

# Product Guide

SYSTIMAX® Structured Connectivity Solutions

**SYSTIMAX® SCS**

*Advancing Network Performance*

***The Complete Portfolio of SYSTIMAX Solutions***

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## Introduction

SYSTIMAX® Structured Connectivity Solutions (SCS) are about quality, innovation, integration and advancing network performance. We break down the barriers between technologies to make it easier for people to share information and create value for their business. We are listening to our customers and working closely with our BusinessPartners to offer the right solutions at the right time for every customer's business goals. We specialize in developing advanced solutions that help organizations manage voice, data and video communications over a single multi-service infrastructure.

SYSTIMAX Labs provides the technical expertise and innovative ingenuity behind our advanced solutions. With a 130 year heritage of Bell Laboratories and over 500 active patents behind it, SYSTIMAX Labs continues to advance the communications industry with new innovations in product, process, electrical performance, and testing all under-pinned by the highest commitment to quality.

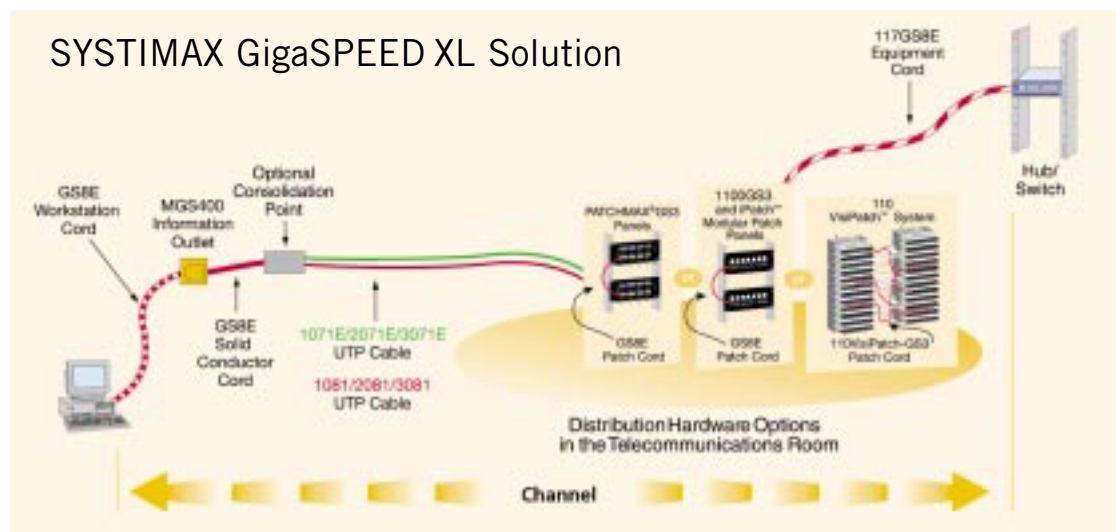
### SEAMLESS COMMUNICATION FROM A TRUE END-TO-END SOLUTION

SYSTIMAX SCS provide the benefits of a true end-to-end solution - the highest levels of performance and reliability from products designed by a single source to work in harmony with one another. Developed in anticipation of the high bandwidth requirements of tomorrow's business environment, SYSTIMAX product innovations in cable and connector design constantly push the boundaries of bandwidth and throughput.

SYSTIMAX SCS offers a combination of copper and fiber media:

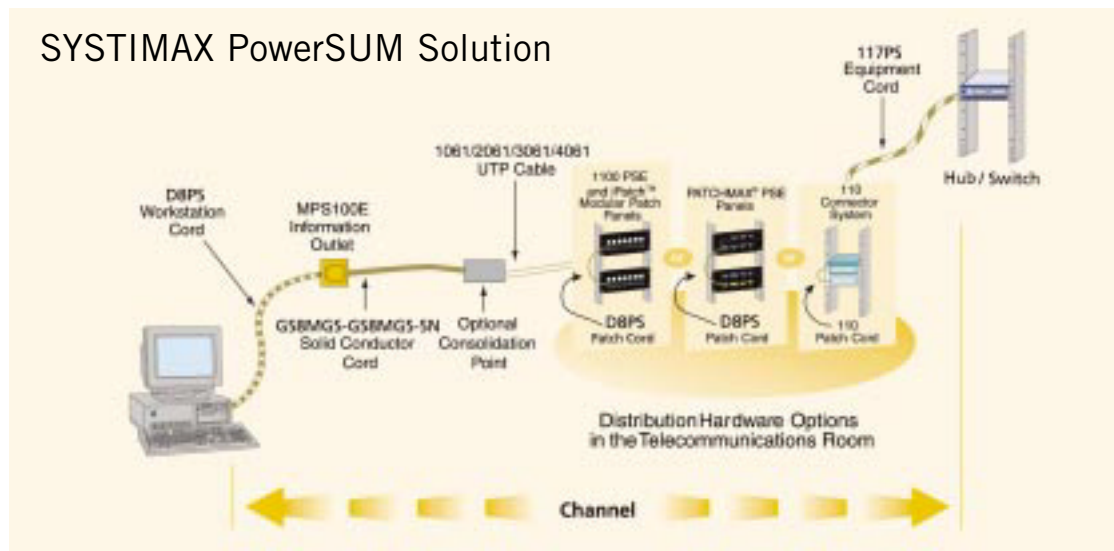
- The SYSTIMAX GigaSPEED® XL Solution is the best performing choice in the Category 6 market. The quality of design and performance make it superior to any other solution. Our legacy of advancement started with the GigaSPEED Solution introduced in late 1997, which became the blueprint for the completed Category 6 standard. The new GigaSPEED XL Solution improves electrical performance by 400% over Category 6 by reducing harmful NEXT interference. In addition the GigaSPEED XL Solution supports up to 6 connection points in short and long channels providing superior network flexibility that is unmatched in the industry. The GigaSPEED XL Solution is the best infrastructure choice for guaranteed network reliability through greater bandwidth, better throughput and improved productivity. This solution gives customers investment protection against future monopolization of bandwidth multimedia desktop applications and multi-gigabit signaling applications.

### SYSTIMAX GigaSPEED XL Solution



## Introduction (*cont'd*)

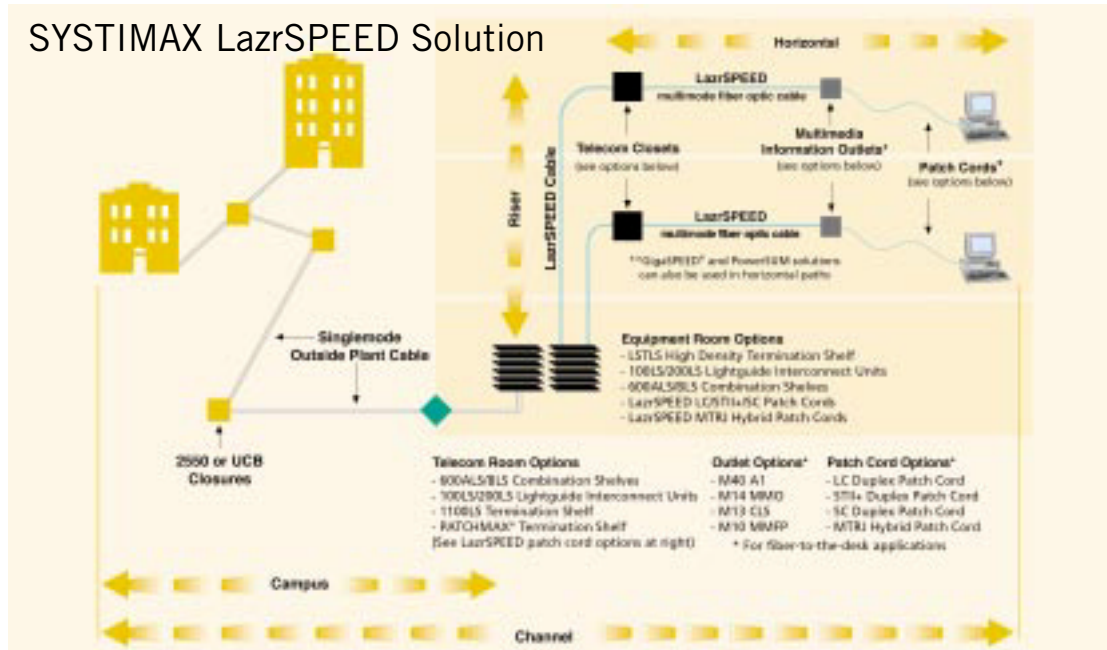
- The SYSTIMAX PowerSUM Solution was the first cabling solution in the industry to take into account the effects of parallel transmission schemes. Introduced in 1996, years before the Category 5e standard was completed, this copper cabling system is the industry leading Category 5e solution, and was the blueprint for the completed Category 5e standard. The PowerSUM Solution far exceeds the Category 5e standard with guaranteed channel performance out to 155 MHz. With enhanced throughput and headroom, the PowerSUM Solution improves electrical performance by 100% over Category 5e by reducing harmful NEXT interference by a factor of 2. In addition harmful PSELFEXT is reduced by more than a factor of 3.5, which is critically important in dual duplex transmission of Gigabit Ethernet. The PowerSUM Solution fully guarantees 100% support for Gigabit Ethernet when deployed as per the IEEE 802.3 (1000BASE-T) implementation.



- The SYSTIMAX LazrSPEED™ Solution - the world's first and most advanced multimode fiber-optic solution to support 10 Gb/s serial transmission at 850 nanometers at distances up to 300 meters - more than enough to connect an in-building backbone. Developed in 1999, the LazrSPEED Solution includes laser optimized multimode fiber (LOMMF/OM3) which has become the blueprint for the TIA/ISO Global specifications. Laser-optimized multimode fiber in the LazrSPEED cable minimizes differential mode delay (DMD), ensuring that photons traveling along various pathways arrive at the detector at the right time. By minimizing this form of dispersion, LazrSPEED technology enables high-speed, high reliability transmission over distances of hundreds of meters in a very affordable cost effective manner.
- The LazrSPEED Solution is backward compatible with legacy LAN applications. It allows you to continue running your existing applications from 10 Kb/s to 10 Gb/s. (Ethernet, Fast Ethernet, FDDI, ATM, SONET, and Token Ring). LazrSPEED fiber supports 1 Gb/s to 1000 meters and 10 Gb/s to 300 meters. This allows for the simplest form of an upgrade. An upgrade that requires no additional effort or investment of the physical infrastructure. With the lowest multimode optical channel loss available and the breakthrough bandwidth performance, a LazrSPEED Solution incorporating the LC connector, easily meets the Gigabit Ethernet standard and sets the pace for 10 Gb/s support. No other solution comes close. This unparalleled channel loss performance (0.1 dB average loss for LC connections, 3.5 dB/km loss for cables at 850 nm) and bandwidth performance enables cost effective 10 Gb/s networks as well as increased network reliability for gigabit applications. It is available in two versions: LazrSPEED 300 and 150.

## Introduction (cont'd)

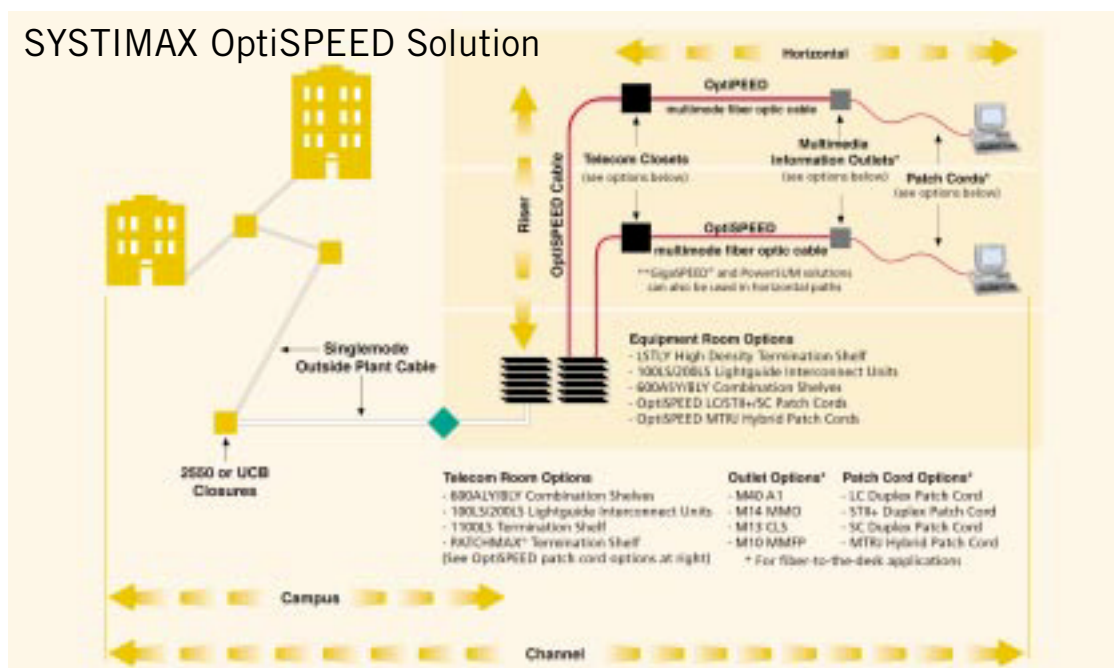
## SYSTIMAX LazrSPEED Solution



- The OptiSPEED<sup>®</sup> Solution - developed to provide a fiber-optic solution that is the backbone for both today's performance requirements and the networks of the future, it offers multimode and singlemode fiber cable. The 62.5 micron multimode fiber provides high-speed links to support signal transmission up to the TIA standard of 300 meters within a building, and up to 2000 meters or 2 kilometers within a campus for many of today's legacy LAN's. The singlemode fiber provides low loss, high bandwidth backbone for distances optimized over 300 meters and beyond.

The OptiSPEED multimode fiber channel, coupled with the low loss LC Connector, supports the 1000BASE-SX and Gigabit Ethernet LAN up to 300 meters with 6 LC connections. In addition to LC Connectors, the OptiSPEED Solution supports the duplex SC Connector as well as the STII+ Connector although over restricted applications and number of connections.

## SYSTIMAX OptiSPEED Solution



## Introduction (*cont'd*)

The SYSTIMAX LC Connector is a next-generation small form factor fiber-optic connector that cuts in half the footprint required for LAN interfaces, thereby reducing costs and saving space for private network users. The LC is fast becoming the connector of choice and is seen as the most popular connector for use in short wave and long wave gigabit transceivers. The SYSTIMAX LC connector has been designed to meet the tight loss budget requirements of the new high bit rate applications such as Gigabit Ethernet, and exhibits loss performance of 0.1 dB, far better than competitive products and connector standards. This miniature connector product family is half the size of existing connectors; uses a smaller 1.6 mm diameter cable; gives equipment vendors a compact option to free up valuable board space; offers easy field mountability; reduces the number of patch panels required; and reduces termination labor costs.

### HIGH PERFORMANCE CONNECTIVITY BASED ON WORLD-CLASS R&D

As the worldwide market leader SYSTIMAX SCS is known for setting industry trends, and driving the development of new cabling standards. This is made possible by SYSTIMAX Labs, with industry leading engineers and scientists who know and understand where future applications and network related technology are heading. The Systems Engineering group takes the knowledge of future network trends and defines high-level systems (channel) performance requirements necessary to support where the network will be many years from now.

Only then do we define specific component requirements that optimally support the systems level specifications. The result is to rapidly deliver competitive technology for the world's best communications solutions that allow businesses to excel. This activity ensures that SYSTIMAX customers can be confident that their cabling investment meets component and cabling system standards. Through its participation in a wide range of communication standards, SYSTIMAX SCS engineers can also ensure that the applications and networks, which users want to operate over the cabling infrastructure, will be supported reliably, backed by the knowledge and support of SYSTIMAX Labs. In comparison, many vendors who only make individual components focus on component performance and then search for other component vendors to complete their "channel solutions".

### LEADING THE WORLD OF STANDARDS

SYSTIMAX Solutions meet or exceed all major cabling standards and those currently in development. In fact, SYSTIMAX Labs has a strong presence in all major standards organizations world-wide, including:

- TIA (Telecommunications Industry Association)
- EIA (Electronic Industry Association)
- IEEE (Institute of Electrical and Electronic Engineers)
- ATM Forum
- ISO (International Standards Organization)
- IEC (International Electro-technical Commission)
- ANSI (American National Standards Institute)
- AS/NZS (Australian & New Zealand Standards Committee)

### PEACE OF MIND WITH THE BEST WARRANTY IN THE BUSINESS

The quality of a cabling infrastructure solution's warranty is the best assurance that system faults will not result in unexpected costs. The SYSTIMAX SCS warranty covers not only your system components, but also the performance of specific applications for a full 20 years. No one can match the advantage of the SYSTIMAX SCS Extended Product Warranty and Application Assurance Program. Not only is the

## Introduction (*cont'd*)

product warranty on the passive components extended to 20 years for all certified sites, but the applications assurance covers existing and future applications you may want to support - applications that haven't even been developed yet. By warranting any future applications that meet recognized standards using ISO/IEC IS 11801 or TIA/EIA 568-B, SYSTIMAX SCS allows you to virtually "future proof" your connectivity infrastructure. But it doesn't stop there. The applications assurance is further enhanced by including EMC compliance assurance for all registered SYSTIMAX installations. SYSTIMAX SCS is the most widely used cabling solution in the world, according to Frost & Sullivan and other independent researchers. Our cabling is being installed at a rate of more than 1,000 miles per day 1,600 km with 140,000 new points of connection per day in 90+ countries. Our solutions are available worldwide through a global network of 2,800 Authorized and Prestige BusinessPartners trained by SYSTIMAX SCS to design, engineer, install and maintain these network solutions.

**SYSTIMAX Structured Connectivity Solutions – Advancing Network Performance.**

### GLOBAL SYSTIMAX BUSINESSPARTNER ACCREDITED TRAINING PROGRAM

SYSTIMAX products and solutions are typically many years ahead of the standards. Products such as the SYSTIMAX GigaSPEED XL and the SYSTIMAX LazrSPEED Solutions are two such examples. In order for customers to avail of the full benefits of the SYSTIMAX Solutions, it is imperative that they be designed and installed to the highest standards. A comprehensive and specific training program is required to support the product, the warranty and the BusinessPartners that deliver it.

The Global SYSTIMAX BusinessPartner Training Program is an integral part of the authorization and approval process for SYSTIMAX BusinessPartners. Courses such as the SYSTIMAX D&E (Design and Engineering) and the I&M (Installation and Maintenance), enable BusinessPartner engineers to be fully trained on the SYSTIMAX products and solutions. Once completed, ongoing update and refresher courses are available for engineers to continue with their accreditation.

The Program is designed to provide our SYSTIMAX BusinessPartners with a variety of courses relating to fiber and copper solutions, ensuring that the correct procedures, practices and components are used in the delivery of a SYSTIMAX Solution. Quoted as the "best in the business", the courses enable SYSTIMAX BusinessPartners to achieve the optimum in design, installation and performance from our SYSTIMAX product portfolio, and to enhance their solution offerings to SYSTIMAX SCS customers, providing the most current and relevant SYSTIMAX SCS information.

As a customer, it is always advisable to verify that your selected BusinessPartner is D&E and I&M accredited.

### PRODUCT GUIDE AMENDMENTS AND UPDATES

We will be updating our electronic PDF Product Guide, and our On-Line Product Guide on an ongoing basis. We encourage you to visit our web site <http://avaya.com/connectivity/> regularly to ensure you have the latest information available. We will also be providing you with bundled hard copy updates. These bundles will fit in your Product Guide ring binder and are designed to ensure that you can maintain your own personal up-to-date product guide at all times.

# Cables

Chapter

1



# Cables

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## Copper

## GigaSPEED® XL Cables

## Indoor

## 1081 XL 4-Pair Cable

The **GigaSPEED® XL 1081 4-Pair Cable** features an innovative fluted design to guide the pairs inside the jacket and provide unrivaled transmission performance.

The precision manufacturing process and design of the **GigaSPEED XL 1081 4-Pair Cable** maximizes performance and significantly reduces signal emissions and susceptibility to external noise.

The **1081 GigaSPEED XL Cable** meets or exceeds the Category 6 requirements in TIA/EIA 568B.2-1, ISO/IEC 11801 (2002), and EN50173-1 (2002), and provides significant margin (10 dB) over the minimum Category 6 NEXT and PSNEXT requirements.

**1081 cables** are UL Verified Category 6 and UL Listed CMR.



**Figure 1**  
1081 4-Pair Cable

### Physical Specifications

<b>Gauge:</b> 23 AWG	<b>Operating Temperature Range:</b> -20 to 60 °C
<b>Outside Diameter:</b> 0.250 in (6.35 mm)	<b>Max. Pulling Tension:</b> 25 lbs (11.34 Kg)
<b>Weight:</b> 28.4 lbs/1000 ft (12.86 kg/305 m)	

### Electrical Specifications

<b>Nom. Velocity of Prop. (NVP):</b> 0.68	<b>Max. DC Resistance:</b> 9.38 Ω/100 m
<b>Max. DC Resistance Unbal:</b> ≤3%	<b>Max. Mutual Capacitance:</b> 5.6 nF/100 m @ 1 kHz

### Typical Margin to Category 6 Specifications

	GigaSPEED XL 81 Series Cable Typical Worst Pair Margin <sup>1</sup>
Pr-Pr NEXT	12.0 dB
PSNEXT	12.0 dB
Insertion Loss	5%
PSELFEXT	10.0 dB
Return Loss	4.0 dB
Freq Range	1 to 550 MHz

<sup>1</sup>Typical margin represents worst pair minimum average



## Copper

## GigaSPEED XL Cables

## Indoor

1081 XL 4-Pair Cable  
(cont'd)

## Non-plenum Cables

Product	Material ID	Length	Packaging	Color
1081004ASL	108744921	3000 ft (915 m)	Reel	Slate
1081004AWH	108744939	3000 ft (915 m)	Reel	White
1081004ABL	108744947	3000 ft (915 m)	Reel	Blue
1081004ASL	108680802	1000 ft (305 m)	Reel	Slate
1081004ALB	108680810	1000 ft (305 m)	Reel	Light Blue
1081004ABL	108680869	1000 ft (305 m)	Reel	Blue
1081004AYL	108680885	1000 ft (305 m)	Reel	Yellow
1081004ARD	108680893	1000 ft (305 m)	Reel	Red
1081004AWH	108681115	1000 ft (305 m)	Reel	White
1081004AGN	108681131	1000 ft (305 m)	Reel	Green
1081004ABK	108744954	1000 ft (305 m)	Reel	Black
1081004ALL	108681149	1000 ft (305 m)	Reel	Lilac
1081004AOR	700189061	Custom Length	Reel	Orange
<sup>2</sup> 1081004A1SL	700207947	1000 ft (305 m)	Reel	Slate
1081004AOR	108681156	1000 ft (305 m)	Reel	Orange
1081004AIV	108680877	1000 ft (305 m)	Reel	Ivory

\* This is a Global SYSTIMAX SCS Product Guide. Portfolios differ from region to region. Contact your local account representative or BusinessPartner, for any specific regional queries.

<sup>2</sup> Australian Region ONLY

## Copper

## GigaSPEED XL Cables

## Indoor

2081 XL Plenum  
4-Pair Cable

The **GigaSPEED XL 2081 4-Pair Cable** features an innovative fluted design to guide the pairs inside the jacket and provide unrivaled transmission performance.

The precision manufacturing process and design of the **GigaSPEED XL 2081 4-Pair Cable** maximizes performance and significantly reduces signal emissions and susceptibility to external noise.

**2081 XL Cables** are composed of 23 AWG solid copper conductors insulated with Fluorinated-Ethylene-Propylene (FEP) and jacketed with Low Smoke PVC.

The **2081 GigaSPEED XL Cable** meets or exceeds the Category 6 requirements in TIA/EIA 568B.2-1, ISO/IEC 11801 (2002), and EN50173-1 (2002), and provides significant margin (10 dB) over the minimum Category 6 NEXT and PSNEXT requirements.

**2081 cables** are UL Verified Category 6 and UL Listed CMP.



**Figure 2**  
2081 XL Plenum  
4-Pair Cable

## Physical Specifications

<b>Gauge:</b> 23 AWG	<b>Operating Temperature Range:</b> -20 to 60 °C
<b>Outside Diameter:</b> 0.233 in (5.92 mm)	<b>Max. Pulling Tension:</b> 25 lbs (11.34 Kg)
<b>Weight:</b> 31.3 lbs/1000 ft (14.19 Kg/305 m)	

## Electrical Specifications

<b>Nom. Velocity of Prop. (NVP):</b> 0.72	<b>Max. DC Resistance:</b> 9.38 $\Omega$ /100 m
<b>Max. DC Resistance Unbal:</b> $\leq 3\%$	<b>Max. Mutual Capacitance:</b> 5.6 nF/100 m @ 1 kHz

**Copper****GigaSPEED XL Cables****Indoor****2081 XL Plenum  
4-Pair Cable (*cont'd*)****Typical Margin to Category 6 Specifications**

GigaSPEED XL 81 Series Cable Typical Worst Pair Margin <sup>1</sup>	
Pr-Pr NEXT	12.0 dB
PSNEXT	12.0 dB
Insertion Loss	5%
PSELFEXT	10.0 dB
Return Loss	4.0 dB
Freq Range	1 to 550 MHz

<sup>1</sup> Typical margin represents worst pair minimum average

## Copper

## GigaSPEED XL Cables

## Indoor

2081 XL Plenum  
4-Pair Cable (*cont'd*)

Product	Material ID	Length	Packaging	Color
2081004AWH	108681172	1000 ft (305 m)	Reel	White
2081004AWH	108900770	Custom Length	Reel	White
2081004ABL	108681180	1000 ft (305 m)	Reel	Blue
2081004ABL	108901554	Custom Length	Reel	Blue
2081004AYL	108681198	1000 ft (305 m)	Reel	Yellow
2081004AGN	108681206	1000 ft (305 m)	Reel	Green
2081004ALL	108681222	1000 ft (305 m)	Reel	Lilac
2081004AOR	108681164	1000 ft (305 m)	Reel	Orange
2081004ARD	108681248	1000 ft (305 m)	Reel	Red
2081004ASL	108681214	1000 ft (305 m)	Reel	Slate
2081004ABK	108681230	1000 ft (305 m)	Reel	Black
2081004AYL	108901562	Custom Length	Reel	Yellow
2081004AGN	108901570	Custom Length	Reel	Green
2081004ARD	700179112	Custom Length	Reel	Red
2081004ABL	760001354	3000 ft (915 m)	Reel	Blue
2081004AWH	760001347	3000 ft (915 m)	Reel	White
2081004ASL	760001339	3000 ft (915 m)	Reel	Slate
2081004AYL	760001321	3000 ft (915 m)	Reel	Yellow
2081004AOR	760006619	3000 ft (915 m)	Reel	Orange
2081004ARD	108830761	3000 ft (915 m)	Reel	Red

\* This is a Global SYSTIMAX SCS Product Guide. Portfolios differ from region to region. Contact your local account representative or BusinessPartner, for any specific regional queries.

## Copper

## GigaSPEED XL Cables

The **GigaSPEED XL 3081 4-Pair Cable Solution** features an innovative fluted design to guide the pairs inside the jacket and provide unrivaled transmission performance.

The precision manufacturing process and design of the **GigaSPEED XL 3081 4-Pair Cable Solution** maximizes performance and significantly reduces signal emissions and susceptibility to external noise.

**3081 XL Cables** are composed of 23 AWG solid copper conductors insulated with non-halogen high density polyethylene and jacketed with a low smoke zero halogen (LSZH) compound.

The **3081 LSZH Cable** is IEC tested for LSZH emission and passes the following tests:

- IEC 754 part 2, Non-Halogen based on pH and Conductivity Measurements.
- IEC 1034 part 2, Smoke emission.
- IEC 332 part 3, Flammability and Fire retardant.
- NES 713: Toxicity index.

The **3081 cable** meets or exceeds the Category 6 requirements in TIA/EIA 568B.2-1, ISO/IEC 11801 (2002), and EN50173-1 (2002), and provides significant margin (10 dB) over the minimum Category 6 NEXT and PSNEXT requirements.

NON-US PRODUCT

Indoor

**3081 XL Low Smoke Zero Halogen 4-Pair Cable**

**Figure 3**  
3081 Low Smoke Zero Halogen 4-Pair

**Physical Specifications****Gauge:** 23 AWG**Operating Temperature Range:** -20 to 60 °C**Outside Diameter:** 0.275 in (6.99 mm)**Max. Pulling Tension:** 25 lbs (11.34 Kg)**Weight:** 30.2 lbs/1000 ft (13.7 Kg / 305 m)**Electrical Specifications****Nom. Velocity of Prop. (NVP):** 0.68**Max. DC Resistance:** 9.38  $\Omega$ /100 m**Max. DC Resistance Unbal:**  $\leq 3\%$ **Max. Mutual Capacitance:** 5.6 nF/100 m @ 1 kHz

Copper

## GigaSPEED XL Cables

NON-US PRODUCT

Indoor

**3081 XL Low Smoke  
Zero Halogen 4-Pair  
Cable(cont'd)**

## Typical Margin to Category 6 Specifications

GigaSPEED XL 81 Series Cable Typical Worst Pair Margin <sup>1</sup>	
Pr-Pr NEXT	12.0 dB
PSNEXT	12.0 dB
Insertion Loss	5%
PSELFEXT	10.0 dB
Return Loss	4.0 dB
Freq Range	1 to 550 MHz

<sup>1</sup> Typical margin represents worst pair minimum average

Product	Material ID	Length	Packaging Reel	Color
3081004AWH	108687682	3000 ft (915 m)	Reel	White
3081004AWH	108687658	1000 ft (305 m)	Reel	White
3081004ABL	108687674	1000 ft (305 m)	Reel	Blue
3081004ABL	108687690	3000 ft (915 m)	Reel	Blue

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## Copper

## GigaSPEED XL Cables

**1071E GigaSPEED XL 4-Pair Cables** are designed to support emerging high-bandwidth applications, including the IEEE 802.3ab 1000BASE-T (Gigabit Ethernet), TIA/EIA 1000BASE-TX, 1.2 Gb/s ATM and any future applications designed for Category 6/Class E cabling, as well as analog broadband video up to 550 MHz.

The **1071E GigaSPEED XL Cable** features a patent-pending thin and easy to remove bi-sector tape. This delivers the performance benefits of more traditional fluted center members without the associated thickness and size.

The **1071E GigaSPEED XL Cable** meet or exceed the Category 6 requirements in TIA/EIA 568B.2-1, ISO/IEC 11801 (2002) and CENELEC EN50173-1 (2002)

**1071E Cables** are UL Verified Category 6 and UL Listed CMR.



## Indoor

## 1071E XL 4-Pair Cable

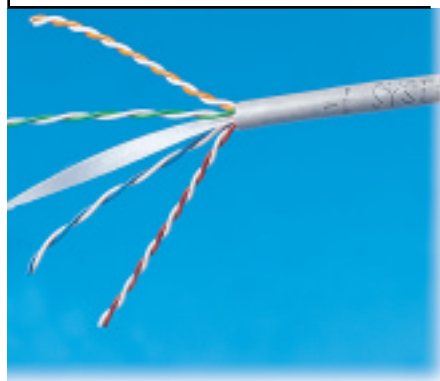


Figure 4  
1071E Cable 4-Pairs



Figure 5  
We Tote®  
Box Packaging

## Physical Specifications

Gauge: 23 AWG	Weight: 24.7 lbs/1000 ft (11.20 kg/305 m)
Outside Diameter: 0.232 in (5.89 mm)	Max. Pulling Tension: 25 lbs (11.34 kg)
Operating Temperature Range: -20 to 60 °C	

## Electrical Specifications

Nom. Velocity of Prop. (NVP): 0.69	Max. DC Resistance: 9.38 ohms /100 m
Max. DC Resistance Unbal.: $\geq 3\%$	Mut. Capacitance @ 1 kHz: 5.6 nF/100 m @ 1 kHz

**Copper****GigaSPEED XL Cables****Indoor****1071E XL 4-Pair Cable  
(cont'd)****Typical Margin to Category 6 Specifications**

	GigaSPEED XL 71 Series Cable Typical Worst Pair Margin*
Pr-Pr NEXT	6.0 dB
PSNEXT	6.0 dB
Insertion Loss	3%
PSELFEXT	5.0 dB
Return Loss	4.0 dB
Freq Range	1 to 550 MHz

\* Typical margin represents worst pair minimum average



## Copper

## GigaSPEED XL Cables

## Indoor

1071E XL 4-Pair Cable  
(cont'd)

## Non-plenum Cable

Product	Material ID	Length	Packaging	Color
1071004EOR	700212111	1000 ft (305 m)	Reel	Orange
1071004EOR	700212103	1000 ft (305 m)	We Tote	Orange
1071004ELB	700211964	1000 ft (305 m)	We Tote	Light Blue
1071004ELB	700211956	1000 ft (305 m)	Reel	Light Blue
1071004ELB	700211972	Custom Length	Reel	Light Blue
1071004EBL	760004689	1000 ft (305 m)	We Tote	Blue
1071004EBL	760004697	1000 ft ( 305 m)	Reel	Blue
1071004EWH	700212046	1000 ft (305 m)	We Tote	White
1071004EWH	700214208	1000 ft (305 m)	Reel	White
1071004EGN	700212061	1000 ft (305 m)	We Tote	Green
1071004EGN	700212053	1000 ft (305 m)	Reel	Green
1071004EGN	700212079	Custom Length	Reel	Green
1071004ESL	700211931	1000 ft (305 m)	We Tote	Slate
1071004ESL	700211923	1000 ft (305 m)	Reel	Slate
1071004ESL	700211949	Custom Length	Reel	Slate
1071004ELL	700212095	1000 ft (305 m)	We Tote	Lilac
1071004ELL	700212087	1000 ft (305 m)	Reel	Lilac
1071004EBK	700212129	1000 ft (305 m)	We Tote	Black
1071004ERD	700212020	1000 ft (305 m)	We Tote	Red
1071004ERD	700212012	1000 ft (305 m)	Reel	Red
1071004ERD	700212038	Custom Length	Reel	Red
1071004EYL	700211998	1000 ft (305 m)	We Tote	Yellow
1071004EYL	700212004	Custom Length	Reel	Yellow
1071004EYL	700211980	1000 ft (305 m)	Reel	Yellow
1071004EWH	700219736	4400 ft (1342 m)	Reel	White
1071004ESL	700219744	4400 ft (1342 m)	Reel	Slate
1071004EWH	700214257	Custom Length	Reel	White

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## Australian Region ONLY

Product	Material ID	Length	Packaging	Color
1071004E1SL	700214216	1000 ft (305 m)	Reel	Slate
1071004E1SL	700214224	1000 ft (305 m)	We Tote	Slate
1071004E1SL	700214232	Custom Length	Reel	Slate
1071004E1LB	700214240	1000 ft (305 m)	We Tote	Light Blue
1071004E1LB	700214547	4000 ft (1220 m)	Reel	Light Blue
1071004E1LB	700214554	4000 ft (1220 m)	Reel	Light Blue

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## Copper

## GigaSPEED XL Cables

The **2071E GigaSPEED XL 4-Pair Cables** are designed to support emerging high-bandwidth applications, including the IEEE 802.3ab 1000BASE-T (Gigabit Ethernet), TIA/EIA 1000BASE-TX, 1.2 Gb/s ATM and any future applications designed for Category 6/Class E cabling, as well as analog broadband video up to 550 MHz.

The precision manufacturing process and design of the **2071E GigaSPEED XL 4-Pair Cables** maximizes performance and significantly reduces signal emissions and susceptibility to external noise. The **2071E GigaSPEED XL Cable** features a patent-pending thin and easy to remove bisector tape. This delivers the performance benefits of more traditional fluted center members without the associated stiffness and size.

The **2071E GigaSPEED XL 4-Pair Cables** is composed of 24-AWG (0.5 mm) bare solid-copper conductors insulated with Fluorinated-Ethylene-Propylene (FEP). The core of twisted pairs is jacketed with a low-smoke PVC. It conforms to the low-flame, low-smoke requirements of the NEC.

The **2071E GigaSPEED XL Cables** meet or exceed the Category 6 requirements in TIA/EIA 568B.2-1, ISO/IEC 11801 (2002) and CENELEC EN50173-1 (2002).



**2071E cables** are UL Verified Category 6 and UL Listed CMP.

## Indoor

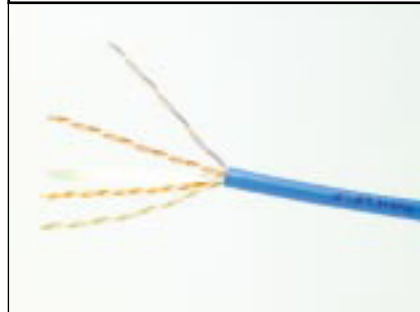
2071E XL Plenum  
4-Pair Cable

Figure 6  
2071E 4-Pair Cable

## Physical Specifications

<b>Gauge:</b> 23 AWG	<b>Weight:</b> 28.9 lbs/1000 ft (13.11 kg/305 m)
<b>Outside Diameter:</b> 0.226 in (5.74 mm)	<b>Max. Pulling Tension:</b> 25 lbs (11.34 kg)
<b>Operating Temperature Range:</b> -20 to 60 °C	

## Electrical Specifications

<b>Nom. Velocity of Prop. (NVP):</b> 0.72	<b>Max. DC Resistance:</b> 9.38 $\Omega$ / 100 m
<b>Max. DC Resistance Unbal.:</b> $\leq 3\%$	<b>Mut. Capacitance @ 1 kHz:</b> 5.6 nF/100 m @ 1 kHz

## Copper

## GigaSPEED XL Cables

## Indoor

2071E XL Plenum  
4-Pair Cable (cont'd)

## Typical Margin to Category 6 Specifications

GigaSPEED XL 71 Series Cable Typical Worst Pair Margin*	
Pr-Pr NEXT	6.0 dB
PSNEXT	6.0 dB
Insertion Loss	3%
PSELFEXT	5.0 dB
Return Loss	4.0 dB
Freq Range	1 to 550 MHz

\* Typical margin represents worst pair minimum average

## Physical Specifications

Gauge: 23 AWG	Weight: 10 kg/305 m (22.04 lb/1,000 ft)
Outside Diameter: 5.66 mm (0.233 in)	Max. Pulling Tension: 11 kg (24.25 lb)
Operating Temperature Range: -20 to 60 °C	Breaking Pulling Tension: 907.2 kg (2,000 lb per sq/in)

## Electrical Specifications

Nom. Velocity of Prop. (NVP): 0.72	Max. DC Resistance: 9.4 ohms /100 m
Max. DC Resistance Unbal.: <3%	Mut. Capacitance @ 1 kHz: 4.9 nF/100 m/(328.08 ft)

## Copper

## GigaSPEED XL Cables

## Indoor

2071E XL Plenum  
4-Pair Cable (*cont'd*)

## Plenum Cable

Product	Material ID	Length	Packaging	Color
2071004EWH	700210032	1000 ft (305 m)	Reel	White
2071004EWH	700210040	4500 ft (1,372 m)	Reel	White
2071004EWH	700210057	3000ft (914.4 m)	Reel	White
2071004EWH	700208101	1000 ft (305 m)	We Tote	White
2071004EWH	700210065	Custom Length	Reel	White
<sup>1</sup> 2071004E1WH	760003228	1000 ft (305 m)	We Tote	White
2071004EBL	700210081	1000 ft (305 m)	Reel	Blue
2071004EBL	700210099	3000 ft (914.4 m)	Reel	Blue
2071004EBL	700208093	1000 ft (305 m)	We Tote	Blue
2071004EBL	700210107	Custom Length	Reel	Blue
2071004EYL	700210123	1000 ft (305 m)	We Tote	Yellow
2071004EYL	700210131	1000 ft (305 m)	Reel	Yellow
2071004EYL	700210149	Custom Length	Reel	Yellow
2071004EGN	700210156	1000 ft (305 m)	Reel	Green
2071004EGN	700210164	1000 ft (305 m)	We Tote	Green
2071004EGN	700210172	Custom Length	Reel	Green
2071004EGN	700210180	4500 ft (1,372 m)	Reel	Green
2071004ESL	700210198	1000 ft (305 m)	Reel	Slate
2071004ESL	700214372	1000 ft (305 m)	We Tote	Slate
2071004ESL	700023039	Custom Length	Reel	Slate
2071004ELL	700210206	1000 ft (305 m)	Reel	Lilac
2071004ELL	700210214	1000 ft (305 m)	We Tote	Lilac
2071004EBK	700210222	1000 ft (305 m)	Reel	Black
2071004EBK	700210230	1000 ft (305 m)	We Tote	Black
2071004ERD	700210263	1000 ft (305 m)	We Tote	Red
2071004ERD	700210248	1000 ft (305 m)	Reel	Red
2071004ERD	700210255	2000 ft (610 m)	Reel	Red
2071004EOR	700210008	1000 ft (305 m)	Reel	Orange
2071004EOR	700210016	Custom Length	Reel	Orange
2071004EOR	700210024	1000 ft (305 m)	We Tote	Orange

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<sup>1</sup>EMEA Region Only.

## Copper

## GigaSPEED XL Cables

NON-US PRODUCT

Indoor

**3071E-3 Low Smoke Zero Halogen 4-Pair Cable**

The **3071E-3 4-Pair GigaSPEED Cable** meets the IEC 60332-3 Flammability & Fire Retardant Tests. This cable offers superior Flammability & Fire Retardant requirements. The difference in fire performance lies in criteria outlined in IEC60332-3 (part 3) and IEC60332-1 (part 1).

The precision manufacturing process and design of the **3071E-3 4-Pair GigaSPEED Cable** maximizes performance and significantly reduces signal emissions and susceptibility to external noise.

**3071E-3 Cable** is composed of 23-AWG solid-copper conductors insulated with non-halogen high density polyethylene and jacketed with a low smoke zero halogen (LSZH) compound.

**Physical Specifications**

Gauge: 23 AWG	Weight: 25.8 lbs/1000 ft (11.70 kg/305 m)
Outside Diameter: 0.236 in (6 mm)	Max. Pulling Tension: 25 lbs (11.34 kg)
Operating Temperature Range: -20 to 60 °C	

**Electrical Specifications**

Nom. Velocity of Prop. (NVP): 0.69	Max. DC Resistance: 9.38 ohms/100 m
Max. DC Resistance Unbal.: 3%	Mut. Capacitance @ 1 kHz: 5.6 nF/100 m

Product	Material ID	Length	Packaging	Color
3071004E3WH	760006346	1000 ft (305 m)	Reel	White
3071004E3WH	760011544	1000 ft (305 m)	We Tote	White
3071004E3WH	760006353	4400 ft (1340 m )	Reel	White

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## Copper

## GigaSPEED XL Cables

NON-US PRODUCT

Indoor

**3071E XL Low Smoke Zero Halogen 4-Pair Cable**

The **3071E GigaSPEED XL 4-Pair Cable** is designed to support emerging high-bandwidth applications, including the IEEE 802.3ab 1000BASE-T (Gigabit Ethernet), TIA/EIA 1000BASE-TX, 1.2 Gb/s ATM and any future applications designed for Category 6/Class E cabling, as well as analog broadband video up to 550 MHz.

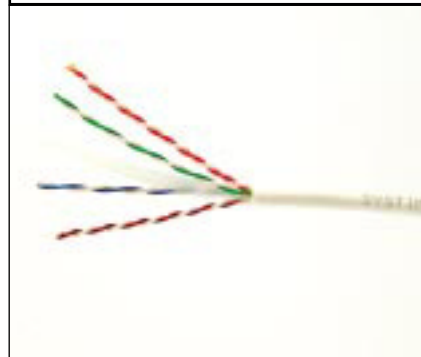
The precision manufacturing process and design of the **3071E GigaSPEED XL 4-Pair Cable** maximizes performance and significantly reduces signal emissions and susceptibility to external noise. The 3071E GigaSPEED XL cable features a patent-pending thin and easy to remove bisector tape. This delivers the performance benefits of more traditional fluted center members without the associated stiffness and size.

**3071E XL Cable** is composed of 23 AWG solid-copper conductors insulated with non-halogen high density polyethylene and jacketed with a low smoke zero halogen (LSZH) compound.

The **3071E LSZH XL Cable** is IEC tested for low smoke and non-halogen emission and passes the following tests:

- IEC 754 part 2, Non-halogen based on pH and Conductivity Measurements.
- IEC 1034 part 2, Smoke emission.
- IEC 60332-1 (part 1), Flammability and Fire retardant.
- NES 713: Toxicity index.

The **3071E GigaSPEED XL Cable** meets or exceeds the Category 6 requirements in TIA/EIA 568B.2-1, ISO/IEC 11801 (2002) and CENELEC EN50173-1 (2002).



**Figure 7**  
3071E 4-Pair Cable

## Copper

## GigaSPEED XL Cables

NON-US PRODUCT

Indoor

**3071E XL Low Smoke  
Zero Halogen  
4-Pair Cable (cont'd)**

## Typical Margin to Category 6 Specifications

GigaSPEED XL 71 Series Cable Typical Worst Pair Margin*	
Pr-Pr NEXT	6.0 dB
PSNEXT	6.0 dB
Insertion Loss	3%
PSELFEXT	5.0 dB
Return Loss	4.0 dB
Freq Range	1 to 550 MHz

\* Typical margin represents worst pair minimum average

## Physical Specifications

<b>Gauge:</b> 23 AWG	<b>Weight:</b> 25.8 lbs/1000 ft (11.70 kg/305 m)
<b>Outside Diameter:</b> 0.236 in (5.99 mm)	<b>Max. Pulling Tension:</b> 25 lbs (11.34 kg)
<b>Operating Temperature Range:</b> -20 to 60 °C	

## Electrical Specifications

<b>Nom. Velocity of Prop. (NVP):</b> 0.69	<b>Max. DC Resistance:</b> 9.38 $\Omega$ /100 m
<b>Max. DC Resistance Unbal.:</b> $\leq 3\%$	<b>Mut. Capacitance @ 1 kHz:</b> 5.6 nF/100 m @ 1 kHz

## Non-Halogen Cable

Product	Material ID	Length	Packaging	Color
3071004EWH	700216476	4400 ft (1340 m)	Reel	White
3071004EWH	700216450	1000 ft (305 m)	We Tote	White
3071004EBL	700216500	4400 ft (1305 m)	Reel	Blue
3071004EWH	700216443	1000 ft (305 m)	Reel	White
3071004EBL	700216492	1000 ft (305 m)	We Tote	Blue

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## Copper

## PowerSUM Cables

**1061 4-Pair Cable** is composed of 24 AWG bare solid-copper conductors insulated with high density polyolefin. The insulated conductors are tightly twisted into pairs and jacketed with SYSTIMAX SCS specially formulated PVC Material.

The **1061 4-Pair Cable** is a high-speed, 100 ohm high performance cable with excellent pair-to-pair NEXT levels. The **1061 Cable** provides excellent high-speed transmission, is specified out to 155 MHz and supports applications such as 155 Mb/s ATM, 622 Mb/s ATM and the IEEE 802.3 1000BASE-T (Gigabit Ethernet) standard, using parallel transmission scheme technology in conjunction with other SYSTIMAX SCS components.

The **1061 4-Pair Cables** are UL Verified Category 5e, and meet the Category 5 and Category 5e requirements in TIA/EIA 568B, ISO/IEC 11801 (2002) and EN50173-1 (2002). They are also UL Listed CM (C+ version) or UL Listed CMR and CSA Type FT4 (B+ version).



## Indoor

## 1061 4-Pair Cable



Figure 8  
1061 4-Pair Cable



Figure 9  
We Tote Box Packaging

## Physical Specifications

<b>Gauge:</b> 24 AWG	<b>Weight:</b> 1061C = 20.8 lbs /1000 ft (9.43 kg/305 m)
<b>Outside Diameter:</b> 0.215 in (5.5 mm)	1061B = 20.6 lbs/1000 ft (9.34 kg/305 m)
<b>Operating Temperature Range:</b> -20 to 60 °C	<b>Max. Pulling Tension:</b> 25 lbs (11.38 kg)

## Electrical Specifications

<b>Nom. Velocity of Prop. (NVP):</b> 0.70	<b>Max. DC Resistance:</b> 9.38 $\Omega$ /100 m
<b>Max. DC Resistance Unbal.:</b> $\leq 3\%$	<b>Mut. Capacitance @ 1 kHz:</b> 5.6 nF/100 m



## Copper

## PowerSUM Cables

## Indoor

1061 4-Pair Cable  
(cont'd)

## Minimum Electrical Specifications in dB/100m 328ft

Frequency (MHz)	Insertion Loss	NEXT	PS NEXT	ELFEXT	PS ELFEXT	Return Loss
0.772	1.8	69.0	64.0	66.0	63.0	-
1	2.0	67.3	62.3	63.8	60.8	20
4	4.1	58.3	53.3	51.8	48.8	23
8	5.8	53.8	48.8	45.7	42.7	25
10	6.5	52.3	47.3	43.8	40.8	25
16	8.2	49.2	44.2	39.7	36.7	25
20	9.3	47.8	42.8	37.8	34.8	25
25	10.4	46.3	41.3	35.8	32.8	24
31.25	11.7	44.9	39.9	33.9	30.9	24
62.5	17.0	40.4	35.4	27.9	24.9	22
100	22.0	37.3	32.3	23.8	20.8	20
200	32.4	32.8	27.8	17.7	14.7	18

## Typical Margin to Category 5e Specifications

PowerSUM 61 Series Cable Typical Worst Pair Margin*	
Pr-Pr NEXT	4.0 dB
PSNEXT	6.0 dB
Insertion Loss	5%
PSELFEXT	9.0 dB
Return Loss	3.0 dB
Freq Range	1 to 200 MHz

\* Typical margin represents worst pair minimum average

## Copper

## PowerSUM Cables

## Indoor

1061 4-Pair Cable  
(cont'd)

## “C+” VERSION – UL TYPE CM

Product	Material ID	Length	Packaging	Color
1061004CSL	106836950	1000 ft (305 m)	We Tote	Slate
1061004CSL	106836943	1000 ft (305 m)	Reel	Slate
1061004CSL	106836968	4400 ft (1340 m)	Reel	Slate
1061004CBK	107509051	1000 ft (305 m)	We Tote	Black
1061004CLB	107057853	1000 ft (305 m)	Reel	Light Blue
1061004CBL	106871809	1000 ft (305 m)	We Tote	Blue
1061004CGN	107244048	1000 ft (305 m)	Reel	Green
1061004CGN	107244030	1000 ft (305 m)	We Tote	Green
1061004CIV	107076192	1000 ft (305 m)	Reel	Ivory
1061004CIV	106871817	1000 ft (305 m)	We Tote	Ivory
1061004CIV	107257289	Custom Lengths	Reel	Ivory
1061004CLL	107244022	1000 ft (305 m)	We Tote	Lilac
1061004COR	107193435	1000 ft (305 m)	Reel	Orange
1061004CRD	107244055	1000 ft (305 m)	Reel	Red
1061004CRD	106926363	1000 ft (305 m)	We Tote	Red
1061004CWH	107849283	1000 ft (305 m)	Reel	White
1061004CWH	107147787	1000 ft (305 m)	We Tote	White
1061004CYL	106999071	1000 ft (305 m)	Reel	Yellow
1061004CYL	107001687	1000 ft (305 m)	We Tote	Yellow
1061004CSL	106836976	Custom Length	Reel	Slate
1061004CWH	107288235	Custom Length	Reel	White
1061004CLB	107288243	Custom Length	Reel	Light Blue
<sup>1</sup> 1061004CYL	107388035	Custom Length	Reel	Yellow
<sup>1</sup> 1061004CLL	107244014	1000 ft (305 m)	Reel	Lilac
<sup>1</sup> 1061004COR	700156177	1000 ft (305 m)	We Tote	Orange

## “B+” VERSION – UL TYPE CMR, CSA TYPE FT4

Product	Material ID	Length	Packaging	Color
1061004BBL	107251696	1000 ft (305 m)	We Tote	Blue
1061004BBL	107323636	1000 ft (305 m)	Reel	Blue
1061004BSL	107091936	1000 ft (305 m)	We Tote	Slate
1061004BWH	107819575	1000 ft (305 m)	We Tote	White
1061004BOR	108173840	1000 ft (305 m)	We Tote	Orange

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<sup>1</sup>Australian Region Only

## Copper

## PowerSUM Cables

## Indoor

## 1061 &amp; 2061 25-Pair Cable

The **1061 25-Pair Cable** is composed of 24-AWG bare solid-copper conductors insulated with high density polyolefin. The insulated conductors are tightly twisted into pairs, stranded into mini-units and jacketed with a SYSTIMAX SCS specially formulated PVC jacket.

The **2061 25-Pair Cable** is composed of 24-AWG bare solid copper conductors insulated with FEP. The insulated conductors are twisted into pairs and jacketed with low smoke PVC (LSPVC).

The cable employs a unique honeycomb core construction.

This design consists of multiple 3 and 4-Pair tightly stranded sub-units. A total of seven unjacketed sub-units (six around one) are then stranded to comprise the cable core. This construction allows for easy pair identification and termination.

These cables are high-speed, 100 ohm high performance cable with excellent PSNEXT levels, which ensures that multiple identical or compatible signals can be shared in the same cable without loss of data integrity.

**1061 and 2061 Cables** provides excellent high-speed transmission up to at least 155 Mb/s ATM and will support the mixing of multiple ATM signals along with other compatible signals (Please refer to the latest SYSTIMAX SCS Performance Specifications for details concerning shared sheath compatibility).

The cables are UL Verified Category 5 and they meet or exceed the Category 5 requirements in ISO/IEC 11801, CENELEC EN50173 and EIA/TIA 568A. Further, they are also UL Listed CMR and (UL) CMG for riser and general purpose use, and meet IEC 60332-3 Part 3. The **1061 25-Pair Cable** is UL listed CMP.



**Figure 10**  
25-Pair  
PowerSUM Cable



## Physical Specifications

**Gauge:** 24 AWG

**Operating Temperature:** -20 to 60 °C

**Outside Diameter:** 1061 0.520 in (13.21 mm)  
2061 0.435 in (11.05 mm)

**Weight:** 1061 113.5 lbs/1000 ft (51.48 kg/305 m)  
2061 110.8 lbs/1000 ft (50.26 kg/305 m)

**Max. Pulling Tension:** 6.3 lbs/ pair (2.8 kg/ pair)

## Electrical Specifications

**Nom. Velocity of Prop. (NVP):** 1061 2061  
0.71 0.74

**Max. DC Resistance:** 9.38 Ω/ 100 m

**Max. DC Resistance Unbal:** ≤3%

**Max. Mutual Capacitance:** 5.6 nF/100 m @ 1 kHz

## Copper

## PowerSUM Cables

## Indoor

1061 & 2061 25-Pair  
Cable (*cont'd*)

## Minimum Electrical Specifications dB/100m (dB/328ft)

Frequency (MHz)	Insertion Loss	PS NEXT Return	Structural Loss
0.772	1.8	64.0	-
1	2.0	62.3	23
4	4.1	53.3	23
8	5.8	48.8	23
10	6.5	47.3	23
16	8.2	44.3	23
20	9.3	42.8	23
25	10.4	41.3	22
31.25	11.7	39.9	21
62.5	17.0	35.4	18
100	22.0	32.3	16

Product	Material ID	Length	Packaging	Color
1061025CSL	107287484	1000 ft (305 m)	Reel	Slate
1061025CSL	107479313	4000 ft (1219 m)	Reel	Slate
1061025CSL	107222762	Variable	Reel	Slate
1061025CSL	107314668	Custom length	Reel	Slate
<sup>1</sup> 106025C1SL	760003186	1000 ft (305 m)	Reel	Slate
<sup>1</sup> 106025C1SL	760003210	4000 ft (1219 m)	Reel	Slate
2061025ABL	107871477	1000 ft (305 m)	Reel	Blue
2061025AWH	107369845	1000 ft (305 m)	Reel	White
2061025AWH	107995011	4000 ft (1219 m)	Reel	White
2061025AWH	107369852	Variable	Reel	White

\* This is a Global SYSTIMAX SCS Product Guide. Portfolios differ from region to region. Contact your local account representative or BusinessPartner, for any specific regional queries.

<sup>1</sup> Australian Region ONLY

## Copper

## PowerSUM Cables

## Indoor

**2061 Plenum  
4-Pair Cable**

The **2061 4-Pair Cable** is composed of 24-AWG bare solid-copper conductors insulated with Fluorinated-Ethylene-Propylene (FEP). The core of twisted pairs is jacketed with a low-smoke PVC.

It conforms to the low-flame, low-smoke requirements of the NEC. The **2061 4-Pair Cable** is a high-speed, 100 ohm high performance cable with excellent PSNEXT levels which ensures that multiple identical or compatible signals can be shared in the same cable without loss of data integrity.

**2061 Cables** provides excellent high-speed transmission, are specified out to 155 MHz and supports applications such as 155 Mb/s ATM, 622 Mb/s ATM and the proposed IEEE 802.3 1000BASE-T (Gigabit Ethernet) Standard, using parallel transmission scheme technology in conjunction with other SYSTIMAX SCS components.

**2061 Cables** are UL Verified Category 5e. **2061 Cables** meet or exceed the Category 5 and Category 5e requirements in ISO/IEC 11801 and EN50173-1 and EIA/TIA 568-B.2. **2061 Cables** are UL Listed CMP and are listed in the Approved Fire and Security Products and Services list of the Loss Prevention Certification Board (UK).

**Physical Specifications**

<b>Gauge:</b> 24 AWG	<b>Weight:</b> 21.9 lbs/1000 ft (9.92 kg/305 m)
<b>Outside Diameter:</b> 0.196 in (4.98 mm)	<b>Max. Pulling Tension:</b> 25 lbs (11.38 kg)
<b>Operating Temperature Range:</b> -20 to 60 °C	

**Electrical Specifications**

<b>Nom. Velocity of Prop. (NVP):</b> 0.75	<b>Max. DC Resistance:</b> 9.38 $\Omega$ /100 m
<b>Max. DC Resistance Unbal.:</b> $\leq 3\%$	<b>Mut. Capacitance @ 1 kHz:</b> 5.6 nF/100 m

Frequency (MHz)	Insertion Loss	NEXT	PS NEXT	ELFEXT	PS ELFEXT	Return Loss
0.772	1.8	69.0	64.0	66.0	63.0	-
1	2.0	67.3	62.3	63.8	60.8	20
4	4.1	58.3	53.3	51.8	48.8	23
8	5.8	53.8	48.8	45.7	42.7	25
10	6.5	52.3	47.3	43.8	40.8	25
16	8.2	49.2	44.2	39.7	36.7	25
20	9.3	47.8	42.8	37.8	34.8	25
25	10.4	46.3	41.3	35.8	32.8	24
31.25	11.7	44.9	39.9	33.9	30.9	24
62.5	17.0	40.4	35.4	27.9	24.9	22
100	22.0	37.3	32.3	23.8	20.8	20
200	32.4	32.8	27.8	17.7	14.7	18

**Copper****PowerSUM Cables****Indoor****2061 Plenum  
4-Pair Cable (*cont'd*)****Typical Margin to Category 5e Specifications**

	PowerSUM 61 Series Cable Typical Worst Pair Margin*
Pr-Pr NEXT	4.0 dB
PSNEXT	6.0 dB
Insertion Loss	5%
PSELFEXT	9.0 dB
Return Loss	3.0 dB
Freq Range	1 to 200 MHz

\* Typical margin represents worst pair minimum average

## Copper

## PowerSUM Cables

## Indoor

2061 Plenum  
4-Pair Cable (*cont'd*)

Product	Material ID	Length	Packaging	Color
2061004BWH	106939317	1000 ft (305 m)	Reel	White
2061004BWH	106939325	1000 ft (305 m)	We Tote	White
2061004BWH	108079401	1000 ft (305 m)	Reel Tote	White
2061004BWH	106946833	Custom Length	Reel	White
2061004BBL	106946809	1000 ft (305 m)	Reel	Blue
2061004BBL	108079369	1000 ft (305 m)	Reel Tote	Blue
2061004BBL	106946825	1000 ft (305 m)	We Tote	Blue
2061004BOR	106974348	1000 ft (305 m)	Reel	Orange
2061004BOR	108052879	1000 ft (305 m)	Reel Tote	Orange
2061004BOR	108077835	1000 ft (305 m)	We Tote	Orange
2061004BGN	107272841	1000 ft (305 m)	Reel	Spring Green
2061004BGN	107272809	1000 ft (305 m)	We Tote	Spring Green
2061004BLL	107273286	1000 ft (305 m)	Reel	Lilac
2061004BLL	107273278	1000 ft (305 m)	We Tote	Lilac
2061004BBK	107383705	1000 ft (305 m)	Reel	Black
2061004BBK	107509036	1000 ft (305 m)	We Tote	Black
2061004BYL	106965387	1000 ft (305 m)	Reel	Yellow
2061004BYL	108077868	1000 ft (305 m)	Reel Tote	Yellow
2061004BYL	106965379	1000 ft (305 m)	We Tote	Yellow
2061004BSL	108606815	1000 ft (305 m)	We Tote	Slate
2061004BSL	107193468	1000 ft (305 m)	Reel	Slate
2061004BWH	107014052	5000 ft (1525 m)	Reel	White
2061004BBL	108077827	3000 ft (915 m)	Reel	Blue
2061004BWH	108077850	3000 ft (915 m)	Reel	White
2061004BSL	108545997	3000 ft (915 m)	Reel	Slate
2061004BRD	108546003	3000 ft (915 m)	Reel	Red
2061004BRD	108924838	1000 ft (305 m)	Reel	Red
2061004BRD	700013667	1000 ft (305 m)	We Tote	Red

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## Copper

## PowerSUM Cables

The **3061** is a **Low Smoke Zero Halogen (LSZH) 4-Pair/ 25-Pair Cable**. It is composed of (24-AWG) bare solid-copper conductors insulated with high density polyethylene non-halogen compound. The insulated conductors are tightly twisted into pairs and jacketed with the low smoke non-halogen compound.

The **3061 LSZH Cable** is IEC tested for low smoke and non-halogen emission and passes the following tests:

- IEC 754 part 2, Non-halogen based on pH and Conductivity Measurements.
- IEC 1034 part 2, Smoke emission.
- IEC 332 part 3, Flammability and Fire retardant.
- NES 713: Toxicity index.

The **3061 25-Pair Cable** employs a unique honeycomb core construction. This design consists of multiple 3 and 4-Pair tightly stranded sub-units. A total of seven unjacketed sub-units (six around one) are then stranded to comprise the cable core. This construction allows for easy pair identification and termination.

These cables are high-speed, 100 ohm high performance cable with excellent PSNEXT levels, which ensures that multiple identical or compatible signals can be shared in the same cable without loss of data integrity. The **3061 Cable** provides excellent high-speed transmission up to at least 155 Mb/s ATM and will support the mixing of multiple ATM signals along with other compatible signals (Please refer to the latest SYSTIMAX SCS Performance Specifications for details concerning shared sheath compatibility). The cables are UL verified.

The **3061 LSZH 4-Pair and 25-Pair Cable** meets or exceeds the Category 5 requirements in ISO/IEC 11801 and EN50173-1 and TIA/EIA 568-B.2.

### Physical Specifications

<b>Gauge:</b> 24 AWG	
<b>Operating Temperature:</b> -20 to 60 °C	
<b>Outside Diameter:</b> 3061 4-Pair	0.215 in (5.46 mm)
3061 25-Pair	0.535 in (13.59 mm)
<b>Weight:</b> 3061 4-Pair	21.4 lbs/1000 ft (9.71 kg/305 m)
3061 25-Pair	116.1 lbs/1000 ft (52.66 kg/305 m)
<b>Max. Pulling Tension:</b> 3061 4-Pair	25 lbs/ pair (11.38 kg/ pair)
3061 25-Pair	6.3 lbs/pair (2.8 kg/ pair)

### Electrical Specifications

<b>Nom. Velocity of Prop. (NVP):</b> 3061 4-Pair	3061 25-Pair
0.70	0.71
<b>Max. DC Resistance:</b> 9.38 $\Omega$ / 100 m	
<b>Max. DC Resistance Unbal:</b> $\leq 3\%$	
<b>Max. Mutual Capacitance:</b> 5.6 nF/100 m @ 1 kHz	

NON-US PRODUCT

Indoor

### 3061 Low Smoke Zero Halogen 4-Pair & 25-Pair Cables



**Figure 11**  
3061A Low Smoke  
Zero Halogen  
4-Pair Cable



**Figure 12**  
Reel Packaging  
4-Pair Cable



## Copper

## PowerSUM Cables

NON-US PRODUCT

Indoor

**3061 Low Smoke Zero  
Halogen 4-Pair &  
25-Pair Cables (cont'd)**

## 25-Pair Minimum Electrical Specifications dB/100m (dB/328ft)

Frequency (MHz)	Insertion Loss	PS NEXT Return	Structural Loss
0.772	1.8	64.0	-
1	2.0	62.3	23
4	4.1	53.3	23
8	5.8	48.8	23
10	6.5	47.3	23
16	8.2	44.3	23
20	9.3	42.8	23
25	10.4	41.3	22
31.25	11.7	39.9	21
62.5	17.0	35.4	18
100	22.0	32.3	16

## 4-Pair Typical Margin to Category 5e Specifications

PowerSUM 61 Series 4-Pair Cable Typical Worst Pair Margin*	
Pr-Pr NEXT	4.0 dB
PSNEXT	6.0 dB
Insertion Loss	5%
PSELFEXT	9.0 dB
Return Loss	3.0 dB
Freq Range	1 to 200 MHz

\* Typical margin represents worst pair minimum average

Product	Material ID	Length Ft (m)	Pair Size	Packaging	Color
3061004AWH	107573537	1000 (305)	4	Reel	White
3061004AWH	107573545	1000 (305)	4	We Tote	White
3061004AWH	107860538	4400 (1340)	4	Reel	White
3061004AWH	107573560	Custom Length	4	Reel	White
3061025AWH	107754350	1000 (305)	25	Reel	White
3061025AWH	107754368	4000 (1219)	25	Reel	White
3061025AWH	107754327	Custom Length	25	Reel	White
3061025AWH	107754343	Variable	25	Reel	White

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## Copper

GigaSPEED/PowerSUM  
Cables

## Indoor

4061 and 4070 4-Pair  
Limited Combustible Cable

GigaSPEED 4070 and PowerSUM 4061 cables are the first of this kind to meet (UL) limited combustible cable standards. These plenum cables, jacketed and insulated with a fluorinated ethylene-propylene (FEP) polymer resin, meet stringent National Fire Protection Association (NFPA) 90A limited combustible requirements for low smoke generation and flame spread. **SYSTIMAX Limited Combustible Cables** are resistant to performance changes due to aging or environmental conditions, and are totally recyclable, reusable, chemical resistant and craft-friendly.

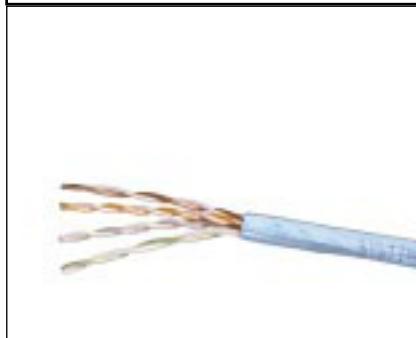


Figure 13  
4070 Limited  
Combustible Cable

## Features:

- 24 AWG bare copper.
- Characterized to 250 MHz for 4070 and to 200 MHz for 4061.
- FEP resin jacket and insulation.
- Environmentally friendly.
- Limited combustible rated, low smoke, negligible flame spread.
- Supports 1000BASE-T Gigabit Ethernet, broadband and baseband video applications.
- Compliant with Category 6 (4070) and Category 5e (4061) standards. UL Listed - Limited Combustible FHC25/50, Type CMP.

## Physical Specifications

**Gauge:** 24 AWG

**Operating Temperature:** -20 to 60 °C

**Outside Diameter:** 0.194 in (4.93 mm)

**Weight:** 25.3 lbs/1000 ft (11.48 kg/305 m)

**Max. Pulling Tension:** 25 lbs/ pair (11.38 kg/ pair)

## Electrical Specifications

**Nom. Velocity of Prop. (NVP):** 0.72

**Max. DC Resistance:** 9.38  $\Omega$ / 100 m

**Max. DC Resistance Unbal:**  $\leq 3\%$

**Max. Mutual Capacitance:** 5.6 nF/100 m @ 1 kHz

Product	Material ID	Length Ft (m)	Packaging	Color
4070004ABL	700201361	1000 (305)	Reel	Blue
4061004ABL	108671272	1000 (305)	Reel	Blue
4061004AWH	108671280	1000 (305)	Reel	White

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## Copper

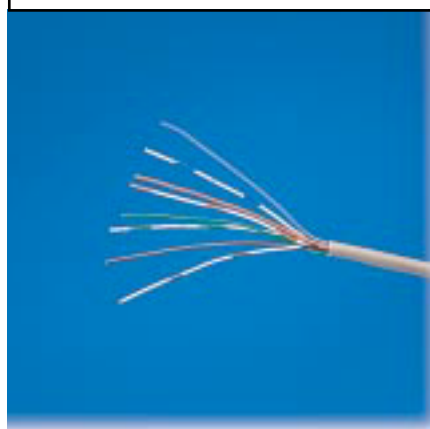
## Category 3 Cables

## Indoor

## 1010 4-Pair Cable

**1010 4-Pair LAN Cable** consists of 24-AWG solid-copper conductors insulated with color-coded PVC. It is a general-purpose, high performance cable used in voice and Local Area Network applications, specified up to 16 MHz. Please refer to the SYSTIMAX SCS Performance Specifications for distances supported by various data applications.

The **1010 4-Pair Cables** meet or exceed attenuation and NEXT requirements and meet or exceed the Category 3 requirements in ISO/IEC 11801, CENELEC EN50173 and TIA/EIA - 568B.2. Further, these cables are UL certified as Category 3, and UL listed CMR - C(UL) CMG.



**Figure 14**  
1010 4-Pair Cable

## Physical Specifications

<b>Gauge:</b> 24 AWG	<b>Weight:</b> 16 lbs/1000 ft (7.27 kg/305 m)
<b>Outside Diameter:</b> 0.170 in (4.32 mm)	<b>Max. Pulling Tension:</b> 25 lbs (11.38 kg)
<b>Operating Temperature Range:</b> -20 to 60 °C	

## Electrical Specifications

<b>Nom. Velocity of Prop. (NVP):</b> 0.67	<b>Max. DC Resistance:</b> 9.4 Ω/100 m
<b>Max. DC Resistance Unbal:</b> ≤5%	
<b>Mut. Capacitance @ 1 kHz:</b> 6.6 nF/100 m @ 1 kHz	

Frequency (MHz)	Insertion Loss	NEXT	SRL
0.772	2.2	43.0	-
1	2.6	41.3	12
4	5.6	32.3	12
8	8.5	27.8	12
10	9.7	26.3	12
16	13.1	23.2	9.96

Product	Material ID	Length	Packaging	Color
1010004AGY 4/24	106062524	1000 ft (305 m)	We Tote	Gray
1010004AGY 4/24	106062532	1000 ft (305 m)	Reel	Gray
1010004ALB 4/24	106300098	1000 ft (305 m)	We Tote	Light Blue
1010004ABE 4/24	106300106	1000 ft (305 m)	We Tote	Beige
1010004AWH 4/24	108689134	1000 ft (305 m)	We Tote	White

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## Copper

## Category 3 Cables

## Indoor

## 1010 MultiPair Cable

**1010 MultiPair LAN Cable** consists of 24-AWG solid-copper conductors insulated with color-coded PVC. It is a general-purpose, high performance cable used in voice and Local Area Network applications specified up to 16 MHz. Please refer to SYSTIMAX SCS Performance Specifications for distances supported by various data applications.

The **1010 MultiPair Cables** meet or exceed the Category 3 requirements in ISO/IEC 11801, CENELEC EN50173 and TIA/EIA-568B.2. Further, these cables are UL listed CMR - C(UL) CMG for riser or general purpose use.

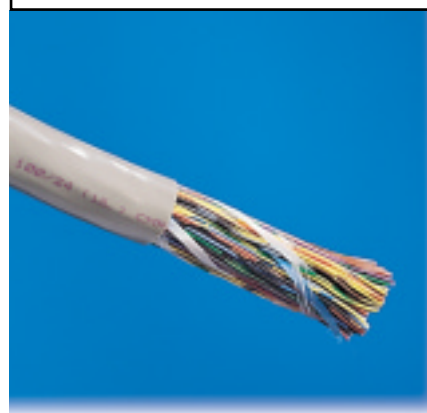


Figure 15  
1010 100-Pair Cable

## Physical Specifications

Gauge: 24 AWG

Operating Temperature Range: -20 to 60 °C

Max. Pulling Tension: 6.3lbs/pair (2.8 kg / pair)

## Electrical Specifications

Nom. Velocity of Prop. (NVP): 0.67

Max. DC Resistance: 9.38 ohms

Max. DC Resistance Unbal: ≤ 5%

Mut. Capacitance @ 1 kHz: 6.6 nF/100m @ 1 KHz

## Minimum Electrical Specifications dB/100 m (dB / 328 ft)

Frequency (MHz)	Insertion Loss	NEXT	SRL
0.772	2.2	43.0	-
1	2.6	41.3	12
4	5.6	32.3	12
8	8.5	27.8	12
10	9.7	26.3	12
16	13.1	23.2	9.96

Product	Material ID	Pair Size	Weight lbs/1000ft (kg/305m)	OD mm (in)	Length ft (m)	Packaging
1010025AGY	106824329	25	95.8 (43.47)	(10.16) 0.400	1000 (305)	Reel
1010025AGY	106824345	25	95.8 (43.47)	(10.16) 0.400	Variable Length	Reel
1010025AGY	107304081	25	95.8 (43.47)	(10.16) 0.400	Customer Length	Reel
1010050AGY	106824378	50	189.9 (89.16)	(13.72) 0.540	1000 (305)	Reel
1010050AGY	106824352	50	189.9 (89.16)	(13.72) 0.540	Variable Length	Reel
1010050AGY	107304073	50	189.9 (89.16)	(13.72) 0.540	Customer Length	Reel
10100100AGY	106824469	100	361.8 (164.12)	(19.56) 0.770	1000 (305)	Reel
10100100AGY	106824451	100	361.8 (164.12)	(19.56) 0.770	Variable Length	Reel
10100100AGY	107304065	100	361.8 (164.12)	(19.56) 0.770	Customer Length	Reel

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## Copper

## Category 3 Cables

## Indoor

## 2010 Cable

The **2010 Plenum Cable** is comprised of 24 AWG twisted-pair copper conductor individually insulated with various PVC compounds and sheathed with a white low smoke PVC outer jacket. It is a general-purpose, high performance cable used in voice and Local Area Network applications. It can be used in air-handling plenums or above suspended ceilings without the use of conduits.

The **2010 Plenum Cable** meets or exceeds the Category 3 requirements in ISO/IEC 11801, CENELEC EN50173 and TIA/EIA-568B.2.

**2010 Cables** are UL listed CMP.

## Physical Specifications

**Gauge:** 24 AWG

**Operating Temperature:** -20 to 60 °C

**Max. Pulling Tension:** 6.3 lbs / pair (2.8 kg / pair)

## Electrical Specifications

**Nom. Velocity of Prop. (NVP):** 0.70

**Max. DC Resistance Unbal:** ≤5%

**Max. DC Resistance:** 9.38 Ω / 100 m

**Max. Mutual Capacitance:** 6.6 nF/100 m @ 1 kHz

## Minimum Electrical Specifications dB/100 m (dB / 328 ft)

Frequency (MHz)	Insertion Loss	NEXT	SRL
0.772	2.2	43.0	-
1	2.6	41.3	12
4	5.6	32.3	12
8	8.5	27.8	12
10	9.7	26.3	12
16	13.1	23.2	9.96

## Copper

## Category 3 Cables

## Indoor

2010 Cable *(cont'd)*

Product	Material ID	Pair Size	Weight lbs/1000ft (kg/305m)	OD mm (in)	Length ft (m)	Packaging
2010004BWH	107078396	4	19 (8.65)	4.57 (0.180)	1000 (305)	Reel
2110004BGY	107256745	4	19 (8.65)	4.57 (0.180)	1000 (305)	Reel
2010004BYL	107256786	4	19 (8.65)	4.57 (0.180)	1000 (305)	Reel
2010004BBL	107819146	4	19 (8.65)	4.57 (0.180)	1000 (305)	Reel
2010004BWH	107078388	4	19 (8.65)	4.57 (0.180)	1000 (305)	We Tote
2010004BBL	107078404	4	19 (8.65)	4.57 (0.180)	1000 (305)	We Tote
2010004BGY	107256737	4	19 (8.65)	4.57 (0.180)	1000 (305)	We Tote
2010004BYL	107078412	4	19 (8.65)	4.57 (0.180)	1000 (305)	We Tote
2010025BWH	107765992	25	101 (46.04)	11.43 (0.450)	1000 (305)	Reel
2010025BWH	700211394	25	101 (46.04)	11.43 (0.450)	500 (152.4)	Reel
2010025BBK	700235674	25	101 (46.04)	11.43 (0.450)	1000 (305)	Reel
2010050BWH	107766032	50	209 (95.03)	15.75 (0.620)	Custom Length	Reel
2010050BWH	107766040	50	209 (95.03)	15.75 (0.620)	1000 (305)	Reel
2010050BWH	700211402	50	209 (95.03)	21.34 (0.840)	500 (152.4)	Reel
2010100BWH	107766057	100	395 (179.17)	21.34 (0.840)	1000 (305)	Reel
2010100BWH	700211410	100	395 (179.17)	21.34 (0.840)	500 (152.4)	Reel
2010100BWH	107766065	100	395 (179.17)	21.34 (0.840)	Custom Length	Reel
2010100BWH	108597394	100	395 (179.17)	21.34 (0.840)	2000 (609.6)	Reel

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## Copper

## Category 3 Cables

NON-US PRODUCT

Indoor

**3010 Low Smoke Zero  
Halogen Cable**

The **3010 Low Smoke Zero Halogen (LSZH) Cable** is a cable that provides excellent flame retardance. It is composed of 0.511 mm (24-AWG) solid copper conductors. It is a general-purpose, high performance cable used in voice and Local Area Network applications specified up to 16 MHz.

**3010 Plenum Cable** meets or exceeds the Category 3 requirements in ISO/IEC 11801, CENELEC EN50173 and TIA/EIA-568B.

The **3010 LSZH Cable** is IEC tested for low smoke and non-halogen emission and passes the following tests:

- IEC 754 part 2, Non-halogen based on pH and Conductivity Measurements.
- IEC 1034 part 2, Smoke emission.
- IEC 332 part 1, Flammability and Fire retardant.
- NES 713: Toxicity index.

**Physical Specifications**

<b>Gauge:</b> 24 AWG	<b>Weight:</b> 18 lbs/ft (8 kg/km)
<b>Outside Diameter:</b> 15 in (3.8 cm)	<b>Insulation Thickness:</b> 0.007 in (0.017 cm)

**Electrical Specifications**

<b>DC Resistance:</b> 93.8 $\Omega$ /km maximum
<b>Resistance Unbalance:</b> 3% maximum
<b>Mutual Capacitance @ 1 kHz:</b> 66 nF/km maximum pair to ground
<b>Capacitance Unbalance:</b> 3400 pF/km maximum pair to ground
<b>Nom. Velocity of Prop. (NVP):</b> 0.6
<b>Characteristic Impedance:</b> 100 $\Omega$ $\pm$ 15% @ 1.0 MHz -16 MHz
<b>Att @ 1.0, 10 and 16 MHz:</b> 2.6 dB, 9.8 dB and 13.1 dB maximum/100 m(328.08 ft)
<b>SRL @ 1.0, 10 and 16 MHz:</b> 12 dB, 10 dB and 10 dB minimum
<b>NEXT @ 1.0, 10 and 16 MHz:</b> 41 dB, 26 dB and 23 dB minimum

Product	Material ID	Pair Size	Length ft (m)	OD	Packaging
3010LSZH	977700001	25	1000 (305)	0.5 in (12.7 mm)	Reel
3010LSZH	977700004	100	1000 (305)	1 in (25.6 mm)	Reel

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## Copper

## Category 3 Cables

## Indoor

## Cross-Connect Wire

**CCW-F Cross-Connect Wire** is used for cross connecting voice or data circuits running at 10 Mb/s or less on 110 cross-connect hardware. It consists of solid annealed copper conductors individually insulated with PVC. The insulated pairs are color-coded for identification.



**Figure 16**  
CCW-F 2/24  
Cross-Connect Wire Reel

## Physical Specifications

**Gauge:** 24 AWG

**Maximum Insulation Diameter:** 0.038 in (0.965 mm)

**Operating Temperature:** 75 °C Max

## Electrical Specifications

**Max DC Resistance:** 9.38 Ω/100 m

Product	Material ID	Pair Size	Length ft (m)	Packaging	Color
CCW-F 1/24	105597199	1	1000 (305)	Spool	Y-BL/BL-Y
CCW-F 1/24	105597264	1	1000 (305)	Spool	W-BL/BL-W
CCW-F 1/24	105597231	1	1000 (305)	Spool	W-R/R-W
CCW-F 1/24	105597215	1	600 (183)	Spool	Y-BL/BL-Y
CCW-F 1/24	107279937	1	600 (183)	Spool	W-R/R-W
CCW-F 1/24	107035008	1	1000 (305)	Spool	W/BK
CCW-F 2/24	105597413	2	1150 (320)	Spool	BL-R/R-BL, O-R/R-O
CCW-F 2/24	105617955	2	1000 (305)	Spool	W-BL/BL-W, W-O/O-W
CCW-F 2/24	106483878	2	1000 (305)	Spool	R-BL/BL-R, R-O/O-R
CCW-F 3/24	105597462	3	660 (201)	Spool	W-BL/BL-W, W-O/O-W, W-G/G-W
CCW-F 3/24	105597447	3	1000 (305)	Spool	W-BL/BL-W, W-D/O-W, W-G/GW
CCW-F 4/24	105597512	4	1000 (305)	Reel	W-BL/BL-W, W-O/O-W, W-G/G-W, W-BR/BR-W

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## Copper

## Category 3 Cables

## Indoor

## 2001 LAN Cable

The **2001 LAN Cable** (200 & 300 Pair) is a Plenum Category 3 cable. This 24 AWG twisted pair copper cables has conductors individually insulated with various PVC compounds and sheathed with a PVDF outer jacket. This cable is used in building backbone applications between the equipment rooms and the telecommunications rooms. It can be connectorized in the field or terminated on 110 Wiring Blocks.

The cables are compliant to TIA/EIA 568-B.2 Category 3 backbone cable specification. The cables support the following applications: Analog and digital voice, ISDN, IEEE 802.5 4 Mb/s, IEEE 802.3 10BASE-T, 10 Mb/s Ethernet, 100 VG-ANYLAN.

The cables are plenum rated for use in air handling ducts and spaces in accordance with Article 800 of the National Electrical Code (NEC). The cable is UL (USA) & C(UL) (Canada) listed type CMP/MPP for this application by passing UL 910 (Steiner Tunnel) test.



## Physical Specifications

Gauge: 24 AWG

Operating Temperature: -20 to 60 °C

Max Pulling Tension: 6.3 lbs/pair (2.8 kg/pair)

## Electrical Specification

Maximum DC Resistance: 9.38 Ω/100 m

Max DC Resistance Unbalance: ≤5%

Mutual Capacitance: 6.6 nF/100 m @1 kHz

## Minimum Electrical Specifications dB/100m (dB / 328ft)

Frequency MHz	Insertion Loss	NEXT	SRL
0.772	2.2	43.0	-
1	2.6	41.3	12
4	5.6	32.3	12
8	8.5	27.8	12
10	9.7	26.3	12
16	13.1	23.2	9.96

Product	Material ID	Pair	Weight lbs/1000ft (kg/305m)	OD in (mm)	Length ft (m)	Packaging
2001 200EGY	108363284	200	874 (396.4)	1.038 (26.37)	Variable Length	Reel
2001 300EGY	108424433	300	1299 (589.2)	1.276 (32.41)	Variable Length	Reel
2001 200EGY	108584897	200	874 (396.4)	1.038 (26.37)	2000 609.6	Reel
2001 300EGY	108584905	300	1299 (589.2)	1.276 (32.41)	1400 426.7	Reel

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## Copper

## Category 5 Cable

## Outdoor

## Outside Plant Cables

SYSTIMAX **Outside Plant Cable** is for use in an outdoor environment. This 4-pair cable was developed for high-speed applications requiring state of the art electrical performance in an environmentally robust package. As a component in the SYSTIMAX product family, system performance is tested and guaranteed for all Category 5 applications.

The cable was developed for use in the outdoor environment and is a gel filled design to be used in wet locations. It can be used with Category 5 protectors in exposed locations. These protectors have been specially developed for Category 5 data applications, and should not be used for voice applications. Standard telephony protection devices do not provide adequate protection or electrical performance to meet rigid Category 5 horizontal electrical requirements, and cannot be used in Category 5 applications. Standard 110ANA1 protection devices can be used for voice circuits in exposed locations.

**Outside Plant Cable** installations must meet all ISO/IEC 11801 requirements for a horizontal link. No more than 4 connections are allowed, including the protection devices at each end. Each protector counts as one of the four connections. Total cable length is limited to 90 meters (295 ft) for a Category 5 operation.

### Physical Specifications

**Gauge:** 24AWG

**Weight:** 108 lbs/1000 ft (49.0 kg / km)

**Outside Diameter:** 0.21 in (5.33 mm)

**Operating Temperature Range:** -20 to 60 °C

**Max. Pulling Tension:** 6.3 lbs/pair (2.8 kg/pair)

### Electrical Specifications

**Max. DC Resistance:** 9.38 ohms 100 m

**Max. Mutual Capacitance:** 5.6 nF/100 m @ 1 kHz

**Max. DC Resistance Unbal:** ≤ 5%

## Copper

## Category 5 Cable

## Outdoor

## Outside Plant Cables (cont'd)

## Minimum Electrical Specifications in dB/100m (db/328ft)

Frequency (MHz)	Attenuation (dB/100m)	PowerSUM Near End Crosstalk (dB)	Structural Return Loss (dB)
0.772	1.8	64	23
1	2.0	62	23
4	4.1	53	23
8	5.8	49	23
10	6.5	47	23
16	8.2	44	23
20	9.3	42	23
25	10.4	41	22
31.25	11.7	39	21
62.5	17	35	18
100	22	32	16

Product	Material ID	Length ft (m)	Pair Size	Package
NCA4158 4/24	108257643	1000 (305)	4	Reel

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## Copper

## Category 6 Cable

## Outdoor

## 1571 Category 6 Cable

The **1571 cable** consists of polyethylene, insulated conductors. The conductors are tightly twisted into four pairs. The pairs are stranded around a polyolefin fluted center member, filled with a flooding compound and jacketed with a black polyethylene jacket. The **1571 cable** is fully compliant with Category 6 requirements of TIA/EIA 568-B.2-1 and ISO/IEC 11801.

## Physical Specifications

<b>Gauge:</b> 23 AWG	
<b>Weight:</b> 27 lbs/1000 ft (12.25 kg / 305 m)	<b>Cable Diameter:</b> 0.250 in (0.635 cm)
<b>Operating Temperature Range:</b> -40 °C to 70°C (-40°F - 158°F)	
<b>Installation Temperature Range:</b> 0 °C to 60 °C (32°F - 140°F)	
<b>Max. Pulling Tension:</b> 50 lbs (22.68 kg)	

## Electrical Specifications

<b>Nom. Velocity of Prop. (NVP):</b> 0.62	<b>Max. DC Resistance:</b> 8.16 K/100m
<b>Max. DC Resistance Unbal:</b> 2.5%	<b>Mut. Capacitance @ 1 kHz:</b> 5.2 nF/100m

## Minimum Electrical Specifications dB/100 m (dB / 328 ft)

Frequency (MHz)	Insertion Loss (dB/100m)	NEXT (dB/100m)	PS-NEXT (dB/100m)	ELFEXT (dB/100m)	PS-ELFEXT (dB/100m)	RL (dB)
1	2.0	74.3	72.3	67.8	64.8	20.0
4	3.8	65.3	63.3	55.8	52.8	23.0
8	5.3	60.8	58.8	49.7	46.7	24.5
10	6.0	59.3	57.3	47.8	44.8	25.0
16	7.6	56.2	54.2	43.7	40.7	25.0
20	8.5	54.8	52.8	41.8	38.8	25.0
25	9.5	53.3	51.3	39.8	36.8	24.3
31.25	10.7	51.9	49.9	37.9	34.9	23.6
62.5	15.4	47.4	45.4	31.9	28.9	21.5
100	19.8	44.3	42.3	27.8	24.8	20.1
155	25.2	41.4	39.4	24.0	21.0	18.8
200	29.0	39.8	37.8	21.8	18.8	18.0
250	32.8	38.3	36.3	19.8	16.8	17.3

Product	Material ID	Pair Size	Weight lbs/1000ft	OD mm (in)	Length ft (m)	Packaging
1571 004ABK	760008888	4	95.8 (43.47)	10.16 (0.400)	1000ft (305)	Reel

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## Copper

## ARMM Riser Cable

## Indoor

## Outside Plant Cables

**ARMM Riser Cable** is used in riser shafts where a fire-retardant sheath is necessary to meet NEC low-flame requirements. It can be used without conduit. The cable consists of a core of solid-copper conductors insulated with polyethylene covered by a PVC skin. The core is covered by polypropylene film and overlaid with a corrugated aluminum shield, which is adhesively bonded to an outer jacket of PVC plastic to form an ALVYN sheath.

## Physical Specifications

Gauge: 24AWG

Max. Pulling Tension: 6.1 lbs/pair (2.8 kg/pair)

## Electrical Specifications

Nom. Velocity of Prop. (NVP): 78

Max. DC Resistance: 8.95 ohms /100 m

Max. DC Resistance Unbal.:  $\leq 5\%$

Max. Mutual Capacitance: 5.7 nF/100 m @ 1 kHz

## Minimum Electrical Specifications dB/100m (dB / 328ft)

Frequency MHz	Insertion Loss	NEXT
0.772	2.2	43.0
3.15	-	38
4	5.6	-
10	9.7	26

Product Number	Material ID	Length ft (m)	OD in (cm)	Pair Count	Weight lbs/1000ft (kg/305m)
ARMM-1800	107527350	1070 (326)	2.94 (7.54)	1,800	6,000 (892.92)
ARMM-1500	107527343	1220 (372)	2.75 (7.05)	1,500	4,900 (729)
ARMM-1200	107527335	1430 (436)	2.42 (6.21)	1,200	4,050 (602.72)
ARMM-0900	107527327	2160 (658)	2.15 (5.51)	900	3,040 (452.41)
ARMM-0600	107527319	2590 (789)	1.80 (4.62)	600	2,070 (308.06)
ARMM-0400	107527301	4200 (1280)	1.48 (3.79)	400	1,390 (206.86)
ARMM-0300	107527293	5040 (1536)	1.30 (3.33)	300	1,060 (157.75)
ARMM-0200	107527285	8400 (2560)	1.09 (2.79)	200	730 (108.64)
ARMM-0100	107527129	12600 (3840)	0.89 (2.28)	100	390 (58.04)
ARMM-0050	107527111	12600 (3840)	0.65 (1.67)	50	220 (32.74)
ARMM-0025	107526873	12600 (3840)	0.53 (1.36)	25	130 (19.35)

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## Copper ANMW Cable

The **ASP-Filled Core Cable** has an Aluminum Steel with Polyethylene (ASP) sheath and a core of solid-copper conductors, dual insulated with foam skin and plastic, and surrounded by a gel filling compound. The core is surrounded by a plastic core wrap and armored with corrugated aluminum and steel. Additional filling compound is found between the core wrap and the armor. The outer jacket is polyethylene. ASP cable is used for direct-buried applications where wet or moist soil conditions threaten electrical performance. ASP is also the preferred sheath for mechanical and wildlife protection. This cable is for outside plant use only and not intended for use inside buildings unless enclosed in a metallic or fire retardant conduit.

ASP-Filled Core Cables meet or exceed the Category 3 requirements in ISO/IEC 11801, CENELEC EN50173 and TIA/EIA-568B.

### Outdoor

#### ASP Filled Core Cable



Figure 17  
ANMW-200 Cable

### Physical Specifications

**Gauge:** 24AWG

**Max. Pulling Tension:** 6.3 lbs/pair (2.8 kg/pair)

### Electrical Specifications

**Nom. Velocity of Prop. (NVP):** 72

**Max. DC Resistance:** 8.95  $\Omega$ /100 m

**Max DC Resistance Unbal:**  $\leq 5\%$

**Max. Attenuation @ 0.772 MHz:** 1.84 dB/100 m

**Max. Mutual Capacitance:** 5.8 nf/100 m @ 1 kHz

Product	Material ID	Pair Size	Weight lbs/1000ft (kg/305m)	OD in (cm)	Length 84 in Diameter Reel in ft (m)	Packaging
ANMW	106583909	25	210 (95.3)	0.61 (1.55)	15100 (4604)	Reel
ANMW	106583917	50	330 (149.7)	0.77 (1.96)	15100 (4604)	Reel
ANMW	106583933	100	550 (249.5)	0.99 (2.50)	10060 (3067)	Reel
ANMW	106583958	200	970 (440.0)	1.29 (3.23)	6040 (1841)	Reel
ANMW	106583966	300	1380 (626.0)	1.48 (3.99)	5020 (1530)	Reel
ANMW	106583974	400	1750 (793.8)	1.65 (4.22)	3770 (1149)	Reel
ANMW	106583982	600	2590 (1174.8)	2.01 (5.11)	2990 (911)	Reel
ANMW	106584154	900	3800 (1723.6)	2.41 (6.15)	2120 (646)	Reel
ANMW	106584162	1,200	4970 (2254.4)	2.93 (7.06)	1620 (494)	Reel
ANMW	106584170	1,500	6180 (2803.2)	2.94 (7.75)	1250 (381)	Reel
ANMW	106584188	1,800	7240 (3284.0)	3.30 (8.59)	985 (300)	Reel

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## Fiber

## LazrSPEED®

## Indoor

## Fiber Description



The LazrSPEED® Solution is the first “next generation” multimode fiber designed to support 10 Gb/s distances of up to 550 meters using serial 850 nm electronics. LazrSPEED 550 guarantees to support 10GBASE-S transmission up to 550 meters. It extends the distance of low-cost 850 nm VCSEL-based electronics, supporting 1100 m at 1 Gb/s. The application suite includes Ethernet from 10 Mb/s to 10 Gb/s, Fiber Channel from 1 to 10 Gb/s, and ATM/SONET/SDH from OC-1 to OC-192. All LazrSPEED fibers are Differential Mode Delay (DMD) tested. The SYSTIMAX Labs use a high-resolution test bench that exceeds the FOTP-220 standards and is independently certified by UL®.

## Benefits

- 10 Gb/s using 850 nm VCSELs to 550 m.
- Dual wavelength capability for increased versatility.
- Excellent dimensional properties for low loss connectorization.
- Legacy support: Ethernet, Fast Ethernet, Token Ring, ATM, FDDI.
- Dual coating for excellent environmental performance and long-term reliability.
- Excellent resistance to bending-induced losses.
- Compliant with IEC 60793 and EIA/TIA 492 specifications.
- Gigabit Ethernet supported to distances of 1100 meters.
- Laser bandwidth guaranteed with Differential Mode Delay specifications.
- LazrSPEED fiber and the SYSTIMAX DMD test facility are the first to be independently verified by UL to comply with industry standards for 850 nm laser-optimized 50 µm fiber (OM3) and DMD test procedures.

## Physical Specifications

Core Diameter: 50 ± 2.5 µm	Coating/Cladding Concentricity Error: A 6 µm
Core Non-Circularity: A 5%	Colored Fiber Diameter: 254 ± 7 µm
Cladding Diameter: 125 ± 1 µm	Proof Test Levels: 0.7 GPa minimum
Core/Cladding Concentricity Error: A 1.5 µm	Dynamic Fatigue Parameter: B 18
Cladding Non-Circularity: A 1.0%	Macrobending (100 turns on a 75 mm mandrel): A 0.5 dB @ 850 nm and 1300 nm
Coated Fiber Diameter (uncolored): 245 ± 10 µm	Operating Temperature Range: -60 to 85 °C

## Optical Specifications

Numerical Aperture:	0.200 ± 0.015/-0.010					
Effective Group Index of Refraction @ 850 nm:	1.483					
Effective Group Index of Refraction @ 1300 nm:	1.478					
Point Discontinuities @ 850 nm and 1300 nm:	A 0.1 dB					
Maximum Cable Loss:	Tight Buffered	and		Loose		
	3.0 dB/km @ 850 nm			3.0 dB/km @ 850 nm		
	1.0 dB/km @ 1300 nm			1.0 dB/km @ 1300 nm		
Minimum Bandwidth:	LazrSPEED 150		LazrSPEED 300		LazrSPEED 550	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
Overfilled	700 MHz-km	500 MHz-km	1500 MHz-km	500 MHz-km	3500 MHz-km	500 MHz-km
Laser	950 MHz-km	500 MHz-km	2000 MHz-km	500 MHz-km	4700 MHz-km	500 MHz-km
Differential Mode	LazrSPEED 150		LazrSPEED 300		LazrSPEED 550	
Delay (DMD)	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
	0.70 ps/m	0.88 ps/m	superior to TIA-492AAAC-A	0.88 ps/m	0.14 ps/m	0.88 ps/m
Zero Dispersion Wavelength:	minimum 1297 nm		maximum 1316 nm			
Zero Dispersion Slope:	A 0.101 ps/(nm²km)					

## Fiber

## LazrSPEED 300

## Indoor

LazrSPEED 300  
Multimode Riser Cable

The LazrSPEED Solution supports 10 Gb/s speeds at distances up to 300 meters, using single channel 850 nm VCSEL electronics. The LazrSPEED channel provides the lowest loss and highest bandwidth solution.

**Features:**

- Ideal for cost-effective migration to 10 Gb/s Ethernet up to 300 meters.
- Legacy application support including Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring, ATM, FDDI.
- Aqua color-coded jacket for ease of craft identification
- UL Listed CMR, CSA Certified.
- 2000/500 MHz-km minimum laser bandwidth (with DMD) at 850/1300 nm.
- 1500/500 MHz-km minimum overfilled bandwidth at 850/1300 nm.
- 3.0 /1.0 dB maximum cable loss at 850/1300 nm.
- LazrSPEED 300 complies with the Laser Optimized Multimode Fiber specifications in ANSI/EIA/TIA 492AAAC as well as the OM3 specifications in ISO/IEC 11801 2nd Edition and EN50173 2nd Edition.
- Guaranteed to support 10 Gigabit Ethernet (10GBASE-SR) to 300 m\*.
- Guaranteed to support Gigabit Ethernet (1000BASE-SX) to 1 km with 2 LC connections\*.

\* See SYSTIMAX SCS Performance Specifications for maximum distance as a function of number and type of connectors.

For LazrSPEED 300 optical fiber specification refer to page 51.



**Figure 18**  
LazrSPEED Cable

**Physical Specifications**

<b>Cable Minimum Bending Radius:</b>	<b>Buffering:</b> 900 µm
<b>During Installation:</b> 20 x cable diam.	<b>Max. Pulling Tension:</b> 90 kg (198.41 lb)
<b>After Installation:</b> 10 x cable diam.	<b>Operating Temperature Range:</b> 0 to 50 °C
<b>Buffered Fiber Minimum Bend Radius:</b> 19 mm (0.74 in)	<b>Storage Temperature Range:</b> -60 to +85 °C

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)	Fiber Type
5200-002A-ZRAQ	700208127	2	0.8	(12)	0.15 (3.9)	LZ 300
5200-004A-ZRAQ	700208135	4	1.4	(21)	0.19 (4.8)	LZ 300
5200-006A-ZRAQ	700208143	6	1.6	(24)	0.20 (5.2)	LZ 300
5200-012A-ZRAQ	700208150	12	2.3	(34)	0.24 (6.1)	LZ 300
5300-024A-ZRAQ	700208168	24	11.7	(174)	0.56 (14.2)	LZ 300
5300-036A-ZRAQ	700208176	36	11.8	(176)	0.59 (14.9)	LZ 300
5300-048A-ZRAQ	700208218	48	15.0	(224)	0.65 (16.4)	LZ 300
5300-072A-ZRAQ	700208226	72	24.2	(360)	0.79 (20.2)	LZ 300

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## Fiber

## LazrSPEED 300

## Indoor

LazrSPEED 300  
Multimode Plenum Cable

## Features:

- Ideal for cost-effective migration to 10 Gb/s Ethernet up to 300 meters.
- Legacy application support including Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring, ATM, FDDI.
- Aqua color-coded jacket for ease of craft identification.
- UL Listed CMP, CSA FT6.
- 2000/500 MHz-km minimum laser bandwidth (with DMD) at 850/1300 nm.
- 1500/500 MHz-km minimum overfilled bandwidth at 850/1300 nm.
- 3.0 /1.0 dB maximum cable loss at 850/1300 nm.
- LazrSPEED 300 complies with the Laser Optimized Multimode Fiber specifications in ANSI/EIA/TIA 492AAAC as well as the OM3 specifications in ISO/IEC 11801 2nd Edition and EN50173 2nd Edition.
- Guaranteed to support 10 Gigabit Ethernet (10GBASE-SR) to 300 meters\*.
- Guaranteed to support Gigabit Ethernet (1000BASE-SX) to 1 km with 2 LC connections\*.

\* See SYSTIMAX SCS Performance Specifications for maximum distance as a function of number and type of connectors.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)	Fiber Type
5201-002A-ZPAQ	700009855	2	0.9	(13)	0.15 (3.9)	LZ 300
5201-004A-ZPAQ	700009814	4	1.2	(18)	0.17 (4.4)	LZ 300
5201-006A-ZPAQ	700009772	6	1.4	(21)	0.19 (4.7)	LZ 300
5201-012A-ZPAQ	700009731	12	2.1	(31)	0.22 (5.7)	LZ 300
5301-024A-ZPAQ	700009699	24	10.4	(155)	0.51 (12.9)	LZ 300
5301-036A-ZPAQ	700009673	36	12.8	(191)	0.54 (13.7)	LZ 300
5301-048A-ZPAQ	700211147	48	13.8	(205)	0.60 (15.1)	LZ 300
5301-072A-ZPAQ	700211154	72	23.7	(353)	0.75 (19.1)	LZ 300

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## Fiber

## LazrSPEED 300

NON-US PRODUCT

Indoor

**LazrSPEED 300 Indoor  
Multimode Low Smoke  
Zero Halogen Cable**

**Features:**

- Ideal for cost-effective migration to 10 Gb/s Ethernet up to 300 meters.
- Legacy application support including Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring, ATM, FDDI.
- Aqua color-coded jacket for ease of craft identification.
- Low Smoke Zero Halogen (LSZH) cable (meets IEC 754 part 2, IEC 1034 part 2, IEC 332-3, NES 713).
- 2000/500 MHz-km minimum laser bandwidth (with DMD) at 850/1300 nm.
- 1500/500 MHz-km minimum overfilled bandwidth at 850/1300 nm.
- 3.0/1.0 dB maximum cable loss at 850/1300 nm.
- LazrSPEED 300 complies with the Laser Optimized Multimode Fiber specifications in ANSI/EIA/TIA 492AAAC as well as the OM3 specifications in ISO/IEC 11801 2nd Edition and EN50173 2nd Edition.
- Guaranteed to support 10 Gigabit Ethernet (10GBASE-SR) to 300 meters\*.
- Guaranteed to support Gigabit Ethernet (1000BASE-SX) to 1 km with 2 LC connections\*.

\* See SYSTIMAX SCS Performance Specifications for maximum distance as a function of number and type of connectors.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)	Fiber Type
5202-002A-ZHAQ	700009863	2	0.8	(12)	0.15 (3.9)	LZ 300
5202-004A-ZHAQ	700009822	4	1.4	(21)	0.19 (4.8)	LZ 300
5202-006A-ZHAQ	700009780	6	1.6	(24)	0.20 (5.2)	LZ 300
5202-012A-ZHAQ	700009749	12	2.3	(34)	0.24 (6.1)	LZ 300
5302-024A-ZHAQ	700009707	24	11.7	(174)	0.56 (14.2)	LZ 300
5302-036A-ZHAQ	700009681	36	11.8	(176)	0.59 (14.9)	LZ 300
5302-048A-ZHAQ	700211121	48	15	(224)	0.65 (16.4)	LZ 300
5302-072A-ZHAQ	700211139	72	24.2	(360)	0.79 (20.2)	LZ 300

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## Fiber

## LazrSPEED 150

## Indoor

LazrSPEED 150  
Multimode Riser Cable

## Features:

- Ideal for cost-effective migration to 10 Gb/s Ethernet up to 150 meters.
- Legacy application support including Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring, ATM, FDDI.
- Aqua color-coded jacket for ease of craft identification
- UL Listed CMR, CSA Certified.
- 950/500 MHz-km minimum laser bandwidth (with DMD) at 850/1300 nm.
- 700/500 MHz-km minimum overfilled bandwidth at 850/1300 nm.
- 3.0/1.0 dB maximum cable loss at 850/1300 nm.
- Guaranteed to support 10 Gigabit Ethernet (10GBASE-SR) to 150 meters\*.
- Guaranteed to support Gigabit Ethernet (1000BASE-SX) to 750 m with 2 LC connections\*.



Figure 19  
LazrSPEED Cable

\* See SYSTIMAX SCS Performance Specifications for maximum distance as a function of number and type of connectors.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)	Fiber Type
5200-002A-HRAQ	700203052	2	0.9	(13)	0.16 (4.1)	LZ 150
5200-004A-HRAQ	700203060	4	1.3	(19)	0.19 (4.8)	LZ 150
5200-006A-HRAQ	700203078	6	1.5	(22)	0.20 (5)	LZ 150
5200-012A-HRAQ	700203086	12	1.9	(28)	0.23 (5.8)	LZ 150
5300-024A-HRAQ	700203094	24	10.7	(160)	0.55 (13.9)	LZ 150
5300-036A-HRAQ	700203102	36	11.9	(177)	0.56 (14.2)	LZ 150
5300-048A-HRAQ	700203110	48	12.7	(188)	0.62 (15.7)	LZ 150
5300-072A-HRAQ	700203128	72	21.1	(314)	0.77 (19.6)	LZ 150

\* This is a Global SYSTIMAX SCS Product Guide. Portfolios differ from region to region. Contact your local account representative or BusinessPartner, for any specific regional queries.

## Fiber

## LazrSPEED 150

## Indoor

LazrSPEED 150  
Multimode Plenum Cable

## Features:

- Ideal for cost-effective migration to 10 Gb/s Ethernet up to 150 meters.
- Legacy application support including Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring, ATM, FDDI.
- Aqua color-coded jacket for ease of craft identification.
- UL Listed CMP, CSA FT6.
- 950/500 MHz-km minimum laser bandwidth (with DMD) at 850/1300 nm.
- 700/500 MHz-km minimum overfilled bandwidth at 850/1300 nm.
- 3.0/1.0 dB maximum cable loss at 850/1300 nm.
- Guaranteed to support 10 Gigabit Ethernet (10GBASE-SR) to 150 meters\*.
- Guaranteed to support Gigabit Ethernet (1000BASE-SX) to 750 meters with 2 LC connections\*.

\* See SYSTIMAX SCS Performance Specifications for maximum distance as a function of number and type of connectors.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)	Fiber Type
5201-002A-HPAQ	700009871	2	0.9	(13)	0.15 (3.9)	LZ 150
5201-004A-HPAQ	700009830	4	1.2	(18)	0.17 (4.4)	LZ 150
5201-006A-HPAQ	700009798	6	1.4	(21)	0.18 (4.6)	LZ 150
5201-012A-HPAQ	700009756	12	2.1	(31)	0.22 (5.7)	LZ 150
5301-024A-HPAQ	700009715	24	10.4	(155)	0.50 (12.7)	LZ 150
5301-036A-HPAQ	700205586	36	12.8	(191)	0.54 (13.7)	LZ 150
5301-048A-HPAQ	700211105	48	13.8	(205)	0.59 (15.1)	LZ 150
5301-072A-HPAQ	700211113	72	23.7	(353)	0.75 (19.1)	LZ 150

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## Fiber

## LazrSPEED 150

NON-US PRODUCT

Indoor

**LazrSPEED 150**  
**Multimode Low Smoke**  
**Zero Halogen Cable**

**Features:**

- Ideal for cost-effective migration to 10 Gb/s Ethernet up to 150 meters.
- Legacy application support including Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring, ATM, FDDI.
- Aqua color-coded jacket for ease of craft identification.
- Low Smoke Zero Halogen (LSZH) cable (meets IEC 754 part 2, IEC 1034 part 2, IEC 332-3, NES 713).
- 950/500 MHz-km minimum laser bandwidth (with DMD) at 850/1300 nm.
- 700/500 MHz-km minimum overfilled bandwidth at 850/1300 nm.
- 3.0/1.0 dB maximum cable loss at 850/1300 nm.
- Guaranteed to support 10 Gigabit Ethernet (10GBASE-SR) to 150 meters\*.
- Guaranteed to support Gigabit Ethernet (1000BASE-SX) to 750 meters with 2 LC connections\*.

\* See SYSTIMAX SCS Performance Specifications for maximum distance as a function of number and type of connectors.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)		Fiber Type
5202-002A-HHAQ	700009889	2	0.8	(12)	0.15	(3.9)	LZ 150
5202-004A-HHAQ	700009848	4	1.4	(21)	0.19	(4.8)	LZ 150
5202-006A-HHAQ	700009806	6	1.6	(24)	0.20	(5.2)	LZ 150
5202-012A-HHAQ	700009764	12	2.3	(34)	0.24	(6.1)	LZ 150
5302-024A-HHAQ	700009723	24	11.7	(174)	0.56	(14.2)	LZ 150
5302-036A-HHAQ	700229511	36	11.8	(176)	0.59	(14.9)	LZ 150
5302-048A-HHAQ	700211089	48	15	(224)	0.65	(16.4)	LZ 150
5302-072A-HHAQ	700211097	72	24.2	(360)	0.79	(20.2)	LZ 150

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## Fiber

## OptiSPEED®

## Indoor

Multimode Fiber  
Description

The **OptiSPEED® Multimode Fiber** is a graded index 62.5 Micron fiber optimized for operation at 850 and 1300 nm. It uses a carefully controlled refractive index profile to achieve low attenuation and high bandwidth at both operating wavelengths.

A dual coating applied over the glass surface protects the fiber and enhances its long-term reliability. Each fiber is proof tested to 100 kpsi so that it will survive installation loads and associated long-term residual stresses, even under extreme environmental conditions.

**Benefits**

- Dual wavelength capability for increased versatility.
- Excellent dimensional properties for low loss connectorization.
- Supports Ethernet, Fast Ethernet, Token Ring, ATM, FDDI.
- Dual coating for excellent environmental performance and long-term reliability.
- Excellent resistance to bending-induced losses.
- Compliant with IEC 60793 and EIA/TIA 492 specifications.
- 200/500 MHz-km overfilled bandwidth.

**Physical Specifications**

Core Diameter:	62.5 ± 2.5 µm
Core Non-circularity:	5% max. (typical < 2%)
Cladding Diameter:	125.0 ± 1.0 µm
Core/Clad Concentricity Error:	≤ 1.5 µm
Coating Fiber Diameter (uncolored):	245 ± 10 µm
Cladding Non-circularity:	≤ 1%
Coating/Cladding Concentricity Error:	≤ 6 µm
Colored Fiber Diameter:	254 (± 7) µm
Proof Test Level:	0.7 GPa minimum
Dynamic Fatigue Parameter:	≥ 18
Fiber Curl:	≥ 2 m
Macrobending (100 turns on a 75 mm mandrel):	< 0.5 dB @ 850 nm and 1300 nm
Operating Temperature Range:	-60 to 85 °C

**Optical Specifications**

Numerical Aperture:	0.275 ± 0.015
Effective Group Index of Refraction @ 850 nm:	1.496
Effective Group Index of Refraction @ 1300 nm:	1.491
Point Discontinuities @ 850 and 1300 nm:	≤ 0.08 dB
Maximum Fiber Loss:	<b>Tight Buffered</b> <b>Loose</b>
	3.4 dB/km @ 850 nm      3.0 dB/km @ 850 nm
	1.0 dB/km @ 1300 nm    1.0 dB/km @ 1300 nm
Minimum Bandwidth :	200 MHz-km @ 850 nm    500 MHz-km @ 1300 nm
Zero Dispersion Wavelength:	minimum 1320 nm    maximum 1365 nm
Zero Dispersion Slope:	maximum < 0.097 ps/((nm) <sup>2</sup> km)

## Fiber

## OptiSPEED

## Indoor

Singlemode Fiber  
Description

**Dispersion Unshifted Fibers** (EIA/TIA Class IVa) with depressed cladding are offered for optimized system operation in the 1310 nm window. All SYSTIMAX **Singlemode Fibers** are manufactured to meet a low polarization mode dispersion (PMD) specification in cable.

SYSTIMAX **Singlemode Fiber** consists of a germanium doped core and a silica cladding. The fiber is fully compatible with other commercially available matched cladding fibers. The dispersion characteristics of the fiber are optimized for systems operating in the 1310 nm region, although operation at 1550 nm is possible.

## Physical Specifications

<b>Core Diameter:</b> 8.3 $\mu\text{m}$ nominal
<b>Cladding Diameter:</b> 125.0 $\pm$ 1.0 $\mu\text{m}$
<b>Core/Cladding Concentricity Error:</b> $\leq$ 0.5 $\mu\text{m}$
<b>Cladding Non-Circularity:</b> $\leq$ 1.0%
<b>Coated Fiber Diameter:</b> 245 $\pm$ 10 $\mu\text{m}$
<b>Coating/ Cladding / Concentricity Error:</b> less than or equal to 12 $\mu\text{m}$
<b>Colored Fiber Diameter:</b> 254 $\pm$ 7 $\mu\text{m}$
<b>Proof Test Level:</b> 0.70 Gpa (100 kpsi)
<b>Dynamic Fatigue Parameter:</b> $\geq$ 18
<b>Fiber Curl:</b> $>$ 2 m
<b>Macrobend (100 turns, 75 mm diameter):</b> $\leq$ 0.05 dB @ 1310 nm, 0.10 dB @ 1550 nm
<b>Macrobend (1 turn on a 32mm diameter to mandrel):</b> $\leq$ 0.05 dB @ 1310 nm, 1.10 dB @ 1550 nm
<b>Operating Temperature Range:</b> - 60 to 85 $^{\circ}\text{C}$

## Optical Specifications

<b>Mode Field Diameter:</b> 8.8 $\pm$ 0.5 $\mu\text{m}$ @ 1310 nm		
<b>Group Index of Refraction:</b> 1.466 @ 1310 nm, 1.467 @ 1550 nm		
<b>Point Discontinuities:</b> 0.1 dB		
<b>Attenuation:</b>	<b>Tight buffered</b>	<b>Loose</b>
	0.7 dB/km @ 1310 nm	0.35 dB/km @ 1310 nm
	0.7 dB/km @ 1550 nm	0.25 dB/km @ 1550 nm
<b>Maximum Dispersion:</b> 2.8 ps/nm-km 1285 to 1330 nm		
<b>Zero-Dispersion Wavelength:</b> 1300 - 1320 nm		
<b>Zero-Dispersion Slope:</b> 0.092 ps/nm <sup>2</sup> -km		
<b>Polarization Mode Dispersion LDV :</b> $<$ 0.05 ps/(km) <sup>1/2</sup>		

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## Fiber

## OptiSPEED

The **OptiSPEED Riser Building Cable** consists of 2, 4, 6, 8, 12 and higher count individual OptiSPEED Multimode fibers. Each 62.5/125 micron fiber has a specially formulated acrylate dual coating, bringing the diameter to 250 microns, and is proof tested at 100 kpsi. It is color-coded for easy identification. The buffered fibers are surrounded by aramid yarn for strength and over jacketed with a PVC jacket for protection. The cable has a small outside diameter with the best bend radius in the market.

For OptiSPEED MM specifications refer to page 58.

For OptiSPEED SM specifications refer to page 59.

**OptiSPEED Riser Cables** meet or exceed the multimode fiber requirements in ISO/IEC 11801 2nd Edition (type OM1), EN50173 2nd Edition (category OM1) and TIA/EIA-568B.

#### Features:

- All SYSTIMAX multimode cables provide 200 MHz-km bandwidth @ 850 nm and 500 MHz-km bandwidth @ 1300 nm.
- Designed for building backbone and fiber-to-workstation applications.
- Provides premises distribution systems with one cable that directly connects the building entrance splice to the user's desktop equipment in both horizontal distribution and vertical riser backbone.
- Slate gray or orange jacket.

## Indoor

### Multimode Riser Rated Building Cable



**Figure 20**  
Multimode Riser Rated Building Cable





## Fiber

## OptiSPEED

## Indoor

Multimode Riser Rated  
Building Cable (Cont'd)

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5200-002A-MRSL	700009640	2	0.9 (13)	0.16 (4.1)	MM OS
5200-004A-MRSL	700009574	4	1.3 (19)	0.19 (4.8)	MM OS
5200-006A-MRSL	700009509	6	1.5 (22)	0.20 (5.1)	MM OS
5200-008A-MRSL	700009434	8	1.7 (26)	0.22 (5.5)	MM OS
5200-012A-MRSL	700009384	12	1.9 (28)	0.23 (5.8)	MM OS
5300-018A-MRSL	700009301	18	10.7 (160)	0.55 (13.9)	MM OS
5300-024A-MRSL	700009269	24	11.9 (177)	0.56 (14.2)	MM OS
5300-036A-MRSL	700009178	36	12.7 (188)	0.62 (15.7)	MM OS
5300-048A-MRSL	700009087	48	21.1 (314)	0.77 (19.6)	MM OS
5300-072A-MRSL	700008998	72	23.7 (353)	0.75 (19.1)	MM OS

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5200-002A-MROR	700010184	2	1.08 (16)	0.15 (3.8)	MM OS
5200-004A-MROR	700012172	4	1.22 (18)	0.18 (4.6)	MM OS
5200-006A-MROR	700010176	6	1.44 (21)	0.19 (4.8)	MM OS
5200-008A-MROR	700012180	8	1.68 (25)	0.21 (5.3)	MM OS
5200-012A-MROR	700010168	12	2.08 (31)	0.22 (5.6)	MM OS

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## Fiber

## TeraSPEED™

## Indoor

Singlemode Riser  
Rated Building Cable

The **TeraSPEED™ Cable** is designed to cost-effectively future-proof enterprise campus backbones for next generation equipment. It operates over the entire wavelength range from 1280 nm to 1625 nm, removing the water peaks (high attenuation) in the 1400 nm window - adding more than 50% in operational wavelength range over conventional singlemode fiber. TeraSPEED delivers a cost-effective upgrade path by expanding the available wavelengths by 50% and allowing up to 16 channels of CWDM (Coarse Wave Division Multiplexing), the lowest-cost option to pack more channels on a single fiber, and up to 400 channels of DWDM (Dense Wave Division Multiplexing).



**Figure 21**  
Singlemode Riser Rated  
Building Cable

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5200-002A-WRYL	760004408	2	1.1 (16)	0.15 (4.0)	ZWP - SM
5200-004A-WRYL	760004416	4	1.2 (18)	0.18 (4.6)	ZWP - SM
5200-006A-WRYL	760004424	6	1.44 (21)	0.19 (4.8)	ZWP - SM
5200-008A-WRYL	760004432	8	1.68 (25)	0.21 (5.3)	ZWP - SM
5200-012A-WRYL	760004440	12	2.08 (31)	0.22 (5.6)	ZWP - SM
5300-024A-WRYL	760004457	24	10.4 (155)	0.51 (13.0)	ZWP - SM
5300-036A-WRYL	760004465	36	12.8 (191)	0.54 (14.0)	ZWP - SM
5300-048A-WRYL	760004473	48	13.8 (205)	0.60 (15.0)	ZWP - SM
5300-072A-WRYL	760004481	72	23.7 (353)	0.75 (19.0)	ZWP - SM

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## Fiber

## OptiSPEED

## Indoor

Multimode Plenum  
Building Cable

The **OptiSPEED Plenum Building Cable** consists of 2 - 72 OptiSPEED Multimode fibers. Each 125 micron fiber has a specially formulated acrylate dual coating, bringing the diameter to 250 microns, and is proof tested at 100 kpsi. It is color-coded for easy identification. The buffered fibers are surrounded by aramid yarn for strength and over jacketed with a low-smoke, flame-retardant plenum jacket for protection. Small outside diameter with best bend radius in the market.

For OptiSPEED MM specifications refer to 58.

For OptiSPEED SM specifications refer to 59.



**OptiSPEED Plenum Cables** meet or exceed the multimode fiber requirements in ISO/IEC 11801 2nd Edition (type OM1), EN50173 2nd Edition (category OM1) and TIA/EIA-568B.

## Physical Specifications

<b>Cable Minimum Bending Radius:</b>	<b>Buffering:</b> 900 µm
<b>During Installation:</b> 20 x cable diam.	<b>Operating Temperature Range:</b> -20 to 70 °C
<b>After Installation:</b> 10 x cable diam.	<b>Storage Temperature Range:</b> -40 to 70 °C
<b>Buffered Fiber Minimum Bend Radius (unloaded):</b> 1.4 in (35 mm) <b>Installation Temp Range:</b> 0 to 70 °C	

## SLATE GRAY

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5201-002A-MPSL	700009657	2	0.9 (13)	0.15 (3.9)	MM OS
5201-004A-MPSL	700009582	4	1.2 (18)	0.17 (4.4)	MM OS
5201-006A-MPSL	700009517	6	1.4 (21)	0.18 (4.6)	MM OS
5201-008A-MPSL	700009442	8	1.7 (25)	0.20 (5.1)	MM OS
5201-012A-MPSL	700009392	12	1.9 (28)	0.22 (5.5)	MM OS
5201-018A-MPSL	700009319	18	2.1 (31)	0.22 (5.7)	MM OS
5301-024A-MPSL	700009277	24	10.4 (155)	0.50 (12.7)	MM OS
5301-036A-MPSL	700009186	36	12.8 (191)	0.54 (13.7)	MM OS
5301-048A-MPSL	700009095	48	13.8 (205)	0.59 (15.1)	MM OS
5301-072A-MPSL	700009004	72	23.7 (353)	0.75 (19.1)	MM OS

## ORANGE

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5201-002A-MPOR	700009665	2	0.9 (13)	0.15 (3.9)	MM OS
5201-004A-MPOR	700009590	4	1.2 (18)	0.17 (4.4)	MM OS
5201-006A-MPOR	700009525	6	1.4 (21)	0.18 (4.6)	MM OS
5201-012A-MPOR	700009400	12	2.1 (31)	0.22 (5.7)	MM OS
5301-024A-MPOR	700009285	24	10.4 (155)	0.50 (12.7)	MM OS

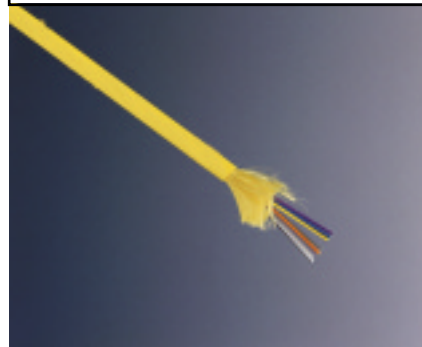
\* This is a Global SYSTIMAX SCS Product Guide. Portfolios differ from region to region. Contact your local account representative or BusinessPartner, for any specific regional queries.

## Fiber

## TeraSPEED

The **TeraSPEED Cable** is designed to cost-effectively future-proof enterprise campus backbones for next generation equipment. It operates over the entire wavelength range from 1280 nm to 1625 nm, removing the water peaks (high attenuation) in the 1400 nm window - adding more than 50% in operational wavelength range over conventional singlemode fiber. TeraSPEED delivers a cost-effective upgrade path by expanding the available wavelengths by 50% and allowing up to 16 channels of CWDM (Coarse Wave Division Multiplexing), the lowest-cost option to pack more channels on a single fiber, and up to 400 channels of DWDM (Dense Wave Division Multiplexing).

## Indoor

Singlemode Plenum  
Rated Building Cable

**Figure 23**  
Singlemode Plenum Rated  
Building Cable

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5201-002A-WPYL	760004317	2	0.9 (13)	0.15 (3.9)	ZWP - SM
5201-004A-WPYL	760004325	4	1.2 (18)	0.17 (4.4)	ZWP - SM
5201-006A-WPYL	760004333	6	1.4 (21)	0.18 (4.6)	ZWP - SM
5201-008A-WPYL	760004341	8	1.7 (25)	0.20 (5.1)	ZWP - SM
5201-012A-WPYL	760004358	12	1.9 (28)	0.22 (5.5)	ZWP - SM
5301-024A-WPYL	760004366	24	10.4 (155)	0.50 (12.7)	ZWP - SM
5301-036A-WRYL	760004374	36	12.8 (191)	0.54 (13.7)	ZWP - SM
5301-048A-WRYL	760004382	48	13.8 (205)	0.59 (15.1)	ZWP - SM
5301-072A-WRYL	760004390	72	23.7 (353)	0.75 (19.1)	ZWP - SM

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## Fiber

## OptiSPEED

The **OptiSPEED Low Smoke Zero Halogen (LSZH) Building Cable** consists of up to 72 fibers in either OptiSPEED Multimode, or OptiSPEED Singlemode. Each 125-micron fiber has a specially formulated acrylate dual coating, bringing the diameter to 250 microns, and is proof tested at 100 kpsi. The buffer is color-coded for identification. The buffered fibers are surrounded by halogen free aramid yarn for strength and over jacketed for protection.

The jacket color of **LSZH OptiSPEED multimode cables** is orange.

The **LSZH Cable** passes the following tests:

- IEC 754 part 2, Acidity/corrosively based on pH and conductivity measurements.
- IEC 1034 part 2, Smoke emission.
- IEC 332 part 3, Flammability and Fire retardant.
- NES 713, Toxicity index.

**OptiSPEED LSZH Cables** meet or exceed the multimode fiber requirements in ISO/IEC 11801 2nd Edition (type OM1), EN50173 2nd Edition (category OM1) and TIA/EIA-568B.

For OptiSPEED MM Optical Fiber specifications refer to page 58.

NON-US PRODUCT

Indoor

**Indoor Multimode Low Smoke Zero Halogen Building Cable**



Figure 25  
OptiSPEED Cable

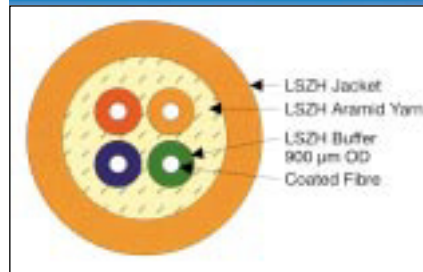


Figure 26  
OptiSPEED Cross Section

## Physical Specifications

<b>Cable Minimum Bending Radius:</b>	<b>Buffering:</b> 900 µm
<b>During Installation:</b> 20 x cable diam.	<b>Operating Temperature Range:</b> -40 to 70 °C
<b>After Installation:</b> 10 x cable diam.	<b>Storage Temperature Range:</b> -40 to 70 °C
<b>Buffered Fiber Minimum Bend Radius (unloaded):</b> 1.4 in (35 mm)	<b>Installation Temp Range:</b> 0 to 70 °C

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5202-002A-MH0R	700008485	2	0.8 (12)	0.15 (3.9)	MM OS
5202-004A-MH0R	700008477	4	1.4 (21)	0.19 (4.8)	MM OS
5202-006A-MH0R	700008469	6	1.6 (24)	0.20 (5.2)	MM OS
5202-008A-MH0R	700008451	8	1.9 (28)	0.22 (5.5)	MM OS
5202-012A-MH0R	700008444	12	2.3 (34)	0.24 (6.1)	MM OS
5302-024A-MH0R	700009293	24	11.7 (174)	0.56 (14.2)	MM OS
5302-036A-MH0R	700009194	36	11.8 (176)	0.59 (14.9)	MM OS
5302-048A-MH0R	700009103	48	15.0 (224)	0.65 (16.4)	MM OS
5302-072A-MH0R	700009012	72	24.2 (360)	0.79 (20.2)	MM OS

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## Fiber

## TeraSPEED

## Indoor

**Singlemode  
Low Smoke Zero  
Halogen Building Cable**

The **TeraSPEED Cable** is designed to cost-effectively future-proof enterprise campus backbones for next generation equipment. It operates over the entire wavelength range from 1280 nm to 1625 nm, removing the water peaks (high attenuation) in the 1400 nm window - adding more than 50% in operational wavelength range over conventional singlemode fiber. TeraSPEED delivers a cost-effective upgrade path by expanding the available wavelengths by 50% and allowing up to 16 channels of CWDM (Coarse Wave Division Multiplexing), the lowest-cost option to pack more channels on a single fiber, and up to 400 channels of DWDM (Dense Wave Division Multiplexing).

For TeraSPEED SM specifications refer to page 70.



Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5202 006 WHYL	760004242	6	1.6 (24)	0.20 (5.2)	ZWP - SM
5202 008 WHYL	760004259	8	1.9 (29)	0.22 (5.5)	ZWP - SM
5202 012 WHYL	760004267	12	2.3 (34)	0.24 (6.1)	ZWP - SM
5302 024 WHYL	760004275	24	11.7 (174)	0.56 (14.2)	ZWP - SM
5302 036 WHYL	760004283	36	11.8 (176)	0.59 (14.9)	ZWP - SM
5302 048 WHYL	760004291	48	15.0 (224)	0.65 (16.4)	ZWP - SM
5302 072 WHYL	760004309	72	24.2 (360)	0.79 (20.2)	ZWP - SM

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## Fiber

## OptiSPEED Composite and OptiSPEED / LazrSPEED 150 Composite Cable

**Features:**

- Slate gray jacket or Aqua jacket.
- Fiber types include:
  - Singlemode 8.3 / 125
  - Multimode 62.5 / 125
  - Multimode LazrSPEED 150
- Reinforced with aramid yarn for superior strength.

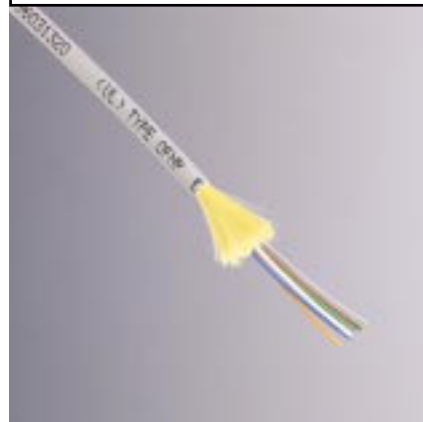
For OptiSPEED MM specifications refer to page 58.

For OptiSPEED SM specifications refer to page 59.

For LazrSPEED specifications refer to page 51.

## Indoor

### Hybrid Composite Plenum Rated Cable



**Figure 28**  
Hybrid Composite  
Plenum Cable

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5201-02/02A S-MPSL	700008923	4 (2SM + 2MM)	1.22 (18)	0.17 (4.4)	OS SM + OS MM
5201-02/04A S-MPSL	700008907	6 (2SM + 4MM)	1.44 (21)	0.18 (4.6)	OS SM + OS MM
5201-02/06A S-MPSL	700008873	8 (2SM + 6MM)	1.68 (25)	0.20 (5.1)	OS SM + OS MM
5201-04/04A S-MPSL	700008857	8 (4SM + 4MM)	1.68 (25)	0.20 (5.1)	OS SM + OS MM
5201-04/08A S-MPSL	700008832	12 (4SM + 8MM)	2.08 (31)	0.22 (5.7)	OS SM + OS MM
5201-06/06A S-MPSL	700008808	12 (6SM + 6MM)	2.08 (31)	0.22 (5.7)	OS SM + OS MM
5301-06/12A S-MPSL	700008782	18 (6SM/12MM)	9.61 (143)	0.45 (11.5)	OS SM + OS MM
5301-06/18A S-MPSL	700008758	24 (6SM/18MM)	10.45 (155)	0.50 (12.7)	OS SM + OS MM
5301-12/12A S-MPSL	700008725	24 (12SM/12MM)	10.45 (155)	0.50 (12.7)	OS SM + OS MM
5301-12/24A S-MPSL	700008709	36 (12SM/24MM)	12.84 (191)	0.54 (13.7)	OS SM + OS MM
5301-18/18A S-MPSL	700008618	36 (18SM/18MM)	12.84 (191)	0.54 (13.7)	OS SM + OS MM
5301-12/36A S-MPSL	700008683	48 (12SM/36MM)	13.77 (205)	0.59 (15.1)	OS SM + OS MM
5301-24/24A S-MPSL	700008600	48 (24SM/24MM)	13.77 (205)	0.59 (15.1)	OS SM + OS MM
5301-12/48A S-MPSL	700008659	60 (12SM/48MM)	19.0 (282)	0.68 (17.2)	OS SM + OS MM
5301-24/48A S-MPSL	700008584	72 (24SM/48MM)	23.71 (353)	0.75 (19.1)	OS SM + OS MM
5301-12/60A S-MPSL	700008634	72 (12SM/60MM)	23.71 (353)	0.75 (19.1)	OS SM + OS MM
5301-36/36A S-MPSL	700008568	72 (36SM/36MM)	23.71 (353)	0.75 (19.1)	OS SM + OS MM
5201-06/06A S-HPAQ	700214364	12 (6SM + 6LZ150)	2.08 (31)	0.22 (5.7)	OS SM + LZ 150
5301-12/12A S-HPAQ	760000323	24 (12SM + 12LZ150)	10.45 (155)	0.50 (12.7)	OS SM + LZ 150
5301-24/12A S-HPAQ	760000331	36 (24SM + 12LZ150)	12.84 (191)	0.54 (13.7)	OS SM + LZ 150
5301-48/24A S-HPAQ	760000349	72 (48SM + 24LZ150)	23.71 (353)	0.75 (19.1)	OS SM + LZ 150

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## Fiber

## OptiSPEED Composite and OptiSPEED / LazrSPEED 150 Composite Cable

**Features:**

- Slate gray jacket or Aqua jacket.
- Fiber types include:
  - Singlemode 8.3 / 125
  - Multimode 62.5 / 125
  - Multimode LazrSPEED 150
- Reinforced with aramid yarn for superior strength.

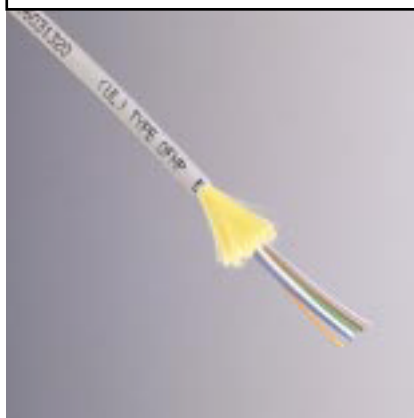
For OptiSPEED MM specifications refer to page 58.

For OptiSPEED SM specifications refer to page 59.

For LazrSPEED specifications refer to page 51.

## Indoor

### Hybrid Composite Riser Cable



**Figure 29**  
Hybrid Composite  
Plenum Cable

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5200-02/02A S-MRSL	700008951	4 (2SM + 2MM)	1.31 (19)	0.19 (4.8)	OS SM + OS MM
5200-02/04A S-MRSL	700008881	6 (2SM + 4MM)	1.51 (22)	0.20 (5.0)	OS SM + OS MM
5200-02/06A S-MRSL	700008865	8 (2SM + 6MM)	1.72 (26)	0.22 (5.5)	OS SM + OS MM
5200-04/04A S-MRSL	700008840	8 (4SM + 4MM)	1.72 (26)	0.22 (5.5)	OS SM + OS MM
5200-04/08A S-MRSL	700008824	12 (4SM + 8MM)	1.88 (28)	0.23 (5.8)	OS SM + OS MM
5200-06/06A S-MRSL	700008790	12 (6SM + 6MM)	1.88 (28)	0.23 (5.8)	OS SM + OS MM
5300-06/12A S-MRSL	700008774	18 (6SM/12MM)	9.98 (148)	0.50 (12.6)	OS SM + OS MM
5300-06/18A S-MRSL	700008766	24 (6SM/18MM)	10.72 (160)	0.55 (13.9)	OS SM + OS MM
5300-12/12A S-MRSL	700008717	24 (12SM/12MM)	10.72 (160)	0.55 (13.9)	OS SM + OS MM
5300-12/24A S-MRSL	700008691	36 (12SM/24MM)	11.87 (177)	0.56 (14.2)	OS SM + OS MM
5300-12/36A S-MRSL	700008675	48 (12SM/36MM)	12.66 (188)	0.62 (15.7)	OS SM + OS MM
5300-24/24A S-MRSL	700008592	48 (24SM/24MM)	12.66 (188)	0.62 (15.7)	OS SM + OS MM
5300-12/60A S-MRSL	700008642	72 (12SM + 60MM)	21.12 (314)	0.77 (19.6)	OS SM + OS MM
5300-24/48A S-MRSL	700008576	72 (24SM + 48MM)	21.12 (314)	0.77 (19.6)	OS SM + OS MM
5300-36/36A S-MRSL	700008550	72 (36SM + 36MM)	21.12 (314)	0.77 (19.6)	OS SM + OS MM
5300-12/12A S-HRAQ	760000356	24 (12SM + 12LZ150)	10.72 (160)	0.55 (13.9)	OS SM + LZ 150
5300-24/12A S-HRAQ	760000364	36 (24SM + 12LZ150)	11.87 (177)	0.56 (14.2)	OS SM + LZ 150
5300-48/24A S-HRAQ	760000372	72 (48SM + 24LZ150)	21.12 (314)	0.77 (19.6)	OS SM + LZ 150

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## Fiber

## TeraSPEED/LazrSPEED

## Indoor

Composite Premises  
Cable

The **TeraSPEED /LazrSPEED Composite Fiber-Optic Cable** provides the ultimate in future proofing. This combination of fibers provides the benefits of a Zero Water Peak singlemode, and LazrSPEED 300 Laser Optimized Multimode Fiber (LOMMF), the leading 10 Gb/s (OM3) fiber. The incorporation of both singlemode and multimode fibers under one jacket provides not only for seamless future migration should the need arise, but also for improved installation time and decreased installation expense. This composite premise riser cable uses LazrSPEED 300 fiber and is reinforced with aramid yarn for superior strength.

For TeraSPEED optical fiber specification refer to page 70.

For LazrSPEED optical fiber specification refer to page 51.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
Composite Riser Cables					
5200 02/02A W/ZRAQ	760007898	4	1.22 (18)	0.17 (-4.4)	ZWP / LZ300
5200 02/04A W/ZRAQ	760007906	6	1.44 (21)	0.18 (-4.6)	ZWP / LZ300
5200 02/06A W/ZRAQ	760007914	8	1.44 (21)	0.18 (-4.6)	ZWP / LZ300
5200 04/04A W/ZRAQ	760007922	8	1.68 (25)	0.20 (5.1)	ZWP / LZ300
5200 04/08A W/ZRAQ	760007930	12	2.08 (31)	0.22 (-5.7)	ZWP / LZ300
5200 06/06A W/ZRAQ	760007948	12	2.08 (31)	0.22 (-5.7)	ZWP / LZ300
5200 06/12A W/ZRAQ	760007955	18	9.61 (143)	0.45 (-11.5)	ZWP / LZ300
5300 06/18A W/ZRAQ	760007963	24	10.45 (155)	0.5 (-12.7)	ZWP / LZ300
5300 12/12A W/ZRAQ	760007971	24	10.45 (155)	0.5 (-12.7)	ZWP / LZ300
5300 06/30A W/ZRAQ	760007989	36	12.84 (191)	0.54 (-13.7)	ZWP / LZ300
5300 12/24A W/ZRAQ	760007997	36	12.84 (191)	0.54 (-13.7)	ZWP / LZ300
5300 18/18A W/ZRAQ	760008003	36	12.84 (191)	0.54 (-13.7)	ZWP / LZ300
5300 12/36A W/ZRAQ	760008011	48	13.77 (205)	0.59 (-15.1)	ZWP / LZ300
5300 24/24A W/ZRAQ	760008029	48	13.77 (205)	0.59 (-15.1)	ZWP / LZ300
5300 12/48A W/ZRAQ	760008037	60	19.0 (282)	0.68 (17.2)	ZWP / LZ300
5300 24/48A W/ZRAQ	760008045	72	23.71 (353)	0.75 (-19.1)	ZWP / LZ300
5300 12/60A W/ZRAQ	760008052	72	23.71 (353)	0.75 (-19.1)	ZWP / LZ300
5300 36/36A W/ZRAQ	760008060	72	23.71 (353)	0.75 (-19.1)	ZWP / LZ300

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## Fiber

## TeraSPEED / LazrSPEED

## Indoor

Composite Premises  
Cable (Cont'd)

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
<b>Composite Plenum Cables</b>					
5201 02/02A W/ZPAQ	760008078	4	1.22 (18)	0.17 (-4.4)	ZWP / LZ300
5201 02/04A W/ZPAQ	760008086	6	1.44 (21)	0.18 (-4.6)	ZWP / LZ300
5201 02/06A W/ZPAQ	760008094	8	1.44 (21)	0.18 (-4.6)	ZWP / LZ300
5201 04/04A W/ZPAQ	760008102	8	1.68 (25)	0.20 (5.1)	ZWP / LZ300
5201 04/08A W/ZPAQ	760008110	12	2.08 (31)	0.22 (-5.7)	ZWP / LZ300
5201 06/06A W/ZPAQ	760008128	12	2.08 (31)	0.22 (-5.7)	ZWP / LZ300
5301 06/12A W/ZPAQ	760008136	18	9.61 (143)	0.45 (-11.5)	ZWP / LZ300
5301 06/18A W/ZPAQ	760008144	24	10.45 (155)	0.5 (-12.7)	ZWP / LZ300
5301 12/12A W/ZPAQ	760008151	24	10.45 (155)	0.5 (-12.7)	ZWP / LZ300
5301 06/30A W/ZPAQ	760008169	36	12.84 (191)	0.54 (-13.7)	ZWP / LZ300
5301 12/24A W/ZPAQ	760008177	36	12.84 (191)	0.54 (-13.7)	ZWP / LZ300
5301 18/18A W/ZPAQ	760008185	36	12.84 (191)	0.54 (-13.7)	ZWP / LZ300
5301 12/36A W/ZPAQ	760008193	48	13.77 (205)	0.59 (-15.1)	ZWP / LZ300
5301 24/24A W/ZPAQ	760008201	48	13.77 (205)	0.59 (-15.1)	ZWP / LZ300
5301 12/48A W/ZPAQ	760008219	60	19.0 (282)	0.68 (17.2)	ZWP / LZ300
5301 24/48A W/ZPAQ	760008227	72	23.71 (353)	0.75 (-19.1)	ZWP / LZ300
5301 12/60A W/ZPAQ	760008235	72	23.71 (353)	0.75 (-19.1)	ZWP / LZ300
<b>Composite Low Smoke Zero Halogen Cables</b>					
5202 02/02A W/ZHAQ	760009183	4	1.22 (18)	0.17 (4.4)	ZWP / LZ300
5202 02/04A W/ZHAQ	760009191	6	1.44 (21)	0.18 (4.6)	ZWP / LZ300
5202 02/06A W/ZHAQ	760009209	8	1.44 (21)	0.18 (4.6)	ZWP / LZ300
5202 04/04A W/ZHAQ	760009217	8	1.68 (25)	0.20 (5.1)	ZWP / LZ300
5202 04/08A W/ZHAQ	760009225	12	1.68 (25)	0.20 (5.1)	ZWP / LZ300
5202 06/06A W/ZHAQ	760009233	12	2.08 (31)	0.22 (5.7)	ZWP / LZ300
5302 06/12A W/ZHAQ	760009241	18	2.08 (31)	0.22 (5.7)	ZWP / LZ300
5302 06/18A W/ZHAQ	760009258	24	9.61 (143)	0.45 (11.5)	ZWP / LZ300
5302 12/12A W/ZHAQ	760009266	24	10.45 (155)	0.5 (12.7)	ZWP / LZ300
5302 06/30A W/ZHAQ	760009274	24	10.45 (155)	0.5 (12.7)	ZWP / LZ300
5302 12/24A W/ZHAQ	760009282	36	12.84 (191)	0.54 (13.7)	ZWP / LZ300
5302 18/18A W/ZHAQ	760009290	36	12.84 (191)	0.54 (13.7)	ZWP / LZ300
5302 12/36A W/ZHAQ	760009308	48	13.77 (205)	0.59 (15.1)	ZWP / LZ300
5302 24/24A W/ZHAQ	760009316	48	13.77 (205)	0.59 (15.1)	ZWP / LZ300
5302 12/48A W/ZHAQ	760009324	60	19.0 (282)	0.68 (17.2)	ZWP / LZ300
5302 24/48A W/ZHAQ	760009332	72	23.71 (353)	0.75 (19.1)	ZWP / LZ300
5302 12/60A W/ZHAQ	760009340	72	23.71 (353)	0.75 (19.1)	ZWP / LZ300
5302 36/36A W/ZHAQ	760009357	72	23.71 (353)	0.75 (19.1)	ZWP / LZ300

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## Fiber

## TeraSPEED / OptiSPEED

## Indoor

Composite Premises  
Cable

The **TeraSPEED/OptiSPEED Composite Cable** incorporates the new TeraSPEED singlemode fiber with the OptiSPEED multimode fiber, all under one jacket. This provides a cost effective alternative for those with modest bandwidth requirements today, while allowing a seamless migration to singlemode for future requirements. Having both singlemode and multimode fibers under one jacket provides not only for future migration should the need arise, but also for improved installation time and decreased installation expense. **TeraSPEED / OptiSPEED Composite Premises Riser Cable** is reinforced with aramid yarn for superior strength and is available in riser, plenum, and Low Smoke Zero Halogen rating.

For TeraSPEED optical fiber specification refer to page 70.

For OptiSPEED optical fiber specification refer to page 59.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
<b>Composite Premises Riser Cable</b>					
5200 02/02A W/MRSL 760007534		4	1.22 (18)	0.17 (-4.4)	ZWP / 62.5 SM
5200 02/04A W/MRSL 760007559		6	1.44 (21)	0.18 (-4.6)	ZWP / 62.5 SM
5200 02/06A W/MRSL 760007567		8	1.68 (25)	0.20 (5.1)	ZWP / 62.5 SM
5200 04/04A W/MRSL 760007575		8	1.68 (25)	0.20 (5.1)	ZWP / 62.5 SM
5200 04/08A W/MRSL 760007583		12	2.08 (31)	0.22 (-5.7)	ZWP / 62.5 SM
5200 06/06A W/MRSL 760007591		12	2.08 (31)	0.22 (-5.7)	ZWP / 62.5 SM
5300 06/12A W/MRSL 760007609		18	9.61 (143)	0.45 (-11.5)	ZWP / 62.5 SM
5300 06/18A W/MRSL 760007617		24	10.45 (155)	0.5 (-12.7)	ZWP / 62.5 SM
5300 12/12A W/MRSL 760007625		24	10.45 (155)	0.5 (-12.7)	ZWP / 62.5 SM
5300 06/30A W/MRSL 760007633		36	12.84 (191)	0.54 (-13.7)	ZWP / 62.5 SM
5300 12/24A W/MRSL 760007641		36	12.84 (191)	0.54 (-13.7)	ZWP / 62.5 SM
5300 18/18A W/MRSL 760007658		36	12.84 (191)	0.54 (-13.7)	ZWP / 62.5 SM
5300 12/36A W/MRSL 760007666		48	13.77 (205)	0.59 (-15.1)	ZWP / 62.5 SM
5300 24/24A W/MRSL 760007674		48	13.77 (205)	0.59 (-15.1)	ZWP / 62.5 SM
5300 12/60A W/MRSL 760007682		72	23.71 (353)	0.75 (-19.1)	ZWP / 62.5 SM
5300 24/48A W/MRSL 760007690		72	23.71 (353)	0.75 (-19.1)	ZWP / 62.5 SM
5300 36/36A W/MRSL 760007708		72	23.71 (353)	0.75 (-19.1)	ZWP / 62.5 SM

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## Fiber

## TeraSPEED / OptiSPEED

## Indoor

Composite Premises  
Cable (Cont'd)

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
<b>Composite Premises Plenum Cable</b>					
5201 02/02A W/MPSL	760007716	4	1.22 (18)	0.17 (-4.4)	ZWP / 62.5 SM
5201 02/04A W/MPSL	760007724	6	1.44 (21)	0.18 (-4.6)	ZWP / 62.5 SM
5201 02/06A W/MPSL	760007732	8	1.44 (21)	0.18 (-4.6)	ZWP / 62.5 SM
5201 04/04A W/MPSL	760007740	8	1.68 (25)	0.20 (5.1)	ZWP / 62.5 SM
5201 04/08A W/MPSL	760007757	12	2.08 (31)	0.22 (-5.7)	ZWP / 62.5 SM
5201 06/06A W/MPSL	760007765	12	2.08 (31)	0.22 (-5.7)	ZWP / 62.5 SM
5301 06/12A W/MPSL	760007773	18	9.61 (143)	0.45 (-11.5)	ZWP / 62.5 SM
5301 06/18A W/MPSL	760007781	24	10.45 (155)	0.5 (-12.7)	ZWP / 62.5 SM
5301 12/12A W/MPSL	760007799	24	10.45 (155)	0.5 (-12.7)	ZWP / 62.5 SM
5301 06/30A W/MPSL	760007807	36	12.84 (191)	0.54 (-13.7)	ZWP / 62.5 SM
5301 12/24A W/MPSL	760007815	36	12.84 (191)	0.54 (-13.7)	ZWP / 62.5 SM
5301 18/18A W/MPSL	760007823	36	12.84 (191)	0.54 (-13.7)	ZWP / 62.5 SM
5301 12/36A W/MPSL	760007831	48	13.77 (205)	0.59 (-15.1)	ZWP / 62.5 SM
5301 24/24A W/MPSL	760007849	48	13.77 (205)	0.59 (-15.1)	ZWP / 62.5 SM
5301 12/48A W/MPSL	760007856	60	19.0 (282)	0.68 (17.2)	ZWP / 62.5 SM
5301 24/48A W/MPSL	760007864	72	23.71 (353)	0.75 (-19.1)	ZWP / 62.5 SM
5301 12/60A W/MPSL	760007872	72	23.71 (353)	0.75 (-19.1)	ZWP / 62.5 SM
5301 36/36A W/MPSL	760007880	72	23.71 (353)	0.75 (-19.1)	ZWP / 62.5 SM
<b>Composite Premises Low Smoke Zero Halogen Cable</b>					
5202 02/02A W/MHOR	760009001	4	1.22 (18)	0.17 (4.4)	ZWP / 62.5 SM
5202 02/04A W/MHOR	760009019	6	1.44 (21)	0.18 (4.6)	ZWP / 62.5 SM
5202 02/06A W/MHOR	760009027	8	1.44 (21)	0.18 (4.6)	ZWP / 62.5 SM
5202 04/04A W/MHOR	760009035	8	1.68 (25)	0.20 (5.1)	ZWP / 62.5 SM
5202 04/08A W/MHOR	760009043	12	1.68 (25)	0.20 (5.1)	ZWP / 62.5 SM
5202 06/06A W/MHOR	760009050	12	2.08 (31)	0.22 (5.7)	ZWP / 62.5 SM
5302 06/12A W/MHOR	760009068	18	2.08 (31)	0.22 (5.7)	ZWP / 62.5 SM
5302 06/18A W/MHOR	760009076	24	9.61 (143)	0.45 (11.5)	ZWP / 62.5 SM
5302 12/12A W/MHOR	760009084	24	10.45 (155)	0.5 (12.7)	ZWP / 62.5 SM
5302 06/30A W/MHOR	760009092	36	12.84 (191)	0.54 (13.7)	ZWP / 62.5 SM
5302 12/24A W/MHOR	760009100	36	12.84 (191)	0.54 (13.7)	ZWP / 62.5 SM
5302 18/18A W/MHOR	760009118	36	12.84 (191)	0.54 (13.7)	ZWP / 62.5 SM
5302 12/36A W/MHOR	760009126	48	13.77 (205)	0.59 (15.1)	ZWP / 62.5 SM
5302 24/24A W/MHOR	760009134	48	13.77 (205)	0.59 (15.1)	ZWP / 62.5 SM
5302 12/48A W/MHOR	760009142	60	19.0 (282)	0.68 (17.2)	ZWP / 62.5 SM
5302 24/48A W/MHOR	760009159	72	23.71 (353)	0.75 (19.1)	ZWP / 62.5 SM
5302 12/60A W/MHOR	760009167	72	23.71 (353)	0.75 (19.1)	ZWP / 62.5 SM
5302 36/36A W/MHOR	760009175	72	23.71 (353)	0.75 (19.1)	ZWP / 62.5 SM

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## Fiber

## TeraSPEED™

## Indoor

Singlemode Fiber  
Description

The TeraSPEED™ Singlemode fiber is a dispersion-unshifted, matched clad fiber which meets the ITU-T G.652c requirements. This fiber is fully capable of handling existing and legacy singlemode applications which traditionally operate in the 1310 nm and 1550 nm regions. It is also designed to handle the new and emerging applications that utilize the "Extended" E-band, 1360 nm to 1460 nm. This fiber is the choice for 16-channel Course Wavelength Division Multiplexing applications, because it is designed to provide optimum performance from 1265 nm to 1625 nm.

## Benefits

- Zero-Water-Peak Singlemode Fiber provides an increase of 50% on the bandwidth capabilities.
- It is compatible with other singlemode fiber types.
- It supports CWDM (Course Wave Division Multiplexing) and provides at least 33% more channels than conventional singlemode fiber.
- Long term reliability.

## Physical Specifications

<b>Core Diameter:</b> 8.3 $\mu\text{m}$ nominal
<b>Cladding Diameter:</b> 125.0 ( $\pm 0.7$ ) $\mu\text{m}$
<b>Core/Clad Offset:</b> $\leq 0.5 \mu\text{m}$
<b>Cladding Non-Circularity:</b> $\leq 1\%$
<b>Coated Fiber Diameter:</b> 245 ( $\pm 10$ ) $\mu\text{m}$
<b>Cladding/Coating Offset:</b> $\leq 12 \mu\text{m}$
<b>Colored Fiber Diameter:</b> 254 ( $\pm 7$ ) $\mu\text{m}$
<b>Proof Test:</b> 0.7 GPa
<b>Fiber Curl:</b> $> 4 \text{ m}$
<b>Dynamic Fatigue Parameter:</b> $\geq 18$
<b>Macrobend (100 turns, 50 mm mandrel):</b> 0.10 dB @ 1310 nm, 0.10 dB @ 1550 nm
<b>Macrobend (1 turn on a 32mm mandrel):</b> 0.50 dB @ 1310 nm and @ 1550 nm

## Optical Specifications

<b>Mode Field Diameter:</b> 9.2 (± 0.3) μm @ 1310 nm    10.4 (nominal) @ 1550 nm		
<b>Group Index of Refraction:</b> 1.466 @ 1310 nm and 1383 (± 3) nm, 1.467 @ 1550 nm		
<b>Attenuation:</b>	<b>Tight Buffered</b>	<b>Loose</b>
	0.70 dB/km @ 1310 nm	0.35 dB/km @ 1310 nm
	0.70 dB/km @ 1550 nm	0.24 dB/km @ 1550 nm
<b>Maximum Dispersion:</b> 2.8 ps/nm-km 1285 to 1330 nm		
<b>Zero-Dispersion Wavelength:</b> 1300 - 1322 nm		
<b>Zero-Dispersion Slope:</b> 0.092 ps/((nm) <sup>2</sup> km)		
<b>Polarization Mode Dispersion LDV:</b> 0.08 ps/((km) <sup>1/2</sup>		

## Fiber

## TeraSPEED

## Indoor

Singlemode Riser Rated  
Building Cable

The **TeraSPEED Enhanced Singlemode Riser Cable** consists of single unit and multi-unit match clad optical fibers, aramid strength yarn, and a PVC outer jacket. The product complies with the requirements of the National Electrical Code, Article 770-51; ANSI/TIA/EIA 568-B.3, "Optical Fiber Cabling Components Standard"; and Telcordia Generic Requirements for Premises Fiber-Optic Cable (GR-409-CORE), Section 6. The product shall be listed as (UL) TYPE OFNR [CSA OFN FT4].

For TeraSPEED SM Specifications refer to page 70.



**Figure 31**  
Zero-Water-Peak SM  
Optical Fiber

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)	Fiber Type
5200 002A WRYL	760004408	2	1.1	(16)	0.15 (4.0)	Zero-Water-Peak SM
5200 004A WRYL	760004416	4	1.2	(18)	0.18 (4.6)	Zero-Water-Peak SM
5200 006A WRYL	760004424	6	1.44	(21)	0.19 (4.8)	Zero-Water-Peak SM
5200 008A WRYL	760004432	8	1.68	(25)	0.21 (5.3)	Zero-Water-Peak SM
5200 012A WRYL	760004440	12	2.08	(31)	0.22 (5.6)	Zero-Water-Peak SM
5300 024A WRYL	760004457	24	10.4	(155)	0.51 (13.0)	Zero-Water-Peak SM
5300 036A WRYL	760004465	36	12.8	(191)	0.54 (14.0)	Zero-Water-Peak SM
5300 048A WRYL	760004473	48	13.8	(205)	0.60 (15.0)	Zero-Water-Peak SM
5300 072A WRYL	760004481	72	23.7	(353)	0.75 (19.0)	Zero-Water-Peak SM

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## Fiber

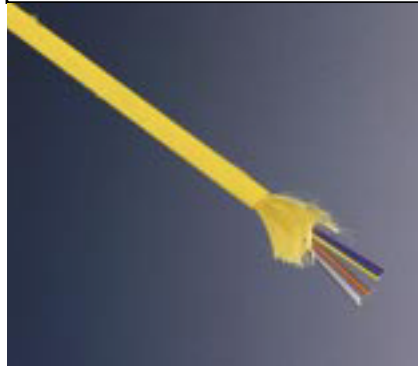
## TeraSPEED

## Indoor

## Singlemode Plenum Rated Building Cable

The **TeraSPEED Enhanced Singlemode Plenum Cable** consists of single unit and multi-unit match clad optical fibers, aramid strength yarn, and a plenum outer jacket. It complies with the requirements of the National Electrical Code, Article 770-51; ANSI/TIA/EIA 568-B.3, "Optical Fiber Cabling Components Standard"; and Telcordia Generic Requirements for Premises Fiber-Optic Cable (GR-409-CORE), Section 6. It is (UL) TYPE OFNP [CSA OFN FT6].

For TeraSPEED SM Specifications refer to page 70.



**Figure 32**  
Singlemode Plenum  
Optical Fiber

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)	Fiber Type
5201 002A WPYL	760004317	2	0.9	(13)	0.15 (3.9)	Zero-Water-Peak SM
5201 004A WPYL	760004325	4	1.2	(18)	0.17 (4.4)	Zero-Water-Peak SM
5201 006A WPYL	760004333	6	1.4	(21)	0.18 (4.6)	Zero-Water-Peak SM
5201 008A WPYL	760004341	8	1.7	(25)	0.20 (5.1)	Zero-Water-Peak SM
5201 012A WPYL	760004358	12	1.9	(28)	0.22 (5.5)	Zero-Water-Peak SM
5301 024A WPYL	760004366	24	10.4	(155)	0.50 (12.7)	Zero-Water-Peak SM
5301 036A WPYL	760004374	36	12.8	(191)	0.54 (13.7)	Zero-Water-Peak SM
5301 048A WPYL	760004382	48	13.8	(205)	0.59 (15.1)	Zero-Water-Peak SM
5301 072A WPYL	760004390	72	23.7	(353)	0.75 (19.1)	Zero-Water-Peak SM

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## Fiber

## TeraSPEED

EMEA ONLY PRODUCT

Indoor

**Singlemode Low  
Smoke Zero Halogen  
Building Cable**

The **TeraSPEED Enhanced Singlemode Low Smoke Zero Halogen (LSZH) Cable** consists of single unit and multi-unit match clad optical fibers, zero-halogen buffer, aramid strength yarn, a polyester slitting cord, and a zero-halogen Fire Retardant Polyethylene (FRPE) outer jacket. The product complies with the requirements of the National Electrical Code, Article 770-51; ANSI/TIA/EIA 568-B.3, "Optical Fiber Cabling Components Standard"; and Telcordia Generic Requirements for Premises Fiber-Optic Cable (GR-409-CORE), Section 6. It is UL TYPE OFNR OFN-LS [CSA OFN FT4] and IEC60332-3C, IEC61034-2 compliant.

For TeraSPEED SM Specifications refer to page 70.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)	Fiber Type
5202 006A WHYL	760004242	6	1.4	(21)	0.18 (4.6)	Zero-Water-Peak SM
5202 008A WHYL	760004259	8	1.7	(25)	0.20 (5.1)	Zero-Water-Peak SM
5202 012A WHYL	760004267	12	1.9	(28)	0.22 (5.5)	Zero-Water-Peak SM
5302 024A WHYL	760004275	24	10.4	(155)	0.50 (12.7)	Zero-Water-Peak SM
5302 036A WHYL	760004283	36	12.8	(191)	0.54 (13.7)	Zero-Water-Peak SM
5302 048A WHYL	760004291	48	13.8	(205)	0.59 (15.1)	Zero-Water-Peak SM
5302 072A WHYL	760004309	72	23.7	(353)	0.75 (19.1)	Zero-Water-Peak SM

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## Fiber

## LazrSPEED

The LazrSPEED Solution supports 10 Gb/s speeds at distances up to 300 meters, using single channel 850 nm VCSEL electronics. The LazrSPEED channel provides the lowest loss and highest bandwidth solution.

For LazrSPEED fiber specifications refer to page 51.

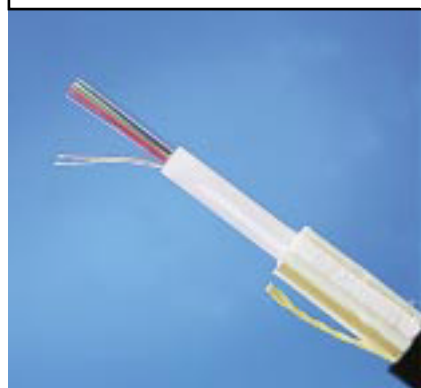
**5022 cable is the standard dielectric cable.**

#### Features:

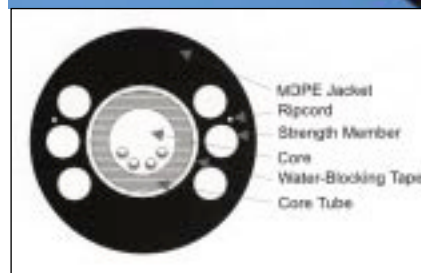
- Ideal for cost-effective migration to 10 Gb/s Ethernet up to 300 meters.
- Legacy application support including Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring, ATM, FDDI.
- Central Tube Outside Plant design.
- 2000/500 MHz-km minimum laser bandwidth (with DMD) at 850/1300 nm.
- 1500/500 MHz-km minimum overfilled bandwidth at 850/1300 nm.
- 3.0 /1.0 dB maximum cable loss at 850/1300 nm.
- LazrSPEED 300 complies with the Laser Optimized Multimode Fiber specifications in ANSI/EIA/TIA 492AAAC as well as the OM3 specifications in ISO/IEC 11801 2nd Edition and EN50173 2nd Edition.
- Guaranteed to support 10 Gigabit Ethernet (10GBASE-SR) to 300 meters\*.
- Guaranteed to support Gigabit Ethernet (1000BASE-SX) to 1 Km with 2 LC connections\*.

## Outdoor

## Dielectric Cable



**Figure 33**  
Dielectric Cable



**Figure 34**  
Dielectric Cable  
Cross Section

## Physical Specifications

<b>Cable Minimum Bending Radius:</b>	<b>Operating Temperature Range:</b> -40 to 70 °C
<b>Under Load:</b> 20 x cable diam.	<b>Max. Pulling Tension:</b> 2670 N (600 lbf)
<b>Under no Load:</b> 10 x cable diam.	

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5022-006A-ZXBK	700012347	6	6.8 (102)	0.47 (12.4)	LZ
5022-012A-ZXBK	700012354	12	6.8 (102)	0.47 (12.4)	LZ
5022-024A-ZXBK	700012362	24	6.8 (102)	0.47 (12.4)	LZ
5022-036A-ZXBK	700219116	36	6.8 (102)	0.47 (12.4)	LZ
5022-048A-ZXBK	700012370	48	6.8 (102)	0.47 (12.4)	LZ
5022-096A-ZXBK	700012388	96	8.7 (129)	0.55 (14.4)	LZ

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# Fiber

## OptiSPEED

The **Metallic Cable** is one of the standard OSP cables containing either OptiSPEED Multimode or OptiSPEED Singlemode fiber. Composite cables (a mix of Singlemode and Multimode) are also available upon request. The cable is designed for easy mid-sheath entry. The fibers are separated into binder groups inside a central tube filled with water-blocking compound. The steel armor provides rodent and lightning protection. The sheath jacket material is medium-density polyethylene for maximum environmental protection and is petrochemical stable. The **Metallic Cable** can be used in underground conduit, direct-buried, or aerial applications. These cables are black in color.

For OptiSPEED MM specifications refer to page 58.

For OptiSPEED SM specifications refer to page 59.

**Metallic Cables** meet or exceed the fiber requirements in ISO/IEC 11801 2nd Edition (type OM1 for multimode, OS1 for singlemode), EN50173 2nd Edition (category OM1 for multimode, OS1 for singlemode) and TIA/EIA-568B.

## Outdoor

### Metallic Cable

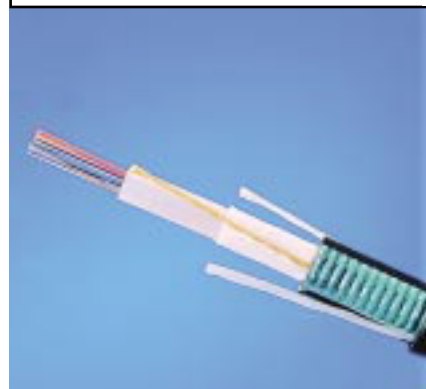


Figure 35  
Metallic Cable



Figure 36  
Metallic Cable  
Cross Section

## Physical Specifications

<b>Cable Minimum Bending Radius:</b>	<b>Operating Temperature Range:</b> -40 to 70 °C
<b>Under no Load:</b> 10 x cable diam.	<b>Max. Pulling Tension:</b> 2670 N (600 lbf)
<b>Under Load:</b> 20 x cable diam.	

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5021-004A-MXBK	700010622	4	10.1 (151)	0.41 (10.3)	MM OS
5021-006A-MXBK	700010614	6	10.1 (151)	0.41 (10.3)	MM OS
5021-008A-MXBK	700010606	8	10.1 (151)	0.41 (10.3)	MM OS
5021-012A-MXBK	700010598	12	10.1 (151)	0.41 (10.3)	MM OS
5021-024A-MXBK	700010580	24	10.1 (151)	0.41 (10.3)	MM OS
5021-036A-MXBK	700010572	36	14.0 (209)	0.48 (12.2)	MM OS
5021-048A-MXBK	700010564	48	14.0 (209)	0.48 (12.2)	MM OS
5021-072A-MXBK	700010556	72	19.6 (293)	0.58 (14.8)	MM OS
5021-096A-MXBK	700010549	96	19.6 (293)	0.58 (14.8)	MM OS
5021-004A-SXBK	700032857	4	10.1 (151)	0.41 (10.3)	SM OS
5021-006A-SXBK	700032865	6	10.1 (151)	0.41 (10.3)	SM OS
5021-008A-SXBK	700032873	8	10.1 (151)	0.41 (10.3)	SM OS
5021-012A-SXBK	700012230	12	10.1 (151)	0.41 (10.3)	SM OS
5021-024A-SXBK	700012248	24	10.1 (151)	0.41 (10.3)	SM OS
5021-036A-SXBK	700012255	36	14.0 (209)	0.48 (12.2)	SM OS
5021-048A-SXBK	700012263	48	14.0 (209)	0.48 (12.2)	SM OS
5021-072A-SXBK	700012271	72	19.6 (293)	0.58 (14.8)	SM OS
5021-096A-SXBK	700071376	96	19.6 (293)	0.58 (14.8)	SM OS

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## Fiber

### OptiSPEED & TeraSPEED

**Dielectric OptiSPEED & TeraSPEED Cable** is one of the standard OSP cables containing OptiSPEED multimode fiber and TeraSPEED singlemode fiber. Composite cables are also available upon request. It is designed for easy mid-sheath entry. Fibers are separated into color-coded binder groups inside a central tube filled with water-blocking compound. The sheath has dielectric strength members parallel to the core and outside the core. The sheath jacket material is medium-density polyethylene for maximum environmental protection and is petrochemical stable. Dielectric OSP Cable is used in underground conduit, direct-buried, or aerial applications. These cables are black in color.

For OptiSPEED MM specifications refer to page 58.

For TeraSPEED SM specifications refer to page 70.

These cables meet or exceed the fiber requirements in ISO/IEC 11801 2nd Edition (type OM1 for multimode, OS1 for singlemode), EN50173 2nd Edition (category OM1 for multimode, OS1 for singlemode) and TIA/EIA-568B.

## Outdoor

### Dielectric Cable

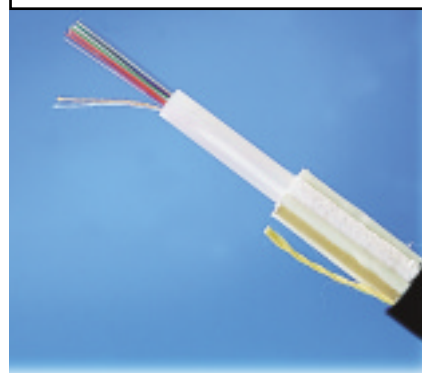


Figure 37  
Dielectric Cable

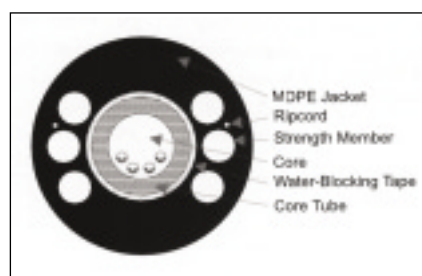


Figure 38  
Dielectric Cable Cross Section

## Physical Specifications

<b>Cable Minimum Bending Radius:</b>	<b>Operating Temperature Range:</b> -40 to 70 °C
<b>Under no Load:</b> 10 x cable diam.	<b>Max. Pulling Tension:</b> 2670N (600 lbf)
<b>Under Load:</b> 20 x cable diam.	

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5022-004A-MXBK	700010739	4	6.8 (102)	0.49 (12.4)	MM OS
5022-006A-MXBK	700010721	6	6.8 (102)	0.49 (12.4)	MM OS
5022-008A-MXBK	700010713	8	6.8 (102)	0.49 (12.4)	MM OS
5022-012A-MXBK	700010705	12	6.8 (102)	0.49 (12.4)	MM OS
5022-018A-MXBK	700010697	18	6.8 (102)	0.49 (12.4)	MM OS
5022-024A-MXBK	700010689	24	6.8 (102)	0.49 (12.4)	MM OS
5022-036A-MXBK	700010671	36	6.8 (102)	0.49 (12.4)	MM OS
5022-048A-MXBK	700010663	48	6.8 (102)	0.49 (12.4)	MM OS
5022-060A-MXBK	700010655	60	8.7 (129)	0.57 (14.4)	MM OS
5022-072A-MXBK	700010648	72	8.7 (129)	0.57 (14.4)	MM OS
5022-096A-MXBK	700010630	96	8.7 (129)	0.57 (14.4)	MM OS

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## Fiber

OptiSPEED &  
TeraSPEED

## Outdoor

Dielectric Cable  
(Cont'd)

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5022-004A-WXBK	760004002	4	6.8 (102)	0.49 (12.4)	ZWP - SM
5022-006A-WXBK	760004010	6	6.8 (102)	0.49 (12.4)	ZWP - SM
5022-008A-WXBK	760004028	8	6.8 (102)	0.49 (12.4)	ZWP - SM
5022-012A-WXBK	760004036	12	6.8 (102)	0.49 (12.4)	ZWP - SM
5022-024A-WXBK	760004044	24	6.8 (102)	0.49 (12.4)	ZWP - SM
5022-036A-WXBK	760004051	36	6.8 (102)	0.49 (12.4)	ZWP - SM
5022-048A-WXBK	760004069	48	6.8 (102)	0.49 (12.4)	ZWP - SM
5022-072A-WXBK	760004077	72	8.7 (129)	0.57 (14.4)	ZWP - SM
5022-096A-WXBK	760004085	96	8.7 (129)	0.57 (14.4)	ZWP - SM

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# Fiber

## OptiSPEED

The **Dielectric Drop Cable** is available with 2, 4, 6, 8, 12, or 18 fibers. The OptiSPEED multimode fibers are in a core. The fibers are color-coded and contained in a gel-filled, polypropylene tube. The tube is covered with a water blocking material and six dielectric strength elements. Two diametrically opposed ripcords are added and a medium density polyethylene sheath is applied. This rugged design makes it suitable for underground, aerial, direct buried, tunnel, or tray installations. The Dielectric Drop Cable was specifically designed for use in crowded duct applications. It is ideally suited to connect equipment or facilities that are separated by an outdoor type environment.

For OptiSPEED MM specifications refer to page 58.

Dielectric Cables meet or exceed the fiber requirements in ISO/IEC 11801 2nd Edition (type OM1 for multimode, OS1 for singlemode), EN50173 2nd Edition (category OM1 for multimode, OS1 for singlemode) and TIA/EIA-568B.

## Outdoor

### Dielectric Drop Cable

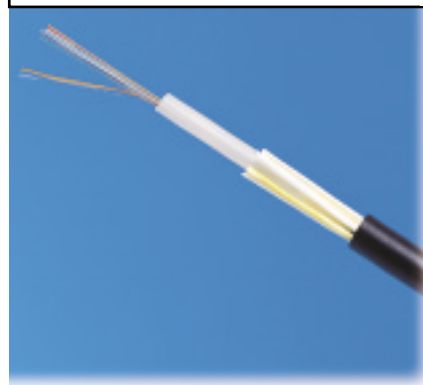


Figure 39  
Dielectric Drop Cable

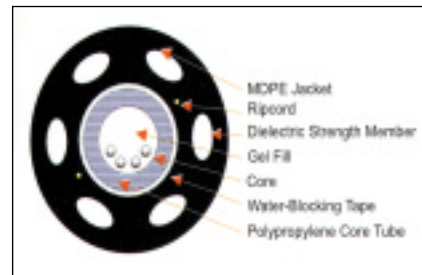


Figure 40  
Cross Section

## Physical Specifications

Cable Minimum Bending Radius:	Operating Temperature Range: -40 to 70 °C
Under Load: 20 x cable diam.	Max. Pulling Tension: 2670N (600 lbf)
Under no Load: 10 x cable diam.	

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5020-002A-MXBK	700010796	2	3.01 (45)	0.30 (7.6)	MM OS
5020-004A-MXBK	700010788	4	3.01 (45)	0.30 (7.6)	MM OS
5020-006A-MXBK	700010770	6	3.01 (45)	0.30 (7.6))	MM OS
5020-008A-MXBK	700010762	8	3.01 (45)	0.30 (7.6)	MM OS
5020-012A-MXBK	700010754	12	3.01 (45)	0.30 (7.6)	MM OS
5020-018A-MXBK	700010747	18	3.01 (45)	0.30 (7.6)	MM OS

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## Fiber

## OptiSPEED

## Outdoor

## Dielectric Composite Cable

## Features:

- Future-proof campus backbone cable.
- Combines multimode fibers for today's applications with singlemode fibers for future applications.
- For underground conduit, direct buried, or aerial applications.
- High density polyethylene sheath for maximum environmental protection.
- No central strength member.
- Designed for easy midsheath entry.



**Figure 41**  
Dielectric Composite Cable

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5022-06/06A S/MXBK	700010150	12 (6SM + 6MM)	6.1 (91)	0.38 (9.7)	OS SM + OS MM
5022-06/12A S/MXBK	700010143	18 (6SM + 12MM)	6.1 (91)	0.38 (9.7)	OS SM + OS MM
5022-12/12A S/MXBK	700010135	24 (12SM + 12MM)	6.1 (91)	0.38 (9.7)	OS SM + OS MM
5022-12/24A S/MXBK	700010127	36 (12SM + 24MM)	6.9 (103)	0.49 (12.4)	OS SM + OS MM
5022-24/24A S/MXBK	760002030	48 (24SM + 24MM)	6.9 (103)	0.49 (12.4)	OS SM + OS MM

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## Fiber

## TeraSPEED/LazrSPEED

## Outdoor

## Composite OSP Cable

The **TeraSPEED /LazrSPEED Composite Fiber-Optic Outside Plant Cable** provides the ultimate in future proofing. This combination of fibers provides the benefits of a Zero Water Peak singlemode, and LazrSPEED 300 Laser Optimized Multimode Fiber (LOMMF), the leading 10 Gb/s (OM3) fiber. The incorporation of both singlemode and multimode fibers under one jacket provides not only for seamless future migration should the need arise, but also for improved installation time and decreased installation expense. This central core composite cable uses LazrSPEED 300 fiber and is reinforced with aramid yarn for superior strength.

For TeraSPEED optical fiber specification refer to page 70.

For LazrSPEED optical fiber specification refer to page 51.

**Features:**

- Completely re-engineered zero water peak singlemode fiber
- No special installation required; uses familiar termination procedures
- Saves installation time with singlemode and multimode under one jacket
- 1500/500 MHz-km overfilled bandwidth at 850/1300 nm
- 2000/500 MHz-km laser bandwidth at 850/1300 nm
- 3.0/1.0dB/km loss at 850/1300 nm
- 60% increase in bandwidth due to Zero Water Peak in the E-band (1400 nm window)

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
<b>Composite OSP Cables</b>					
5022 06/06A W/ZXBK	760008318	12	6.1 (0908)	0.49 (12.4)	ZWP / LZ300
5022 06/12A W/ZXBK	760008326	18	6.8 (102)	0.49 (12.4)	ZWP / LZ300
5022 12/12A W/ZXBK	760008334	24	6.8 (102)	0.49 (12.4)	ZWP / LZ300
5022 12/24A W/ZXBK	760008334	36	6.8 (102)	0.49 (12.4)	ZWP / LZ300
5022 24/24A W/ZXBK	760008342	48	6.8 (102)	0.49 (12.4)	ZWP / LZ300
5022 48/48A W/ZXBK	760008367	96	8.7 (129)	0.57 (14.4)	ZWP / LZ300

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## Fiber

## TeraSPEED /OptiSPEED

## Outdoor

## Composite OSP Cable

The **TeraSPEED/OptiSPEED Composite OSP Central Filled Core Dielectric Cables** incorporate the new TeraSPEED singlemode fiber with the OptiSPEED multimode fiber, all under one jacket. This provides a cost effective alternative for those with modest bandwidth requirements today, while allowing a seamless migration to singlemode for future requirements. Having both singlemode and multimode fibers under one jacket provides not only for future migration should the need arise, but also for improved installation time and decreased installation expense. SYSTIMAX central filled core cables comply with the Telcordia Generic Requirements for Optical Fiber and Optical Fiber Cable (GR-20-CORE), Section 6. These products also satisfy the requirements of ICEA S-87-640-1999, Optical Fiber Outside Plant Communications Cable.

For TeraSPEED optical fiber specification refer to page 70.

For OptiSPEED optical fiber specification refer to page 58.

## Features:

- Completely re-engineered zero water peak singlemode fiber
- Saves installation time with singlemode and multimode under one jacket
- Plenum and riser rated are slate in color, LSZH is orange in color
- 60% increase in bandwidth due to Zero Water Peak in the E-band (1400 nm window)
- Common Dielectric central core construction

Product	Material ID	Fiber Count	Weight lbs/100ft	OD in (mm)	Fiber Type
<b>Composite OSP Cables</b>					
5022 06/06A W/MXBK	760008250	12	6.1 (0908)	0.49 (12.4)	ZWP / MM OS
5022 06/12A W/MXBK	760008268	18	6.8 (102)	0.49 (12.4)	ZWP / MM OS
5022 12/12A W/MXBK	760008276	24	6.8 (102)	0.49 (12.4)	ZWP / MM OS
5022 12/24A W/MXBK	760008284	36	6.8 (102)	0.49 (12.4)	ZWP / MM OS
5022 24/24A W/MXBK	760008292	48	6.8 (102)	0.49 (12.4)	ZWP / MM OS
5022 48/48A W/MXBK	760008300	96	8.7 (129)	0.57 (14.4)	ZWP / MM OS

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## Fiber

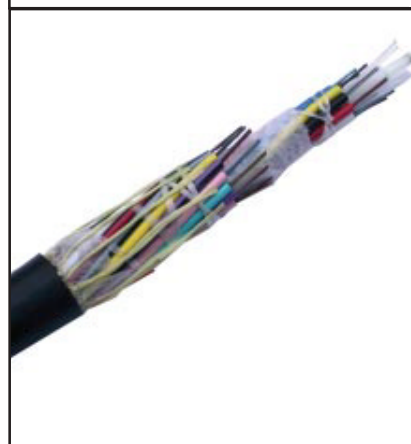
## LazrSPEED / OptiSPEED

## Outdoor

## Stranded Loose Tube Dielectric Cable

The **Stranded Loose Tube Dielectric Cable** is constructed with industry standard 3 mm buffer tubes, stranded around a central strength member. The buffer tubes are compatible with standard hardware, cable routing and fan-out kits. The individual gel-filled tubes with water-blocking binders are placed between the central strength member and the tubes; then a water-blocking tape is formed around the core. These cables provide a high level of protection for fiber installed in the outside plant environment where mid-span access and cable management is required.

For LazrSPEED optical fiber specification refer to page 51. For OptiSPEED optical fiber specification refer to page 58.



**Figure 42**  
Stranded Loose Tube  
Dielectric Cable

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
<b>LazrSPEED</b>					
5024 004A ZXBK	760002782	4	6.3 (94)	0.46 (11.7)	LZ 300
5024 006A ZXBK	760002790	6	6.3 (94)	0.46 (11.7)	LZ 300
5024 012A ZXBK	760002808	12	6.3 (94)	0.46 (11.7)	LZ 300
5024 018A ZXBK	760002816	18	6.3 (94)	0.46 (11.7)	LZ 300
5024 024A ZXBK	760002824	24	6.3 (94)	0.46 (11.7)	LZ 300
5024 036A ZXBK	760002832	36	6.3 (94)	0.46 (11.7)	LZ 300
5024 048A ZXBK	760002840	48	6.3 (94)	0.46 (11.7)	LZ 300
5024 072A ZXBK	760002857	72	7.2 (107)	0.50 (12.6)	LZ 300
5024 096A ZXBK	760002865	96	9.3 (139)	0.58 (14.7)	LZ 300
5024 144A ZXBK	760002873	144	14.4 (215)	0.74 (18.8)	LZ 300
5024 288A ZXBK	760002881	288	21.0 (313)	0.86 (21.8)	LZ 300
5024 004A XXBK	760007351	4	6.3 (94)	0.46 (11.7)	LZ 550
5024 006A XXBK	760007369	6	6.3 (94)	0.46 (11.7)	LZ 550
5024 012A XXBK	760007377	12	6.3 (94)	0.46 (11.7)	LZ 550
5024 018A XXBK	760007385	18	6.3 (94)	0.46 (11.7)	LZ 550
5024 024A XXBK	760007393	24	6.3 (94)	0.46 (11.7)	LZ 550
5024 036A XXBK	760007401	36	6.3 (94)	0.46 (11.7)	LZ 550
5024 048A XXBK	760007419	48	6.3 (94)	0.46 (11.7)	LZ 550
5024 072A XXBK	760007427	72	7.2 (107)	0.50 (12.6)	LZ 550
5024 096A XXBK	760007435	96	9.3 (139)	0.58 (14.7)	LZ 550
5024 144A XXBK	760007443	144	14.4 (215)	0.74 (18.8)	LZ 550
5024 288A XXBK	760007450	288	21.0 (313)	0.86 (21.8)	LZ 550

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## Fiber

## LazrSPEED / OptiSPEED

## Outdoor

Stranded Loose Tube  
Dielectric Cable

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
<b>OptiSPEED</b>					
5024 004A MXBK	760002683	4	6.3 (94)	0.46 (11.7)	62.5 MM
5024 006A MXBK	760002691	6	6.3 (94)	0.46 (11.7)	62.5 MM
5024 012A MXBK	760002709	12	6.3 (94)	0.46 (11.7)	62.5 MM
5024 018A MXBK	760002717	18	6.3 (94)	0.46 (11.7)	62.5 MM
5024 024A MXBK	760002725	24	6.3 (94)	0.46 (11.7)	62.5 MM
5024 036A MXBK	760002733	36	6.3 (94)	0.46 (11.7)	62.5 MM
5024 048A MXBK	760002741	48	6.3 (94)	0.46 (11.7)	62.5 MM
5024 072A MXBK	760002758	72	7.2 (107)	0.50 (12.6)	62.5 MM
5024 096A MXBK	760002766	96	9.3 (139)	0.58 (14.7)	62.5 MM
5024 144A MXBK	760002695	144	14.4 (215)	0.74 (18.8)	62.5 MM
5024 288A MXBK	760002774	288	21.0 (313)	0.86 (21.8)	62.5 MM

## fiber CABLES

## Fiber

## LazrSPEED / OptiSPEED

## Outdoor

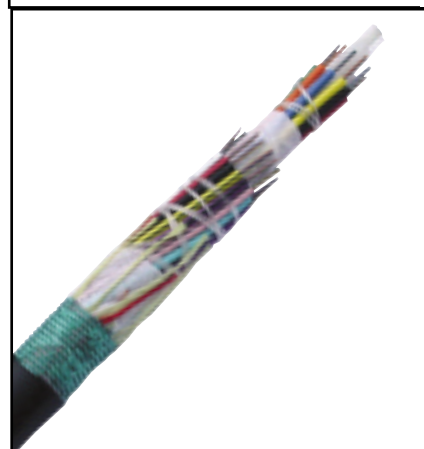
Stranded Loose Tube  
Metallic Cable

The **Stranded Loose Tube Metallic Cable** is armored with a corrugated, polymer coated steel tape and constructed with industry standard 3 mm buffer tubes, stranded around a central strength member. The armor layer provides added crush protection and meets the Telcordia requirements for Superior Armored cable. The buffer tubes are compatible with standard hardware, cable routing and fan-out kits. The individual gel-filled tubes with water-blocking binders are placed between the central strength member and the tubes; then a water-blocking tape is formed around the core. These cables provide a high level of protection for fiber installed in the outside plant environment where mid-span access and cable management is required.

For LazrSPEED optical fiber specification refer to page 51.

For OptiSPEED optical fiber specification refer to page 58.

\* This is a Global SYSTIMAX SCS Product Guide. Portfolios differ from region to region. Contact your local account representative or BusinessPartner, for any specific regional queries.



**Figure 43**  
Stranded Loose  
Tube Metallic  
Cable

## Fiber

## LazrSPEED / OptiSPEED

## Outdoor

Stranded Loose Tube  
Metallic Cable

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
<b>LazrSPEED</b>					
5023 004A ZXBK	760002469	4	12.0 (179)	0.53 (13.4)	LZ 300
5023 006A ZXBK	760002477	6	12.0 (179)	0.53 (13.4)	LZ 300
5023 012A ZXBK	760002485	12	12.0 (179)	0.53 (13.4)	LZ 300
5023 018A ZXBK	760002493	18	12.0 (179)	0.53 (13.4)	LZ 300
5023 024A ZXBK	760002501	24	12.0 (179)	0.53 (13.4)	LZ 300
5023 036A ZXBK	760002519	36	12.0 (179)	0.53 (13.4)	LZ 300
5023 048A ZXBK	760002527	48	12.0 (179)	0.53 (13.4)	LZ 300
5023 072A ZXBK	760002535	72	13.3 (198)	0.56 (14.2)	LZ 300
5023 096A ZXBK	760002543	96	16.5 (246)	0.64 (16.3)	LZ 300
5023 144A ZXBK	760002550	144	23.5 (351)	0.80 (20.4)	LZ 300
5023 288A ZXBK	760002568	288	31.7 (472)	0.92 (23.4)	LZ 300
5023 004A XXBK	760007245	4	12.0 (179)	0.53 (13.4)	LZ 550
5023 006A XXBK	760007252	6	12.0 (179)	0.53 (13.4)	LZ 550
5023 012A XXBK	760007260	12	12.0 (179)	0.53 (13.4)	LZ 550
5023 018A XXBK	760007278	18	12.0 (179)	0.53 (13.4)	LZ 550
5023 024A XXBK	760007286	24	12.0 (179)	0.53 (13.4)	LZ 550
5023 036A XXBK	760007294	36	12.0 (179)	0.53 (13.4)	LZ 550
5023 048A XXBK	760007302	48	12.0 (179)	0.53 (13.4)	LZ 550
5023 072A XXBK	760007310	72	13.3 (198)	0.56 (14.2)	LZ 550
5023 096A XXBK	760007328	96	16.5 (246)	0.64 (16.3)	LZ 550
5023 144A XXBK	760007336	144	23.5 (351)	0.80 (20.4)	LZ 550
<b>OptiSPEED</b>					
5023 004A MXBK	760002360	4	12.0 (179)	0.53 (13.4)	62.5 MM
5023 006A MXBK	760002378	6	12.0 (179)	0.53 (13.4)	62.5 MM
5023 012A MXBK	760002386	12	12.0 (179)	0.53 (13.4)	62.5 MM
5023 018A MXBK	760002394	18	12.0 (179)	0.53 (13.4)	62.5 MM
5023 024A MXBK	760002402	24	12.0 (179)	0.53 (13.4)	62.5 MM
5023 036A MXBK	760002410	36	12.0 (179)	0.53 (13.4)	62.5 MM
5023 048A MXBK	760002428	48	12.0 (179)	0.53 (13.4)	62.5 MM
5023 072A MXBK	760002436	72	13.3 (198)	0.56 (14.2)	62.5 MM
5023 096A MXBK	760002444	96	16.5 (246)	0.64 (16.3)	62.5 MM
5023 144A MXBK	760000893	144	23.5 (351)	0.80 (20.4)	62.5 MM
5023 288A MXBK	760002451	288	31.7 (472)	0.92 (23.4)	62.5 MM

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## Fiber

## TeraSPEED

## Outdoor

Stranded Loose  
Tube Dielectric and  
Metallic Cable

**TeraSPEED Singlemode Fiber** is a dispersion-unshifted, singlemode fiber which meets the ITU-T G.652c requirements. This fiber is fully capable of handling existing and legacy singlemode applications which traditionally operate in the 1310 nm and 1550 nm regions. It is also designed to handle the new and emerging applications that utilize the "Extended" E-band, 1360 nm to 1460 nm. Because this fiber is designed to provide optimum performance from 1265 nm to 1625 nm, it is the choice for 16 channel Course Wavelength Division Multiplexing applications.

For TeraSPEED specifications refer to page 70.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
<b>Stranded Loose Tube Dielectric Cable</b>					
5024 004A WXBK	760002576	4	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5024 006A WXBK	760002584	6	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5024 012A WXBK	760002592	12	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5024 018A WXBK	760002600	18	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5024 024A WXBK	760002618	24	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5024 036A WXBK	760002626	36	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5024 048A WXBK	760002634	48	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5024 072A WXBK	760002642	72	7.2 (107)	0.50 (12.6)	Zero-Water-Peak SM
5024 096A WXBK	760002659	96	9.3 (139)	0.58 (14.7)	Zero-Water-Peak SM
5024 144A WXBK	760002667	144	14.4 (215)	0.74 (18.8)	Zero-Water-Peak SM
5024 288A WXBK	760002675	288	21.0 (313)	0.86 (21.8)	Zero-Water-Peak SM
<b>Stranded Loose Tube Metallic Cable</b>					
5023 004A WXBK	760002253	4	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5023 006A WXBK	760002261	6	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5023 012A WXBK	760002279	12	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5023 018A WXBK	760002287	18	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5023 024A WXBK	760002295	24	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5023 036A WXBK	760002303	36	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5023 048A WXBK	760002311	48	6.3 (94)	0.46 (11.7)	Zero-Water-Peak SM
5023 072A WXBK	760002329	72	7.2 (107)	0.50 (12.6)	Zero-Water-Peak SM
5023 096A WXBK	760002337	96	9.3 (139)	0.58 (14.7)	Zero-Water-Peak SM
5023 144A WXBK	760002345	144	14.4 (215)	0.74 (18.8)	Zero-Water-Peak SM
5023 288A WXBK	760002352	288	21.0 (313)	0.86 (21.8)	Zero-Water-Peak SM

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## Fiber

## TeraSPEED

## Outdoor

## Dielectric Cable

The **TeraSPEED central tube, non-armored, fiber-optic cable** consists of a core of colored match-clad optical fibers inside a filled polybutylene terephthalate (PBT) central tube. On opposite sides of the core tube are two longitudinal, rigid, dielectric strength members that run along the cable length. Additional flexible strength members are placed radially flanking each rigid strength member. This construction is then covered with a medium density polyethylene (MDPE) outer jacket with polyester ripcords underneath. The product complies with the requirements of Telcordia Generic Requirements for Optical Fiber.

For TeraSPEED SM Specifications refer to page 70.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5022 004A WXBK	760004002	4	6.8 (102)	0.47 (12.4)	Zero-Water-Peak SM
5022 006A WXBK	760004010	6	6.8 (102)	0.47 (12.4)	Zero-Water-Peak SM
5022 008A WXBK	760004028	8	6.8 (102)	0.47 (12.4)	Zero-Water-Peak SM
5022 012A WXBK	760004036	12	6.8 (102)	0.47 (12.4)	Zero-Water-Peak SM
5022 024A WXBK	760004044	24	6.8 (102)	0.47 (12.4)	Zero-Water-Peak SM
5022 036A WXBK	760004051	36	6.8 (102)	0.47 (12.4)	Zero-Water-Peak SM
5022 048A WXBK	760004069	48	6.8 (102)	0.47 (12.4)	Zero-Water-Peak SM
5022 072A WXBK	760004077	72	6.8 (102)	0.47 (12.4)	Zero-Water-Peak SM
5022 096A WXBK	760004085	96	8.7 (129)	0.55 (14.4)	Zero-Water-Peak SM

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## Fiber

## TeraSPEED

## Outdoor

## Metallic Cable

The **TeraSPEED central tube, armored, fiber-optic cable** consists of a core of colored match-clad optical fibers inside a filled, corrugated steel armored, polybutylene terephthalate (PBT) central tube. The cable contains two aramid ripcords under the corrugated steel armor. On opposite sides of the armored core tube are two, rigid, steel strength members that run along the cable length. This construction is then covered with a medium density polyethylene (MDPE) outer jacket with polyester ripcords underneath. The jacket is lightly bonded to the steel armor.

For TeraSPEED SM Specifications refer to page 70.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5021 004A WXBK	760003913	4	10.1 (151)	0.41 (10.3)	Zero-Water-Peak SM
5021 006A WXBK	760003921	6	10.1 (151)	0.41 (10.3)	Zero-Water-Peak SM
5021 008A WXBK	760003939	8	10.1 (151)	0.41 (10.3)	Zero-Water-Peak SM
5021 012A WXBK	760003947	12	10.1 (151)	0.41 (10.3)	Zero-Water-Peak SM
5021 024A WXBK	760003954	24	10.1 (151)	0.41 (10.3)	Zero-Water-Peak SM
5021 036A WXBK	760003962	36	14.0 (209)	0.48 (12.2)	Zero-Water-Peak SM
5021 048A WXBK	760003970	48	14.0 (209)	0.48 (12.2)	Zero-Water-Peak SM
5021 072A WXBK	760003988	72	19.6 (293)	0.58 (14.8)	Zero-Water-Peak SM
5021 096A WXBK	760003996	96	19.6 (293)	0.58 (14.8)	Zero-Water-Peak SM

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## Fiber

## LazrSPEED/OptiSPEED

**Indoor/Outdoor Fiber-Optic Cable** is a totally dry and waterproof central core cable. It does not contain any gel, filling or flooding compound, grease or other flammable water blocking fluids.

The SYSTIMAX **Riser Rated Fiber-Optic Indoor/Outdoor Cable** is a totally dry cable and meets all Bellcore GR-409 requirements.

The **Low Smoke Zero Halogen (LSZH) Fiber-Optic Indoor/ Outdoor Cable** is built to the International ISO/IEC specifications and features a LSZH design. The UV protected **Fiber-Optic Indoor/ Outdoor Cable** is totally halogen free and flame retardant (self-extinguishing).

**Indoor/Outdoor Cables** use aramid yarns for strength in conjunction with a glass reinforced polyemer (GRP) central strength member (CSM). The aramid yarns are specially prepared with an agent that provides the water-proof attribute of the Indoor/ Outdoor cables.

Because of the use of buffered fibers rather than coated fibers, connectorization does not require buffer tubing. The absence of gel, filling compound, flooding compound, grease or other flammable water blocking fluids further guarantee an easy and clean connectorization process.

The color of the cable jacket is black. Each buffered fiber is color-coded — Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, and Aqua.

For OptiSPEED MM specifications refer to page 58.

For OptiSPEED SM specifications refer to page 59.

For LazrSPEED specifications refer to page 51.

## Indoor/Outdoor

## Dry Fiber-Optic Cable



**Figure 44**  
Totally Dry Cable



## Fiber

## LazrSPEED/OptiSPEED

## Indoor/Outdoor

Dry Fiber-Optic Cable  
(cont'd)

## LazrSPEED

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5100-012A-XRBK	760006650	12	3.1 (46)	0.26 (6.6)	LZ 550
5103-024A-XRBK	760007476	24	12.6 (187)	0.63 (16.1)	LZ 550
5103-036A-XRBK	760007484	36	14.9 (222)	0.69 (17.6)	LZ 550
5102-012A-XHBK	760007492	12	3.1 (46)	0.26 (6.6)	LZ 550
5102-024A-XHBK	760007500	24	12.6 (187)	0.63 (16.1)	LZ 550
5105-036A-XHBK	760007518	36	14.9 (222)	0.69 (17.6)	LZ 550
5100-012A-ZRBK	700210982	12	3.1 (46)	0.26 (6.6)	LZ 300
5103-024A-ZRBK	700210990	24	12.6 (187)	0.63 (16.1)	LZ 300
5103-036A-ZRBK	700211006	36	14.9 (222)	0.69 (17.6)	LZ 300
5102-012A-ZHBK	700010119	12	3.1 (46)	0.26 (6.6)	LZ 300
5105-024A-ZHBK	700205560	24	12.6 (187)	0.63 (16.1)	LZ 300
5105-036A-ZHBK	700205578	36	14.9 (222)	0.69 (17.6)	LZ 300
5100-012A-HRBK	700211014	12	3.1 (46)	0.26 (6.6)	LZ 150
5103-024A-HRBK	700211022	24	12.6 (187)	0.63 (16.1)	LZ 150
5103-036A-HRBK	700211030	36	14.9 (222)	0.69 (17.6)	LZ 150
5102-012A-HHBK	760002170	12	3.1 (46)	0.26 (6.6)	LZ 150
5102-024A-HHBK	760002188	24	12.6 (187)	0.63 (16.1)	LZ 150
5105-036A-HHBK	760002196	36	14.9 (222)	0.69 (17.6)	LZ 150

## OptiSPEED

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)	OD in (mm)	Fiber Type
5102-012A-SHBK	700012107	12	3.1 (46)	0.26 (6.6)	OS SM
5105-024A-SHBK	700012115	24	12.6 (187)	0.63 (16.1)	OS SM
5105-036A-SHBK	700012123	36	14.9 (222)	0.69 (17.6)	OS SM
5100-012A-SRBK	700211303	12	3.1 (46)	0.26 (6.6)	OS SM
5103-024A-SRBK	700211311	24	12.6 (187)	0.63 (16.1)	OS SM
5103-036A-SRBK	700211329	36	14.9 (222)	0.69 (17.6)	OS SM
5100-004A-MRBK	760005165	4	1.4 (20)	0.19 (4.8)	OS MM
5100-012A-MRBK	700211279	12	3.1 (46)	0.26 (6.6)	OS MM
5103-024A-MRBK	700211287	24	12.6 (187)	0.63 (16.1)	OS MM
5103-036A-MRBK	700211295	36	14.9 (222)	0.69 (17.6)	OS MM
5102-012A-MHBK	700010390	12	3.1 (46)	0.26 (6.6)	OS MM
5105-024A-MHBK	700008543	24	12.6 (187)	0.63 (16.1)	OS MM
5105-036A-MHBK	700008519	36	14.9 (222)	0.69 (17.6)	OS MM

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## Fiber

## OptiSPEED

## Indoor/Outdoor

Riser Rated Dielectric  
Stranded Loose Tube  
Cable

The **Riser Rated, Dielectric Stranded Loose Tube Cable** consists of individual gel-filled polypropylene (PP) tubes, each containing up to 12 color-coded optical fibers, stranded around a glass reinforced polymer (GRP) central strength member (CSM) and bound with polyester binders. Water-blocking binders are placed between the CSM and the tubes. Water-blocking tape is formed around the stranded core. E-glass or aramid yarn is helically stranded around the core. An aramid ripcord is placed underneath a black polyvinyl chloride (PVC) outer jacket. The buffer tubes are compatible with standard hardware, cable routing and fan-out kits.

The product complies with the requirements of Telcordia Generic Requirements for Optical Fiber and Optical Fiber Cable (GR-20-CORE), Section 6, and Telcordia Generic Requirements for Premises Fiber-Optic Cable (GR-409-CORE), Section 6. The product is listed as (UL) TYPE OFNR. OFNR cables have been found to meet the standard criteria for CSA FT4.

## OptiSPEED

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)		Fiber Type
5124 006A MRBK	700191430	6	9.5	142	0.50	12.8	MM
5124 012A MRBK	700191448	12	9.5	142	0.50	12.8	MM
5124 024A MRBK	700191455	24	9.5	142	0.50	12.8	MM
5124 036A MRBK	700191463	36	9.5	142	0.50	12.8	MM
5124 048A MRBK	700191471	48	9.5	142	0.50	12.8	MM
5124 072A MRBK	700191489	72	10.8	161	0.54	13.6	MM
5124 096A MRBK	700191497	96	14.2	212	0.62	15.7	MM
5124 144A MRBK	700191505	144	22.8	340	0.78	19.8	MM

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)		Fiber Type
5124 006A SRBK	700191349	6	9.5	142	0.50	12.8	SM
5124 012A SRBK	700191356	12	9.5	142	0.50	12.8	SM
5124 024A SRBK	700191364	24	9.5	142	0.50	12.8	SM
5124 036A SRBK	700191372	36	9.5	142	0.50	12.8	SM
5124 048A SRBK	700191380	48	9.5	142	0.50	12.8	SM
5124 072A SRBK	700191398	72	10.8	161	0.54	13.6	SM
5124 096A SRBK	700191406	96	14.2	212	0.62	15.7	SM
5124 144A SRBK	700191414	144	22.8	340	0.78	19.8	SM

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## Fiber

## OptiSPEED

## Indoor/Outdoor

**Multimode Low  
Smoke Zero Halogen  
Fiber-Optic Cable**

**Indoor/Outdoor Low Smoke Zero Halogen (LSZH) Fiber-Optic Cable** provides excellent flame retardance and eliminates the need for splicing between indoor and outdoor cables. It offers easier cable handling, core access and installation. This cable has a loose buffer tube as the core.

Product	Material ID	Fiber Count	Weight lbs (kg)		OD in (mm)	Fiber Type
AT-RU91206-004	999900001	04	293	(133)	0.45 (11.5)	MM
AT-RU91206-006	999900002	06	293	(133)	0.45 (11.5)	MM
AT-RU91206-008	999900003	08	293	(133)	0.45 (11.5)	MM
AT-RU91206-012	999900004	12	293	(133)	0.45 (11.5)	MM
AT-RU91206-016	999900005	16	293	(133)	0.45 (11.5)	MM
AT-RU91206-018	999900006	18	293	(133)	0.45 (11.5)	MM
AT-RU91206-024	999900007	24	293	(133)	0.45 (11.5)	MM
AT-RU91206-030	999900008	30	293	(133)	0.45 (11.5)	MM
AT-RU91206-036	999900009	36	333	(151)	0.48 (12.3)	MM
AT-RU91206-048	999900010	48	410.1	(186)	0.54 (13.8)	MM
AT-RU91206-060	999900011	60	410.1	(186)	0.54 (13.8)	MM
AT-RU91206-072	999900012	72	410.1	(186)	0.54 (13.8)	MM

## Fiber

## TeraSPEED

## Indoor/Outdoor

**Singlemode Tight  
Buffered Riser Cable**

The TeraSPEED indoor/outdoor, riser-rated, match clad fiber-optic distribution cables consist of optical fibers tight buffered with Fire Retardant Polyethylene (FRPE), a glass reinforced polymer (GRP) central strength member (CSM), aramid yarn flexible strength elements, and a FRPE outer jacket. Additionally, the design incorporates a water blocking system to prevent water penetration in the outdoor environment. The water blocking system may include one or more of the following components: water blocking aramid yarn, water blocking threads along the CSM, and water blocking powder applied over the aramid yarn.

The product complies with the requirements of the National Electrical Code, Article 770-51; ANSI/TIA/EIA 568-B.3, "Optical Fiber Cabling Components Standard"; and Telcordia Generic Requirements for Premises Fiber-Optic Cable (GR-409-CORE), Section 6. The product shall be listed as (UL) TYPE OFNR OFN-LS [CSA OFN FT4] and be IEC60332-3C, IEC61034-2 compliant.

For TeraSPEED SM Specifications refer to page 70.

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## Fiber

## TeraSPEED

## Indoor/Outdoor

Singlemode Tight  
Buffered Riser Cable  
*cont'd*

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)		Fiber Type
5100 012A WRBK	760004184	12	3.1	46	0.26	6.6	Zero-Water-Peak SM
5103 024A WRBK	760004192	24	12.6	187	0.63	16.1	Zero-Water-Peak SM
5103 036A WRBK	760004200	36	14.9	222	0.69	17.6	Zero-Water-Peak SM

## Fiber

## TeraSPEED

## Indoor/Outdoor

Singlemode Tight Buffered  
Low Smoke Zero Halogen  
Cable

The TeraSPEED **Indoor/Outdoor LowSmoke Zero Halogen (LSZH), Match-Clad, Riser-Rated, Fiber-Optic Distribution Cable**, consists of optical fibers tight buffered with a LSZH polyethylene, a glass reinforced polymer (GRP) central strength member (CSM), aramid yarn flexible strength elements, and a LSZH polyethylene outer jacket. Additionally, the design incorporates a water blocking system to prevent water penetration in the outdoor environment. The water blocking system may include one or more of the following components: water blocking aramid yarn, water blocking threads along the central strength member, and water blocking powder applied over the aramid yarn.

The product complies with the requirements of the National Electrical Code, Article 770-51; ANSI/TIA/EIA 568-B.3, "Optical Fiber Cabling Components Standard"; and Telcordia Generic Requirements for Premises Fiber-Optic Cable (GR-409-CORE), Section 6. The product shall be listed as (UL) TYPE OFNR OFN-LS [CSA OFN FT4] and be IEC60332-3C, IEC61034-2 compliant.

For TeraSPEED SM Specifications refer to page 70.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)		Fiber Type
5102 012A WHBK	760004218	12	3.1	46	0.26	6.6	Zero-Water-Peak SM
5105 024A WHBK	760004226	24	12.6	187	0.63	16.1	Zero-Water-Peak SM
5105 036A WHBK	760004234	36	14.9	222	0.69	17.6	Zero-Water-Peak SM

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## Fiber

## TeraSPEED

## Indoor/Outdoor

Singlemode Stranded  
Loose Tube Dielectric  
Riser Cable

The **TeraSPEED Indoor/Outdoor, Singlemode Match-Clad Stranded Loose Tube Fiber-Optic Cable**, consists of individual gel-filled polypropylene (PP) tubes, each containing up to 12 color-coded optical fibers, stranded around a glass reinforced polymer (GRP) central strength member (CSM) and bound with polyester binders. Water-blocking binders are placed between the CSM and the tubes. Water-blocking tape is formed around the stranded core. E-glass or aramid yarn is helically stranded around the core. An aramid ripcord is placed underneath a black polyvinyl chloride (PVC) outer jacket.

The product complies with the requirements of Telcordia Generic Requirements for Optical Fiber and Optical Fiber Cable (GR-20-CORE), Section 6, and Telcordia Generic Requirements for Premises Fiber-Optic Cable (GR-409-CORE), Section 6. The product is listed as (UL) TYPE OFNR. OFNR cables have been found to meet the standard criteria for CSA FT4.

For TeraSPEED SM Specifications refer to page 70.

Product	Material ID	Fiber Count	Weight lbs/100ft (kg/km)		OD in (mm)		Fiber Type
5124 006A WRBK	760004093	6	9.5	142	0.50	12.8	Zero-Water-Peak SM
5124 012A WRBK	760004101	12	9.5	142	0.50	12.8	Zero-Water-Peak SM
5124 024A WRBK	760004119	24	9.5	142	0.50	12.8	Zero-Water-Peak SM
5124 036A WRBK	760004127	36	9.5	142	0.50	12.8	Zero-Water-Peak SM
5124 048A WRBK	760004135	48	9.5	142	0.50	12.8	Zero-Water-Peak SM
5124 072A WRBK	760004143	72	10.8	161	0.54	13.6	Zero-Water-Peak SM
5124 096A WRBK	760004150	96	14.2	212	0.62	15.7	Zero-Water-Peak SM
5124 144A WRBK	760004168	144	22.8	340	0.78	19.8	Zero-Water-Peak SM
5124 288A WRBK	760004176	288	31.3	467	0.92	23.4	Zero-Water-Peak SM

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# Fiber

## OptiSPEED and TeraSPEED Cordage

### Cordage

**3.0 mm and 1.6 mm Simplex and Zipcord Cordage**

### Physical Specifications

<b>Minimum Bend Radius:</b>	<b>Loaded</b>	<b>Unloaded</b>
1.6 mm	2.0 in (5.1 cm)	1.4 in (3.5 cm)
3.0 mm	2.3 in (5.8 cm)	1.4 in (3.5 cm)
<b>Cordage Min. Bend Radius after Installation:</b>	<b>Simplex</b>	3.18 cm (1.25 in)
<b>Cordage Min. Bend Radius during Installation:</b>	<b>Simplex</b>	6.35 cm (2.5 in)
<b>Tension Rating:</b>	<b>Simplex</b>	444 N
<b>Operating Temperature:</b>	<b>Specification</b>	<b>Test Method</b>
	-20 to 70 °C	FOTP - 3
<b>Installation Temperature:</b>	<b>Specification</b>	<b>Test Method</b>
	0 to 70 °C	N/A
<b>Storage Temperature:</b>	<b>Specification</b>	<b>Test Method</b>
	-40 to 70 °C	N/A

Product	Material ID	Cordage Type	Description
<b>Multimode 62.5um - Riser Cordage</b>			
5400 001A MROR	700009905	OptiSPEED	3.0 mm Simplex
5400 001A MRSL	700216187	OptiSPEED	3.0 mm Simplex
5400 002A MROR	760006379	OptiSPEED	3.0 mm Zipcord
5400 002A MRSL	760002048	OptiSPEED	3.0 mm Zipcord
5410 001A MROR	700009996	OptiSPEED	1.6 mm Simplex
5410 001A MRSL	700216294	OptiSPEED	1.6 mm Simplex
5410 002A MROR	700009954	OptiSPEED	1.6 mm Zipcord
5410 002A MRSL	700216302	OptiSPEED	1.6 mm Zipcord
<b>Multimode 62.5um - Plenum Cordage</b>			
5401 001A MPOR	700009913	OptiSPEED	3.0 mm Simplex
5401 001A MPSL	760002220	OptiSPEED	3.0 mm Simplex
5401 002A MPSL	760002055	OptiSPEED	3.0 mm Zipcord
<b>Multimode 62.5um - SBJ - Riser Cordage</b>			
5403 001A MRSL	700210842	OptiSPEED	0.9 mm SBJ
<b>Multimode 62.5um - LSZH (EMEA ONLY PRODUCT)</b>			
5402 001A MHOR	700010036	OptiSPEED	3.0 mm Simplex
5402 002A MHOR	760002063	OptiSPEED	3.0 mm Zipcord
<b>Singlemode 8.3um - Riser Cordage</b>			
5400 001A SRYL	700002538	OptiSPEED	3.0 mm Simplex
5400 002A SRYL	760002147	OptiSPEED	3.0 mm Zipcord
5410 001A SRYL	700004732	OptiSPEED	1.6 mm Simplex
5410 002A SRYL	700004740	OptiSPEED	1.6 mm Zipcord
5400 001A WRYL	760004499	TeraSPEED	3.0 mm Simplex

## Fiber

OptiSPEED and  
TeraSPEED Cordage

## Cordage

**3.0 mm and 1.6 mm  
Simplex and Zipcord  
Cordage (cont'd)**

Product	Material ID	Cordage Type	Description
<b>Singlemode 8.3 um - Riser Cordage (cont'd)</b>			
5400 002A WRYL	760004507	TeraSPEED	3.0 mm Zipcord
5410 001A WRYL	760004515	TeraSPEED	1.6 mm Simplex
5410 002A WRYL	760004523	TeraSPEED	1.6 mm Zipcord
<b>Singlemode 8.3 um - Plenum Cordage</b>			
5401 001A WPYL	760004531	TeraSPEED	3.0 mm Simplex
5401 002A WPYL	760004549	TeraSPEED	3.0 mm Zipcord
5400 001A SPYL	700003973	OptiSPEED	3.0 mm Simplex
5400 002A SPYL	760002139	OptiSPEED	3.0 mm Zipcord
<b>Singlemode 8.3 um - SBJ - Riser Cordage</b>			
5403 001A SRYL	700227424	OptiSPEED	0.9 mm SBJ
5403 001A WRYL	760004556	TeraSPEED	0.9 mm SBJ
<b>Singlemode 8.3 um - LSZH (EMEA ONLY PRODUCT)</b>			
5402 002A SHYL	760002154	OptiSPEED	3.0 mm Zipcord
5402 002A WHYL	760004564	TeraSPEED	3.0 mm Simplex

# Fiber

## Fiber-Optic Description Trees

### Description Trees

#### Fiber-Optic Cable

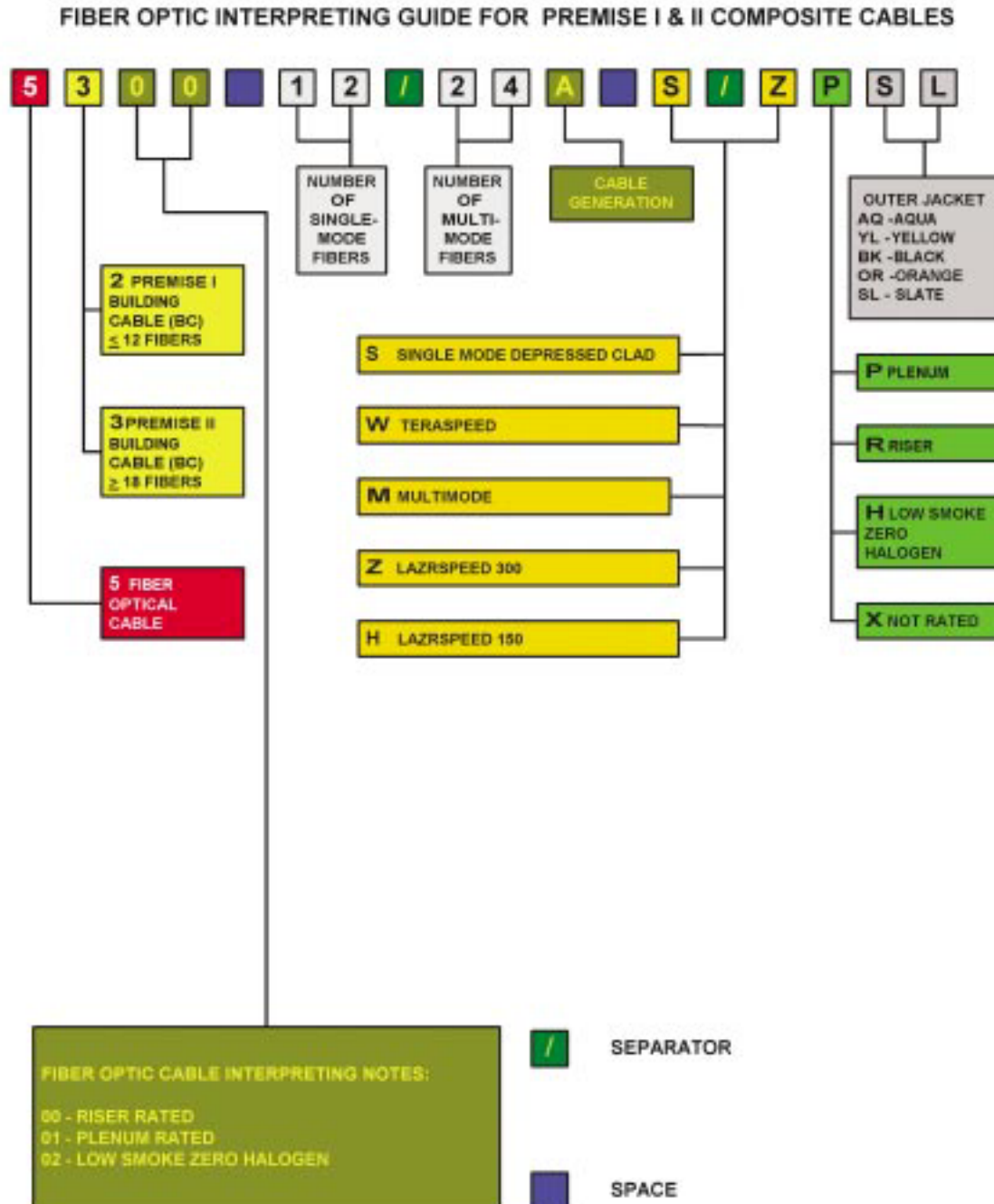


Figure 45  
Marketing Premise I and  
II Composite Cables

# Fiber

## Fiber-Optic Description Trees

### Description Trees

#### Fiber-Optic Cable

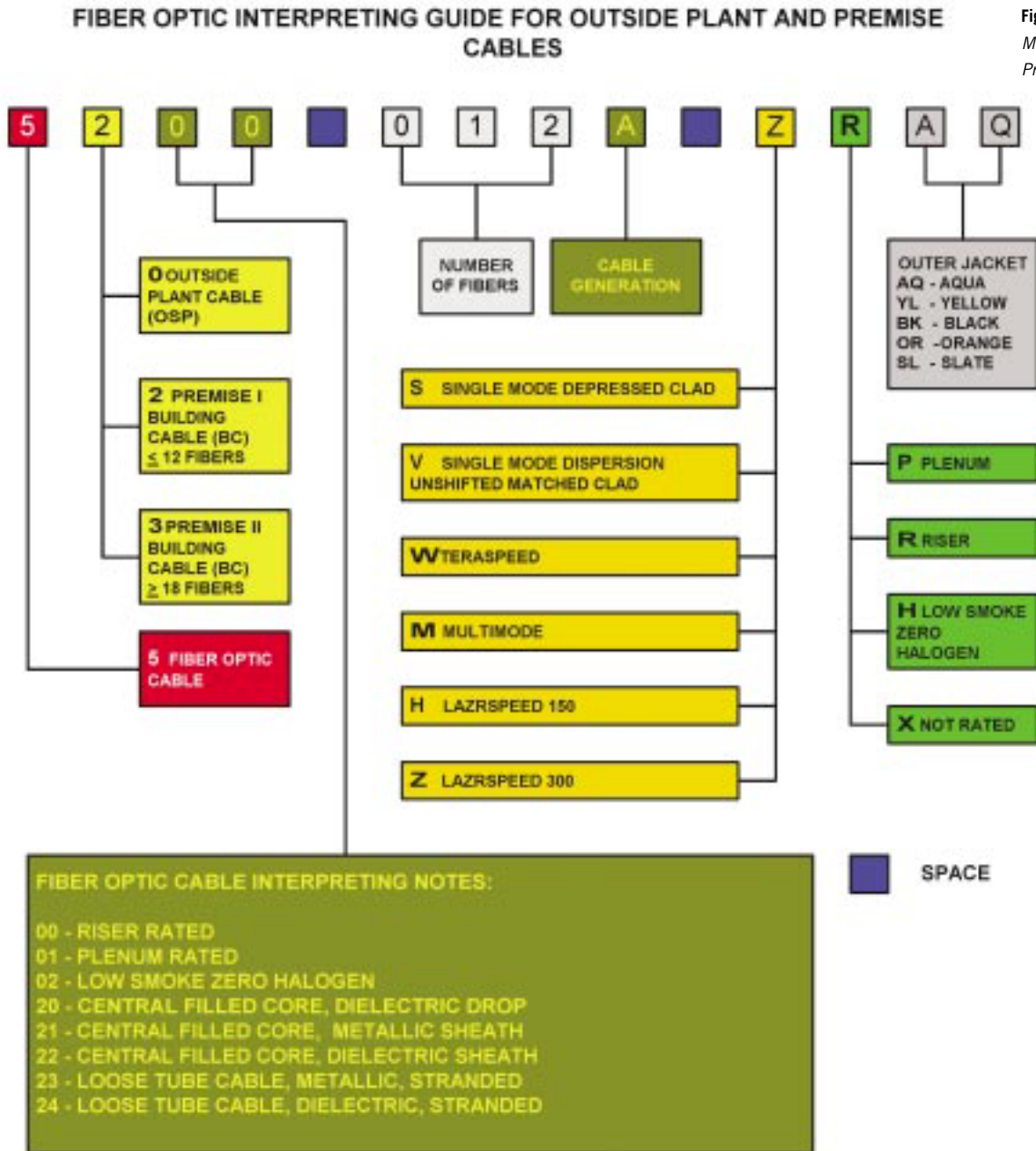


Figure 46  
Marketing OSP and  
Premise Cables



# Fiber

## Fiber-Optic Description Trees

## Description Trees

### Fiber-Optic Cable

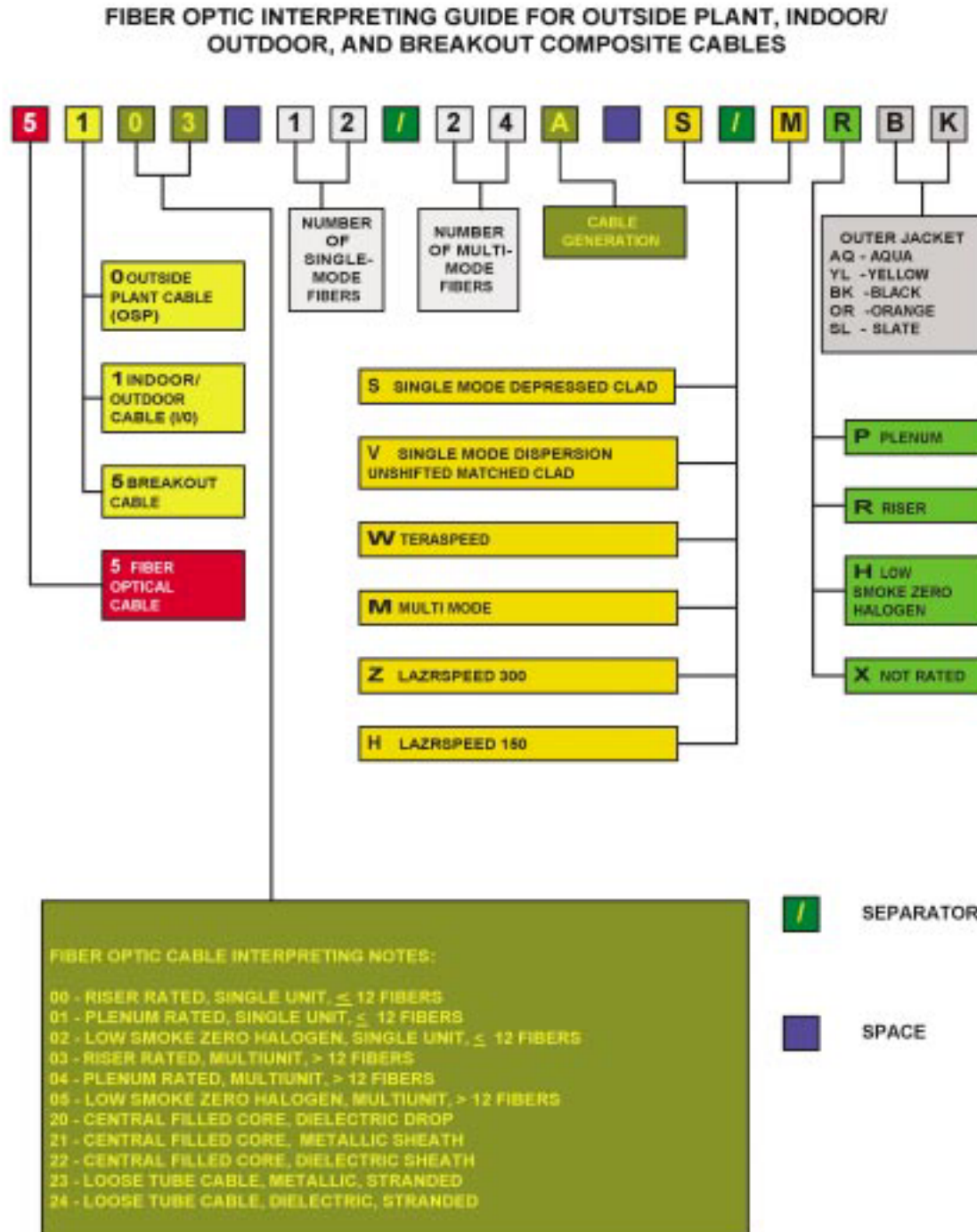


Figure 47  
Marketing OSPI-O and  
B-O Composite Cables

## Fiber

Fiber-Optic  
Description Trees

## Description Trees

## Fiber-Optic Cable

## FIBER OPTIC INTERPRETING GUIDE FOR INDOOR/OUTDOOR AND BREAKOUT CABLES

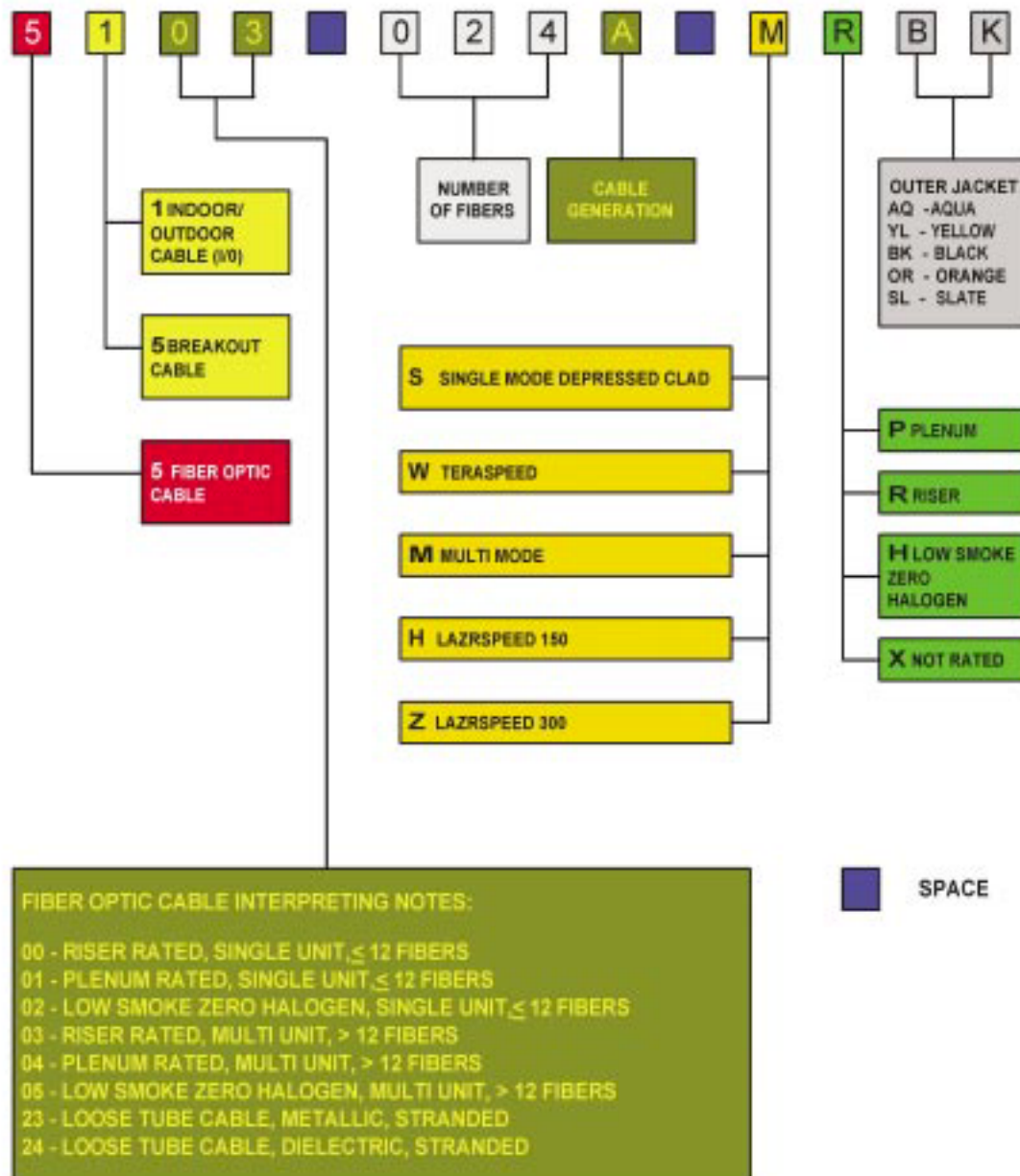


Figure 48

Marketing Indoor-Outdoor  
and Breakout Cables

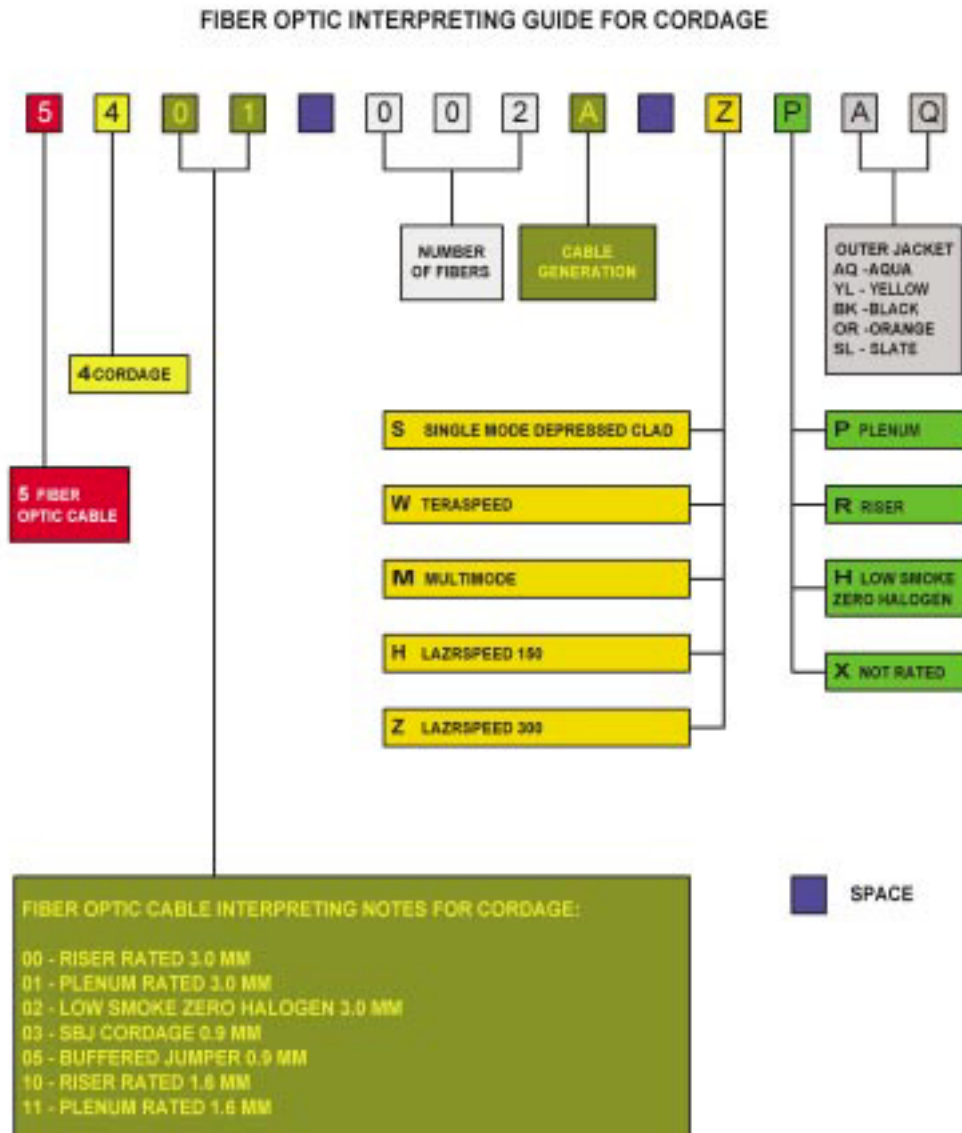
# Fiber

## Fiber-Optic Description Trees

## Description Trees

### Fiber-Optic Cable

Figure 49  
Marketing Cordage





# Cords

Chapter

2

CORDS

# Cords

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### Copper

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#### OptiSPEED®

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## Copper

## GS8E XL Modular Patch Cord

The **GS8E XL Modular Patch Cord** family represents the latest in a long line of innovative patch cord designs from SYSTIMAX® Labs. This family of high bandwidth cords was specially designed to support the high performance system level requirements built into the new GigaSPEED XL cabling solutions. A wide variety of cord types, lengths, colors, and configurations are available through our new feature configuration ordering process. This gives the customer the ultimate in flexibility to meet any cabling infrastructure design. This cord is a SYSTIMAX certified required component.

## Features

- Unmatched electrical performance exceeds TIA/EIA and ISO/IEC Category 6 specifications and is fully backward compatible with Category 5e, and Category 5 connectors.
- Patented plug design, improved 24 gauge cordage and a unique manufacturing process assures excellent electrical performance and low variability.
- Improved anti-snap feature provides maximum protection from snagging during moves and re-arrangements.
- Available in 10 colors, stranded or solid conductor, and all lengths from 1 to 30 meters (1 to 100 feet) utilizing our new feature configurator ordering process which improves delivery and provides the customer with maximum flexibility in customizing cords to their specific needs.
- UL listed, UL-C certified and AUSTEL approved.
- Supports network line speeds in excess of 1 gigabit per second.
- Certified component of an integrated GigaSPEED XL Solution.
- Qualifies for the 20-Year Extended Product Warranty and Applications Assurance when installed in a registered SYSTIMAX SCS installation.

## GigaSPEED® XL

## 4-pair GigaSPEED XL Modular Patch Cords



**Figure 50**  
GS8E Modular Patch Cords

Product	Material ID	Length	Packaging	Color
GS8E-6L	CPC3312-03F0.5	0.15 m (6 in)	ea	Gray
GS8E-1ft	CPC3312-03F001	0.30 m (1 ft)	ea	Gray
GS8E-2ft	CPC3312-03F002	0.60 m (2 ft)	ea	Gray
GS8E-3ft	CPC3312-03F003	0.91 m (3 ft)	ea	Gray
GS8E-4ft	CPC3312-03F004	1.2 m (4 ft)	ea	Gray
GS8E-5ft	CPC3312-03F005	1.5 m (5 ft)	ea	Gray
GS8E-6ft	CPC3312-03F006	1.8 m (6 ft)	ea	Gray
GS8E-7ft	CPC3312-03F007	2.1 m (7 ft)	ea	Gray

## Copper

GS8E XL Modular  
Patch Cord

## GigaSPEED XL

4-pair GigaSPEED XL  
Modular Patch Cords (*cont'd*)

Product	Material ID	Length	Packaging	Color
GS8E-8ft	CPC3312-03F008	2.4 m (8 ft)	ea	Gray
GS8E-9ft	CPC3312-03F009	2.7 m (9 ft)	ea	Gray
GS8E-10ft	CPC3312-03F010	3 m (10 ft)	ea	Gray
GS8E-14ft	CPC3312-03F014	4.3 m (14 ft)	ea	Gray
GS8E-15ft	CPC3312-03F015	4.6 m (15 ft)	ea	Gray
GS8E-19ft	CPC3312-03F019	5.8 m (19 ft)	ea	Gray
GS8E-25ft	CPC3312-03F025	7.6 m (25 ft)	ea	Gray
GS8E-50ft	CPC3312-03F050	15.2 m (50 ft)	ea	Gray
GS8E-100ft	CPC3312-03F100	30.5 m (100 ft)	ea	Gray
GS8E-6M	CPC3312-03M006	6 m (19.7 ft)	ea	Gray
GS8E-30M	CPC3312-03M030	30 m (98 ft)	ea	Gray
GS8E-BL-1ft	CPC3312-02F001	0.3 m (1 ft)	ea	Blue
GS8E-BL-2ft	CPC3312-02F002	0.6 m (2 ft)	ea	Blue
GS8E-BL-3ft	CPC3312-02F003	0.91 m (3 ft)	ea	Blue
GS8E-BL-4ft	CPC3312-02F004	1.2 m (4 ft)	ea	Blue
GS8E-BL-5ft	CPC3312-02F005	1.5 m (5 ft)	ea	Blue
GS8E-BL-6ft	CPC3312-02F006	1.8 m (6 ft)	ea	Blue
GS8E-BL-7ft	CPC3312-02F007	2.1 m (7 ft)	ea	Blue
GS8E-BL-8ft	CPC3312-02F008	2.4 m (8 ft)	ea	Blue
GS8E-BL-9ft	CPC3312-02F009	2.7 m (9 ft)	ea	Blue
GS8E-BL-10ft	CPC3312-02F010	3 m (10 ft)	ea	Blue
GS8E-BL-14ft	CPC3312-02F014	4.3 m (14 ft)	ea	Blue
GS8E-BL-19ft	CPC3312-02F019	5.8 m (19 ft)	ea	Blue
GS8E-BL-25ft	CPC3312-02F025	7.6 m (25 ft)	ea	Blue
GS8E-BL-50ft	CPC3312-02F050	15.2 m (50 ft)	ea	Blue
GS8E-IV-2ft	CPC3312-05F002	0.6 m (2 ft)	ea	Ivory
GS8E-IV-3ft	CPC3312-05F003	0.91 m (3 ft)	ea	Ivory
GS8E-IV-4ft	CPC3312-05F004	1.2 m (4 ft)	ea	Ivory
GS8E-IV-5ft	CPC3312-05F005	1.5 m (5 ft)	ea	Ivory
GS8E-IV-6ft	CPC3312-05F006	1.8 m (6 ft)	ea	Ivory
GS8E-IV-7ft	CPC3312-05F007	2.1 m (7 ft)	ea	Ivory
GS8E-IV-9ft	CPC3312-05F009	2.7 m (9 ft)	ea	Ivory
GS8E-IV-10ft	CPC3312-05F010	3 m (10 ft)	ea	Ivory
GS8E-IV-14ft	CPC3312-05F014	4.3 m (14 ft)	ea	Ivory
GS8E-IV-19ft	CPC3312-05F019	5.8 m (19 ft)	ea	Ivory
GS8E-IV-25ft	CPC3312-05F025	7.6 m (25 ft)	ea	Ivory
GS8E-IV-50ft	CPC3312-05F050	15.2 m (50 ft)	ea	Ivory



## Copper

GS8E XL Modular  
Patch Cord

## GigaSPEED XL

4-pair GigaSPEED XL  
Modular Patch Cords (*cont'd*)

Product	Material ID	Length	Packaging	Color
GS8E-OR-2ft	CPC3312-06F002	0.6 m (2 ft)	ea	Orange
GS8E-OR-3ft	CPC3312-06F003	0.91 m (3 ft)	ea	Orange
GS8E-OR-4ft	CPC3312-06F004	1.2 m (4 ft)	ea	Orange
GS8E-OR-5ft	CPC3312-06F005	1.5 m (5 ft)	ea	Orange
GS8E-OR-6ft	CPC3312-06F006	1.8 m (6 ft)	ea	Orange
GS8E-OR-7ft	CPC3312-06F007	2.1 m (7 ft)	ea	Orange
GS8E-OR-8ft	CPC3312-06F008	2.4 m (8 ft)	ea	Orange
GS8E-OR-9ft	CPC3312-06F009	2.7 m (9 ft)	ea	Orange
GS8E-OR-10ft	CPC3312-06F010	3 m (10 ft)	ea	Orange
GS8E-OR-14ft	CPC3312-06F014	4.3 m (14 ft)	ea	Orange
GS8E-OR-15ft	CPC3312-06F015	4.6 m (15 ft)	ea	Orange
GS8E-OR-19ft	CPC3312-06F019	5.8 m (19 ft)	ea	Orange
GS8E-OR-25ft	CPC3312-06F025	7.6 m (25 ft)	ea	Orange
GS8E-RD-1ft	CPC3312-07F001	0.3 m (1 ft)	ea	Red
GS8E-RD-2ft	CPC3312-07F002	0.6 m (2 ft)	ea	Red
GS8E-RD-3ft	CPC3312-07F003	0.91 m (3 ft)	ea	Red
GS8E-RD-4ft	CPC3312-07F004	1.2 m (4 ft)	ea	Red
GS8E-RD-5ft	CPC3312-07F005	1.5 m (5 ft)	ea	Red
GS8E-RD-6ft	CPC3312-07F006	1.8 m (6 ft)	ea	Red
GS8E-RD-7ft	CPC3312-07F007	2.1 m (7 ft)	ea	Red
GS8E-RD-9ft	CPC3312-07F009	2.7 m (9 ft)	ea	Red
GS8E-RD-10ft	CPC3312-07F010	3 m (10 ft)	ea	Red
GS8E-RD-14ft	CPC3312-07F014	4.3 m (14 ft)	ea	Red
GS8E-RD-15ft	CPC3312-07F015	4.6 m (15 ft)	ea	Red
GS8E-RD-19ft	CPC3312-07F019	5.8 m (19 ft)	ea	Red
GS8E-RD-25ft	CPC3312-07F025	7.6 m (25 ft)	ea	Red
GS8E-RD-50ft	CPC3312-07F050	15.2 m (50 ft)	ea	Red
GS8E-GR-1ft	CPC3312-04F001	0.3 m (1 ft)	ea	Green
GS8E-GR-2ft	CPC3312-04F002	0.6 m (2 ft)	ea	Green
GS8E-GR-3ft	CPC3312-04F003	0.91 m (3 ft)	ea	Green
GS8E-GR-4ft	CPC3312-04F004	1.2 m (4 ft)	ea	Green
GS8E-GR-5ft	CPC3312-04F005	1.5 m (5 ft)	ea	Green
GS8E-GR-6ft	CPC3312-04F006	1.8 m (6 ft)	ea	Green
GS8E-GR-7ft	CPC3312-04F007	2.1 m (7 ft)	ea	Green
GS8E-GR-8ft	CPC3312-04F008	2.4 m (8 ft)	ea	Green
GS8E-GR-9ft	CPC3312-04F009	2.7 m (9 ft)	ea	Green
GS8E-GR-10ft	CPC3312-04F010	3 m (10 ft)	ea	Green
GS8E-GR-14ft	CPC3312-04F014	4.3 m (14 ft)	ea	Green
GS8E-GR-15ft	CPC3312-04F015	4.6 m (15 ft)	ea	Green
GS8E-GR-19ft	CPC3312-04F019	5.8 m (19 ft)	ea	Green
GS8E-GR-25ft	CPC3312-04F025	7.6 m (25 ft)	ea	Green
GS8E-GR-30ft	CPC3312-04F030	9.1 m (30 ft)	ea	Green
GS8E-GR-50ft	CPC3312-04F050	15.2 m (50 ft)	ea	Green

## Copper

GS8E XL Modular  
Patch Cord

## GigaSPEED XL

4-pair GigaSPEED XL  
Modular Patch Cords (*cont'd*)

Product	Material ID	Length	Packaging	Color
GS8E-SA-1ft	CPC3312-0AF001	0.3 m (1 ft)	ea	Sable
GS8E-SA-2ft	CPC3312-0AF002	0.6 m (2 ft)	ea	Sable
GS8E-SA-3ft	CPC3312-0AF003	0.91 m (4 ft)	ea	Sable
GS8E-SA-4ft	CPC3312-0AF004	1.2 m (4 ft)	ea	Sable
GS8E-SA-5ft	CPC3312-0AF005	1.5 m (5 ft)	ea	Sable
GS8E-SA-7ft	CPC3312-0AF007	2.1 m (7 ft)	ea	Sable
GS8E-SA-8ft	CPC3312-0AF008	2.4 m (8 ft)	ea	Sable
GS8E-SA-9ft	CPC3312-0AF009	2.7 m (9 ft)	ea	Sable
GS8E-SA-10ft	CPC3312-0AF010	3 m (10 ft)	ea	Sable
GS8E-SA-14ft	CPC3312-0AF014	4.3 m (14 ft)	ea	Sable
GS8E-SA-15ft	CPC3312-0AF015	4.6 m (15 ft)	ea	Sable
GS8E-SA-25ft	CPC3312-0AF025	7.6 m (25 ft)	ea	Sable
GS8E-SA-50ft	CPC3312-0AF050	15.2 m (50 ft)	ea	Sable
GS8E-LL-1ft	CPC3312-0BF001	0.3 m (1 ft)	ea	Lilac
GS8E-LL-2ft	CPC3312-0BF002	0.6 m (2 ft)	ea	Lilac
GS8E-LL-3ft	CPC3312-0BF003	0.91 m (3 ft)	ea	Lilac
GS8E-LL-4ft	CPC3312-0BF004	1.2 m (4 ft)	ea	Lilac
GS8E-LL-5ft	CPC3312-0BF005	1.5 m (5 ft)	ea	Lilac
GS8E-LL-6ft	CPC3312-0BF006	1.8 m (6 ft)	ea	Lilac
GS8E-LL-7ft	CPC3312-0BF007	2.1 m (7 ft)	ea	Lilac
GS8E-LL-8ft	CPC3312-0BF008	2.4 m (8 ft)	ea	Lilac
GS8E-LL-9ft	CPC3312-0BF009	2.7 m (9 ft)	ea	Lilac
GS8E-LL-10ft	CPC3312-0BF010	3 m (10 ft)	ea	Lilac
GS8E-LL-14ft	CPC3312-0BF014	4.3 m (14 ft)	ea	Lilac
GS8E-LL-15ft	CPC3312-0BF015	4.6 m (15 ft)	ea	Lilac
GS8E-LL-19ft	CPC3312-0BF019	5.8 m (19 ft)	ea	Lilac
GS8E-LL-25ft	CPC3312-0BF025	7.6 m (25 ft)	ea	Lilac
GS8E-YW-1ft	CPC3312-09F001	0.3 m (1 ft)	ea	Yellow
GS8E-YW-2ft	CPC3312-09F002	0.6 m (2 ft)	ea	Yellow
GS8E-YW-3ft	CPC3312-09F003	0.91 m (3 ft)	ea	Yellow
GS8E-YW-4ft	CPC3312-09F004	1.2 m (4 ft)	ea	Yellow
GS8E-YW-5ft	CPC3312-09F005	1.5 m (5 ft)	ea	Yellow
GS8E-YW-6ft	CPC3312-09F006	1.8 m (6 ft)	ea	Yellow
GS8E-YW-7ft	CPC3312-09F007	2.1 m (7 ft)	ea	Yellow
GS8E-YW-8ft	CPC3312-09F008	2.4 m (8 ft)	ea	Yellow
GS8E-YW-9ft	CPC3312-09F009	2.7 m (9 ft)	ea	Yellow
GS8E-YW-10ft	CPC3312-09F010	3 m (10 ft)	ea	Yellow
GS8E-YW-14ft	CPC3312-09F014	4.3 m (14 ft)	ea	Yellow
GS8E-YW-15ft	CPC3312-09F015	4.6 m (15 ft)	ea	Yellow
GS8E-YW-19ft	CPC3312-09F019	5.8 m (19 ft)	ea	Yellow
GS8E-YW-25ft	CPC3312-09F025	7.6 m (25 ft)	ea	Yellow
GS8E-YW-50ft	CPC3312-09F050	15.2 m (50 ft)	ea	Yellow

## Copper

GS8E XL Modular  
Patch Cord

## GigaSPEED XL

4-pair GigaSPEED XL  
Modular Patch Cords (*cont'd*)

Product	Material ID	Length	Packaging	Color
GS8E-BK-1ft	CPC3312-01F001	0.3 m (1 ft)	ea	Black
GS8E-BK-2ft	CPC3312-01F002	0.6 m (2 ft)	ea	Black
GS8E-BK-3ft	CPC3312-01F003	0.91 m (3 ft)	ea	Black
GS8E-BK-4ft	CPC3312-01F004	1.2 m (4 ft)	ea	Black
GS8E-BK-5ft	CPC3312-01F005	1.5 m (5 ft)	ea	Black
GS8E-BK-6ft	CPC3312-01F006	1.8 m (6 ft)	ea	Black
GS8E-BK-7ft	CPC3312-01F007	2.1 m (7 ft)	ea	Black
GS8E-BK-8ft	CPC3312-01F008	2.4 m (8 ft)	ea	Black
GS8E-BK-9ft	CPC3312-01F009	2.7 m (9 ft)	ea	Black
GS8E-BK-10ft	CPC3312-01F010	3 m (10 ft)	ea	Black
GS8E-BK-14ft	CPC3312-01F014	4.3 m (14 ft)	ea	Black
GS8E-BK-15ft	CPC3312-01F015	4.6 m (15 ft)	ea	Black
GS8E-BK-19ft	CPC3312-01F019	5.8 m (19 ft)	ea	Black
GS8E-BK-25ft	CPC3312-01F025	7.6 m (25 ft)	ea	Black
GS8E-WH-1ft	CPC3312-08F001	0.3 m (1 ft)	ea	White
GS8E-WH-2ft	CPC3312-08F002	0.6 m (2 ft)	ea	White
GS8E-WH-3ft	CPC3312-08F003	0.91 m (3 ft)	ea	White
GS8E-WH-4ft	CPC3312-08F004	1.2 m (4 ft)	ea	White
GS8E-WH-5ft	CPC3312-08F005	1.5 m (5 ft)	ea	White
GS8E-WH-6ft	CPC3312-08F006	1.8 m (6 ft)	ea	White
GS8E-WH-7ft	CPC3312-08F007	2.1 m (7 ft)	ea	White
GS8E-WH-8ft	CPC3312-08F008	2.4 m (8 ft)	ea	White
GS8E-WH-9ft	CPC3312-08F009	2.7 m (9 ft)	ea	White
GS8E-WH-10ft	CPC3312-08F010	3 m (10 ft)	ea	White
GS8E-WH-14ft	CPC3312-08F014	4.3 m (14 ft)	ea	White
GS8E-WH-15ft	CPC3312-08F015	4.6 m (15 ft)	ea	White
GS8E-WH-19ft	CPC3312-08F019	5.8 m (19 ft)	ea	White
GS8E-WH-25ft	CPC3312-08F025	7.6 m (25 ft)	ea	White

## Copper

## GS117 Hybrid Cord

## GigaSPEED XL

## 110 - Unterminated

The **GS117** is a single-ended GS8E plug to unterminated over stranded 1074E cordage. This equipment cord will support the high performance system level requirements built into the new GigaSPEED XL cabling solution.

This cord has a high performance with low variability. It supports both PowerSUM and GigaSPEED XL Solutions and is backward compatible with existing Category 5, Category 5e and Category 6 systems.

Product	Material ID	Length	Packaging	Color
GS117-GR-15	CPC3412-03F015	4.6 m (15 ft)	ea	Slate Gray
GS117-GR-30	CPC3412-03F030	9.1 m (30 ft)	ea	Slate Gray

## Copper

## GS8H LSZH Patch Cord

The **GS8H Low Smoke Zero Halogen (LSZH)** is a stranded GigaSPEED XL cord. It utilizes 3074 LSZH stranded cordage connected with the GS8E 8-pin connector plug.

The **GS8H** patch cords support GigaSPEED XL Solutions designed to assure high performance in high-speed data applications. The cord meets the stringent Category 6 standards and the cordage is IEC tested for low smoke and non-halogen emission meeting the following requirements:

- IEC 745 part 2, Zero Halogen based on pH and Conductivity measurements.
- IEC 1034 part 2, Smoke Emission.
- IEC 60332 part 1, Flammability and Fire Retardant.
- NES 713, Toxicity Index.

## Features

- Unmatched electrical performance exceeds TIA/EIA and ISO/IEC Category 6 specifications and is fully backward compatible with Category 5e, and Category 5 connectors.
- Patented plug design, improved 24 gauge cordage and a unique manufacturing process assures excellent electrical performance and low variability.
- Improved anti-snap feature provides maximum protection from snagging during moves and re-arrangements - Supports network line speeds in excess of 1 gigabit per second.
- Certified component of an integrated GigaSPEED XL Solution.
- Qualifies for the 20-Year Extended Product Warranty and Applications Assurance when installed in a registered SYSTIMAX SCS installation.

NON-US PRODUCT

GigaSPEED XL

GS8H Patch Cord



Figure 51  
GS8H Patch Cords

Product	Material ID	Length	Packaging	Color
GS8H-1FT	CPC3392-08F001	0.3 m (1 ft)	ea	White
GS8H-2FT	CPC3392-08F002	0.6 m (2 ft)	ea	White
GS8H-3FT	CPC3392-08F003	0.9 m (3 ft)	ea	White
GS8H-4FT	CPC3392-08F004	1.2 m (4 ft)	ea	White
GS8H-5FT	CPC3392-08F005	1.5 m (5 ft)	ea	White
GS8H-6FT	CPC3392-08F006	1.8 m (6 ft)	ea	White
GS8H-7FT	CPC3392-08F007	2.1 m (7 ft)	ea	White
GS8H-8FT	CPC3392-08 F008	2.4 m (8 ft)	ea	White
GS8H-9FT	CPC3392-08 F009	2.7 m (9 ft)	ea	White
GS8H-10FT	CPC3392-08 F010	3 m (10 ft)	ea	White
GS8H-14FT	CPC3392-08 F014	4.3 m (14 ft)	ea	White
GS8H-15FT	CPC3392-08 F015	4.6 m (15 ft)	ea	White
GS8H-19FT	CPC3392-08 F019	5.8 m (19 ft)	ea	White
GS8H-25FT	CPC3392-08 F025	7.6 m (25 ft)	ea	White
GS8H-50FT	CPC3392-08 F050	15.2 m (50 ft)	ea	White
GS8H-100FT	CPC3392-08 F100	30.5 m (100 ft)	ea	White

## Copper

## GS8MGS

The **GS8MGS GigaSPEED XL and PowerSUM Adapter Cord** provides a flexible approach to Zone Wiring and Open Office Architecture solutions. The **GS8MGS** is a solid conductor adapter cord to be used from consolidation point (or zone wiring box) to the faceplate at the end-user's desk.

It is terminated with a GigaSPEED XL GS8E modular plug on one end and a pre-connectorized MGS400 outlet on the other end, using solid cordage.

The **GS8MGS Adapter Cord** provides ease of reconfiguration and increased flexibility for moves, adds and changes. These adapter cords provide an alternative to hard-wiring the portion of the installation that runs from the consolidation point to the end-user's desk. Unlike hard-wiring, the **GS8MGS Cords** can be reused after the furniture has been moved or reconfigured.

The outlets are manufactured in black, white and ivory as standard, but can also be ordered in other colors (slate gray, blue, red, yellow and orange). Please contact your SYSTIMAX SCS representative for ordering information. Other lengths are available upon request.

## GigaSPEED XL

## Adapter Cords

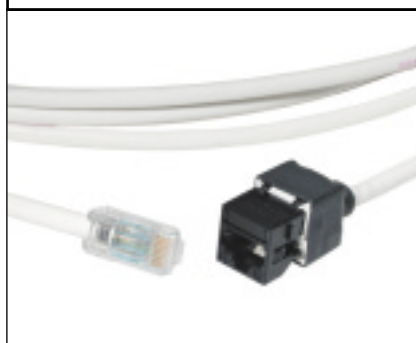


Figure 52  
Adapter Cords

Product	Material ID	Type	Length		Module Color
GS8MGS-SN-BK-05	CPC3282-13F005	Non-plenum	5 ft	(1.5 m)	Black
GS8MGS-SN-BK-10	CPC3282-13F010	Non-plenum	10 ft	(3 m)	Black
GS8MGS-SN-BK-15	CPC3282-13F015	Non-plenum	15 ft	(4.6 m)	Black
GS8MGS-SN-BK-20	CPC3282-13F020	Non-plenum	20 ft	(6.1 m)	Black
GS8MGS-SN-BK-25	CPC3282-13F025	Non-plenum	25 ft	(7.6 m)	Black
GS8MGS-SN-BK-33	CPC3282-13F033	Non-plenum	33 ft	(10.1 m)	Black
GS8MGS-SP-BK-20	CPC3272-13F020	Plenum	20 ft	(6.1 m)	Black
GS8MGS-SP-BK-25	CPC3272-13F025	Plenum	25 ft	(7.6 m)	Black
GS8MGS-SP-BK-33	CPC3272-13F033	Plenum	33 ft	(10.1 m)	Black
GS8MGS-SP-BK-40	CPC3272-13F040	Plenum	40 ft	(12.2 m)	Black
GS8MGS-SP-BK-50	CPC3272-13F050	Plenum	50 ft	(15.2 m)	Black
GS8MGS-SN-IV-05	CPC3282-53F005	Non-plenum	5 ft	(1.5 m)	Ivory
GS8MGS-SN-IV-10	CPC3282-53F010	Non-plenum	10 ft	(3 m)	Ivory
GS8MGS-SN-IV-15	CPC3282-53F015	Non-plenum	15 ft	(4.6 m)	Ivory
GS8MGS-SN-IV-20	CPC3282-58F020	Non-plenum	20 ft	(6.1 m)	Ivory
GS8MGS-SN-IV-25	CPC3282-58F025	Non-plenum	25 ft	(7.6 m)	Ivory
GS8MGS-SN-IV-33	CPC3282-58F033	Non-plenum	33 ft	(10.1 m)	Ivory
GS8MGS-SP-IV-20	CPC3272-58F020	Plenum	20 ft	(6.1 m)	Ivory
GS8MGS-SP-IV-25	CPC3272-58F025	Plenum	25 ft	(7.6 m)	Ivory
GS8MGS-SP-IV-33	CPC3272-58F033	Plenum	33 ft	(10.1 m)	Ivory
GS8MGS-SP-IV-40	CPC3272-58F040	Plenum	40 ft	(12.2 m)	Ivory
GS8MGS-SP-IV-50	CPC3272-58F050	Plenum	50 ft	(15.2 m)	Ivory

Copper

GS8MGS

GigaSPEED XL

Adapter Cords (Cont'd)

Product	Material ID	Type	Length		Module Color
GS8MGS-SN-WH-05	CPC3282-83F005	Non-plenum	5 ft	(1.5 m)	White
GS8MGS-SN-WH-10	CPC3282-83F010	Non-plenum	10 ft	(3 m)	White
GS8MGS-SN-WH-15	CPC3282-83F015	Non-plenum	15 ft	(4.6 m)	White
GS8MGS-SN-WH-20	CPC3282-83F020	Non-plenum	20 ft	(6.1 m)	White
GS8MGS-SN-WH-25	CPC3282-83F025	Non-plenum	25 ft	(7.6 m)	White
GS8MGS-SN-WH-33	CPC3282-83F033	Non-plenum	33 ft	(10.1 m)	White
GS8MGS-SP-WH-20	CPC3272-83F020	Plenum	20 ft	(6.1 m)	White
GS8MGS-SP-WH-25	CPC3272-83F025	Plenum	25 ft	(7.6 m)	White
GS8MGS-SP-WH-33	CPC3272-83F033	Plenum	33 ft	(10.1 m)	White
GS8MGS-SP-WH-40	CPC3272-83F040	Plenum	40 ft	(12.2 m)	White
GS8MGS-SP-WH-50	CPC3272-83F050	Plenum	50 ft	(15.2 m)	White

**Copper**

GS8E-SP / GS8E-SN and  
GS8E-SND / GS8E-SPD  
Solid Core Cords

**GigaSPEED XL**

**4-Pair Modular Cords**

The GS8E-SP / GS8E-SN and GS8E-SND / GS8E-SPD are GigaSPEED XL cords consisting of solid conductor cable, factory terminated with a GigaSPEED XL GS8E Plug(s). The patented tight pair twist algorithm used in manufacturing the cable along with the carefully controlled termination of the specially designed GS8E plug together produce a solid conductor cord with performance exceeding the Category 6 requirements. The GS8E-SP / GS8E-SN (single-ended) and the GS8E-SND / GS8E-SPD (double-ended) are ideal for zone wiring applications. (For alternate lengths please contact your SYSTIMAX SCS representative for ordering information.)

Unmatched electrical performance exceeds TIA/EIA and ISO/IEC Category 6 specifications and is fully backward compatible with Category 5e, and Category 5 connectors.

Physical Specifications	
<b>Operating Temperature Range:</b> -10 to 60 °C	<b>Contact Plating:</b> 1.27 µm Gold over 2.540 µm Nickel
<b>Contact Stability:</b> 20 m Ω max. change	<b>Plug Retention Force:</b> 110 N
<b>Insertion Life:</b> 750 insertions	



## Copper

GS8E-SP / GS8E-SN and  
GS8E-SND / GS8E-SPD  
Solid Core Cords

## GigaSPEED

**4-Pair Modular Cords**  
(*cont'd*)

Product	Material ID	Cordage Type	Color
GS8E-SP-15	CPC3472-08F015	Plenum	White
GS8E-SP-25	CPC3472-08F025	Plenum	White
GS8E-SP-50	CPC3472-08F050	Plenum	White
GS8E-SP-75	CPC3472-08F075	Plenum	White
GS8E-SP-100	CPC3472-08F100	Plenum	White
GS8E-SN-15	CPC3482-03F015	Non-Plenum	Gray
GS8E-SN-25	CPC3482-03F025	Non-Plenum	Gray
GS8E-SN-50	CPC3482-03F050	Non-Plenum	Gray
GS8E-SN-75	CPC3482-03F075	Non-Plenum	Gray
GS8E-SN-100	CPC3482-03F100	Non-Plenum	Gray
GS8E-SPD-15	CPC3372-08F015	Plenum	White
GS8E-SPD-25	CPC3372-08F025	Plenum	White
GS8E-SPD-50	CPC3372-08F050	Plenum	White
GS8E-SPD-75	CPC3372-08F075	Plenum	White
GS8E-SPD-100	CPC3372-08F100	Plenum	White
GS8E-SND-015	CPC3382-03F015	Non-Plenum	Gray
GS8E-SND-025	CPC3382-03F025	Non-Plenum	Gray
GS8E-SND-050	CPC3382-03F050	Non-Plenum	Gray
GS8E-SND-075	CPC3382-03F075	Non-Plenum	Gray
GS8E-SND-100	CPC3382-03F100	Non-Plenum	Gray

## Copper

GS8L - Solid Core  
Double-ended LSZH Cords

NON US-PRODUCT

GigaSPEED XL

4-Pair Modular Cords

The **GS8L** is a **3071 Low Smoke Zero Halogen LSZH** solid conductor cable which is terminated with the GS8E GigaSPEED XL plugs. This cable will support the high performance system level requirements built into the new GigaSPEED XL cabling solution.

The **GS8L** modular cords support PowerSUM and GigaSPEED XL Solutions; it is backward compatible with Category 5 and Category 5e systems, offers high performance and low variability.

The GS8L complies with IEC 754- part 2, Zero Halogen based on PH and conductivity measurements, with IEC 7034 part 2, Smoke Emissions, IEC 60332 part 1, Flammability and Fire Retardant and NES 713, Toxicity Index.

Product	Material ID	Length	Packaging	Color
GS8L-1	CPC3322-08F1	0.3 m (1 ft)	ea	White
GS8L-2	CPC3322-08F2	0.6 m (2 ft)	ea	White
GS8L-3	CPC3322-08F3	0.9 m (3 ft)	ea	White
GS8L-4	CPC3322-08F4	1.2 m (4 ft)	ea	White
GS8L-5	CPC3322-08F5	1.5 m (5 ft)	ea	White
GS8L-6	CPC3322-08F6	1.8 m (6 ft)	ea	White
GS8L-7	CPC3322-08F7	2.1 m (7 ft)	ea	White
GS8L-8	CPC3322-08F8	2.4 m (8 ft)	ea	White
GS8L-9	CPC3322-08F9	2.7 m (9 ft)	ea	White
GS8L-10	CPC3322-08F10	3 m (10 ft)	ea	White
GS8L-14	CPC3322-08F14	4.3 m (14 ft)	ea	White
GS8L-15	CPC3322-08F15	4.6 m (15 ft)	ea	White
GS8L-19	CPC3322-08F19	5.8 m (19 ft)	ea	White
GS8L-25	CPC3322-08F25	7.6 m (25 ft)	ea	White
GS8L-50	CPC3322-08F50	15.2 m (50 ft)	ea	White
GS8L-80	CPC3322-08F80	24.4 m (80 ft)	ea	White
GS8L-100	CPC3322-08F100	30.5 m (100 ft)	ea	White

## Copper

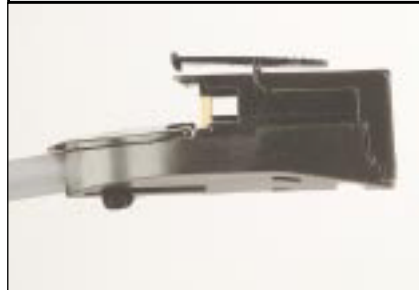
## VisiPatch™ 110 GigaSPEED XL 4-Pair Patch Cord

The **VisiPatch™ 110 4-Pair GS3 Patch Cord** utilizes a patented connector design that allows the cordage to be neatly routed back toward the VisiPatch panel rather than to project forward. The connector snaps on with an audible click and features an anti-snag device, which allows the cord to be easily removed from the panel. This cord will support the high performance system level requirements built into the new GigaSPEED XL cabling solution.

This product supports both GigaSPEED XL and PowerSUM Solutions.

## GigaSPEED XL

### VisiPatch™ 4-Pair Patch Cord



**Figure 53**  
110 4-Pair GS XL  
Patch Cord

Product	Material ID	Length	Pair Size	Packaging
110VP8-GS3-3	CPC5512-03F003	0.9 m (3 ft)	4	ea
110VP8-GS3-5	CPC5512-03F005	1.5 m (5 ft)	4	ea
110VP8-GS3-7	CPC5512-03F007	2.1 m (7 ft)	4	ea
110VP8-GS3-9	CPC5512-03F009	2.7 m (9 ft)	4	ea
110VP8-GS3-12	CPC5512-03F012	3.7 m (12 ft)	4	ea
110VP8-GS3-15	CPC5512-03F015	4.6 m (15 ft)	4	ea

\* Additional lengths can be ordered. Please contact your SYSTIMAX SCS representative for support.

Copper

119UP8 - 4-Pair  
GigaSPEED XL Cord

The **119UP8GS3 VisiPatch Cords** utilize a patented 110 connector design terminated to a GS8E (RJ45) plug. This allows the cordage to be neatly routed back towards the VisiPatch Panel. The initial range on offer consists of 0.9 m (3 ft) to 4.6 m (15 ft), individually packed, 4-pair cords. This product supports both GigaSPEED XL and PowerSUM Solutions.

GigaSPEED XL  
VisiPatch 119 Cord



Figure 54  
VisiPatch Cord

Product	Material ID	Length	Packaging	Color
119VP8-GS3-3	CPC5312-03F003	0.9 m (3 ft)	ea	Slate Gray
119VP8-GS3-5	CPC5312-03F005	1.5 m (5 ft)	ea	Slate Gray
119VP8-GS3-7	CPC5312-03F007	2.1 m (7 ft)	ea	Slate Gray
119VP8-GS3-9	CPC5312-03F009	2.7 m (9 ft)	ea	Slate Gray
119VP8-GS3-12	CPC5312-03F012	3.7 m (12 ft)	ea	Slate Gray
119VP8-GS3-15	CPC5312-03F015	4.6 m (15 ft)	ea	Slate Gray

## Copper

VisiPatch 110 2-Pair  
Patch Cords

The **VisiPatch 110 2-Pair GigaSPEED Patch Cord** utilizes a patented connector design that allows the cordage to be neatly routed back towards the VisiPatch panel rather than to project forward. The connector snaps on with an audible click and features an anti-snag device, which allows the cord to be easily removed from the panel. This cord will support the high performance system level requirements built into the new GigaSPEED cabling solution.

## GigaSPEED

VisiPatch 2-Pair  
Patch Cord

**Figure 55**  
110 2-Pair Patch Cord

Product	Material ID	Length	Packaging
110VP4-GS2-2	108535675	0.6 m (2 ft)	ea
110VP4-GS2-3	108535683	0.9 m (3 ft)	ea
110VP4-GS2-4	108535691	1.2 m (4 ft)	ea
110VP4-GS2-5	108535709	1.5 m (5 ft)	ea
110VP4-GS2-6	108535717	1.8 m (6 ft)	ea
110VP4-GS2-7	108535725	2.1 m (7 ft)	ea
110VP4-GS2-8	108535733	2.4 m (8 ft)	ea
110VP4-GS2-9	108535741	2.7 m (9 ft)	ea
110VP4-GS2-12	108535758	3.7 m (12 ft)	ea
110VP4-GS2-15	108535766	4.6 m (15 ft)	ea
110VP4-GS2-18	108535774	5.5 m (18 ft)	ea

\* Additional lengths can be ordered. Please contact your SYSTIMAX SCS representative for support.

## Copper

VisiPatch 110 1-Pair  
Patch Cords

## GigaSPEED

VisiPatch 1-Pair  
Patch Cord

The **VisiPatch 110 1-Pair Patch Cord** utilizes a patented connector design that allows the cordage to be neatly routed back towards the VisiPatch panel rather than to project forward. The connector snaps on with an audible click and features an anti-snag device, which allows the cord to be easily removed from the panel.

Product	Material ID	Length	Packaging
110VP2-GS2-2	108535527	0.6 m (2 ft)	ea
110VP2-GS2-3	108535576	0.9 m (3 ft)	ea
110VP2-GS2-4	108535584	1.2 m (4 ft)	ea
110VP2-GS2-5	108535592	1.5 m (5 ft)	ea
110VP2-GS2-6	108535600	1.8 m (6 ft)	ea
110VP2-GS2-7	108535618	2.1 m (7 ft)	ea
110VP2-GS2-8	108535626	2.4 m (8 ft)	ea
110VP2-GS2-9	108535634	2.7 m (9 ft)	ea
110VP2-GS2-12	108535642	3.7 m (12 ft)	ea
110VP2-GS2-15	108535659	4.6 m (15 ft)	ea
110VP2-GS2-18	108535667	5.5 m (18 ft)	ea

## Copper

## 110GS Patch Cords

Designed to ensure Category 6 channel performance, the SYSTIMAX GigaSPEED family of cords includes 110GS Patch Cords.

Through an exclusive design and manufacturing process, impedance characteristics for GigaSPEED cords are closely matched to impedance levels for GigaSPEED cables, minimizing signal reflection and significantly increasing performance margins.

The 110GS plugs and modular plugs reduce termination variability, allowing better performance in mated GigaSPEED plug/jack combinations every time. Available in 1, 2, and 4-pair configurations.

All GigaSPEED cables and components are covered by a 20-year warranty when installed as part of a registered SYSTIMAX GigaSPEED Solution.

## GigaSPEED

## 110 Patch Cords

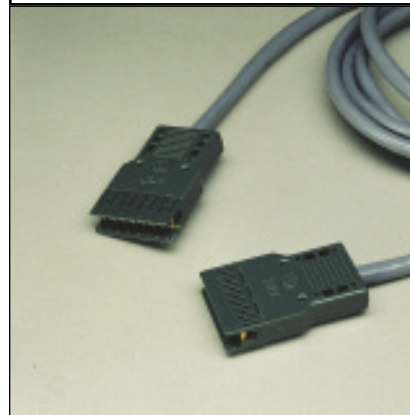


Figure 56  
110 Patch Cords

Product	Material ID	Number of Pairs	Length	Packaging	Color
110P2GS-3	108288135	1	0.9 m (3 ft)	10/Pkg	Slate Gray
110P2GS-5	108288150	1	1.5 m (5 ft)	10/Pkg	Slate Gray
110P2GS-7	108288176	1	2.1 m (7 ft)	10/Pkg	Slate Gray
110P2GS-9	108288192	1	2.7 m (9 ft)	10/Pkg	Slate Gray
110P2GS-15	108288200	1	4.6 m (15 ft)	10/Pkg	Slate Gray
110P4GS-3	108288291	2	0.9 m (3 ft)	10/Pkg	Slate Gray
110P4GS-5	108288275	2	1.5 m (5 ft)	10/Pkg	Slate Gray
110P4GS-7	108288267	2	2.1 m (7 ft)	10/Pkg	Slate Gray
110P4GS-9	108288242	2	2.7 m (9 ft)	10/Pkg	Slate Gray
110P4GS-15	108288234	2	4.5 m (15 ft)	10/Pkg	Slate Gray
110P8GS-3	CPC8842-03F-003	4	0.9 m (3 ft)	10/Pkg	Slate Gray
110P8GS-5	CPC8842-03F-005	4	1.5 m (5 ft)	10/Pkg	Slate Gray
110P8GS-7	CPC8842-03F-007	4	2.1 m (7 ft)	10/Pkg	Slate Gray
110P8GS-9	CPC8842-03F-009	4	2.7 m (9 ft)	10/Pkg	Slate Gray
110P8GS-15	CPC8842-03F-015	4	4.5 m (15 ft)	10/Pkg	Slate Gray

## Copper

## 119P8GS and 120GS

The **119P8GS Cord** is a 4-pair cord that consists of 1074D cordage terminated on a GS8E plug on one end and a 110GS plug on the other end.

The **120GS Cord** is a 2-Pair cord (pins 1,2 and 3,6) that consists of 1074D cordage terminated on a GS8E plug on one end and a 2-pair 110 plug on the other end, and can be used to patch RJ45 ports of high-speed equipment devices to the 110 connector system.

All cords have a higher performance with lower variability. They support both PowerSUM and GigaSPEED Solutions and are backward compatible with existing Category 5 and Category 5e systems.

## GigaSPEED

## Hybrid RJ45 - 110



**Figure 57**  
119P8GS Hybrid Cord

Product	Material ID	Length	Packaging	Color
119P8GS-2ft	CPC8142-03F002	0.6 m (2 ft)	ea	Gray
119P8GS-3ft	CPC8142-03F003	0.9 m (3 ft)	ea	Gray
119P8GS-4ft	CPC8142-03F004	1.2 m (4 ft)	ea	Gray
119P8GS-5ft	CPC8142-03F005	1.5 m (5 ft)	ea	Gray
119P8GS-6ft	CPC8142-03F006	1.8 m (6 ft)	ea	Gray
119P8GS-7ft	CPC8142-03F007	2.1 m (7 ft)	ea	Gray
119P8GS-8ft	CPC8142-03F008	2.4 m (8 ft)	ea	Gray
119P8GS-9ft	CPC8142-03F009	2.7 m (9 ft)	ea	Gray
119P8GS-12ft	CPC8142-03F012	3.7 m (12 ft)	ea	Gray
119P8GS-15ft	CPC8142-03F015	4.6 m (15 ft)	ea	Gray
119P8GS-18ft	CPC8142-03F018	5.5 m (18 ft)	ea	Gray
119P8GS-BL-3ft	CPC8142-02F003	0.9 m (3 ft)	ea	Blue
119P8GS-BL-5ft	CPC8142-02F005	1.5 m (5 ft)	ea	Blue
119P8GS-BL-7ft	CPC8142-02F007	2.1 m (7 ft)	ea	Blue
119P8GS-BL-9ft	CPC8142-02F009	2.7 m (9 ft)	ea	Blue
119P8GS-BL-12ft	CPC8142-02F012	3.7 m (12 ft)	ea	Blue
119P8GS-GN-3ft	CPC8142-04F003	0.9 m (3 ft)	ea	Green
119P8GS-GN-5ft	CPC8142-04F005	1.5 m (5 ft)	ea	Green
119P8GS-GN-7ft	CPC8142-04F007	2.1 m (7 ft)	ea	Green
119P8GS-GN-9ft	CPC8142-04F009	2.7 m (9 ft)	ea	Green
119P8GS-GN-12ft	CPC8142-04F012	3.7 m (12 ft)	ea	Green
119P8GS-IV-3ft	CPC8142-04F003	0.9 m (3 ft)	ea	Ivory
119P8GS-IV-5ft	CPC8142-04F005	1.5 m (5 ft)	ea	Ivory
119P8GS-IV-7ft	CPC8142-04F007	2.1 m (7 ft)	ea	Ivory
119P8GS-IV-9ft	CPC8142-04F009	2.7 m (9 ft)	ea	Ivory
119P8GS-IV-12ft	CPC8142-04F012	3.7 m (12 ft)	ea	Ivory
119P8GS-LL-3ft	CPC8142-0BF003	0.9 m (3 ft)	ea	Lilac
119P8GS-LL-5ft	CPC8142-0BF005	1.5 m (5 ft)	ea	Lilac
119P8GS-LL-7ft	CPC8142-0BF007	2.1 m (7 ft)	ea	Lilac
119P8GS-LL-9ft	CPC8142-0BF009	2.7 m (9 ft)	ea	Lilac
119P8GS-LL-12ft	CPC8142-0BF012	3.7 m (12 ft)	ea	Lilac



## Copper

## 119P8GS and 120GS

## GigaSPEED

## Hybrid RJ45 - 110 (cont'd)

Product	Material ID	Length	Packaging	Color
119P8GS-OR-3ft	CPC8142-06F003	0.9 m (3 ft)	ea	Orange
119P8GS-OR-5ft	CPC8142-06F005	1.5 m (5 ft)	ea	Orange
119P8GS-OR-7ft	CPC8142-06F007	2.1 m (7 ft)	ea	Orange
119P8GS-OR-9ft	CPC8142-06F009	2.7 m (9 ft)	ea	Orange
119P8GS-OR-12ft	CPC8142-06F012	3.7 m (12 ft)	ea	Orange
119P8GS-RD-3ft	CPC8142-07F003	0.9 m (3 ft)	ea	Red
119P8GS-RD-5ft	CPC8142-07F005	1.5 m (5 ft)	ea	Red
119P8GS-RD-7ft	CPC8142-07F007	2.1 m (7 ft)	ea	Red
119P8GS-RD-9ft	CPC8142-07F009	2.7 m (9 ft)	ea	Red
119P8GS-RD-12ft	CPC8142-07F012	3.7 m (12 ft)	ea	Red
119P8GS-SA-3ft	CPC8142-0AF003	0.9 m (3 ft)	ea	Sable
119P8GS-SA-5ft	CPC8142-0AF005	1.5 m (5 ft)	ea	Sable
119P8GS-SA-7ft	CPC8142-0AF007	2.1 m (7 ft)	ea	Sable
119P8GS-SA-9ft	CPC8142-0AF009	2.7 m (9 ft)	ea	Sable
119P8GS-SA-12ft	CPC8142-0AF012	3.7 m (12 ft)	ea	Sable
119P8GS-YW-3ft	CPC8142-09F003	0.9 m (3 ft)	ea	Yellow
119P8GS-YW-5ft	CPC8142-09F005	1.5 m (5 ft)	ea	Yellow
119P8GS-YW-7ft	CPC8142-09F007	2.1 m (7 ft)	ea	Yellow
119P8GS-YW-9ft	CPC8142-09F009	2.7 m (9 ft)	ea	Yellow
119P8GS-YW-12ft	CPC8142-09F012	3.7 m (12 ft)	ea	Yellow
120P4GS-12ft	107774549	3.6 m (12 ft)	ea	Gray
120P4GS-20ft	107774556	6 m (20 ft)	ea	Gray

\*Additional lengths can be ordered. Please contact your SYSTIMAX SCS representative for support.

## Copper

## D8PS Patch Cord

## PowerSUM

## D8PS Patch Cords

The PowerSUM D8PS Patch Cords are designed to assure high performance in PowerSUM data applications. Available in a variety of colors and lengths, the D8PS Cords are ideal for high activity environments that require reliable data transmission. The D8PS Cords are designed and manufactured to mate with PowerSUM Modular Connectors, Panels and Information Outlets, minimizing signal reflections and significantly improving performance margins.

The D8PS Patch Cord meets or exceeds the Category 5 and Category 5e specifications for patch cords in ISO/IEC 11801 and TIA/EIA-568B. When used in a PowerSUM Solution the D8PS Patch Cord fully supports SYSTIMAX PowerSUM channel performance specifications.

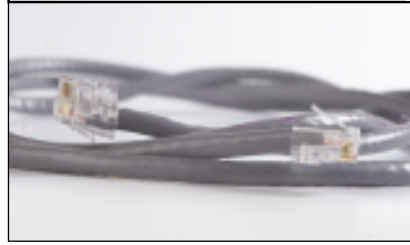


Figure 58  
D8PS Patch Cords

## Physical Specifications

**Operating Temperature Range:** -10 to 60 °C (14 - 140 °F) **Contact Plating:** 1.27 µm Gold over 2.540 µm Nickel

**Contact Stability:** 20 m omega max. change (1 kg = 2.205 lb) **Plug Retention Force:** 110 N (24.73 lb)

**Insertion Life:** 750 insertions

Product	Material ID	Length	Packaging	Color
D8PS-BL-3ft	CPC6642-02F003	0.9 m (3 ft)	ea	Blue
D8PS-BL-5ft	CPC6642-02F005	1.5 m (5 ft)	ea	Blue
D8PS-BL-7ft	CPC6642-02F007	2.1 m (7 ft)	ea	Blue
D8PS-BL-9ft	CPC6642-02F009	2.7 m (9 ft)	ea	Blue
D8PS-BL-14ft	CPC6642-02F014	4.3 m (14 ft)	ea	Blue

This is a Global SYSTIMAX SCS Product Guide, portfolios differ from region to region, any specific regional queries contact your local account representative or BusinessPartner.

\*Additional lengths can be ordered. Please contact your SYSTIMAX SCS representative for support.

## Copper

## D8PS Patch Cord

## PowerSUM

## D8PS Patch Cords (cont'd)

Product	Material ID	Length	Packaging	Color
D8PS-3ft	CPC6642-03F003	0.9 m (3 ft)	ea	Gray
D8PS-5ft	CPC6642-03F005	1.5 m (5 ft)	ea	Gray
D8PS-7ft	CPC6642-03F007	2.1 m (7 ft)	ea	Gray
D8PS-9ft	CPC6642-03F009	2.7 m (9 ft)	ea	Gray
D8PS-14ft	CPC6642-03F014	4.3 m (14 ft)	ea	Gray
D8PS-OR-3ft	CPC6642-06F003	4.3 m (14 ft)	ea	Orange
D8PS-OR-5ft	CPC6642-06F005	4.3 m (14 ft)	ea	Orange
D8PS-OR-7ft	CPC6642-06F007	4.3 m (14 ft)	ea	Orange
D8PS-OR-9ft	CPC6642-06F009	2.7 m (9 ft)	ea	Orange
D8PS-OR-14ft	CPC6642-06F014	4.3 m (14 ft)	ea	Orange
D8PS-RD-3ft	CPC6642-07F003	0.9 m (3 ft)	ea	Red
D8PS-RD-5ft	CPC6642-07F005	1.5 m (5 ft)	ea	Red
D8PS-RD-7ft	CPC6642-07F007	2.1 m (7 ft)	ea	Red
D8PS-RD-9ft	CPC6642-07F009	2.7 m (9 ft)	ea	Red
D8PS-RD-14ft	CPC6642-07F014	4.3 m (14 ft)	ea	Red
D8PS-GR-3ft	CPC6642-04F003	0.9 m (3 ft)	ea	Green
D8PS-GR-5ft	CPC6642-04F005	1.5 m (5 ft)	ea	Green
D8PS-GR-7ft	CPC6642-04F007	2.1 m (7 ft)	ea	Green
D8PS-GR-9ft	CPC6642-04F009	2.7 m (9 ft)	ea	Green
D8PS-GR-14ft	CPC6642-04F014	4.3 m (14 ft)	ea	Green
D8PS-SA-3ft	CPC6642-0AF003	0.9 m (3 ft)	ea	Sable
D8PS-SA-5ft	CPC6642-0AF005	1.5 m (5 ft)	ea	Sable
D8PS-SA-7ft	CPC6642-0AF007	2.1 m (7 ft)	ea	Sable
D8PS-SA-9ft	CPC6642-0AF009	2.7 m (9 ft)	ea	Sable
D8PS-SA-14ft	CPC6642-0AF014	4.3 m (14 ft)	ea	Sable
D8PS-LL-3ft	CPC6642-0BF003	0.9 m (3 ft)	ea	Lilac
D8PS-LL-5ft	CPC6642-0BF005	1.5 m (5 ft)	ea	Lilac
D8PS-LL-7ft	CPC6642-0BF007	2.1 m (7 ft)	ea	Lilac
D8PS-LL-9ft	CPC6642-0BF009	2.7 m (9 ft)	ea	Lilac
D8PS-LL-14ft	CPC6642-0BF014	4.3 m (14 ft)	ea	Lilac
D8PS-YW-3ft	CPC6642-09F003	0.9 m (3 ft)	ea	Yellow
D8PS-YW-5ft	CPC6642-09F005	1.5 m (5 ft)	ea	Yellow
D8PS-YW-7ft	CPC6642-09F007	2.1 m (7 ft)	ea	Yellow
D8PS-YW-9ft	CPC6642-09F009	2.7 m (9 ft)	ea	Yellow
D8PS-YW-14ft	CPC6642-09F014	4.3 m (14 ft)	ea	Yellow

This is a Global SYSTIMAX SCS Product Guide, portfolios differ from region to region, any specific regional queries contact your local account representative or BusinessPartner.

\*Additional lengths can be ordered. Please contact your SYSTIMAX SCS representative for support.

## Copper

## 110PS Patch Cord

The PowerSUM 110 Patch Cords using stranded Cordage and 110 Patch Cord Plugs are available in factory-connectorized 1, 2, 3, and 4-pair sizes. These cords are gray in color while a select number of 4-pair cords are also manufactured in blue, orange, green, lilac, ivory, red and sable (please contact your SYSTIMAX SCS representative for ordering information). Other lengths are available upon request.

The factory-connectorized **PowerSUM 110 Patch Cord** incorporates SYSTIMAX SCS patented “cross-over lead” design, which employs crosstalk cancellation techniques to provide superior Near-End Crosstalk (NEXT) performance. These **110 Patch Cords** meet or exceed attenuation and NEXT Category 5 and Category 5e specifications for Patch Cords as specified in ISO/IEC 11801, CENELEC EN50173, and EIA/TIA 568A. Further, these Patch Cords are UL verified as Category 5e, and UL listed type CM.



## PowerSUM

## 110 Stranded Cord



**Figure 59**  
110P2CAT5,  
110P4CAT5,  
110P6CAT5 and  
110P8CAT5  
Patch Cords

Frequency MHz	Attenuation dB/100m	PowerSUM NEXT (Ave) dB
1	1.9	73
4	3.9	61
8	5.5	57
10	6.3	56
16	8.0	53
20	8.9	52
25	10.0	51
31.25	11.2	49
62.5	16.1	45
100	20.7	42

## Copper

## 110PS Patch Cord

## PowerSUM

## 110 Stranded Cord (cont'd)

Product	Material ID	Pair Size	Length	Packaging
110P2CAT5F-2B	107733206	1	0.6 m (2 ft)	10/Pkg
110P2CAT5F-3B	107733214	1	0.9 m (3 ft)	10/Pkg
110P2CAT5F-5B	107733230	1	1.5 m (5 ft)	10/Pkg
110P2CAT5F-7B	107733255	1	2.1 m (7 ft)	10/Pkg
110P2CAT5F-8B	107733263	1	2.4 m (8 ft)	10/Pkg
110P2CAT5F-12B	107733289	1	3.7 m (12 ft)	10/Pkg
110P2CAT5F-15B	107733297	1	4.6 m (15 ft)	10/Pkg
110P4CAT5F-2B	107733313	2	0.6 m (2 ft)	10/Pkg
110P4CAT5F-3B	107733321	2	0.9 m (3 ft)	10/Pkg
110P4CAT5F-5B	107733347	2	1.5 m (5 ft)	10/Pkg
110P4CAT5F-7B	107733362	2	2.1 m (7 ft)	10/Pkg
110P4CAT5F-8B	107733370	2	2.4 m (8 ft)	10/Pkg
110P4CAT5F-12B	107733396	2	3.7 m (12 ft)	10/Pkg
110P4CAT5F-15B	107733404	2	4.6 m (15 ft)	10/Pkg
110P8CAT5F-3B	107733545	4	0.9 m (3 ft)	10/Pkg
110P8CAT5F-5B	107733560	4	1.5 m (5 ft)	10/Pkg
110P8CAT5F-7B	107733586	4	2.1 m (7 ft)	10/Pkg
110P8CAT5F-12B	107733610	4	3.7 m (12 ft)	10/Pkg
110P8CAT5F-15B	107733628	4	4.6 m (15 ft)	10/Pkg

## Copper

## 110PS LSZH Patch Cord

NON-US PRODUCT

PowerSUM

110 Stranded Cord

The 110P2CAT5L Patch Cords utilize Low Smoke Zero Halogen (LSZH) cordage and are available in factory connectorized 1, 2, 3, and 4-pair sizes. The color of the 110P2CAT5L is white. Additional lengths are available upon request.

The SYSTIMAX patented tight pair twist algorithm used in manufacturing the LSZH cordage along with the carefully controlled termination of the specially designed 110 plug together produce a 110P2CAT5L Patch Cord with excellent PSNEXT performance.

The 110P2CAT5L Patch Cords meet the following IEC requirements:

- IEC 754 part 2, Zero Halogen based on pH and Conductivity Measurements.
- IEC 1034 part 2, Smoke Emission.
- IEC 60332, Flammability and Fire Retardant.
- NES 713, Toxicity Index.
- The factory-connectorized 110P2CAT5L cords meet or exceed attenuation and crosstalk Category 5e specifications for work area cords as specified in ISO/IEC 11801, CENELEC EN50173, and EIA/TIA 568B. Also, the 110P2CAT5L cords are UL verified as Category 5e, and UL listed type CM.



Figure 60  
LSZH Stranded Cord

## Physical Specifications

Operating Temperature Range: -10 to 60 °C

Contact Plating: 1.27 µm Gold over 1.905 µm Nickel

Contact Stability: 5m ž max. change

Plug Retention Force (Depending on Pair Size): 27 to 110 N

Insertion Life: > 200 insertions

Product	Material ID	Pair Size	Length	Packaging
110P2CAT5L-3B	107855843	1	0.9 m (3 ft)	10/Pkg
110P2CAT5L-5B	107855868	1	1.5 m (5 ft)	10/Pkg
110P2CAT5L-7B	107855892	1	2.1 m (7 ft)	10/Pkg
110P4CAT5L-3B	107856007	2	0.9 m (3 ft)	10/Pkg
110P4CAT5L-5B	107856023	2	1.5 m (5 ft)	10/Pkg
110P4CAT5L-7B	107856049	2	2.1 m (7 ft)	10/Pkg
110P6CAT5L-5B	107856163	3	1.5 m (5 ft)	10/Pkg
110P6CAT5L-7B	107856197	3	2.1 m (7 ft)	10/Pkg
110P8CAT5L-3B	107856288	4	0.9 m (3 ft)	10/Pkg
110P8CAT5L-5B	107856346	4	1.5 m (5 ft)	10/Pkg
110P8CAT5L-7B	107856387	4	2.1 m (7 ft)	10/Pkg

\*Additional lengths can be ordered. Please contact your SYSTIMAX SCS representative for support.

## Copper

## 117PS Patch Cord

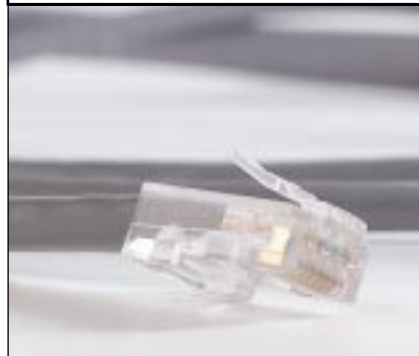
The **117PS Patch Cord** is a single-ended PS plug to unterminated over stranded 1074D cordage.

This equipment cord has a high performance with lower variability. It supports PowerSUM Solutions Category 5 and Category 5e.

The **117PS Patch Cord** meets or exceeds attenuation and crosstalk Category 5 and Category 5e specifications as detailed in ISO/IEC IS11801 (1995), CENELEC EN50173 (1995), and TIA/EIA 568B.

## PowerSUM

## 117PS Patch Cord



**Figure 61**  
117PS Patch Cord

Product	Material ID	Length	Packaging	Color
117PS-1ft	CPC6442-03F001	0.3 m (1 ft)	ea	Gray
117PS-2ft	CPC6442-03F002	0.6 m (2 ft)	ea	Gray
117PS-3ft	CPC6442-03F003	0.9 m (3 ft)	ea	Gray
117PS-4ft	CPC6442-03F004	1.2 m (4 ft)	ea	Gray
117PS-5ft	CPC6442-03F005	1.5 m (5 ft)	ea	Gray
117PS-6ft	CPC6442-03F006	1.8 m (6 ft)	ea	Gray
117PS-7ft	CPC6442-03F007	2.1 m (7 ft)	ea	Gray
117PS-8ft	CPC6442-03F008	2.4 m (8 ft)	ea	Gray
117PS-9ft	CPC6442-03F009	2.7 m (9 ft)	ea	Gray
117PS-10ft	CPC6442-03F010	3 m (10 ft)	ea	Gray
117PS-14ft	CPC6442-03F014	4.3 m (14 ft)	ea	Gray
117PS-15ft	CPC6442-03F015	4.6 m (15 ft)	ea	Gray
117PS-19ft	CPC6442-03F019	5.8 m (19 ft)	ea	Gray
117PS-25ft	CPC6442-03F025	7.6 m (25 ft)	ea	Gray
117PS-50ft	CPC6442-03F050	15.2 m (50 ft)	ea	Gray
117PS-100ft	CPC6442-03F100	30.5 m (100 ft)	ea	Gray

\*Additional lengths can be ordered. Please contact your SYSTIMAX SCS representative for support.

## Copper

## 25-Pair Cords

The SYSTIMAX 525 Connectorized 25-Pair Cords consist of the 25-pair cable terminated at each end with a SYSTIMAX 525 Category 5 telco-type connector.

The 1061C 25-pair cable is a high-speed, 100 ohm high performance cable with excellent PSNEXT levels which ensures excellent high-speed transmission. (See Specifications for the SYSTIMAX 1061 25-Pair Cable).

Specifically designed by SYSTIMAX Labs, the 525-Pair Connector is fully compatible with the standard Telco-type connector, in both pin out and physical compatibility. This compatibility provides a user-friendly migration path from today's

technologies and applications. The Connectorized Category 5 Cords currently available have male plugs with a 90°, 110° Left hand, 110° Right hand, or 180° angled options, as well as a female plug or an unterminated end. The 525 cord assemblies with an angled (110°) end were specifically designed for connection to electronics equipment requiring a 50-pin Teleco-style connector. The 50-pin assembly is backward compatible and can be used to support 10BASE-T, 100BASE-T or 155 Mb/s ATM electronics and applications. The right and left versions of the angle-mount connectorized cable assembly allow for flexibility in routing the cords as they exit the equipment.

The 525 Connectorized Category 5 Cords currently available have male plugs with a 90°, 110° Left hand, 110° Right hand, or 180° Angle Options, as well as a female plug or unterminated.



## Miscellaneous

## Multi-Pair Cords



Figure 62  
525 Connectorized Cord

## Physical Specifications

Gauge: 0.511 mm (24 AWG)	Outside Diameter: 13 mm (0.5 in)
Insulation Thickness: 0.22 mm (0.008 in)	Jacket Thickness: 0.68 mm (0.02 in)
Operating Temperature Range: -10 to 60 °C	Insertion Life: >200 insertions
Min. Contact Force: 100 g (3.5 oz)	
Contact Plating in Mating Region: 0.76 µm in Gold over 1.27 µm Nickel	
Meets FCC Part 68 Subpart F mating area dimensional requirements	

Frequency (MHz)	Attenuation (dB)	PSNEXT (dB)	Return Loss
1	0.01	86	58
4	0.01	74	55
8	0.01	68	52
10	0.02	66	51
16	0.02	62	48
20	0.02	60	46
25	0.02	58	45
31.25	0.02	56	43
62.5	0.03	50	38
100	0.06	46	34



## Copper

## 25-Pair Cords

## Miscellaneous

## Multi-Pair Cords (cont'd)

Product	Material ID	Length	Packaging
<b>90 Degree Plug-to-Raw</b>			
CC525PN-005A	107524746	1.52 m (5 ft)	1/Pkg
CC525PN-010A	107524761	3.05 m (10 ft)	1/Pkg
CC525PN-015A	107524795	4.57 m (15 ft)	1/Pkg
CC525PN-025A	107524811	7.62 m (25 ft)	1/Pkg
CC525PN-030A	107524845	9.14 m (30 ft)	1/Pkg
CC525PN-050A	107524886	15.7 m (50 ft)	1/Pkg
CC525PN-100A	107524936	30.5 m (100 ft)	1/Pkg
<b>90 Degree Plug-to-Plug</b>			
CC525PP-005A	107523516	1.52 m (5 ft)	1/Pkg
CC525PP-010A	107523524	3.05 m (10 ft)	1/Pkg
CC525PP-015A	107523532	4.57 m (15 ft)	1/Pkg
CC525PP-020A	107523664	6.10 m (20 ft)	1/Pkg
CC525PP-025A	107523672	7.62 m (25 ft)	1/Pkg
CC525PP-040A	107523748	12.2 m (40 ft)	1/Pkg
CC525PP-050A	107523771	15.7 m (50 ft)	1/Pkg
CC525PP-100A	107523854	30.5 m (100 ft)	1/Pkg
CC525PP-150A	107523888	45.7 m (150 ft)	1/Pkg
CC525PP-200A	107523912	61 m (200 ft)	1/Pkg
<b>In-Line (180) to In-Line (180)</b>			
CC525CC-005A	108156001	1.5 m (5 ft)	1/Pkg
CC525CC-010A	108156027	3 m (10 ft)	1/Pkg
CC525CC-015A	108199761	4.6 m (15 ft)	1/Pkg
CC525CC-025A	108156068	7.6 m (25 ft)	1/Pkg
CC525CC-030A	108352022	9.14 m (30 ft)	1/Pkg
CC525CC-040A	108352030	12.2 m (40 ft)	1/Pkg
CC525CC-050A	108036740	15.2 m (50 ft)	1/Pkg
CC525CC-075A	108352048	22.9 m (75 ft)	1/Pkg
CC525CC-125A	108352055	38.2 m (125 ft)	1/Pkg
CC525CC-150A	108352063	45.7 m (150 ft)	1/Pkg
CC525CC-175A	108352071	53.3 m (175 ft)	1/pkg
<b>Left Angled (110) to Right Angled (110)</b>			
CC525AR-050A	108234626	15.2 m (50 ft)	1/Pkg
<b>Right Angled (110) to In-Line (180)</b>			
CC525RC-005A	108189291	1.5 m (5 ft)	1/Pkg
CC525RC-010A	108189317	3 m (10 ft)	1/Pkg
CC525RC-015A	108199753	4.6 m (15 ft)	1/Pkg
CC525RC-025A	108189333	7.6 m (25 ft)	1/Pkg
CC525RC-030A	108352899	9.14 m (30 ft)	1/Pkg
CC525RC-040A	108352907	12.2 m (40 ft)	1/Pkg
CC525RC-050A	108189341	15.2 m (50 ft)	1/Pkg
CC525RC-075A	108352915	22.9 m (75 ft)	1/Pkg
CC525RC-125A	108352923	38.2 m (125 ft)	1/Pkg

## Copper

## 25-Pair Cords

## Miscellaneous

## Multi-Pair Cords (cont'd)

Product	Material ID	Length	Packaging
CC525RC-150A	108352931	45.7 m (150 ft)	1/Pkg
CC525RC-175A	108352949	53.3 m (175 ft)	1/Pkg
<b>Left Angled (110) to In-Line (180)</b>			
CC525AC-005A	108189515	1.5 m (5 ft)	1/Pkg
CC525AC-010A	108199720	3 m (10 ft)	1/Pkg
CC525AC-015A	108199738	4.6 m (15 ft)	1/Pkg
CC525AC-025A	108199746	7.6 m (25 ft)	1/Pkg
CC525AC-030A	108353079	9.14 m (30 ft)	1/Pkg
CC525AC-040A	108353087	12.2 m (40 ft)	1/Pkg
CC525AC-050A	108036773	15.2 m (50 ft)	1/Pkg
CC525AC-075A	108353095	22.9 m (75 ft)	1/Pkg
CC525AC-125A	108353103	38.2 m (125 ft)	1/Pkg
CC525AC-150A	108353111	45.7 m (150 ft)	1/Pkg
CC525AC-175A	108353129	53.3 m (175 ft)	1/Pkg
<b>In-Line (180) to Underminated</b>			
CC525CN-050A	108036765	15.2 m (50 ft)	1/Pkg
CC525CN-100A	108301169	30.5 m (100 ft)	1/Pkg
<b>In-Line to Raw</b>			
CC525CN-005A	108262874	1.52 m (5 ft)	1/Pkg
CC525CN-010A	108262882	3.05 m (10 ft)	1/Pkg
CC525CN-015A	108262890	4.57 m (15 ft)	1/Pkg
CC525CN-025A	108262908	7.62 m (25 ft)	1/Pkg
CC525CN-050A	108036765	15.7 m (50 ft)	1/Pkg
CC525CN-075A	108351669	22.9 m (75 ft)	1/Pkg
CC525CN-100A	108301169	30.5 m (100 ft)	1/Pkg
CC525CN-125A	108351677	38.2 m (125 ft)	1/Pkg
CC525CN-150A	108351685	45.7 m (150 ft)	1/Pkg
CC525CN-175A	108351693	53.3 m (175 ft)	1/Pkg
<b>Right Angle to Right Angle</b>			
CC525RR-005A	108272014	1.52 m (5 ft)	1/Pkg
CC525RR-010A	108272022	3.05 m (10 ft)	1/Pkg
CC525RR-015A	108272030	4.57 m (15 ft)	1/Pkg
CC525RR-025A	108272048	7.62 m (25 ft)	1/Pkg
CC525RR-050A	108272055	15.7 m (50 ft)	1/Pkg
CC525RR-075A	108352824	22.9 m (75 ft)	1/Pkg
CC525RR-100A	108301227	30.5 m (100 ft)	1/Pkg
CC525RR-125A	108352832	38.2 m (125 ft)	1/Pkg
CC525RR-150A	108352840	45.7 m (150 ft)	1/Pkg
CC525RR-175A	108352857	53.3 m (175 ft)	1/Pkg
<b>Left Angle to Left Angle</b>			
CC525AA-025A	108272097	7.62 m (25 ft)	1/Pkg
CC525AA-100A	108301177	30.5 m (100 ft)	1/Pkg

## Copper

## 25-Pair Cords

## Miscellaneous

## Category 3 25-Pair Cords



These **25-Pair (50-Pin) Telco Connector Cords** consist of 0.511 mm (24 AWG) solid annealed copper conductors insulated with semi-ridged gray PVC. Single-ended, 25-pair connector cables have one unconnectorized end and one connectorized end, either male or female. Double-ended 25-pair connector cables are connectorized at both ends and are available either with both ends male, or one female end and one male end. These Telco cables are used to connect voice switching equipment, and data equipment operating at 10 Mb/s or less. They are UL listed type CMR.

## Physical Specifications

<b>Gauge:</b> 0.511 mm (24 AWG)	<b>Weight:</b> 12.71 kg/100 m (28.02 lb/328.8 ft)
<b>Outside Diameter:</b> 9.6 mm (0.4 in)	<b>Insulation Thickness:</b> 0.15 mm (0.005 in)
<b>Jacket Thickness:</b> 0.63 mm (0.02 in)	

## Electrical Specifications

<b>DC Resistance:</b> 9.38 $\Omega$ /100 m
<b>Mut. Capacitance (@ 1kHz):</b> 7.2 nF/100 m
<b>Impedance (1.0-10 MHz):</b> 100 $\Omega \pm 15\%$
<b>Attenuation (dB/100m):</b> @ 1.0 MHz: 2.9 @ 4.0 MHz: 6.2 @ 10 MHz: 9.8
<b>Delay at 1 kHz:</b> 0.56 $\mu$ s/100 m

Product	Material ID	Length	Connector Type	Packaging
A25B-15 SGL	100959162	4.6 m (15 ft)	Female to Unterminated	ea
A25B-50 SGL	100016765	15.2 m (50 ft)	Female to Unterminated	ea
A25D-50 SGL	100960004	15.2 m (50 ft)	Male to Unterminated	ea
A25D-100 SGL	101129484	30.5 m (100 ft)	Male to Unterminated	ea
A25D-10 DBL	100963982	3 m (10 ft)	Male to Male	ea
B25A-100 DBL	100017367	30.5 m (100 ft)	Male to Female	ea

Copper

GS8EN Cross-over Cords

The **GS8EN Crossover Cords** are available for Ethernet applications requiring pair cross-overs (ie switch-to-switch connections) and support 10BASE-T, 100BASE-T and 1000BASE-T cross-over applications. Pairs 2 and 3 and pairs 1 and 4 are crossed. Please see wiring diagram at right.

The cord will have a yellow label with the word “CROSSOVER” on the end that is wired differently (crossed). The other end will have a standard label that tells the Product Code (GS8EN), length, and date.



This product is available in all the GS8E colors and lengths of one to one hundred feet in increments of one foot (0.30 meters).

Miscellaneous

Ethernet Crossover Cords

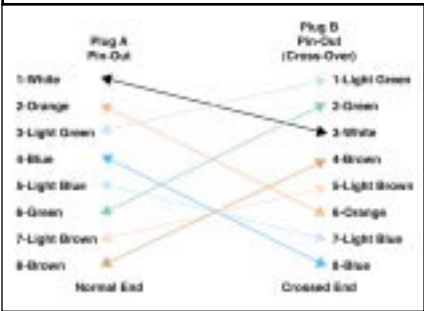


Figure 63  
Crossover  
Cord Configuration

Product	Material ID	Length	Packaging	Color
GS8EN	CPC3313-03F-003	3 ft (.91 m)	ea	Gray
GS8EN	CPC3313-03F-007	7 ft (2.1 m)	ea	Gray
GS8EN	CPC3313-03F-010	10 ft (3 m)	ea	Gray
GS8EN	CPC3313-07F-003	3 ft (.91 m)	ea	Red
GS8EN	CPC3313-07F-007	7 ft (2.1 m)	ea	Red
GS8EN	CPC3313-07F-010	10 ft (3 m)	ea	Red

\*Additional lengths and colors can be ordered. Please contact your SYSTIMAX SCS representative for support.

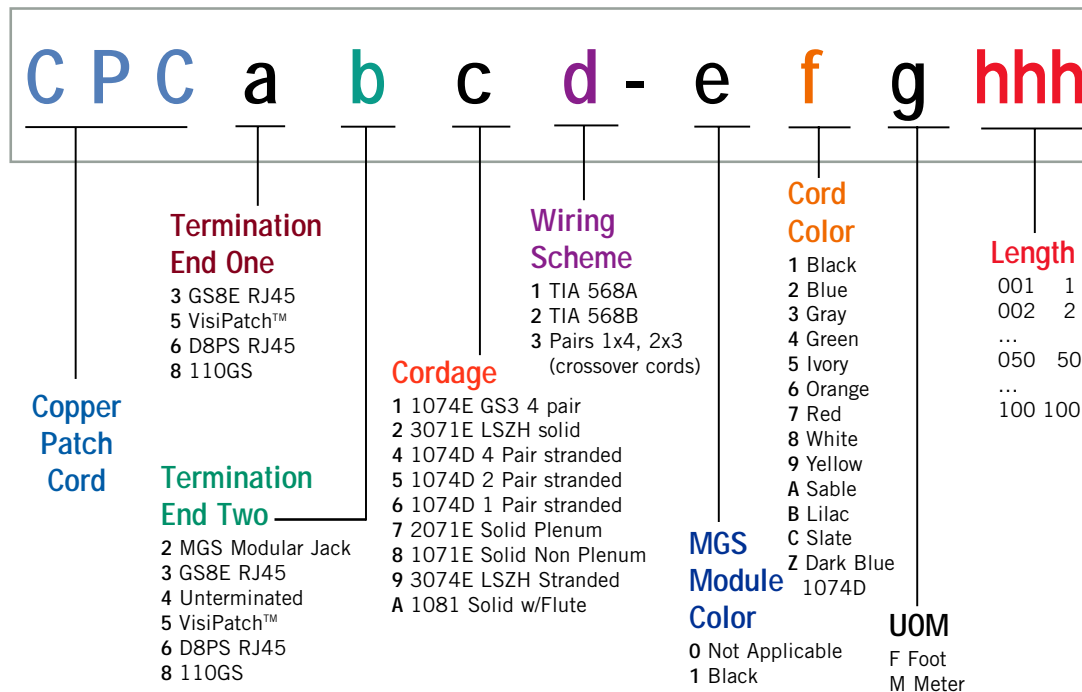
## Copper

## Patch Cord Product Identifier

## Miscellaneous

## Patch Cord Identifier

The Patch Cord Product Identifier provides for a flexible ordering system. The various patch cords are orderable with a 14-character feature configuration coding system. It allows for many different combinations of plug ends, cordage types, colors and lengths. However, as this product guide is global, regional portfolios differ. To confirm your regions offering please contact your account representative or BusinessPartner.



## Patch Cord Portfolio Options

GS8E	CPC3312 - OXXXXX
GS117	CPC3412 - OXXXXX
GS8MGS-SN	CPC3282 - OXXXXX blue, gray only
GS8MGS-SP	CPC3272 - OXXXXX blue, white only
GS8E-SND	CPC3382 - OXXXXX blue, gray only
GS8E-SN	CPC3482 - OXXXXX blue, gray only
GS8E-SPD	CPC3372 - OXXXXX blue, white only
GS8E-SP	CPC3472 - OXXXXX blue, white only
110VP8-GS3-B	CPC5512 - OXXXXX
110VP8-GS3-A	CPC5511 - OXXXXX
119VP8-GS3-B	CPC5312 - OXXXXX
119VP8-GS3-A	CPC5311 - OXXXXX
GS8EN	CPC3313 - OXXXXX
110P4VP	CPC5552 - O3XXXX gray only
110P2VP	CPC5562 - O3XXXX gray only
119P8CM*A	CPC8141 - OXXXXX
119P8CM*B	CPC8142 - OXXXXX
110P8GS	CPC8842 - OXXXXX
1 pr VP to RJ45	CPC5162 - O3XXXX gray only
4 pr VP to Uterm	CPC5482 - OXXXXX blue, gray only
GS8L	CPC3322 - OXXXXX
GS8H	CPC3392 - O8XXXX white only
D8PS	CPC6642 - OXXXXX
117PS	CPC6442 - O3XXXX gray only
GS81-SN	CPC33A2 - XXXXX
GS81	CPC33A2 - OXXXXX
GS81-SE	CPC34A2 - OXXXXX white, blue only
GS8E Keyed	CPC9912 - OXXXXX

## Fiber

## LC Cords

At just 1.6 mm diameter the **LazrSPEED LC cords** are ideal for high-density applications. Tests results by SYSTIMAX Labs per EIA/TIA 455 procedures and IEC 794 methods also show that the 1.6 mm cordage exceeds the requirements for larger diameter cordage. This smaller cordage allows at least twice as many fibers to be installed in a cabinet. The duplex cordage is 1.6 mm by 3.5 mm and has two single fiber cords joined together with a web. **LC Patch Cords** greatly reduce congestion in shelves to help you save space and time when rearranging cabling. Pull-proof design helps prevent accidental disconnects and helps to assure optimal performance of your system. Custom hybrid patch cords are also available, to simplify your migration to industry leading SYSTIMAX LC Connectors.

**Features:**

- Aqua LazrSPEED cordage for craft identification.
- Small diameter cordage provides robust, high density package.
- LC connectors are the lowest loss fiber-optic connectors on the market.

## LazrSPEED

**Duplex 1.6 mm Patch Cords****Figure 64**

LC 1.6 mm Cordage  
ST 1.6 mm Cordage  
SC 1.6 mm Cordage

**Cable Specifications**

**Minimum Bandwidth @ 850 nm:** 2000 MHz-km (laser), 1500 MHz-km (OFL)

**@ 1300 nm:** 500 MHz-km (laser), 500 MHz-km (OFL)

**Attenuation:** 3.0 dB/Km @ 850 nm, 1.0dB/Km @ 1300 nm

**Cable Outside Diameter: Simplex:** 1.6 mm

**Duplex:** 1.6 x 3.7 mm

**Min. Bend Radius:** 2.5 cm

**Operating Temperature Range:** -20 to 70 °C

**Connector Specifications**

**Average Connection Loss:** LC = 0.1 dB

**Return Loss Minimum:** -20 dB

**Tip Material:** Ceramic

**Mating Durability for 500 Reconnects**

**Insertion Loss Change:** <0.2 dB

**Temperature Stability:** -40 to + 75 °C

**Insertion Loss Change:** <0.3 dB

## Fiber

## LC Cords

## LazrSPEED

Duplex 1.6mm  
Cordage Patch Cords

The **1.6mm LazrSPEED Cordage** provides a robust high density package. The LC connectors are the lowest loss fiber-optic connectors on the market.

Product	Material ID	Length	Connector Type	Fiber Type	Packaging
MZ2LC-LC-04	108573627	1.2 m (4 ft)	LC-LC	LZ MM	ea
MZ2LC-LC-06	108573635	1.8 m (6 ft)	LC-LC	LZ MM	ea
MZ2LC-LC-10	108573643	3 m (10 ft)	LC-LC	LZ MM	ea
MZ2LC-LC-20	108573650	6.1 m (20 ft)	LC-LC	LZ MM	ea
MZ2LC-LC-30	108573668	9.1 m (30 ft)	LC-LC	LZ MM	ea
MZ2LC-LC-40	108573676	12.2 m (40 ft)	LC-LC	LZ MM	ea
MZ2LC-LC-50	108573684	15.2 m (50 ft)	LC-LC	LZ MM	ea
MZ2LC-LC-85	108573692	25.93 m (85 ft)	LC-LC	LZ MM	ea
MZ2LC-LC-105	108573700	32.03 m (105 ft)	LC-LC	LZ MM	ea
MZ2LC-LC-E/W	108724956	Custom Lengths	LC-LC	LZ MM	ea

## Fiber

## STII+ Cords

## LazrSPEED

Duplex 1.6 mm  
Cordage Patch Cords

The Aqua color identifies the 1.6 mm LazrSPEED Cord.

See Cable and Connector Specifications for 1.6 mm cords Page 132.

Product	Material ID	Length	Connector Type	Fiber Type	Packaging
MZ2STII+-STII+-04	108688680	1.2 m (4 ft)	STII+-STII+	LZ MM	ea
MZ2STII+-STII+-06	108688136	1.8 m (6 ft)	STII+ - STII+	LZ MM	ea
MZ2STII+-STII+-10	108572710	3 m (10 ft)	STII+-STII+	LZ MM	ea
MZ2STII+-STII+-20	108572728	6.1 m (20 ft)	STII+-STII+	LZ MM	ea
MZ2STII+-STII+-30	108572736	9.1 m (30 ft)	STII+-STII+	LZ MM	ea
MZ2STII+-STII+-40	108688144	12.2 m (40 ft)	STII+-STII+	LZ MM	ea
MZ2STII+-STII+-50	108572744	15.2 m (50 ft)	STII+-STII+	LZ MM	ea



## Fiber

## STII+ Cords

## LazrSPEED

3.0 mm LazrSPEED  
Patch Cords

**LazrSPEED Patch Cords** are available in 3.0 mm cordage with STII+ connectors.

**Features:**

- Aqua LazrSPEED cordage for craft identification.
- 3.0 mm OD Cordage.

Product	Material ID	Length	Connector Type	Fiber Type	Packaging
CLI-DZ2EP-EP - 04	760003251	1.2 m (4 ft)	STII+ - STII+	LZ MM	ea
CLI-DZ2EP-EP - 06	760003269	1.8 m (6 ft)	STII+ - STII+	LZ MM	ea
CLI-DZ2EP-EP - 10	760003277	3 m (10 ft)	STII+ - STII+	LZ MM	ea
CLI-DZ2EP-EP - 20	760003285	6.1 m (20 ft)	STII+ - STII+	LZ MM	ea
CLI-DZ2EP-EP - 30	760003293	9.1 m (30 ft)	STII+ - STII+	LZ MM	ea
CLI-DZ2EP-EP - 40	760003301	12.2 m (40 ft)	STII+ - STII+	LZ MM	ea
CLI-DZ2EP-EP - 50	760003319	15.2 m (50 ft)	STII+ - STII+	LZ MM	ea
CLI-DZ2EP-EP E/W	760003244	Custom Lengths	STII+ - STII+	LZ MM	ea

## Fiber

## SC Cords

## LazrSPEED

3.0 mm LazrSPEED  
Patch Cords

**LazrSPEED Patch Cords** are also available in 3.0 mm cordage with SC connectors.

**Features:**

- Aqua LazrSPEED cordage for craft identification.
- 3.0 mm OD Cordage.

**Optical Specifications**

**Average Connection Loss:** SC = MM: 0.3 dB

**Return Loss Minimum:** -20 dB

**Cable Outside Diameter:** 3.0 mm

**Cable Retention (use with SYSTIMAX cable) (cordage):** 20 lbs / 88.9 N

**Tip Material:** Ceramic

**Mating Durability for 500 Reconnects**      **Insertion Loss Change:** <0.2 dB

**Temperature Stability:** -40 to 75 °C

**Insertion Loss Change:** <0.3 dB

Product	Material ID	Length	Connector Type	Fiber Type	Packaging
CLI-DZ2SC-SC-04	760003418	1.2 m (4 ft)	SC - SC	LZ MM	ea
CLI-DZ2SC-SC-06	760003426	1.8 m (6 ft)	SC - SC	LZ MM	ea
CLI-DZ2SC-SC-10	760003434	3 m (10 ft)	SC - SC	LZ MM	ea
CLI-DZ2SC-SC-20	760003442	6.1 m (20 ft)	SC - SC	LZ MM	ea
CLI-DZ2SC-SC-30	760003459	9.1 m (30 ft)	SC - SC	LZ MM	ea
CLI-DZ2SC-SC-40	760003467	12.2 m (40 ft)	SC - SC	LZ MM	ea
CLI-DZ2SC-SC-50	760003475	15.2 m (50 ft)	SC - SC	LZ MM	ea
CLI-DZ2SC-SC E/W	760003400	Custom Lengths	SC - SC	LZ MM	ea

## Fiber

## Hybrid Cords

## LazrSPEED

Duplex LazrSPEED  
1.6 mm Hybrid Patch Cords

Hybrid LC to MT-RJ LazrSPEED 1.6 mm Patch Cords are available to simplify migration to the industry-leading LC infrastructure. LC to MT-RJ LazrSPEED Patch Cords allow the connection of network equipment with MT-RJ interfaces to a high-performance LC infrastructure.

## Features:

- Aqua LazrSPEED cordage for craft identification.
- Small diameter cordage provides robust, high density package.



**Figure 65**  
LC Connector attached  
to MTRJ

Product	Material ID	Length	Connector Type	Fiber Type	Packaging
MZ2LC-SC-04	108573783	1.2 m (4 ft)	LC-SC	LZ MM	ea
MZ2LC-SC-06	108573791	1.8 m (6 ft)	LC-SC	LZ MM	ea
MZ2LC-SC-10	108573809	3 m (10 ft)	LC-SC	LZ MM	ea
MZ2LC-SC-20	108574435	6.1 m (20 ft)	LC-SC	LZ MM	ea
MZ2LC-SC-30	108574443	9.1 m (30 ft)	LC-SC	LZ MM	ea
MZ2LC-SC-40	108574450	12.2 m (40 ft)	LC-SC	LZ MM	ea
MZ2LC-SC-50	108574468	15.2 m (50 ft)	LC-SC	LZ MM	ea
MZ2LC-SC-E/W	108724964	Custom Lengths	LC-SC	LZ MM	ea
MZ2LC-STII+-04	108573502	1.2 m (4 ft)	LC-STII+	LZ MM	ea
MZ2LC-STII+-06	108573510	1.8 m (6 ft)	LC-STII+	LZ MM	ea
MZ2LC-STII+-10	108573528	3 m (10 ft)	LC-STII+	LZ MM	ea
MZ2LC-STII+-20	108573536	6.1 m (20 ft)	LC-STII+	LZ MM	ea
MZ2LC-STII+-30	108573544	9.1 m (30 ft)	LC-STII+	LZ MM	ea
MZ2LC-STII+-40	108573551	12.2 m (40 ft)	LC-STII+	LZ MM	ea
MZ2LC-STII+-50	108573619	15.2 m (50 ft)	LC-STII+	LZ MM	ea
MZ2LC-STII+-E/W	108724972	Custom Lengths	LC-SC	LZ MM	ea
MZ2LC-MJ-04	108573718	1.2 m (4 ft)	LC - MTRJ	LZ MM	ea
MZ2LC-MJ-06	108573726	1.8 m (6 ft)	LC - MTRJ	LZ MM	ea
MZ2LC-MJ-10	108573734	3 m (10 ft)	LC - MTRJ	LZ MM	ea
MZ2LC-MJ-20	108573742	6.1 m (20 ft)	LC - MTRJ	LZ MM	ea
MZ2LC-MJ-30	108573759	9.1 m (30 ft)	LC - MTRJ	LZ MM	ea
MZ2LC-MJ-40	108573767	12.2 m (40 ft)	LC - MTRJ	LZ MM	ea
MZ2LC-MJ-50	108573775	15.2 m (50 ft)	LC - MTRJ	LZ MM	ea
MZ2LC-MJ-E/W	108725037	Custom Lengths	LC-MJ	LZ MM	ea
MZ2SC-SC-04	108688102	1.2 m (4 ft)	SC-SC	LZ MM	ea
MZ2SC-SC-06	108688110	1.8 m (6 ft)	SC-SC	LZ MM	ea

## Fiber

## Hybrid Cords

## LazrSPEED

**Duplex LazrSPEED  
1.6 mm Hybrid Patch  
Cords (Cont'd)**

Product	Material ID	Length	Connector Type	Fiber Type	Packaging
MZ2SC-SC-10	108574971	3 m (10 ft)	SC-SC	LZ MM	ea
MZ2SC-SC-20	108574997	6.1 m (20 ft)	SC-SC	LZ MM	ea
MZ2SC-SC-30	108575002	9.1 m (30 ft)	SC-SC	LZ MM	ea
MZ2SC-SC-40	108688128	12.2 m (40 ft)	SC-SC	LZ MM	ea
MZ2SC-SC-50	108575010	15.2 m (50 ft)	SC-SC	LZ MM	ea
MZ2SC-SC-85	108575028	25.93 m (85 ft)	SC-SC	LZ MM	ea
MZ2SC-SC-105	108575036	32.03 m (105 ft)	SC-SC	LZ MM	ea
MZ2SC-SC-E/W	108724980	Custom Length	SC-SC	LZ MM	ea

## Fiber

## Hybrid Cords

## LazrSPEED

**3.0 mm LazrSPEED  
Patch Cords**

**Hybrid LazrSPEED Patch Cords** are available in 3.0 mm cordage with STII+ and SC connectors.

**Features:**

- Aqua LazrSPEED cordage for craft identification.
- 3.0 mm OD Cordage.

Product	Material ID	Length	Connector Type	Fiber Type	Packaging
CLI-DZ2SC-EP-04	760003335	1.2 m (4 ft)	SC - STII+	LZ MM	ea
CLI-DZ2SC-EP-06	760003343	1.8 m (6 ft)	SC - STII+	LZ MM	ea
CLI-DZ2SC-EP-10	760003350	3 m (10 ft)	SC - STII+	LZ MM	ea
CLI-DZ2SC-EP-20	760003368	6.1 m (20 ft)	SC - STII+	LZ MM	ea
CLI-DZ2SC-EP-30	760003376	9.1 m (30 ft)	SC - STII+	LZ MM	ea
CLI-DZ2SC-EP-40	760003384	12.2 m (40 ft)	SC - STII+	LZ MM	ea
CLI-DZ2SC-EP-50	760003392	15.2 m (50 ft)	SC - STII+	LZ MM	ea
CLI-DZ2SC-EP E/W	760003327	Custom Lengths	SC - STII+	LZ MM	ea

## Fiber

## LazrSPEED 550 Cords

## LazrSPEED

## LazrSPEED 550 Cords

The **LazrSPEED Fiber-Optic Patch Cord** family is configurable with standard LC, SC, and ST, terminations, and is available in either 1.6 mm or 3.0 mm simplex or zipcord. Using our new feature configuration ordering process for fiber patch cords, any length can be custom configured in either feet or meters, in increments of 1 foot or 1 meter, providing the ultimate in flexibility to meet any cabling infrastructure design. At just 1.6 mm diameter the LazrSPEED LC cords are ideal for high-density applications. Test results by SYSTIMAX Labs per EIA/TIA 455 procedures and IEC 794 methods also show that the 1.6 mm cordage exceeds the requirements for larger diameter cordage. This smaller cordage allows at least twice as many fibers to be installed in a cabinet. The duplex cordage is 1.6 mm by 3.5 mm and has two single fiber cords joined together with a web. LC Patch Cords greatly reduce congestion in shelves to help you save space and time when rearranging cabling. Pull-proof design helps prevent accidental disconnects and helps to assure optimal performance of your system. Custom hybrid patch cords are also available, to simplify your migration to industry-leading SYSTIMAX LC Connectors. All LazrSPEED fibers are Differential Mode Delay (DMD) tested. The SYSTIMAX Labs use a high-resolution test bench that exceeds the FOTP-220 standards and is independently certified by UL®.



Figure 65a  
LazrSPEED 550 Cord

**Features:**

- Available 1.6 mm cordage makes these the smallest cords in the industry
- Double the density in panels/shelves/outlets, when configured with the LC connector
- Pull-proof connector designs prevent unintended disconnect
- Distinctive aqua color-coding for positive identification

**Physical Specifications**

<b>Minimum Bandwidth@ 850 nm:</b> 4700 MHz-km (laser), 3500 MHz-km (OFL)
<b>@ 1300 nm:</b> 500 MHz-km (laser), 500 MHz-km (OFL)
<b>Attenuation:</b> 3.0 dB/Km @ 850 nm, 1.0dB/Km @ 1300 nm
<b>Cable Outside Diameter:</b> <b>Simplex:</b> 1.6 mm
<b>Duplex:</b> 1.6 x 3.7 mm
<b>Min. Bend Radius:</b> 2.5 cm
<b>Operating Temperature Range:</b> -20 to 70 °C
<b>Average Connection Loss:</b> LC = 0.1 dB
<b>Return Loss Minimum:</b> -20 dB
<b>Tip Material:</b> Ceramic
<b>Mating Durability for 500 Reconnects</b>
<b>Insertion Loss Change:</b> <0.2 dB
<b>Temperature Stability:</b> -40 to + 75 °C
<b>Insertion Loss Change:</b> <0.3 dB

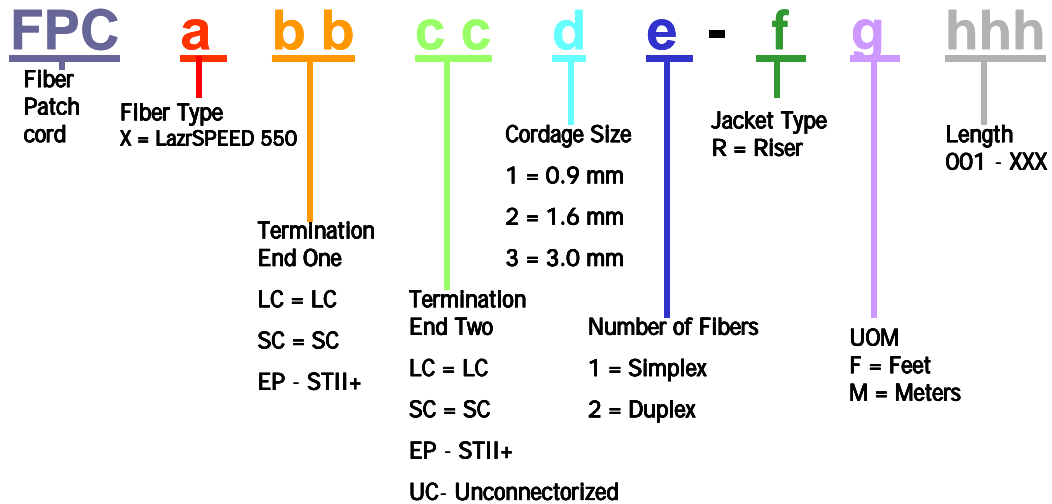
## Fiber

## LazrSPEED 550 Cords

## LazrSPEED

LazrSPEED 550 Cords  
(Cont'd)

Fiber Patch Cord Product Identifier.



Example: FPCZLCLC22-RF007 =  
A 7 foot LC to LC, 1.6mm Riser Rated duplex zipcord

## Fiber

## LC Cords

*The Best Little Connector in the Business....*

The **OptiSPEED LC Connector** represents the latest innovation from SYSTIMAX Labs in the world of fiber connectivity. This best-in-class connector has a revolutionary physical and optical performance that allows for the quality build of fiber based networks. Benefits of this connector include:

- The **LC Small Form Factor** means a space saving of 50%.
- Allows for increased fiber density.
- Superior optical performance allows for quality build of High Data Rate Networks (Gigabit Ethernet).
- Proven ceramic ferrule based technology offers the best-in-class connectivity in terms of optical performance, quality and reliability.
- The new design reduces installation time by some 40%.
- Cost-effectivity is derived not only from the reduced installation time but also from the fact that the connector has a ruggedized solution for cordage and a standard solution for buffered fiber thus making the entire network solution cost effective.
- A complete Connectivity Solution covering singlemode and multimode fibers in a simplex or duplex fashion. Effective color coding of the jacket, inner jacket, buffer and connector ends enable ease of installation and administration.

*From the Innovators of the ST now comes the next generation connector...The LC.*

## OptiSPEED

## LC Fiber Cords



**Figure 66**  
LC 1.6 mm (0.06 in)  
Jumper Connector

### Cable Specifications

**Minimum Bandwidth @ 850 nm:** 200 Mhz-Km  
**@ 1300 nm:** 500 Mhz-Km

**Attenuation @ 850 nm:** 3.0 dB/Km  
**@ 1300 nm:** 1.0 dB/Km

**Cable Outside Diameter Simplex:** 1.6 mm

**Duplex:** 1.6 x 3.5 mm

**Minimum Bend Radius:** 25 cm (after installation)

**Operating Temperature Range:** -20 to 70 °C

### Connector Specifications

**Average Connection Loss:** LC = 0.1 dB

**Return Loss Minimum:** -20 dB (mm) -55 dB (sm)

**Tip Material:** Ceramic

**Mating Durability for 500 Reconnects**

**Insertion Loss Change:** < 0.2 dB

**Insertion Loss Change:** < 0.3 dB

**Temperature Stability:** -40 to + 75 °C

## Fiber

## LC Cords

## OptiSPEED

LC Fiber Cords *(cont'd)*

Product	Material ID	Fiber Count	Length	Fiber Type	Packaging
ML1LC-LC-02	107736704	1	0.6 m (2 ft)	OS MM	ea
ML1LC-LC-04	107736712	1	1.2 m (4 ft)	OS MM	ea
ML1LC-LC-05	107736720	1	1.5 m (5 ft)	OS MM	ea
ML1LC-LC-06	107736738	1	1.8 m (6 ft)	OS MM	ea
ML1LC-LC-08	107736746	1	2.4 m (8 ft)	OS MM	ea
ML1LC-LC-10	107736753	1	3 m (10 ft)	OS MM	ea
ML1LC-LC-15	107736761	1	4.6 m (15 ft)	OS MM	ea
ML1LC-LC-20	107736779	1	6.1 m (20 ft)	OS MM	ea
ML1LC-LC-25	107736787	1	7.6 m (25 ft)	OS MM	ea
ML1LC-LC-30	107736795	1	9.2 m (30 ft)	OS MM	ea
ML1LC-LC-35	107736811	1	10.7 m (35 ft)	OS MM	ea
ML1LC-LC-40	107736829	1	12.2 m (40 ft)	OS MM	ea
ML1LC-LC-50	107736837	1	15.2 m (50 ft)	OS MM	ea
ML1LC-LC-75	107736845	1	22.9 m (75 ft)	OS MM	ea
ML1LC-LC-100	107736852	1	30.5 m (100 ft)	OS MM	ea
ML1LC-LC-E/W	107736878	1	Custom Lengths	OS MM	ea
ML2LC-LC-02	107736886	2	0.6 m (2 ft)	OS MM	ea
ML2LC-LC-04	107736894	2	1.2 m (4 ft)	OS MM	ea
ML2LC-LC-05	107736910	2	1.5 m (5 ft)	OS MM	ea
ML2LC-LC-06	107736928	2	1.8 m (6 ft)	OS MM	ea
ML2LC-LC-08	107736936	2	2.4 m (8 ft)	OS MM	ea
ML2LC-LC-10	107736944	2	3 m (10 ft)	OS MM	ea
ML2LC-LC-15	107736951	2	4.6 m (15 ft)	OS MM	ea
ML2LC-LC-20	107736969	2	6.1 m (20 ft)	OS MM	ea
ML2LC-LC-25	107736977	2	7.6 m (25 ft)	OS MM	ea
ML2LC-LC-30	107736985	2	9.2 m (30 ft)	OS MM	ea
ML2LC-LC-35	107736993	2	10.7 m (35 ft)	OS MM	ea
ML2LC-LC-40	107737009	2	12.2 m (40 ft)	OS MM	ea
ML2LC-LC-50	107737017	2	15.2 m (50 ft)	OS MM	ea
ML2LC-LC-55	108586660	2	16.78 m (55 ft)	OS MM	ea
ML2LC-LC-75	107737025	2	22.9 m (70 ft)	OS MM	ea
ML2LC-LC-100	107737033	2	30.5 m (100 ft)	OS MM	ea
ML2LC-LC-E/W	107737041	2	Custom Lengths	OS MM	ea
MS1LC-LC-04	700003957	1	1.2 m (4 ft)	OS SM	ea
MS1LC-LC-05	700003940	1	1.5 m (5 ft)	OS SM	ea
MS1LC-LC-06	700003734	1	1.8 m (6 ft)	OS SM	ea
MS1LC-LC-08	700003932	1	2.4 m (8 ft)	OS SM	ea
MS1LC-LC-10	700003924	1	3 m (10 ft)	OS SM	ea
MS1LC-LC-15	700003726	1	4.6 m (15 ft)	OS SM	ea
MS1LC-LC-20	700003916	1	6.1 m (20 ft)	OS SM	ea



## Fiber

## LC Cords

## OptiSPEED

LC Fiber Cords *(cont'd)*

Product	Material ID	Fiber Count	Length	Fiber Type	Packaging
MS1LC-LC-25	700003908	1	7.6 m (25 ft)	OS SM	ea
MS1LC-LC-30	700003890	1	9.2 m (30 ft)	OS SM	ea
MS1LC-LC-35	700003684	1	10.7 m (35 ft)	OS SM	ea
MS1LC-LC-40	700003882	1	12.2 m (40 ft)	OS SM	ea
MS1LC-LC-50	700003718	1	15.2 m (50 ft)	OS SM	ea
MS1LC-LC-75	700003874	1	22.9 m (75 ft)	OS SM	ea
MS1LC-LC-100	700003866	1	30.5 m (100 ft)	OS SM	ea
MS2LC-LC-04	700003858	2	1.2 m (4 ft)	OS SM	ea
MS2LC-LC-05	700003841	2	1.5 m (5 ft)	OS SM	ea
MS2LC-LC-06	700003700	2	1.8 m (6 ft)	OS SM	ea
MS2LC-LC-08	700003833	2	2.4 m (8 ft)	OS SM	ea
MS2LC-LC-10	700003692	2	3 m (10 ft)	OS SM	ea
MS2LC-LC-15	700003825	2	4 m (15 ft)	OS SM	ea
MS2LC-LC-20	700003817	2	6 m (20 ft)	OS SM	ea
MS2LC-LC-25	700003809	2	7 m (25 ft)	OS SM	ea
MS2LC-LC-30	700003791	2	9.2 m (30 ft)	OS SM	ea
MS2LC-LC-35	700003783	2	10.7 m (35 ft)	OS SM	ea
MS2LC-LC-40	700003775	2	12.2 m (40 ft)	OS SM	ea
MS2LC-LC-50	700003767	2	15.2 m (50 ft)	OS SM	ea
MS2LC-LC-75	700003759	2	22.9 m (75 ft)	OS SM	ea
MS2LC-LC-100	700003742	2	30.5 m (100 ft)	OS SM	ea

## Fiber

## STII+ Patch Cord

## OptiSPEED

## STII+ Fiber Cords

The **Simplex and Duplex STII+ Fiber Patch Cords** are composed of 3.0 mm cordage with pull-proof STII+ connectors terminated on each end. The cords are available in Simplex and Duplex and also in multimode and singlemode.

## Cable Specifications

Coated Fiber Diameter: 250  $\mu$ m

Cable Outside Diameter: **Simplex:** 3.0 mm; **Duplex:** 6.6 x 3.6 mm

Min. Bend Radius: 3.8 cm

Operating Temperature Range: -20 to 70 °C

## Connector Specifications

## MULTIMODE

Ave. Loss: 0.3 dB/mated connector

Min. Bandwidth @ 850 nm: 200 MHz-km

Min. Bandwidth @ 1300 nm: 500 MHz-km

## SINGLEMODE

Ave. Loss: 0.3 dB/mated connector

Return Loss: -50 dB Max

Product	Material ID	Fiber Count	Length	Fiber Type	Packaging
FL1STII+-STII+-04	107150161	1	1.2 m (4 ft)	OS MM	ea
FL1STII+-STII+-06	107150179	1	1.8 m (6 ft)	OS MM	ea
FL1STII+-STII+-08	107150187	1	2.4 m (8 ft)	OS MM	ea
FL1STII+-STII+-10	107150195	1	3 m (10 ft)	OS MM	ea
FL1STII+-STII+-15	107150203	1	4.6 m (15 ft)	OS MM	ea
FL1STII+-STII+-20	107150211	1	6.1 m (20 ft)	OS MM	ea
FL1STII+-STII+-25	107150229	1	7.6 m (25 ft)	OS MM	ea
CLI-SDL2EP-EP-04	760003574	2	1.2 m (4 ft)	OS MM	ea
CLI-SDL2EP-EP-06	760003582	2	1.8 m (6 ft)	OS MM	ea
CLI-SDL2EP-EP-10	760003590	2	3 m (10 ft)	OS MM	ea
CLI-SDL2EP-EP-15	760003608	2	4.6 m (15 ft)	OS MM	ea
CLI-SDL2EP-EP-20	760003616	2	6.1 m (20 ft)	OS MM	ea
CLI-SDL2EP-EP-25	760003624	2	7.6 m (25 ft)	OS MM	ea
CLI-SDL2EP-EP-30	760003632	2	9.1 m (30 ft)	OS SM	ea
CLI-SDL2EP-EP-35	760003640	2	10.6 m (35 ft)	OS SM	ea
CLI-SDL2EP-EP-40	760003657	2	12.1 m (40 ft)	OS SM	ea
CLI-SDL2EP-EP-50	760003665	2	15.2 m (50 ft)	OS SM	ea
CLI-SDL2EP-EP E/W	760003566	2	Custom Lengths	OS SM	ea

## Fiber

STII+ - STII+

OptiSPEED

1.6 mm Cord

The **STII+ to STII+ Fiber-Optic Cord** features pull-proof connectors and can be ordered in multimode or singlemode in either a simplex or duplex version.

Product	Material ID	Fiber	Length Count	Fiber Type	Packaging
ML1STII+-STII+-06	107486979	1	1.8 m (6 ft)	OS MM	ea
ML1STII+-STII+-10	107486995	1	3 m (10 ft)	OS MM	ea
ML2STII+-STII+-04	107487134	2	1.2 m (4 ft)	OS MM	ea
ML2STII+-STII+-06	107487159	2	1.8 m (6 ft)	OS MM	ea
ML2STII+-STII+-08	107487167	2	2.4 m (8 ft)	OS MM	ea
ML2STII+-STII+-10	107487175	2	3 m (10 ft)	OS MM	ea
ML2STII+-STII+-15	107487183	2	4.6 m (15 ft)	OS MM	ea
ML2STII+-STII+-20	107487191	2	6.1 m (20 ft)	OS MM	ea
ML2STII+-STII+-25	107487209	2	7.6 m (25 ft)	OS MM	ea

## Fiber

## SC-SC Patch Cord

## OptiSPEED

## SC Fiber Cords

The **Simplex and Duplex SC Fiber Patch Cords** are composed of 3.0 mm cordage with push-pull SC connectors terminated on each end. They are available in both Simplex and Duplex and also in multimode and singlemode.

See Cable and Connector Specifications Page 136.



Figure 67  
SC Duplex Patch Cord

Product	Material ID	Fiber Count	Length	Fiber Type	Packaging
FL1SC-SC-04	106908676	1	1.2 m (4 ft)	OS MM	ea
FL1SC-SC-05	106908684	1	1.5 m (5 ft)	OS MM	ea
FL1SC-SC-10	106908692	1	3 m (10 ft)	OS MM	ea
FL1SC-SC-15	106908700	1	4.6 m (15 ft)	OS MM	ea
FL1SC-SC-20	106908718	1	6.1 m (20 ft)	OS MM	ea
FL1SC-SC-25	106908734	1	7.6 m (25 ft)	OS MM	ea
CLI-DL2SC-SC-04	760003798	2	1.2 m (4 ft)	OS MM	ea
CLI-DL2SC-SC-10	760003814	2	3 m (10 ft)	OS MM	ea

## Fiber

## SC-SC Patch Cord

## OptiSPEED

## SC Fiber Cords (cont'd)

Product	Material ID	Fiber Count	Length	Fiber Type	Packaging
CLI-DL2SC-SC-15	760003822	2	4.6 m (15 ft)	OS MM	ea
CLI-DL2SC-SC-20	760003830	2	6.1 m (20 ft)	OS MM	ea
CLI-DL2SC-SC-25	760003848	2	7.6 m (25 ft)	OS MM	ea
CLI-DL2SC-SC-30	760003855	2	9.1 m (30 ft)	OS MM	ea
CLI-DL2SC-SC-35	760003863	2	10.6 m (35 ft)	OS MM	ea
CLI-DL2SC-SC-40	760003871	2	12.1 m (40 ft)	OS MM	ea
CLI-DL2SC-SC-50	760003889	2	15.2 m (50 ft)	OS MM	ea
CLI-DL2SC-SC E/W	760003780	2	Custom Lengths	OS MM	ea
FS1SC-SC-04	700011059	1	1.2 m (4 ft)	OS SM	ea
FS1SC-SC-10	700011042	1	3 m (10 ft)	OS SM	ea
FS2SC-SC-05	700011026	2	1.5 m (5 ft)	OS SM	ea
FS2SC-SC-10	700011018	2	3 m (10 ft)	OS SM	ea

## Fiber

## SC - SC Patch Cords

## OptiSPEED

## 1.6 mm Cords

The **SC to SC Fiber-Optic Cord** uses **1.6 mm** cords feature pull-proof connectors and can be ordered in multimode or singlemode in either a simplex or duplex version.

Product	Material ID	Fiber Count	Length	Fiber Type	Packaging
ML1SC-SC-04	107670994	1	1.2 m (4 ft)	OS MM	ea
ML1SC-SC-05	107671000	1	1.5 m (5 ft)	OS MM	ea
ML1SC-SC-10	107671018	1	3 m (10 ft)	OS MM	ea
ML1SC-SC-15	107671026	1	4.6 m (15 ft)	OS MM	ea
ML1SC-SC-20	107671034	1	6.1 m (20 ft)	OS MM	ea
ML1SC-SC-25	107671042	1	7.6 m (25 ft)	OS MM	ea
ML2SC-SC-04	107671158	2	1.2 m (4 ft)	OS MM	ea
ML2SC-SC-05	107671166	2	1.5 m (5 ft)	OS MM	ea
ML2SC-SC-10	107671182	2	3 m (10 ft)	OS MM	ea
ML2SC-SC-15	107671190	2	4.5 m (15 ft)	OS MM	ea
ML2SC-SC-20	107671208	2	6.1 m (20 ft)	OS MM	ea
ML2SC-SC-25	107671216	2	7.6 m (25 ft)	OS MM	ea
ML2SC-SC-30	107671224	2	9.15 m (30 ft)	OS MM	ea
ML2SC-SC-35	107671232	2	10.7 m (35 ft)	OS MM	ea
ML2SC-SC-40	107671240	2	12.2 m (40 ft)	OS MM	ea
ML2SC-SC-50	107671265	2	15.2 m (50 ft)	OS MM	ea
ML2SC-SC-75	107671273	2	22.9 m (75 ft)	OS MM	ea
ML2SC-SC-100	107671281	2	30.5 m (100 ft)	OS MM	ea

## Fiber

## Hybrid Patch Cord

## OptiSPEED

## 1.6 mm LC-STII+ Cords

The Duplex **LC to STII+ Patch Cords** are composed of duplex 1.6 mm Cord with SYSTIMAX pull-proof STII+ connectors terminated on one end and LC connectors terminated on the other end.

Product	Material ID	Length	Fiber Type	Packaging
ML2LC-STII+-4	108072430	1.2 m (4 ft)	OS MM	ea
ML2LC-STII+-6	108072448	1.8 m (6 ft)	OS MM	ea
ML2LC-STII+-10	108072455	3.0 m (10 ft)	OS MM	ea
ML2LC-STII+-15	108072463	4.6 m (15 ft)	OS MM	ea
ML2LC-STII+-30	108072471	9.0 m (30 ft)	OS MM	ea

## Fiber

## Hybrid Patch Cord

## OptiSPEED

## 1.6 mm LC-SC Cords

The Duplex **LC to SC Patch Cord** are composed of duplex 1.6 mm Cord with SYSTIMAX SC connectors terminated on one end and LC connectors terminated on the other end.

Product	Material ID	Length	Fiber Type	Packaging
ML2LC-SC-4	108072406	1.2 m (4 ft)	OS MM	ea
ML2LC-SC-6	108072414	1.8 m (6 ft)	OS MM	ea
ML2LC-SC-15	108072422	4.6 m (15 ft)	OS MM	ea
MS2LC-SC-10	700010929	3 m (10 ft)	OS SM	ea
MS2LC-SC-20	700025612	6.5 m (20 ft)	OS SM	ea

## Fiber

## Hybrid Patch Cord

## OptiSPEED

## 1.6 mm STII + - SC Cords

The **STII+ to SC Patch Cord** provides connectivity of fiber-optic equipment at cross-connect, interconnects, and information outlets. The average loss is 0.3 dB/mated connector. They are composed of **1.6 mm cordage** terminated at one end with pull-proof **STII+ connectors** and **SC connectors** at the other end.

Product	Material ID	Fiber Count	Length	Fiber Type	Packaging
ML1STII+-SC-04	107755506	1	1.2 m (4 ft)	OS MM	ea
ML1STII+-SC-06	107755522	1	1.8 m (6 ft)	OS MM	ea
ML1STII+-SC-08	107755530	1	2.4 m (8 ft)	OS MM	ea
ML1STII+-SC-10	107755548	1	3 m (10 ft)	OS MM	ea
ML1STII+-SC-15	107755563	1	4.6 m (15 ft)	OS MM	ea
ML1STII+-SC-20	107755571	1	6.1 m (20 ft)	OS MM	ea
ML1STII+-SC-25	107755589	1	7.6 m (25 ft)	OS MM	ea
ML2STII+-SC-04	107755787	2	1.2 m (4 ft)	OS MM	ea
ML2STII+-SC-06	107755795	2	1.8 m (6 ft)	OS MM	ea
ML2STII+-SC-08	107755803	2	2.4 m (8 ft)	OS MM	ea
ML2STII+-SC-10	107755811	2	3 m (10 ft)	OS MM	ea
ML2STII+-SC-15	107755829	2	4.6 m (15 ft)	OS MM	ea
ML2STII+-SC-20	107755837	2	6.1 m (20 ft)	OS MM	ea
ML2STII+-SC-25	107755845	2	7.6 m (25 ft)	OS MM	ea



## Fiber

## Hybrid Patch Cords

## OptiSPEED

STII+ - SC  
3.0 mm Patch Cord

These **STII+ to SC Patch Cords** are composed of 3.0 mm cordage with pull-proof STII+ connectors terminated on one end and SC connectors terminated on the other end.

Product	Material ID	Fiber Count	Length	Fiber Type	Packaging
FL1STII+-SC-04	107755142	1	1.2 m (4 ft)	OS MM	ea
FL1STII+-SC-06	107755159	1	1.8 m (6 ft)	OS MM	ea
FL1STII+-SC-08	107755167	1	2.4 m (8 ft)	OS MM	ea
FL1STII+-SC-10	107755183	1	3 m (10 ft)	OS MM	ea
FL1STII+-SC-15	107755191	1	4.6 m (15 ft)	OS MM	ea
FL1STII+-SC-20	107755209	1	6.1 m (20 ft)	OS MM	ea
FL1STII+-SC-25	107755217	1	7.6 m (25 ft)	OS MM	ea
CLI-DL2EP-SC-04	760003681	2	1.2 m (4 ft)	OS MM	ea
CLI-DL2EP-SC-06	760003699	2	1.8 m (6 ft)	OS MM	ea
CLI-DL2EP-SC-10	760003707	2	3 m (10 ft)	OS MM	ea
CLI-DL2EP-SC-15	760003715	2	4.6 m (15 ft)	OS MM	ea
CLI-DL2EP-SC-20	760003723	2	6.1 m (20 ft)	OS MM	ea
CLI-DL2EP-SC-25	760003731	2	7.6 m (25 ft)	OS MM	ea
CLI-DL2EP-SC-30	760003749	2	9.1 m (30 ft)	OS MM	ea
CLI-DL2EP-SC-35	760003756	2	10.6 m (35 ft)	OS MM	ea
CLI-DL2EP-SC-40	760003764	2	12.1 m (40 ft)	OS MM	ea
CLI-DL2EP-SC-50	760003772	2	15.2 m (50 ft)	OS MM	ea
CLI-DL2EP-SC E/W	760003673	2	Custom Lengths	OS MM	ea

## Fiber

## Hybrid Patch Cords

## OptiSPEED

## 1.6 mm LC - MTRJ Cords

The duplex LC - MTRJ Patch Cords are a hybrid patch cord that use duplex 1.6 mm cordage.

Product	Material ID	Length	Fiber Type	Packaging
ML2LC-MJ-04	108462425	1.2 m (4 ft)	OS MM	ea
ML2LC-MJ-06	108462433	1.8 m (6 ft)	OS MM	ea
ML2LC-MJ-08	108462441	2.4 m (8 ft)	OS MM	ea
ML2LC-MJ-10	108462458	3 m (10 ft)	OS MM	ea
ML2LC-MJ-15	108462466	4.6 m (15 ft)	OS MM	ea
ML2LC-MJ-30	108462508	9.1 m (30 ft)	OS MM	ea

## Fiber

## Hybrid Patch Cords

## OptiSPEED

## 1.6 mm SC - MTRJ Cords

The duplex SC - MTRJ Patch Cords are a hybrid patch cord that use duplex 1.6 mm cordage.

Product	Material ID	Length	Packaging
ML2SC-MJ-04	108510033	1.2 m (4 ft)	ea
ML2SC-MJ-06	108510041	1.8 m (6 ft)	ea
ML2SC-MJ-08	108510058	2.4 m (8 ft)	ea
ML2SC-MJ-10	108510066	3 m (10 ft)	ea
ML2SC-MJ-15	108510074	4.6 m (15 ft)	ea
ML2SC-MJ-20	108510082	6.1 m (20 ft)	ea
ML2SC-MJ-25	108510090	7.6 m (25 ft)	ea

## Fiber

## Hybrid Patch Cords

## OptiSPEED

## 1.6 mm STII+ - MTRJ Cords

Duplex **STII - MTRJ Patch Cords** are a hybrid patch cord that use duplex 1.6 mm cordage.

Product	Material ID	Length	Packaging
ML2STII+-MJ-04	108509910	1.2 m (4 ft)	ea
ML2STII+-MJ-06	108509928	1.8 m (6 ft)	ea
ML2STII+-MJ-08	108509936	2.4 m (8 ft)	ea
ML2STII+-MJ-10	108509944	3 m (10 ft)	ea
ML2STII+-MJ-30	108509985	9.1 m (30 ft)	ea

## Fiber

### TeraSPEED Cords

The **TeraSPEED Fiber Patch Cord** family supports the enhanced high-performance system level requirements designed into the new TeraSPEED Zero Water Peak singlemode (ZWP-SM) cabling solution. The TeraSPEED family of fiber patch cords is configurable with standard LC, SC, and ST terminations, and is available in either 1.6 mm or 3.0 mm simplex or zipcord. Using our new feature configuration ordering process for fiber patch cords, any length can be custom configured in either feet or meters, in increments of 1 foot or 1 meter, providing the ultimate in flexibility to meet any cabling infrastructure design.

The TeraSPEED ZWP-SM fiber is a dispersion-unshifted fiber, which meets the ITU-T G.652c requirements. While this fiber is fully capable of handling existing and legacy singlemode applications that traditionally operate in the 1310 nm and 1550 nm transmission regions, it is also designed to handle the new and emerging applications that utilize the "Extended" E-band, 1360 nm to 1460 nm. Therefore, this fiber is the defacto choice for 16-channel Course Wavelength Division Multiplexing applications, delivering optimum performance from 1265 nm to 1625 nm.

#### Features:

- 60% increase in usable bandwidth with TeraSPEED Zero Water Peak Singlemode
- Support for a wide variety of applications, including CWD
- Available 1.6 mm cordage makes these the smallest cords in the industry
- Double the density in panels/shelves/outlets, when configured with the LC connector
- Pull-proof connector designs prevent unintended disconnect
- Distinctive color-coding for positive identification

### TeraSPEED

#### TeraSPEED Cords

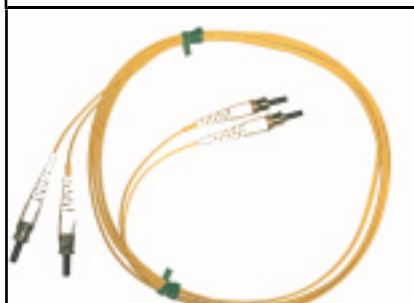


Figure 67a  
TeraSPEED Cord

#### Physical Specifications

Fiber Type:	TeraSPEED ZWP-SM			
Maximum Attenuation:	.70 dB/km @ 1310nm			
	.70 dB/km @ 1383 (+3nm)			
	.70 dB/km @ 1550nm			
Complies with:	TIA/EIA 568b.3			
Outside Diameter (simplex):	1.6 mm		3.0 mm	
Minimum Cable				
Retention Strength lbs. (N):	11.24 (50)		11.24 (50)	
Outside Diameter (zip cord):	1.6 mm x 3.3 mm		3.0 mm x 5.9 mm	
Min. Bend Radius in.(cm):	Loaded	Unloaded	Loaded	Unloaded
	2.0 (5.1)	1.4 (3.5)	2.3 (5.8)	1.4 (3.5)
Maximum Cordage	Short Term	Long Term	Short Term	Long Term
Tensile Load lbs.(N):	70 (311)	21 (93)	90 (400)	27 (120)
Connector:	LC	ST	SC	
Min. Return Loss:	.55 dB	.50 dB	.50 dB	
Insertion Loss (max):	<.25 dB	<.50 dB	<.50 dB	
Insertion Loss (avg):	.10 dB	.30 dB	.30 dB	
Mating Durability:	500			
Operating Temp. Range:	-40c to +75c			

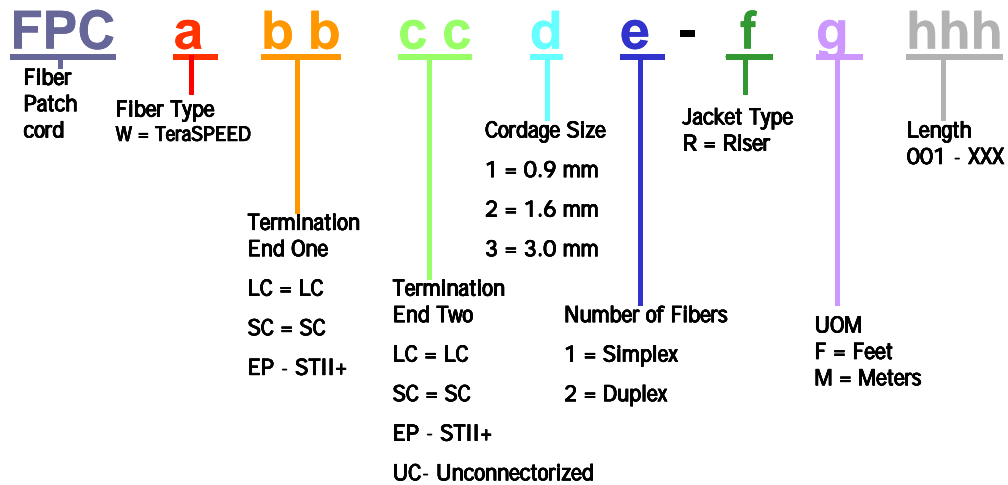
## Fiber

## TeraSPEED Cords

## TeraSPEED

## TeraSPEED Cords (Cont'd)

Fiber Patch Cord Product Identifier.



Example: FPCWLCLC22-RF007 = A 7 foot LC to LC, 1.6 mm Riser Rated duplex zipcord

## Fiber

## LC Pigtails

## Miscellaneous

## Pigtails

The **LC Pigtails** consist of strengthened buffer jacket single fiber cord with an LC connector terminated on one end. They are used for splicing to Indoor or Outside Plant fibers for termination in a fiber distribution shelf or LIU.

Product	Material ID	Length	Fiber Type	Packaging
BL1LC-UC-5	700006760	1.5 m (5 ft)	OS MM	ea
BS1LC-UC-5	700010945	1.5 m (5 ft)	OS SM	ea
TZ1LC-UC-5	760000653	1.5 m (5 ft)	LZ MM	ea
BS1LC-UC-7	700201379	2.1 m (7 ft)	OS SM	ea
BS1LC-UC-10	700216310	3 m (10 ft)	OS SM	ea

## Fiber

## SC Pigtails

## Miscellaneous

## Pigtails

The **SC Pigtails** consist of a strengthened buffer jacket single fiber cord with a push-pull SC connector terminated on one end. They are used for splicing to Indoor or Outside Plant fibers for termination in a fiber distribution shelf or LIU.

Product	Material ID	Length	Fiber Type	Packaging
BL1SC-UC-5	700003353	1.5 m (5 ft)	OS MM	ea
BS1SC-UC-5	700011083	1.5 m (5 ft)	OS SM	ea
TZ1SC-UC-5	760006429	1.5 m (5 ft)	LZ MM	ea
BL1SC-UC-7	700003296	2 m (7 ft)	OS MM	ea
BL1SC-UC-17	700003205	5.1 m (17 ft)	OS MM	ea
BL1SC-UC-20	700002777	6 m (20 ft)	OS MM	ea
BL1SC-UC-35	700003098	10.6 m (35 ft)	OS MM	ea

## Fiber

## STII+ Pigtails

## Miscellaneous

## Pigtails

The **STII+ Pigtails** consist of a strengthened buffer jacket single fiber cord with a pull-proof STII+ connector terminated on one end. They are used for splicing to Indoor or Outside Plant fibers for termination in a fiber distribution shelf or LIU.

Product	Material ID	Length	Fiber Type	Packaging
BL1STII+-UC-1	700006794	0.3 m (1 ft)	OS MM	ea
BL1STII+-UC-5	700006786	1.5 m (5 ft)	OS MM	ea
BS1STII+-UC-5	700010978	1.5 m (5 ft)	OS SM	ea
BL1STII+ - UC - 20	700006778	6 m (20 ft)	OS MM	ea

## Fiber

Patch Cords  
Color Codes

## Miscellaneous

Patch Cords 1.6 mm  
and 3.0 mm

## SIMPLEX CORDAGE

Fiber Type	Fiber 1 Inner Jacket/Buffer Coat	Jacket
OptiSPEED SM	Blue	Yellow
OptiSPEED MM	Blue	Slate Gray

## DUPLIX CORDAGE

Fiber Type	Fiber 1 Inner Jacket/Buffer Coat	Fiber 2 Inner Jacket/Buffer Coat	Jacket
OptiSPEED SM	Orange	Blue	Yellow
OptiSPEED MM	Orange	Blue	Slate Gray

## Fiber

## Pigtails Color Codes

## Miscellaneous

Pigtails, 1.6 mm and  
0.9 mm Cords

Mode	Jacket
SM	Yellow
MM	Slate Gray



# Panels

Chapter **3**

# Panels

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## Copper

## VisiPatch™ System

## 110 Family

## 110 VisiPatch™ System

**The Next Generation 110 Patch Panel System For High-Speed Data Networks**

The **110 VisiPatch™ System** is the “next generation” 110 Patch Panel System and the latest in a long line of SYSTIMAX® Labs designed innovations for high-speed data networks.

The **110 VisiPatch System** utilizes time proven 110 IDC technology and features a unique “reverse direction” patch cord, integrated cable and patch cord management, increased density, wall mounting hardware, and snap together installation. The neat, cordless appearance dramatically improves patch cord organization and management and “cleans up the clutter” that is inherent with other patch panel systems.

**Features**

- Proven SYSTIMAX SCS performance.
- Supports GigaSPEED® and PowerSUM Channels.
- 4-pair Patch Cord Certified GigaSPEED XL component.
- Fast, easy installation with low operating costs.
- Innovative reverse patch cord design.
- Neat, cordless appearance. Improved density to free valuable space.
  - 7 4-pair cables per row (instead of 6).
  - Up to 252 4-pair cables per vertical (instead of 216).
- Snap-together components.
- 112-pair and 336-pair stackable modules.
- Integrated patch cord management.

**Back Panel:** Using space age plastic structural foam technology, this patented wall mounting hardware consists of two identical “L” shaped halves that snap together to form a strong “U” shaped panel. The lightweight panel can be easily mounted to the wall and becomes the **Back Panel** for the **110 VisiPatch System**. Back panels hold 4 or 12 wiring blocks and are stackable.

**Wiring Block:** The **Wiring Block** snaps on to the **Back Panel** and accepts 28 conductor pairs in the same space where traditional **110 Systems** allow only 25. Slots and grooves provide versatile cable management, and seven 4-pair connecting blocks can be accommodated. Accepts 4 and 25-Pair Cables.

**Designation Strip/Cover Plate:** The **Cover Plate** snaps directly on to the **Wiring Block** and provides protection for the terminated cables. It also serves as a **Designation Strip** for circuit identification, and facilitates the latching of the 4-pair patch cord.



**Figure 68**  
VisiPatch System

## Copper

## VisiPatch System

## 110 Family

## Field Termination Kit

## Performance Specifications

	VisiPatch GS3 Patch Cord (4-pair)	XL7 Solution	XL8 Solution
		GigaSPEED Channel (4 Connectors)	
	Typical Worst Pair Margin*	Guaranteed Margin**	Guaranteed Margin**
Insertion Loss	75.00%	5.00%	7.50%
NEXT	3.9 dB	6.0 dB	7.0 dB
PSNEXT	4.8 dB	7.5 dB	8.5 dB
ELFEXT	16.2 dB	6.0 dB	8.0 dB
PSELFEXT	14.9 dB	8.0 dB	10.0 dB
Return Loss	3.8 dB	4.0 dB	4.0 dB
Frequency Range	1 - 250 MHz	1 - 250 MHz	1 - 250 MHz

\* Typical worst pair sept margin when measured with a VisiPatch 110 IDC termination block

\*\* Guaranteed margin is valid at any frequency from 1 - 250 MHz for a SYSTIMAX certified channel comprising GigaSPEED XL apparatus and 71E series cable (GigaSPEED XL7 Solution) or 81A series cable (GigaSPEED XL8 Solution). Values represent margin over the Category 6 / Class E specifications.

Specifications	112-pair VisiPatch Kit	336-pair VisiPatch Kit
Height	7.25 in (18.40 cm)	21.6 in (54.90 cm)
Width	8.50 in (21.59 cm)	8.50 in (21.59 cm)
Depth	7.50 in (19.05 cm)	7.50 in (19.05 cm)
Pairs per Row	28	28
Pairs per Back Panel	112	336
Patch Cords per Row	7 (4-pair cords)	7 (4-pair cords)

\*Visit the Cord chapter in this product guide for a full line of VisiPatch patch cords

Specifications	Description	Material ID
112-Pair VP Kit	VisiPatch Field Termination Kit	108836792
336-Pair VP Kit	VisiPatch Field Termination Kit	108561143

Kit Contents	336FT-Pair VisiPatch Kit Material ID 108561143 Quantity	112FT-Pair VisiPatch Kit Material ID 108836792 Quantity
300PR Base, Back Panel Half	2	2
110UW-28, Wiring Block	12	4
110UC-28, Designation Covers	12	4
110C4W, Connecting Block	84	30
110UPHLDR, Label Holder	12	4
110WG3-2688L, White Label	12	12
Instruction Sheet	1	1

Product	Description	Material ID
110UPT-Kit - Trough	Trough, U Channel to mount below VisiPatch components on the wall.	700012990
110UHPT-Uni. Horz. Trough	Universal Horizontal Trough	108836834
HLDR-110FDLH New Label	Clear Plaster Cover	108738113

## Copper

## VisiPatch

## Accessories

## Horizontal Trough

The **110UHD-S8 VisiPatch Horizontal Trough** provides a horizontal pathway for routing the VisiPatch patch cords between terminal blocks. The **Horizontal Trough** accommodates bulk routing of patch cords and snaps directly to the bottom of the back panel.



**Figure 69**  
VisiPatch Horizontal Trough

Product	Material ID	Packaging
110UHD-S8	108637737	1/Pkg

## Copper

## VisiPatch

## Accessories

## Wall Mounted Bracket

The **Wall Mounted Bracket** allows for convenient mounting of the VisiPatch panel. It is discrete and durable. The **110P-WB VisiPatch Wall Mount Bracket** is used to mount either size VisiPatch Field Terminated Kit on the wall. A minimum of two brackets is required for an installation. Brackets can be added one at a time after the first two are installed. Four brackets will accommodate up to (12) 336-pair Field Terminated Kits with one column of 110U2R Distribution Rings with 110UTC VisiPatch Vertical Trough Covers. The back panel of the VisiPatch Kit easily mounts directly on the tabs of the brackets without the use of screws.

Product	Material ID	Packaging
BRKT-110PWB HGR STL	108688946	1/Pkg

Copper

VisiPatch

Accessories

Installation Spacer

The **110UHS-20 VisiPatch Installation Spacer** is used as a guide for positioning the 110UP-WB VisiPatch Wall Mount Bracket and 110U19M VisiPatch 19-inch Rack Mount Bracket for mounting. The use of two spacers will reduce the installation time for 336-pair kits.

Product	Material ID	Packaging
SPCR-110UHS20BAR.063X1	108637612	1/Pkg

Copper

VisiPatch

Accessories

Trough Cover

The **110UTC VisiPatch Trough Cover**, compliments the sleek appearance of the VisiPatch System by providing a cover for the cords which are routed in the vertical troughs. This light gray cover conveniently snaps over the distribution rings and gives the entire VisiPatch System a clean, cordless look, when used with the appropriate GigaSPEED or PowerSUM cords.

Product	Material ID	Packaging
110UTC	108593203	1/Pkg

Copper

VisiPatch

Accessories

Mounting Bracket

The **110U19M VisiPatch Bracket**, is used to mount the VisiPatch 110 Field Termination Kit in a 19-inch single-sided frame. Four brackets are required to mount six 110UB1-336FT VisiPatch 110 Kits in a 19-inch single-sided frame. The back panels of the VisiPatch Kit easily mount directly on the tabs of these brackets without the use of screws.

Product	Material ID	Packaging
110U19M	108634429	1/Pkg

Copper

VisiPatch

110 Family

Distribution Rings

The **Distribution Rings** snap directly on to the back panel, provide improved vertical patch cord management density and eliminate the need to install traditional vertical cable management panels.

Product	Material ID	Description	Packaging
110U2R	108523937	Distribution Ring	1/Pkg

Copper

VisiPatch

110 Family

Designation Strip Labels

The **Designation Strip Labels** are clipped onto the VisiPatch designation cover via a clear plastic holder.

Product	Material ID	Packaging	Color
110YG3-2688L	108528407	96/Pkg	Yellow
110WG3-2688L	108528415	96/Pkg	White
110SG3-2688L	108528423	96/Pkg	Slate Gray
110RG3-2688L	108528431	96/Pkg	Red
110PG3-2688L	108528449	96/Pkg	Purple
110GG3-2688L	108528456	96/Pkg	Green
110CG3-2688L	108528597	96/Pkg	Orange
110BG3-2688L	108528464	96/Pkg	Blue
110KG3-2688L	108528472	96/Pkg	Brown

\* For more label information go to the Miscellaneous Chapter to our SYSTIMAX Identifier software labeling package.

Copper

VisiPatch

110 Family

Replacement Kits

These kits provide replacement connecting blocks and label holders.

Product	Material ID	Description	Packaging
110C4W	108538612	Connecting Block	10/Pkg
110VPHLDR	108540121	Label Holder	12/Pkg

\* For VisiPatch assembly instructions please go to the following URL, <http://connectivity.avaya.com/systimax/products/>

## Copper

## 110 Connector System

## 110 Family

## Introduction

The **110** Family of connectors, has defined the industry standard for punch-down connections in structured cabling. The **110**-type wiring block is a fire-retardant, molded plastic block consisting of four horizontal index strips designed to terminate 25 pairs of conductors each. These index strips are marked with the five tip colors on the high tooth to help separate the tip and ring of each pair and to establish pair location.

The **110**-type connecting block is a one piece, fire-retardant, molded plastic assembly containing solder-plated insulation displacement quick clips. These clips are double-ended, with one end designed to accept cross-connect wire or patch cords and the other to terminate the cable conductors on the index strips of the wiring blocks. Once the wire is completely seated at the bottom of the wire slot, a permanent gas-tight contact is created. Plastic barbs in the wire slot provide mechanical strain relief to prevent accidental movement. The high teeth of the connecting block are marked with the ring colors. A slate strip is provided on the bottom of the connecting block to assist in alignment, and faces down for installation. The connecting blocks are available in three pair-count sizes; 110C-3, 110C-4, and 110C-5.i.



### Physical Specifications

**Nom. Solid Conductor Diam.:** 0.40 mm (0.015 in) to 0.64 mm (0.25 in) (22 to 26 AWG)

**Nom. Stranded Conductor Diam.:** 0.51 mm (0.02 in) to 0.64 mm (0.025 in) (22 to 24 AWG)

**Termination Type:** Insulation displacement, dry, gas tight

**Wire Retention Force (24 AWG):** 59 - 127 N

**Wire Pullout Force (24 AWG):** 9.7 N

**Wire Retention Force, Horizontal (24 AWG):** 36 N

**Wire Retention Force, vertical (24 AWG):** 9 N

**Storage Temperature Range:** -40 to 70 °C

**Operating Temperature Range:** -10 to 60 °C

**Humidity:** 95% Max.

**Conductor Termination:** >200

**Termination Speed:** 100 pairs/20 mins

### Electrical Specifications

**Dielectric Strength:** ≥ 1kV rms

**Capacitance Adjacent Contacts:** < 1pF

**Insulation Resistance:** ≥ 100 MΩ

**Termination Resistance (Typical):** < 0.5 mΩ



# Copper

## Wiring Blocks

The 110 Wiring Block is a fire-retardant molded plastic block with horizontal index strips each of which secures and organizes 25 cable pairs. The index strips are marked with the five tip colors to help the installer locate pairs quickly. The blocks accommodate 0.643 mm - 0.404 mm (22 - 26 AWG) diameter conductors and can be mounted directly on wall surfaces.

There are two types of 110 Wiring Blocks: “110A” Wiring Blocks and “110D” Wiring Blocks. The 110A Wiring Block is equipped with legs to provide space behind the block for routing the incoming cables. The 110D Wiring Block is built without legs and is used where depth is restrictive. The 110A Wiring Blocks can be ordered in 100-pair and 300-pair sizes. The 110D Wiring Blocks can be ordered in 25, 50, 100 and 300 pair sizes.

There are several choices in ordering the 110 Wiring Blocks:

- 110AW2 and 110DW2 are only the Wiring Blocks themselves, no accessories are included.
- 110AA2, 110AB2, and 110AC2 are the Wiring Blocks with connecting blocks (A = 5-pair, B = 4-pair, and C = 3-pair), clear designation strips and blank labels.

Please see the ACCESSORIES section of this chapter for associated products.

The 110 Wiring Blocks can be used with patch cords to support Gigabit Data Rates or cross-connect wires up to 10 Mb/s. When using in patching applications, it is important to use a 110 Jumper Trough between each 100-pair block to allow for horizontal routing of patch cords. Backboards should also be used to neatly organize the vertical routing of jumpers and patch cords.



### 110 Family

#### 100-Pair and 300-Pair Wiring Blocks

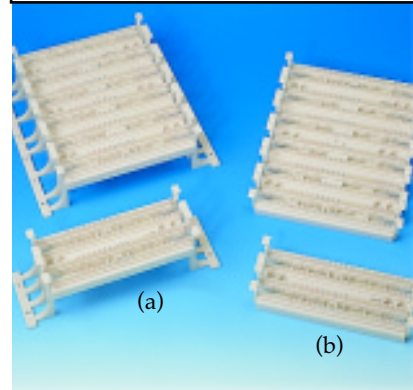


Figure 70  
(a) 110AW2-100,  
110AW2-300,  
(b) 110DW2-100 and  
110DW2-300  
Wiring Blocks

#### Electrical Specifications

GigaSPEED (Category 6) when installed with 110 GS patch cords

PowerSUM (Category 5 and 5e) when installed with PowerSUM 110 patch cords.

#### Physical Specifications

Height: 100-Pair: 9.12 cm (3.6 in)  
300-Pair: 27.41 cm (10.8 in)  
25/50-Pair: 4.45 cm (1.75 in)

Width: A-Block: 27.23 cm (10.7 in)  
D-Block: 21.60 cm (8.5 in)

Depth: A-Block: 8.25 cm (3.2 in)  
D-Block: 3.60 cm (1.4 in)

Product	Material ID	Pair Size	Packaging
110AW2-100	107059891	100	1/Pkg
110AW2-300	107059917	300	1/Pkg
110DW2-100	107059909	100	1/Pkg
110DW2-300	107059925	300	1/Pkg
110AA2-100ft	107058901	100	1/Pkg
110AA2-300ft	107058935	300	1/Pkg
110AB2-100FT	107058919	100	1/Pkg
110AB2-300FT	107058943	300	1/Pkg
110AC2-100FT	107058927	100	1/Pkg
110AC2-300FT	107058950	300	1/Pkg
110DW1-25	107256653	25	1/Pkg
110DW1-50	107256661	50	1/Pkg

## Copper

## Wiring Blocks

## 110 Family

## 110 Troughs

The **110 Jumper Trough** is a white, fire-retardant, molded plastic frame which is placed between each 100-pair wiring block and at the top of each column of 110 blocks. It serves as a horizontal trough for the routing of patch cords and cross-connect wire. The trough is available with legs (**110A3 Trough**) for use with the 110A Wiring Block or without legs (**110B3 Trough**) for use with the 110D Wiring Block or patch panel terminal block.



**Figure 71**  
110A3 and  
110B3 Jumper  
Troughs

## Physical Specifications

**Height:** 6.83 cm (2.7 in)

**Width:** 110A3: 27.30 cm (10.7 in); 110B3: 21.60 cm (8.5 in)

**Depth:** 110A3: 13.91 cm (5.5 in); 110B3: 8.83 cm (3.5 in)

Product	Material ID	Legs	Packaging
110A3	107831133	Yes	1/Pkg
110B3	107831141	No	1/Pkg

## Copper

## Wiring Blocks

## 110 Family

## 188 Backboards

The **188B1 Backboard** is used next to or between 110A Wiring Blocks to arrange jumper wires running between adjacent blocks. It is constructed of metal with two plastic distribution rings for neat horizontal or vertical routing of the jumper wires.

The **188B2 Backboard** is identical to the **188B1 Backboard** except that the **188B2** has legs to allow space for routing cables behind the **Backboard**.



**Figure 72**  
188B2 and  
188B1 Backboards

## Physical Specifications

**Height:** 16.50 cm (6.5 in)

**Width:** 27.30 cm (10.7 in)

**Depth:** **188B1:** 8.90 cm (3.5 in); **188B2:** 11.45 cm (4.5 in)

Product	Material ID	Legs	Packaging
188B1 without legs	102689569	No	1/Pkg
188B2 with legs	104405113	Yes	1/Pkg

## Copper

## Wiring Blocks

## 110 Family

## Disconnect Blocks

The **110 Disconnect Terminal Block** is a 110-type Wiring Block which permits circuit isolation without removing patch cords or cross-connect wire. The “look both ways” testing capabilities allow end-users to identify out-of-service lines and other circuit conditions easily.

The **110 Disconnect Terminal Block**, which has the same footprint as the 110DW2 Wiring Block, includes the 110C-4 or 110C-5 Connecting Block (noted with a “B” or “A,” respectively, in the code) and provides for termination of 50-pairs. The 110W4A4 test cord is available for test purposes with the **Disconnect Block**.

The **110 Disconnect Terminal Block** exceeds the Category 3 transmission requirements as defined in ISO/IEC IS11801 (1995), CENELEC EN50173 (1995), and meets or exceeds Category 4 requirements as defined in EIA/TIA 568A (1995) Cross-Connect Hardware Section.



**Figure 73**  
110TB2-50 Disconnect  
Block, 110A1 &  
110C1 Insulators,  
110W4A4 Test Cord

## Physical Specifications

**Height:** 9.11 cm (3.6 in)

**Width:** 21.6 cm (8.5 in)

**Depth:** 3.60 cm (1.4 in)

Product	Material ID	Pair Size	Packaging
110TA1-50	106274749	50	1/Pkg
110TB2-50	106569908	50	1/Pkg

## Copper

## Wiring Blocks

## 110 Family

## 110B1 Insulator

The **110B1 Insulator** is an accessory to the 110 Disconnect Block which is used to open the circuit of a single pair on the 25-pair strip. It is made of fire-retardant molded plastic, similar to that of the disconnect block.

## Physical Specifications

**Height:** 1.38 cm (0.5 in)

**Depth:** 2.27 cm (0.9 in)

## Product

110B1

## Material ID

106310618

## Pair Size

1

## Packaging

50/Pkg

## Copper

## Wiring Blocks

## 110 Family

## 110W4A4 Test Cord

The **110W4A4 Test Cord** is used with the 110 Disconnect Block to open a 1-pair circuit and test all four conductor ends independently.

## Physical Specifications

**Length:** 1 m (3.3 ft)

## Product

110W4A4

## Material ID

106310659

## Pair Size

1

## Packaging

1/Pkg

## Copper

## Wiring Blocks

## 110 Family

110 Category 5  
Connectorized Terminal  
Block

The SYSTIMAX Category 5 110 Connector System may be used in equipment rooms and telecommunications closets for connecting circuits and LAN electronics. They are backward compatible with existing 50-pin 525 connectors. They also fit higher performance 525 connectorized cable assemblies listed in the cordage section of this catalog.

These pre-connectorized blocks have the same footprint as the current 110 Wiring Block and the 110 Patch Panel Terminal Blocks with easy to install features.

In addition to ease of installation and time savings, these pre-connectorized blocks should reduce the potential for wiring errors that could interfere with the performance of the circuit.



**Figure 74**  
110 Cat 5  
Connectorized  
Terminal Block

## Physical Specifications

<b>50-Pair:</b>	<b>Height:</b> 9.12 cm (3.6 in)	<b>450-Pair:</b>	<b>Height:</b> 156.72 cm (61.7 in)
	<b>Width:</b> 27.23 cm (10.7 in)		<b>Width:</b> 21.6 cm (8.5 in)
	<b>Depth:</b> 8.5 cm (3.3 in)		<b>Depth:</b> 20.45 cm (8 in)
<b>150-pair:</b>	<b>Height:</b> 62.69 cm (24.7 in)		
	<b>Width:</b> 21.6 cm (8.5 in)		
	<b>Depth:</b> 20.45 cm (8 in)		

Frequency MHz	PowerSUM NEXT (dB)	Attenuation (dB)	Return Loss (dB)
1	75	0.01	48
4	69	0.01	47
8	64	0.02	43
10	62	0.02	41
16	58	0.02	37
20	56	0.03	35
25	54	0.03	33
31.25	52	0.04	31
62.5	46	0.11	24
100	40	0.16	18

Product	Material ID	Pair Size	Packaging
110ABCAT5-50C	107764193	50	1/Pkg
110PBCAT5-150C	107764201	150	1/Pkg
110PBCAT5-450C	107764219	450	1/Pkg

## Copper

## Patch Panels

## 110 Family

## 110 Patch Panels

The 110 Patch Panel System comes in two sizes, 300-pair and 900-pair. They consist of a combination of 110D Wiring Blocks (100-pair) and 110B1 Jumper Troughs to be field mounted on a metal back panel which is designed to provide routing of the incoming cables behind the 110 blocks and troughs. The 110 Patch Panel System comes complete with 110C Connecting Blocks (in either 3, 4, or 5-pair modularity), clear designation strips, blank white labels, and grounding hardware. The 188-type backboard should be ordered separately.

The 110 Patch Panel System is best mounted directly on the wall, but can be mounted in a 19-inch rack using the 110RP1-19-600 Bracket. When mounted in a 19-inch rack, the 300 or 900-pair patch panel can be mounted next to a 188-type backboard or next to another 110 Patch Panel. When two patch panels are mounted side-by-side in a 19-inch rack, 110A2 Distribution Rings should be used for vertical cord management.

The 110 Patch Panel System meets or exceeds the Category 5 and Category 5e requirements in ISO/IEC 11801 (2002), EN50173-1 (2002) and EIA/TIA-568B.

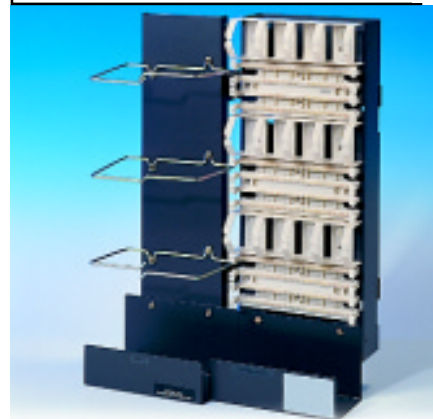


Figure 75  
110PB2-300FT  
Patch Panel and  
188D3 Backboard



## Physical Specifications

**Height:** 300-pair: 62.69 cm (24.7 in); 900-pair: 156.72 cm (61.7 in)

**Width:** 21.60 cm (8.5 in)

**Depth:** 20.45 cm (8 in)

## Electrical Specifications

GigaSPEED (Category 6) when installed with 110 GS patch cords.

PowerSUM (Category 5 and 5e) when installed with PowerSUM 110 patch cord, or cross-connect wire.

Product	Material ID	Pair Size	Connector Block Size	Packaging
110PA2-300FT	107058802	300	5 pairs	1/Pkg
110PA2-900FT	107058851	900	5 pairs	1/Pkg
110PB2-300FT	107058810	300	4 pairs	1/Pkg
110PB2-900FT	107058869	900	4 pairs	1/Pkg
110PC2-300FT	107058828	300	3 pairs	1/Pkg
110PC2-900FT	107058877	900	3 pairs	1/Pkg

## Copper

## Patch Panels

## 110 Family

## 188 Backboards

The **110 Patch Panel System Backboard** is a metal panel equipped with distributing rings that provide the vertical paths for running patch cords or jumpers between 110 Patch Panel System Terminal Blocks. The **188D3** is used with a 300-pair patch panel while the **188C3** is used with the 900-pair patch panel.



**Figure 76**  
110PB2-900FT  
Patch Panel and  
188C3 Backboard

## Physical Specifications

**Length:** **188C3:** 156.84 cm (61.7 in); **188D3:** 61 cm (24 in)

**Width:** 21.60 cm (8.5 in)

**Depth:** 20 cm (7.9 in)

Product	Material ID	Pair Size	Packaging
188D3	107151193	300	1/Pkg
188C3	107151185	900	1/Pkg



## Copper

## Jack Panels

## 110 Family

## 110 Block

The **110 Jack Panel Blocks** provide 12 or 36 RJ45 interfaces, patchable via 110-type connecting blocks. The **110 Jack Panel Blocks** consist of the 110 insulation displacement connector (IDC) field and RJ45 modular jack field mounted on the front of a printed wiring board (PWB). The 110 IDC is connected to the RJ45 modular jack through PWB interconnections. The PWB with 110 IDCs and RJ45s are mounted on either a 100-pair or 300-pair 110 Wiring Block with legs to provide 12 or 36 RJ45 jacks. The reference codes for the **Jack Panel Blocks** with legs are 110AB-CAT5PS-JP12 and 110AB-CAT5PS-JP36 for 12 and 36 ports respectively.

There is also the **110BB-CAT5PS-JP12FTB Jack Panel Kit** which comes complete with a 110DW1-100 Wiring Block (without legs), the same PWB assembly as described above, and clips for mounting on the metal backpanel of the 110 Patch Panel Terminal Block. Shipped loose, the wiring block must first be mounted on the backpanel, then the PWB mounted on the wiring block.

The **110 Jack Panel Blocks** exceed the Category 5 transmission requirements as defined in ISO/IEC IS11801 (1995), CENELEC EN50173 (1995), and EIA/TIA 568A.



**Figure 77**  
110AB-CAT5PS-JP12  
Jack Panel



### Physical Specifications

**Insertion Life:** 750 cycles min.

**Plug/Jack Contact Force:** 100 g min. (3.5 oz)

**Plug Retention Force:** 133 N min.

**Operating Temperature Range:** 0 to 60 °C

**Storage Temperature Range:** -40 to 66 °C

**Humidity:** 5 to 95% (noncondensing)

**Height:** JP12: 9.12 cm; JP36: 27.4 cm (10.8 in)

**Width:** 27.2 cm (10.7 in)

**Depth:** 8.4 cm (3.3 in)

### Electrical Specifications

**DC Resistance:** < 0.2 Ω

**DC Resistance Unbalance:** < 30 mΩ

## Copper

## Jack Panels

## 110 Family

110 Block (*cont'd*)

Frequency MHz	Worst Pair Attenuation (dB)	Worst Pair NEXT (dB)	Worst Pair Return Loss (dB)
1	0.06	81.0	44.0
4	0.07	70.6	41.0
8	0.07	64.7	36.0
10	0.08	62.8	34.0
16	0.09	58.8	33.0
20	0.10	56.9	30.0
25	0.11	54.9	28.0
31.25	0.12	53.1	26.0
62.5	0.17	47.2	22.0
100	0.29	42.5	20.0

Product	Material ID	Ports	Packaging
110AB-CAT5PS-JP12	107920704	12 x RJ45	1/Pkg
110AB-CAT5PS-JP36	107920712	36 x RJ45	1/Pkg
110BB-CAT5PS-JP12FTB	107920738	12 x RJ45	1/Pkg

## Copper

## Jack Panels

## 110 Family

## 110 Panels

The **110 Jack Panels** provide 108 RJ45 interfaces patchable via 110-type connecting blocks. The **110 Jack Panel Blocks** consist of the 110 insulation displacement connector (IDC) field and RJ45 modular jack field mounted on the front of a printed wiring board (PWB). The 110 IDC is connected to the RJ45 modular jack through PWB interconnections. The PWB with 110 IDCs and RJ45s are mounted on 100-pair wiring blocks without legs, then mounted on a patch panel frame with jumper troughs placed between each 100-pair Jack Panel Block. The **110 Jack Panels** are available in 300-pair and 900-pair containing 108 ports.



The **110 Jack Panels** exceed the Category 5 transmission requirements as defined in ISO/IEC IS11801 (1995), CENELEC EN50173 (1995), and EIA/TIA 568A.



**Figure 78**  
110PB-CAT5JP36  
Jack Panel

## Physical Specifications

<b>Insertion Life:</b> 750 cycles min.	<b>Height:</b> JP36: 62.69cm; JP108: 156.72 cm (61.7 in)
<b>Plug/Jack Contact Force:</b> 100 g min (3.5 oz).	<b>Depth:</b> 20.45 cm (8 in)
<b>Plug Retention Force:</b> 133 N min.	<b>Width:</b> 21.6 cm (8.5 in)
<b>Operating Temperature Range:</b> 0 to 60 °C	
<b>Storage Temperature Range:</b> -40 to 66 °C	
<b>Humidity:</b> 5 to 95% (noncondensing)	

## Electrical Specifications

<b>DC Resistance:</b> < 0.2Ω	<b>DC Resistance Unbalance:</b> < 30 mΩ
------------------------------	---

Frequency MHz	Worst Pair Attenuation (dB)	Worst Pair NEXT (dB)	Worst Pair Return Loss (dB)
1	0.06	81.0	44.0
4	0.07	70.6	41.0
8	0.07	64.7	36.0
10	0.08	62.8	34.0
16	0.09	58.8	33.0
20	0.10	56.9	30.0
25	0.11	54.9	28.0
31.25	0.12	53.1	26.0
62.5	0.17	47.2	22.0
100	0.29	42.5	20.0

Product	Material ID	Ports	Packaging
110PB-CAT5PS-JP108B	107920746	108 x RJ45	1/Pkg

## Copper

## Accessories

## 110 Family

## 188UT1 Label Holder

The **188UT1 Label Holder** is a clear plastic strip which snaps onto the 110 Wiring Block and accepts colored insert labels for pair or circuit designation. When attached to the 110 Wiring Block, the **Label Holder** conceals and protects the cable conductor terminations.

The **Label Holders** come in packages of six, while two **Label Holders** are required for 100 pairs. Pre-printed colored labels should be ordered separately.



Figure 79  
188UT1 Label Holders

## Physical Specifications

**Height:** 1.45 cm (0.57 in)

**Width:** 20 cm (7.9 in)

## Product

188UT1-50

## Material ID

103895504

## Packaging

6/Pkg

## Copper

## Accessories

## 110 Family

## Labels

The **110 Insert Labels** are colored paper inserts (for the 188UT1 Label Holder) with vertical lines spaced to identify the circuits on a 110 Wiring Block. The labels listed below identify the circuits with 4-pair modularity and come in colors of white and blue. Additional colors (yellow, slate gray, red, purple, green, orange and brown) are available in 3, 4, and 5-pair modularity on a non-stock basis. Please contact your authorized SYSTIMAX SCS representative for ordering information.

The **Insert Labels** come in sheets of 24 cm (9.4 in) by 28 cm (11 in) which can be pin wheel printer fed.

## Physical Specifications

**Height:** 1.2 cm (0.47 in)

**Width:** 20 cm (7.9 in)

Product	Material ID	Packaging	Color
110BB2-4500L	106657174	90/Pkg	Blue
110WB2-4500L	106657216	90/Pkg	White
110GB2-4500L	106657182	90/Pkg	Green
110PB2-4500L	106657190	90/Pkg	Purple
110YB2-4500L	106657232	90/Pkg	Yellow

\* For more information on labels go to the Miscellaneous Chapter in this catalog and look at our SYSTIMAX Identifier software labeling package.

## Copper

## Accessories

## 110 Family

## 110A2 Distribution Ring

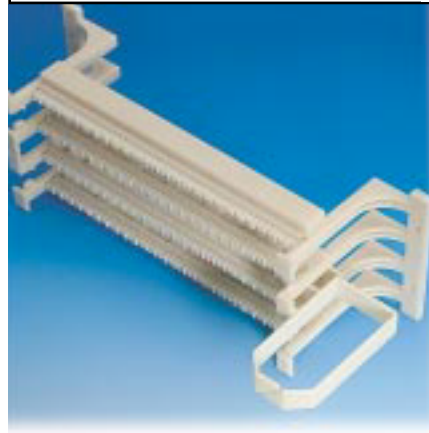
The **110A2 Distribution Ring** is a molded plastic attachment which clips on to either side of the 110 Wiring Block. It functions as a vertical patch cord or jumper organizer.

## Physical Specifications

**Height:** 1.4 cm (0.5 in)

**Width:** 6.99 cm (2.8 in)

**Depth:** 8.26 cm (3.3 in)



**Figure 80**  
110A2 Distribution Ring  
mounted on a  
110AW2-100 Wiring Block

## Product

110A2

## Material ID

107214405

## Packaging

1/Pkg

## Copper

## Accessories

## 110 Family

## 88A2 Retainer

The **88A2 Retainer** is a molded plastic attachment which clips onto the legs of the 110AW2-100/300 Wiring Blocks. It is used to retain the cross-connect wires at the top or bottom corners of a column of the wiring block.

## Physical Specifications

**Height:** 5.08 cm (2 in)

**Width:** 2.54 cm (1 in)

**Depth:** 1.27 cm (0.5 in)



**Figure 81**  
88A2 Retainer

## Product

88A2

## Material ID

107267452

## Packaging

1/Pkg

## Copper

## Accessories

The **110C Connecting Blocks** are one piece, fire-retardant, molded plastic housings containing double-ended, solder plated quick clips with insulation displacement capabilities. The rear or cable side of the connector is designed to mount on the 110 index strip and terminate 0.643 mm - 0.404 mm (22 - 26 AWG) insulated conductors without prior removal of the insulation. The front side of the connector is designed to accept F Cross-Connect Wire or 110 Patch Cords. The top of the **Connecting Block** is stamped with the product code, while the color code on the high teeth is provided to allow for pair identification during installation.

The **110C Connecting Blocks** come in three different pair sizes; 110C-3 is 3-pair, 110C-4 is 4-pair, and 110C-5 is 5-pair.



The **110C Connecting Blocks** meet or exceed the Category 5 and Category 5e requirements in ISO/IEC 11801 (2002), EN50173-1 (2002) and EIA/TIA-568B.

## 110 Family

## 110C Connecting Blocks



Figure 82  
110C-3, 110C-4 and  
110C-5 Connecting Blocks

## Physical Specifications

**Height:** 0.8 cm (0.3 in)

**Width:** 3-Pair: 2.3 cm (1 in); 4-Pair: 3.1 cm (1.2 in); 5-Pair: 3.8 cm (1.5 in)

**Depth:** 2.8 cm (1.1 in)

## Electrical Specifications

GigaSPEED (Category 6) when installed with 110 GS patch cords.

PowerSUM (Category 5 and 5e) when installed with PowerSUM 110 patch cord, or cross-connect wire.

Product	Material ID	Pair Size	Packaging
110C-3	103801239	3	10/Pkg
110C-4	103801247	4	10/Pkg
110C-5	103801254	5	10/Pkg

## Copper

## Accessories

## 110 Family

## 110RD2 19-inch Bracket

The **110RD2-200-19-inch Mounting Brackets** are used for mounting the 110-type hardware in a 19-inch frame rack or data cabinet. Specifically, the 110RD2-200-19-inch Mounting Bracket mounts two 110DW2-100 Wiring Blocks and two 110B1 Troughs. The cable supports rings on the rear of the bracket, secure cable routed through openings in the Mounting Bracket to the wiring blocks. Cross-connect wire or patch cords are routed from the wiring blocks through the troughs to the side of the frame to facilitate wire management. These Mounting Brackets can be mounted one on top of the other to support pair requirements. Wiring blocks, troughs, and rivets must be ordered separately.

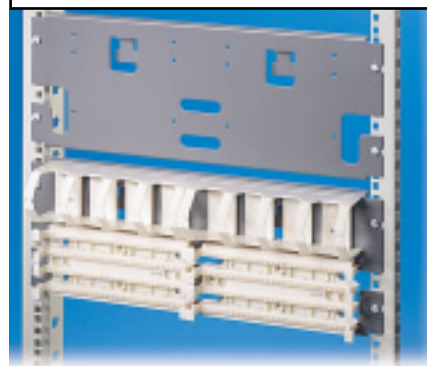


Figure 83  
110RD2-200-19  
Mounting Brackets

The **110RD2-100-19 Mounting Bracket** is designed to mount two 110DW1-25 or 110DW1-50 Wiring Blocks and two 110B3n an EIA-310C 19 "wide frame.

The **110RD2-600-19 Mounting Bracket** consists of two brackets and is designed to mount two 110DW2-300 Wiring Blocks. Four 12 -24 screws are provided to mount the brackets on the 19 inch (48.26 cm) frame. Eight 8 -32 screws are provided to mount the Wiring Blocks to the brackets.

The **110RP2-600-19 Mounting Bracket** consists of a set of three 1 in (2.54 cm) brackets that attach to the 19 in (48.26 cm) frame to support two 110 pre-connectorized patch panel System panel with backboard and one 188 backboard and connector bracket.

## Physical Specifications

110RD2-200-19	110RD2-100-19	110RD2-600-19	110RP2-600-19
Height: 17.78 cm (7 in)	13.0 cm (5.13 in)	2.54 cm (1 in)	3.81cm (1.5 in)
Width: 48.3 cm (19 in)	48.3 cm (19 in)	49.53 cm (19.5 in)	48.3 cm (19 in)
Depth: 1.27 cm (0.5 in)	1.27 cm (0.5 in)	5.6 cm (2.2 in)	8.9 cm (3.5in)

Product	Material ID	Pair Size	Packaging
110RD2-200-19	107535585	200	1/Pkg
110RD2-100-19	107535593	50/100	1/Pkg
110RD2-600-19	108430779	600	2/Pkg
110RP2-600-19	107098816	600	3/Pkg

## Copper

## Accessories

## 110 Family

## Rivet Kit

The **110RA-38** contains 38 white plastic push-in rivets which are designed to hold the 110 Wiring Block or Jumper Trough onto a 110 Patch Panel System backmount panel or 110RD2-200-19-inch Bracket. These are the same rivets which are included with the 110 Patch Panel System.

## Physical Specifications

**Height:** 1.1 cm (0.4 in)

**Width:** 1.1 cm (0.4 in)

**Depth:** 2.54 cm (1 in)



Figure 84  
Rivets

Product	Material ID	Packaging
110RA-12	107611626	12Pkg
110RA-38	107611634	38/Pkg

## Copper

## Accessories

## 110 Family

## Test Cord

The **D Test Cord** is a 1-pair cord used to provide access for testing purposes to a single pair of wires terminated on the 110 Connector System. The **D Test Cord** is equipped with a locking feature on the plug. The GigaSPEED 110GS is a 4-pair 110 to 4-pair 110 alternative to the AT866. The G8CS is the modular test cord piece.



Figure 85  
AT-8662 Test Cord

Product	Material ID	Length	Packaging
AT-8662D	402023956	2.4 m (8 ft)	1/Pkg



## Copper

## iPatch™ System

The **iPatch™ System** integrates GigaSPEED XL and PowerSUM hardware and software to give real-time, at a glance control of all telecommunication room connections. Every port connection is continuously monitored, verified and logged in a central database. Work orders are issued to slash administration time. Work is guided at each patch panel by electronic visual and audio prompts to virtually eliminate wiring errors.

## iPatch

## The iPatch System



**Figure 86**  
iPatch 1100PS Panels

**The most common iPatch System configuration consists of:**

- **iPatch Panel** - which monitors patch connections made at the panel by sensing the insertion and removal of patch cord connectors. It is the heart of the iPatch System built on the best-in-class SYSTIMAX 1100 patch panel platform. Both 24- and 48-port rack-mounted panels accommodating either standard pinout (T568A or T568B) are available.
- **iPatch Rack Manager** – required for each rack in the iPatch System that communicates with and manages its iPatch Panels and maintains a database of patch connections. Up to 40 iPatch 24-port Panels can be mounted on each rack connected to a Rack Manager using the panel bus.
- **iPatch Network Manager** – a Rack Manager with the added capability of providing a LAN connection to the iPatch System Manager Software. This connection allows the iPatch System Manager Software to monitor every port in the rack to verify port usage, update the database, and notify the user of problems the instant they occur. One iPatch Network Manager is required for one telecommunication room, which connects up to 99 iPatch Rack Managers to a LAN.
- **iPatch System Manager Software** – The System Manager Software Version 3.0 uses the industry standard SNMP (Simple Network Management Protocol) to report alarms to the customer's Network Management System (NMS), ensuring that these alarms will appear in the NMS's standard alarm browser window. SYSTIMAX iPatch System Manager allows customers to specify on a per circuit basis whether or not SNMP alarms will be generated when a patching change occurs, thus ensuring that IT managers receive alarms only for those circuits that they have deemed critically important. The iPatch Manager Software runs under Windows 95/ 98/ 2000/ XP /NT and has increasing levels of security preventing unauthorized users from modifying important data. The iPatch System Manager Software has the full client-server, which allows multiple users to log-on and perform work orders concurrently.

With this configuration, network administrators can use the iPatch System Manager Software to schedule moves, adds, and changes, which are then displayed on the equipment in each telecommunication room. The equipment monitors and records the technician's work, and alerts the iPatch System Manager Software to patch connections changes and errors.

## Copper

## iPatch System

## iPatch

Rack Manager and  
RJ45 Panels

## Features of the iPatch System

- Integrates with Copper and Fiber Solutions.
- External patch connector detection circuitry, which does not alter the transmission characteristics of the system.
- Monitors all patch connections and disconnections.
- Guides technicians making patch connections.
- One-touch patch cord tracing speeds administration.
- Instantly reports improper connections to minimize service interruptions.
- Verifies the location, availability and use of ports on patch panels and jacks in faceplates.
- Tracks services provided to each desktop.
- Minimizes tedious paperwork such as generating work orders and tracking scheduled changes.
- Does not require proprietary patch cords.
- Compatibility with any FCC part 68 compliant modular plugs.
- Components conforming to North American, United Kingdom, and European Union power supply standards available.

The iPatch 1100PS PowerSUM Panels meet or exceed the Category 5 and Category 5e requirements in ISO/IEC 11801 (2002), EN50173-1 (2002) and EIA/TIA-568B.

The iPatch 1100GS3 GigaSPEED Panels also meet or exceed the Category 6 requirements in ISO/IEC 11801 (2002), EN50173-1 (2002) and EIA/TIA-568B.

## Specifications

## iPatch System Manager Software

Operating System:	Windows* 95/98/2000/ XP or Windows NT* 4.0
Personal Computer:	400 MHz or faster Pentium* processor or compatible processor At least 128 MB of RAM; 256 MB recommended 100 MB of free hard disk space Network card and LAN connection
Monitor:	Color of at least 800 by 600 pixels (1024 by 768 recommended) 256 colors minimum
Software Medium:	CD-ROM
Number of Objects Managed:	Limited only by processor speed and disk space

## iPatch System Rack Manager

Microprocessor:	8-bit, 14.72 MHz 87C552 processor
Power Requirements:	12 to 16 VAC or VDC at 1 A
Downloadable Software:	From host software via LAN or directly through a serial port
Program and Data Storage:	EEPROM
Program Data Retention Without Power:	Minimum 10 years
Number of Panel Connections per Rack:	Maximum 40
Number of Devices per Rack Manager LAN:	Maximum 100
Recommended Mounting Height:	Approximately 65 inches (165 cm) above the floor, measured from the top edge of the Rack Manager (the 11th 1U slot down from the top of a 7-foot rack)
Display Type:	LCD graphics display

## Copper

## iPatch System

## iPatch

Rack Manager and  
RJ45 Panels *cont'd*

## iPatch System Manager Software

Display Size:	5.2 in (13.2 cm) measured diagonally; 240 x 64 pixels
Display:	Backlit
Operational Environment:	14 to 158° F (–10 to 70 °C); 95% noncondensing humidity
<b>iPatch System Network Manager</b>	
<b>The Network Manager includes all of the Rack Manager features listed above plus those listed below.</b>	
Network Processor:	NET+ARM* 12-1 Processor
Program and Data Storage:	Flash memory
Downloadable Software:	From host software via LAN or directly through a serial port
Network:	Ethernet*
Network Protocol:	Transmission Control Protocol/Internet Protocol (TCP/IP)
Network Platform:	10BASE-T or 100BASE-T
<b>iPatch System Panel</b>	
Transmission Platform:	1100 Copper GigaSPEED® XL and PowerSUM as well as Fiber LazrSPEED™, TeraSPEED™ and OptiSPEED® Patch Panels
Wire size:	22–26 AWG (0.62–0.41 mm) solid copper 22–26 AWG (0.62–0.41 mm) 7-stranded copper
Insulation Size:	0.050 inch (1.27 mm) maximum DOD
Insulation Type:	All plastic insulants (including PVC, irradiated PVC, polyethylene, polypropylene, PTFE polyurethane, nylon, and FEP)
IDC Terminations:	200 minimum per contact
Plug Insertions:	750 minimum per jack
Operational Environment:	14 to 158° F (–10 to 70 °C); 95% noncondensing humidity
<i>Standards Compliance - the iPatch System components meet the standards listed below.</i>	
Safety:	CAN/CSA-C22.2 No. 950-95. Safety of information technology equipment (Canada)UL 1950 Third Edition (USA)EN 60 950 Second Edition (EU) IEC 60 950 Second Edition with in-country deviations (Pacific Rim)IEC 60 950 Second Edition with in-country deviations (Caribbean and Latin America)AS/NZ 3260 (Australia and New Zealand)
Emissions:	FCC Part 15, Subpart B, Sections 15.107b & 15.109b for Class A Information Technology Equipment (USA)EN 55022: 1944 (C.I.S.P.R. 22, 1993) for Class A Information Technology Equipment (EU)
Immunity:	EN 55024: 1998 Information Technology Equipment (EU)

## Copper

## iPatch System

## iPatch

Rack Manager and  
RJ45 Panels *cont'd*

## iPATCH PANELS

Product	Solution	Material ID	Ports	Packaging
iP1100PS24	PowerSUM	108650185	24 x RJ45	1/Pkg
iP1100GS3-24	GigaSPEED XL	700213028	24 x RJ45	1/Pkg
iP1100PS48	PowerSUM	108650201	48 x RJ45	1/Pkg
iP1100GS3-48	GigaSPEED XL	700213036	48 x RJ45	1/Pkg
iPF600A12MS	iPatch Fiber 600A	760005595	12 Port MM SC-SC	1/Pkg
iPF600B12MS	iPatch Fiber 600B	760005629	12 Port MM SC-SC	1/Pkg
iPF600A12SS	iPatch Fiber 600A	760010777	12 Port SM SC-SC	1/Pkg
iPF600B12SS	iPatch Fiber 600B	760010785	12 Port SM SC-SC	1/Pkg

## iPATCH RACK MANAGERS

Product	Description	Material ID	Packaging
iPRCKMGR-NA	iPatch Rack Manager (North America)	108666017	1/Pkg
iPRCKMGR-UK	iPatch Rack Manager (United Kingdom)	108666025	1/Pkg
iPRCKMGR-EU	iPatch Rack Manager (European Union)	108666033	1/Pkg
iPRCKMGR-AU	iPatch Rack Manager (Australia)	700156250	1/Pkg

## Copper

## iPatch System

## iPatch

## Network Manager

## iPATCH NETWORK MANAGERS

Product	Description	Material ID	Packaging
iPNETMGR-NA	iPatch Network Manager (North America)	108665985	1/Pkg
iPNETMGR-UK	iPatch Network Manager (United Kingdom)	108665993	1/Pkg
iPNETMGR-EU	iPatch Network Manager (European Union)	108666009	1/Pkg
iPNETMGR-AU	iPatch Network Manager (Australia)	700156268	1/Pkg

## iPATCH SYSTEM MANAGER SOFTWARE

Product	Description	Material ID	Packaging
iPSYSMGR2V3	iPatch SNMP - 2 users	760010157	1/Pkg
iPSYSMGR25V3	iPatch SNMP - 25 users	760010165	1/Pkg
iPSYSMGRUPV3	iPatch SNMP - 5 user upgrade	760010173	1/Pkg

## iPATCH POWER SUPPLY

Product	Description	Material ID	Packaging
iPPWRSPLY-NA	iPatch Power Supply (North America)	108650672	1/Pkg
PPWRSPLY-UK	iPatch Power Supply (United Kingdom)	108650706	1/Pkg
iPPWRSPLY-EU	iPatch Power Supply (European Union)	108650714	1/Pkg

## Copper

## 1100GS3 Panels

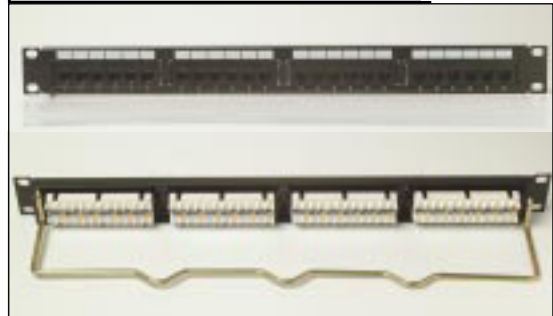
The **1100GS3 Modular Patch Panel** is a 19-inch rack or wall mountable 8-pin modular jack panel that accommodates repeated line moves, additions and rearrangements. Installation is easy using proven 110 IDC gas tight terminations in the back with easy to read labeling guides. Designed by SYSTIMAX Labs as part of the new fully tuned and integrated GigaSPEED XL cabling solutions, the 1100GS3 provides an industry standard panel footprint but with many performance and feature extras.

Combine the **1100GS3** with one of the available patch cord organizers and you have an unsurpassed patching system for the most demanding applications. The 1100D2-35 inter-bay organizer provides horizontal cord routing via metal distribution rings and the 1100D1-35 intra-bay organizer similarly provides horizontal cord routing with the addition of 24 small plastic clips for vertical pathway support. The 1100D3-35 intra-bay cord and cable organizer incorporates metal rings on the front for horizontal routing and on the back for cable routing.

The **1100GS3** Panels have unmatched electrical performance guaranteed to meet or exceed the Category 6 requirements in ISO/IEC 11801 (2002), EN50173-1 (2002) and EIA/TIA-568B. It is fully backward compatible with Category 5e, 5 and 3 cords and cables; however, optimal performance is achieved when used with GigaSPEED GS8E patch cords.

## Modular Patch Panels

## 1100GS3 Panels



**Figure 87**  
1100GS3 Front & Back  
view of the panel

Physical  
Specifications

<b>Insertion Life:</b> 750 cycles min.
<b>Plug/Jack Contact Force:</b> 100 g min (3.5 oz).
<b>Plug Retention Force:</b> 133 N min.
<b>Operating Temperature Range:</b> -10 to 60 °C
<b>Storage Temperature Range:</b> -40 to 70 °C
<b>Humidity:</b> 5 to 95% (noncondensing)
<b>Height: 24-Ports:</b> 4.38 cm (1 u); <b>48-Ports:</b> 8.83 cm (2 u);
<b>Width:</b> 48.26 cm (19 in)
<b>Depth:</b> 4.06 cm (1.60 in)



## Patch Panels

Product	Material ID	Ports	Packaging
1100GS3-24 Universal A/B Wiring	700173750	24 x RJ45	1/Pkg
1100GS3-48 Universal A/B Wiring	700173768	48 x RJ45	1/Pkg
1100GS3 Module Kit	700212137	6 x RJ45	1/Pkg

## Copper

## 1100PSCAT5E Panels

The **1100PSCAT5E Modular Jack Panel** is a 19-inch rack mountable RJ45 jack panel. The **1100PSCAT5E** accommodates repeated line moves, additions and rearrangements. The IDC connection on the rear of the panel houses the printed wiring board that provides continuous connection to the 8-pin modular jacks on the front. The result is a hard-working panel that allows a gas-tight termination of equipment on 110 connectors. The panel is available with 24, 48 or 96 RJ45 ports. The **1100PSCAT5E Panel** kit includes new icon labels with plastic holders that you can mount on the front of the panel for easy port identification.

The **1100PSCAT5E** has an enclosed Printed Wiring Board (PWB) for protection. Cable tie slots on each end of each 6-port module allow for the use of cable ties (provided) to secure the cable at the edge of the module. The panel is capable of handling either T568A or T568B wiring; you simply select the appropriate label and wire the product as either A or B depending on your customer requirements.

The **1100PSCAT5E Panels** meet or exceed the Category 5 and Category 5e requirements in ISO/IEC 11801 (2002), EN50173-1 (2002) and EIA/TIA-568B.



## Modular Patch Panels

## 1100PSCAT5E Panels



**Figure 88**  
1100PSCAT5-24 and  
1100PSCAT5-48 Panels

## Physical Specifications

**Insertion Life:** 750 cycles min.

**Plug/Jack Contact Force:** 100 g min.

**Plug Retention Force:** 133 N min.

**Operating Temperature Range:** 0 to 60 °C

**Storage Temperature Range:** -40 to 66 °C

**Humidity:** 5 to 95% (noncondensing)

**Height:** **24-Ports:** 4.38 cm (1 u); **32-Ports:** 8.83 cm (2 u); **48-Ports:** 8.83 cm (2 u); **64-Ports:** 17.7 cm (4 u)

**Width:** 48.26 cm (19 inch)

**Depth:** 4.06 cm

Product	Material ID	Ports	Packaging
1100PSCAT5E-24	108208919	24xRJ45	1/Pkg
1100PSCAT5E-48	108208935	48xRJ45	1/Pkg
1100PSCAT5E-96	108208950	96xRJ45	1/Pkg

## Copper

2500CAT5PS and  
2512CAT5PS Panels

The **2500CAT5 Modular Jack Panel** is a 19-inch rack mountable RJ45 Category 5 jack panel with 25-pair female 525 connectors on the back. The 25-pair 525 connectors are connected to the 4-pair RJ45 modular jacks through Printed Wiring Board (PWB) interconnections.

The **2500CAT5PS** follows the standard EIA T568B and T568A wiring scheme. The panel is available with 24 or 48 RJ45 ports.

The **2512CAT5PS**, unlike the **2500CAT5PS**, provides two pairs to each 8-pin modular jack. These pairs are terminated on pins 1 and 2 and 3 and 6. Therefore, one 50-pin connector serves 12 jacks.

The **2500CAT5PS Modular Jack Panel** meets or exceeds the Category 5 transmission requirements for attenuation and worst pair-to-pair NEXT as defined in ISO/IEC IS11801, CENELEC EN50173, and EIA/TIA 568A. The **2512CAT5PS** is wired to the IEEE 802.3, Ethernet 100BASE-TX and 10BASE-T Standard.



## Modular Patch Panels

## 2500PS Panels



Figure 89  
2500CAT5PS

## Physical Specifications

**Insertion Life:** 750 cycles min.

**Plug/Jack Contact Force:** 100 g min (3.5 oz).

**Plug Retention Force:** 133 N min.

**Operating Temperature Range:** 0 to 60 °C

**Storage Temperature Range:** -40 to 66 °C

**Humidity:** 5 to 95% (noncondensing)

**Height: 24-Ports:** 4.38 cm (1 u); **48-Ports:** 8.83 cm (2 u)

**Width:** 48.26 cm (19 in)

**Depth:** 4.06 cm (1.6 in)

Product	Material ID	Ports	Wiring Scheme	Packaging
2500CAT5PS-24B	108236142	4 x Telco to 24 x RJ45	T568B	1/Pkg
2500CAT5PS-48B	108236159	8 x Telco to 48 x RJ45	T568B	1/Pkg
2512CATPS-48	108236167	4 x Telco to 48 x RJ45	Pairs 2 & 3	1/Pkg



## Copper

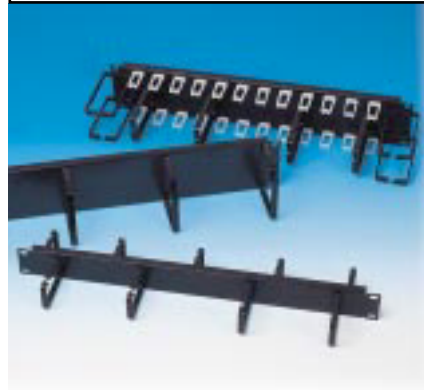
## Accessories

The **1100D Patch Cord Organizers** are used for routing patch cords in 19-inch rack mount RJ45 Jack Panel installations. There are three different **Patch Cord Organizers** available; the **1100D2-35-19** which provides horizontal routing via metal distribution rings and the **1100D1-35-19** which similarly provides horizontal routing but with the addition of 24 small plastic clips to provide for vertical pathways. The **1100D3-35-19** also provides horizontal routing via metal rings on the front and cable routing on the rear.

The **1100D1** and **1100D2** are both 2u high and the **1100D3** is 1u high.

## Modular Patch Panels

## Patch Cord Organizers



**Figure 90**  
1100D1-35-19, 1100D2-35-19 and 1100D3-35-19 Patch Cord Organizers

## Physical Specifications

**Height:** 8.89 cm (3.5 in); **1100D3:** 4.38 cm (1.7 in)

**Width:** **1100D1:** 50.8 cm (20 in); **1100D2:** 48.3 cm (19 in); **1100D3:** 48.3 cm (19 in)

**Depth:** **1100D1:** 11.43 cm (4.5 in); **1100D2:** 9.53 cm (3.8 in); **1100D3:** 11.7 cm (4.6 in)

Product	Material ID	Packaging	Color
1100D1-35-19	106830615	1/Pkg	Black
1100D2-35-19	106830623	1/Pkg	Black
1100D3-35-19	107132664	1/Pkg	Black

## Copper

## Accessories

The **1100C Wall Adapters** are used to mount panels (e.g., 1100 panels) onto any flat surface. Hinges provide easy access to the rear of the panel without removing the unit. The adapters can be mounted so that it hinges from the right or left side. The snap-lock pin holds the panel in place once the unit is installed.

The **1100D Cord Organizers** are used for routing patch cords in 19-inch frames and wall adapters. The **1100D2** is the interbay patch cord organizer which is used for bulk routing cords between bays. The **1100D1** is the intrabay patch cord organizer which provides horizontal and vertical pathways. The **1100D3** is used for routing cords on the front and cable on the rear.

## Modular Patch Panels

## 1100C Wall Adapter



**Figure 91**  
1100C1 Wall Adapters

## Physical Specifications

<b>1100C1-35-19 Wall Adapter:</b>	<b>Height:</b> 8.89 cm (3.5 in)
	<b>Width:</b> 48.3 cm (19 in)
	<b>Depth:</b> 12.7 cm (5 in)
<b>1100C1-70-19 Wall Adapter:</b>	<b>Height:</b> 17.78 cm (7 in)
	<b>Width:</b> 48.3 cm (19 in)
	<b>Depth:</b> 12.7 cm (5 in)

Product	Material ID	Packaging	Color
1100C1-35-19	106830573	1/Pkg	Black
1100C1-70-19	106830581	1/Pkg	Black

## Organizers and Wall Adapters

Product	Material ID	Packaging
1100D1-35-19 Organizer	106830615	Each
1100D2-35-19 Organizer	106830623	Each
1100D3-35-19 Organizer	107132664	Each

## Copper

## FlexiMAX HD Panel

The FlexiMAX HD Panel is a 24-port panel that allows for patching or interconnects in the telecommunications closet or equipment room. It is an RJ45 1u modular panel specifically designed for the GigaSPEED Solution but can also be used for PowerSUM applications.

The panel is available in a 24-port version only and can hold up to 24 high-density distribution modules (not included). The front appearance of the panel comprises two rows of square punch-outs, which allow ease of access for Information Outlets. M81 outlets are not compatible with this panel.

The benefits of this panel include:

- Its 1u height makes it possible to maximize rack space.
- Color coding is possible by use of colored outlets.
- Supports Category 3, PowerSUM, and/or GigaSPEED XL M-series outlets.
- A bend has been incorporated in the top and bottom to minimize the flex.

### Physical Specifications

**Height:** 4.35 cm (1 u)

**Width:** 48.20 cm (19 in)

**Depth:** 8.00 cm (3 in)

Product	Material ID	Packaging	Color
FlexiMAX HD	108356312	1/Kg	Black

## FlexiMAX

## HD Panel

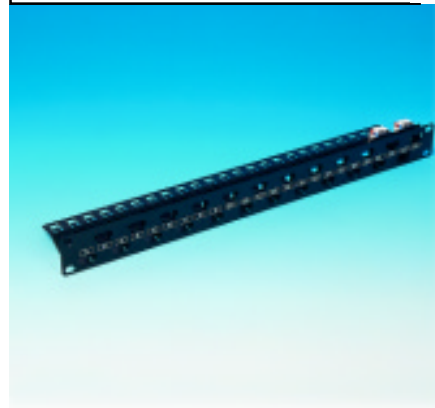


Figure 92  
Fleximax HD panel

## Copper

## Introduction

The **PATCHMAX** Distribution Hardware is a modular patch panel system designed by SYSTIMAX Labs. Its unique patented modular construction provides a customer configurable GigaSPEED XL, PowerSUM (RJ45), OptiSPEED® and LazrSPEED Fiber Patch Panel interface. The basic design is available in two platforms: the new GS3 and original PowerSUM. The GS3 platform will accept the GigaSPEED copper (RJ45) distribution modules and all fiber distribution modules (LazrSPEED® and OptiSPEED). The PowerSUM platform will accept the classic PowerSUM distribution modules. Both platforms are available in 1U 24-port and 2U 48-port versions.

The copper Distribution Modules snap into the panels providing quick field assembly. The GigaSPEED XL modules are described as **DMGS3** while the PowerSUM modules are described as **DM2150**. The unique mounting arrangement allows the modules to rotate in the panel providing front access to the IDC terminations or Telco connector. Cords and cables are managed and routed via the front and retainers, which are integral to the panels. The front mounted retainer routes cords and functions as a cradle for the Distribution Module, allowing the installer to terminate and inspect the IDC or Telco from the front without having to disconnect anything. The rear retainer is a cable management bar, which manages and routes cables on the back of the panel. Both retainers snap into the panel without any mounting screws. There are Velcro straps on both the front and back for additional cable security if required. The GigaSPEED XL PATCHMAX copper modular panels are also available with universal wiring. The panels can be wired for either T568A or T568B; simply select the appropriate “A” or “B” labels and wire the panel based on customer requirements. Identification labels are shipped with each panel and mount on the front of the Distribution Module. Colored reversible icon strips, can be ordered separately in various colors.

PATCHMAX Panels are also available to support our OptiSPEED and LazrSPEED fiber solutions. By utilizing a unique insert bezel a variety of fiber-optic modules can be installed. This flexibility even allows for mixing and matching copper and different fiber applications in the same panel. See the fiber section for more information.

## Patch Panels

## PATCHMAX®



**Figure 93**  
PATCHMAX GigaSPEED  
XL Panel

## Copper

PATCHMAX GS3  
GigaSPEED XL

The **PATCHMAX GS3** Panel System helps unleash the power of the new fully tuned and integrated GigaSPEED XL cabling solution while maintaining all of the innovative features that have made PATCHMAX Panels unique in the industry. Its unique modularity and patch cord management system continues to provide unmatched flexibility to MIS managers with the ability to mix and match copper and fiber media in the same panel.

The 19-inch rack mountable patch panel is designed to accept 4 or 8 six-port Distribution Modules (DM) which can be rotated forward, allowing front access to the newly redesigned 110 type IDC terminals for easy cable termination. This patented mounting system allows front access to the wiring array if rear access to the panel is not possible. And the features don't stop there. Built-in horizontal patch cord management brackets provide support for patch cords as well as a holder for the DM modules during installation.

The **PATCHMAX GS3 Panels** have unmatched electrical performance guaranteed to meet or exceed the Category 6 requirements in ISO/IEC 11801 (2002), EN50173-1 (2002) and EIA/TIA-568B. Fully backward compatible with Category 5e, 5 and 3 cords and cables; however, optimal performance is achieved when used with GigaSPEED GS8E patch cords.

## Patch Panels

## PATCHMAX GS3



**Figure 94a**  
PMGS3 Patch Panel  
Side view



**Figure 94b**  
PMGS3 Patch Panel



## Physical Specifications

<b>4-Module Panel:</b> Height: 8.9 cm (2 u) Width: 48.3 cm (19 in) Depth: 20.5 cm (8 in) (12.7 cm (5 in) depth without retainer)
<b>8-Module Panel:</b> Height: 13.34 cm (3 u) Width: 48.3 cm (19 in) Depth: 20.5 cm (8 in) (12.7 cm (5 in) depth without retainer)
<b>Modular Jack:</b> 750 minimum Height: 8.9 cm (2 u) Width: 48.3 cm (19 in) Depth: 3.2 cm (1.3 in)
<b>Operating Temperature Range:</b> -10 to 60 °C
<b>Storage Temperature Range:</b> -40 to 70 °C
<b>Humidity:</b> 95% (noncondensing)
<b>EIA/TIA Category:</b> 6
<b>Nom. Solid Conductor Diam.:</b> 0.40 to 0.64 mm (0.16 in to 0.3 in) (22 to 26 AWG)
<b>Nom. Stranded Conductor Diam.:</b> 0.40 to 0.64 mm (0.16 in to 0.3 in) (22 to 26 AWG)
<b>Insulation Size:</b> 1.08 mm (0.042 in) <b>Maximum DOD</b>
<b>Insulation Types:</b> All plastic insulants (including PVC, irradiated PVC, Polyethylene, Polypropylene, PTF Polyurethane, Nylon, and FEP)
<b>Reterminations:</b> IDC: 200 minimum
<b>Modular Jack:</b> 750 minimum
<b>PM-GS3-24:</b> 19.0 x 3.50 x 1.25 in (48.26 x 8.90 x 3.20 cm) - 2 Rack Unit Universal A/B labeling
<b>PM-GS3-48:</b> 19.0 x 5.25 x 1.25 in (48.26 x 13.34 x 3.20 cm) - 3 Rack Unit Universal A/B labeling

Product	Material ID	Ports	Packaging
PM-GS3-24	700173735	24	Each
PM-GS3-48	700173743	48	Each
DM-GS3-6 GS 6-port snap-in module	700173776	6	Each
PATCHMAX GS3-2U Panel	760001669	4 x Blank	Each
PATCHMAX GS3-3U Panel	760001677	8 x Blank	Each

\* Each blank slot accepts one 6-port snap-in module or one fiber snap-in module.

## Copper

## PATCHMAX PowerSUM

## Patch Panels

## PowerSUM Accessories

The PowerSUM performance margin of **PATCHMAX PSE** ensures your network will be ready for today's applications and emerging technology such as 1000BASE-T Gigabit Ethernet using parallel transmission schemes. It is a copper and fiber modular connecting hardware system.



The **PATCHMAX PSE** Panels meet or exceed the Category 5 and Category 5e requirements in ISO/IEC 11801 (2002), EN50173-1 (2002) and EIA/TIA-568B.



**Figure 95**  
PM2150-48 and  
PM2150-24 Panel Kits

## Physical Specifications

**Modular Jack: 750 Minimum**

**24-Port Panel (without retainer): Height:** 8.9 cm (2 u) **Width:** 48.3 cm (19 in) **Depth:** 3.2 cm (1 in)

**48-Port Panel (without retainer): Height:** 17.78 cm (4 u) **Width:** 48.3 cm (19 in) **Depth:** 12.7 cm (5 in)

**Operating Temperature Range:** -10 to 70 °C

**Storage Temperature Range:** -40 to 60 °C

**Humidity:** 95% (noncondensing)

**EIA/TIA Category:** 5e (except PM2250 and DM2250)

**Nom. Solid Conductor Diam.:** 0.40 mm to 0.64 mm (0.16 in to 0.3 in) (22 to 26 AWG)

**Nom. Stranded Conductor Diam.:** 0.4 mm to 0.64 mm (0.16 in to 0.3 in) (22 to 26 AWG)

**Insulation Size:** 1.27 mm (0.5in) (0.050 in) Maximum DOD

**Insulation Types:** All plastic insulants (including PVC, irradiated PVC, Polyethylene, Polypropylene, PTF Polyurethane, Nylon, and Teflon)

**Nominal Attenuation (dB) Reterminations:** IDC: 200 minimum

**Modular Jack:** 750 minimum

Product	Material ID	Description	Ports	Packaging	Color
PM2150-24	108320029	PATCHMAX Kit w. 24 x RJ45, Universal Wiring	24	1/Pkg	Black
PM2150-48	108320045	PATCHMAX Kit w. 48 x RJ45, Universal Wiring	48	1/Pkg	Black
P2040	107428591	4 x Blank	4	1/Pkg	Black
P2080	107428609	8 x Blank	8	1/Pkg	Black
DM2150	108320011	Distribution Module, 6 x RJ45, Universal Wiring	6	24/Pkg	Black

\* Each blank slot accepts one 6-port snap-in module or one fiber snap-in module.

## Copper

## PATCHMAX PowerSUM

## Patch Panels

PowerSUM Accessories  
(cont'd)

Product	Material ID	Description	Packaging	Color
R2100A	108036690	Front Retainer	5/Pkg	Black
R2200	107638934	Rear Retainer	1/Pkg	Silver
R2300	107670952	Fastener Kit, Velcro Wrap	1/Pkg	Black
BPSY BLNKNG	108028457	Blanking Plate for P2040 and P2080	5/Pkg	Black
L2300-BL	107536773	Icon Strip (6 Icons per Strip)	4/Pkg	Blue
L2300-GN	107536781	Icon Strip (6 Icons per Strip)	4/Pkg	Green
L2300-PL	107536849	Icon Strip (6 Icons per Strip)	4/Pkg	Purple
L2300-RD	107536815	Icon Strip (6 Icons per Strip)	4/Pkg	Red
L2300-WH	107536823	Icon Strip (6 Icons per Strip)	4/Pkg	White
Label Sheet	107656910	Labeling Sheets (32 x 6-circuit modules)	2/Pkg	Slate Gray
Label Sheet	107656928	Labeling Sheets (32 x 6-circuit modules)	2/Pkg	Blue
Label Sheet	107656936	Labeling Sheets (32 x 6-circuit modules)	2/Pkg	Green
Label Sheet	107656951	Labeling Sheets (32 x 6-circuit modules)	2/Pkg	Orange
Label Sheet	107656969	Labeling Sheets (32 x 6-circuit modules)	2/Pkg	Red
Label Sheet	107656977	Labeling Sheets (32 x 6-circuit modules)	2/Pkg	White
Label Sheet	107656993	Labeling Sheets (32 x 6-circuit modules)	2/Pkg	Purple

\* For more information on labels go to the Miscellaneous Chapter in this catalog and look at our SYSTIMAX Identifier software labeling package.

## Copper

## Rack Solutions

The **Open Racking Solution** offer is designed for use in telecommunications equipment installations, providing our BusinessPartners and customers with an attractive and highly functional vertical pathway for organizing, distributing and storing telecommunication equipment backed by our standard SYSTIMAX 20-Year Warranty. When used with the SYSTIMAX end-to-end solution, the Open Rack Solution provides the ultimate solution for telecommunication storage.

**Benefits:**

- Reduced complexity cross-connect and equipment mounting.
- Open architecture lending to better visibility.
- Integrated cable and cord management allows for more efficient and effective cable management.
- Focused on accessibility.
- Reduced cost compared to closed rack approach.

**Features:**

- Extruded aluminum construction.
- Modular open frame design (no doors and side panels to remove).
- Pre-threaded mounting holes.
- 45U with 270 holes per vertical channel meets EIA/TIA RMU rack mounting unit dimension.
- Mounting screws with pilot point.
- RK100A has a small foot print, 514 mm wide x 381 mm deep.
- Flat-pack for shipping.
- RK130A has 6 in (15.2 cm) deep vertical mounting channels.
- RK130A has a small footprint, 20.24 in (51.4 cm) wide x 18 in (45.7 cm) deep.

EMEA ONLY PRODUCT

Rack Solutions

Rack Solutions



**Figure 96**  
Rack Solutions



## Copper

## Rack Solutions

EMEA ONLY PRODUCT

Rack Solutions

Rack Solutions (*cont'd*)**Structured Cabling Section - Double/Single sided vertical cabling sections**

The Double-Sided structured cabling sections have edge-protected pass through ports to make it easy to route cable from front to back. While the centre separator secures optional cable management straps for neatly bundled cables.

**Features**

- Spacing of cable guides aligns exactly with the spacing on a standard ISO 1101 rack.
- Unique switch gate Door/ Cover provides easy, reversible access to cables.
- Edge protected pass through ports.
- Cable guides provide an effortless solution to transitioning cables.
- Flexible cable guides allow cable to snap-in easily for quick cable routing.

Product	Material ID
STD RACK 19-inch x 7 ft x 3 in, 45U, BLK	108527441
STD RACK 19-inch x 7 ft x 6 in Deep, 45U, BLK	108867151
Cabling Section, 7 ft x 6 in, 45U, BLK	108527350
Cabling Section, 7 ft x 10 in, 45U, BLK	108527351
Mounting Screws, #12-24, 50/PKG, BLK	108527450
Mounting Screws, #12-24, 1000/PKG, BLK	108527451
Vertical Wire Management Loop	108527452
Double Wide Cable Management Ring	108572543
SYSTIMAX Single Cabling Section, 7 ft x 6 in, 45U, BLK	108527544
Blanking Panel BLK 1U	999901650
Blanking Panel BLK 2U	999901651
Patch Cord Organizers - 2 U -1100D1-35-19	106830615
Patch Cord Organizers - 1 U -1100D2-35-19	106830623
Patch Cord Organizers - 2 U -1100D3-35-19	107132664

## Multimedia MultiMAX

The **M1000P5 MultiMAX Panel** is a 19-inch rack mountable aluminum panel that provides for patching or interconnect of copper and / or fiber terminations, in the telecommunications closet or equipment room. Packaged with the panel are mounting clips for up to 24 modular outlets or fiber connectors, distribution rings for cord or cable management and screws.

For copper terminations, the mounting clips provide a fixture for holding the M-series Information Outlets when terminating conductors and also provide strain relief for the cable when snapped into the panel. Mounting clips also accommodate the M81ST and M81SC or M81LC for fiber terminations.

## Multimedia

### Distribution Panel



**Figure 97**  
M1000P5 MultiMAX Panel

### Physical Specifications

**Height:** 8.9 cm (3.5 in)

**Width:** 48.3 cm (19 in)

**Depth:** 0.32 cm (0.1 in)

Product	Material ID	Wiring	Packaging	Color
M1000P5	108006198	24 x IOs	1/Kg	Black

Product	Material ID
Fiber Storage Spool Kit w/ 6 Singlemode Fiber Guides and 3 Wire Guides	107535080
Duplex SC Fiber Mounting Kit w/ 1 Collar Lock	107535072
Wire Guide	107382525
Mounting Collars	108006206
MultiMAX Panel	700022239

## Fiber

## Interconnection Unit

LazrSPEED **Interconnect Units (LIUs)** are modular enclosures providing cross-connect and/or interconnect, splicing and terminating capabilities for outside plant and building cables. Although primarily designed as wall mounted units, they can be placed on a rack using a mounting bracket.

The **100LS LIU** can terminate 12 fibers with ST or SC connectors, or 24 fibers with LC connectors. Made of an engineered polycarbonate material, the **100LS** can accommodate two 10P adapter panels (ordered separately).

The **200LS LIU** can terminate 24 fibers with ST or SC connectors, or 48 fibers with LC connectors. It can accommodate up to 12 mechanical or fusion splices, using an optional splicing kit. The **200LS** can accommodate up to 24 mechanical or fusion splices with optional splicing kits, but the fiber termination capacity is decreased to 12 ST or SC connections, or 24 LC connections. The **200LS** is made of aluminum and can accommodate four 10P adapter panels (ordered separately).

The 10P LazrSPEED adapter panels are equipped with aqua colored ST, SC or LC adapters for easy identification of LazrSPEED terminations these are ordered separately. The 10PSC-LS and 10PST-LS panels are equipped with six SC or ST adapters (respectively), and the 10PLC-LS panel are equipped with twelve LC adapters.

## LazrSPEED

## 100LS and 200LS LIU's



**Figure 98**  
LazrSPEED 100LS LIU  
Interconnect Unit with  
10P adapter panels



**Figure 99**  
LazrSPEED 200LS LIU  
Interconnect Unit with  
10P adapter panels

## Physical Specifications

<b>100LS LIU: Height:</b>	22.2 cm (8.7 in)
<b>Width:</b>	19.1 cm (7.5 in)
<b>Depth:</b>	7.6 cm (3 in)
<b>200LS LIU: Height:</b>	22.2 cm (8.7 in)
<b>Width:</b>	19.1 cm (7.5 in)
<b>Depth:</b>	10.2 cm (4 in)

Product	Material ID	Packaging
100LS LIU	108548868	1/Pkg
200LS LIU	108548876	1/Pkg

## Panels

Product	Material ID	Packaging
10PLC-LS Panels	108627266	1/Pkg
10PSC-LS Panels	108627274	1/Pkg
10PST-LS Panels	108627282	1/Pkg

## Fiber

## Interconnection Unit

## LazrSPEED

100LS and 200LS LIU's  
*cont'd*

The Multiport Adapters can accommodate either six SC, ST or twelve LC terminations. They are color coded for easy identification. LazrSPEED is colored Aqua, OptiSPEED MM is colored Beige, while SM is colored Blue.

Product	Material ID	Packaging	Color
<b>OptiSPEED</b>			
C12SMLC-ADPTR CPLNG	700206972	1/Pkg	Blue
C6SMSC-ADPTR CPLNG	700206980	1/Pkg	Blue
C6SMST-ADPTR CPLNG	700206998	1/Pkg	Blue
C12MMLC-ADPTR CPLNG	700206949	1/Pkg	Beige
C6MMSC ADPTR CPLNG	700206956	1/Pkg	Beige
C6MMST-ADPTR CPLNG	700206964	1/Pkg	Beige
<b>LazrSPEED</b>			
C12MMLC.LS ADAPTER CPLNG	700207004	1/Pkg	Aqua
C6MMSC.LS. ADAPTER CPLNG	700207012	1/Pkg	Aqua
C6MMST.LS ADAPTER CPLNG	700207020	1/Pkg	Aqua

Product	Material ID	Packaging	Color
<b>OptiSPEED</b>			
C12SMLC-10	700007891	10/Pkg	Blue
C6SMSC-10	700007917	10/Pkg	Blue
C6SMST-10	700007909	10/Pkg	Blue
C12MMLC-10	108168824	10/Pkg	Beige
C6MMSC-10	108168774	10/Pkg	Beige
C6MMST-10	108168808	10/Pkg	Beige
<b>LazrSPEED</b>			
C12MMLC-LS-10	108626243	10/Pkg	Aqua
C6MMSC-LS-10	108626250	10/Pkg	Aqua
C6MMST-LS-10	108626268	10/Pkg	Aqua

## Fiber

## Interconnection Unit

## LIUs

## 100A3 Unit

The **100A3 Interconnection Unit (LIU)** is a modular enclosure that provides cross-connect, interconnect, or splicing capabilities for Building Cables or Outside Plant Cables inside a building. Two windows are provided to mount connector panels. The **100A3** is ideal for wall mounting and is made of durable engineered polycarbonate material. It is designed to terminate a maximum of 12 fibers for cross connection or interconnection, or can accommodate up to 12 mechanical (CSL) or fusion splices using the optional splice adapter tray.

The **100A3 LIU** has five plastic split rings for managing slack fibers within the unit and two rings for routing cables passing through the unit. Termination posts at the top and bottom secure the cables entering from overhead or below. The **100A3 LIU** has inserts to enclose cable entry holes and grommets to seal around the cables.

The 10P OptiSPEED adapter panels are equipped with beige colored ST, SC or LC multimode adapters or blue colored ST, SC singlemode adapters for easy identification of multimode or singlemode terminations.

The 10PSC and 10PST panels are equipped with six SC or ST multimode connections (respectively), and the 10PLC are equipped with twelve LC multimode adapters. The 10PSC-SM and 10PST-SM panels are equipped with six SC or six ST singlemode adapters (respectively), and 10PLC-SM Panel is equipped with twelve LC adapters.



**Figure 100**  
100A3  
Interconnect Unit



## Physical Specifications

**Height:** 22.22 cm (8.7 in)

**Width:** 19 cm (7.5 in)

**Depth:** 7.62 cm (3 in)

Product	Material ID	Connector/ Splice Qty	Packaging
100A3 LIU	106896947	12	1/Pkg

## OptiSPEED

Product	Material ID	Description	Packaging
10PLC Panel	108491697	LC Multimode	1/Pkg
10PSC Panel	108259458	SC Multimode	1/Pkg
10PST Panel	108259466	ST Multimode	1/Pkg
10PLC-SM	700025984	LC Singlemode	1/pkg
10PSC-SM	700011430	SC Singlemode	1/Pkg
10PST-SM	700011422	ST Singlemode	1/Pkg

## Fiber

## Interconnection Unit

## LIUs

## 200A and 400A Units

The **200A Interconnection Unit (LIU)** is a modular enclosure that provides cross-connect, interconnect or splicing capabilities for Building Cables (LGBC) or Outside Plant Cables inside a building. Four windows are provided to mount connector panels. The **200A Interconnection Unit** is ideal for wall mounting and is made of durable lightweight aluminum. It is designed to terminate a maximum of 24 fibers for cross-connection or interconnection, or can accommodate up to 24 mechanical or fusion splices using the optional splice adapter tray, and can also accommodate a combination of 12 terminations and 12 splices.



Figure 101  
200A Interconnect Unit

The **200A LIU** has five plastic split rings for managing slack fibers within the unit and two rings for routing cables passing through the unit. Termination posts at the top and bottom secure the cables entering from overhead or below.

The 10P OptiSPEED adapter panels are equipped with beige colored ST, SC or LC multimode adapters or blue colored ST, SC singlemode adapters for easy identification of multimode or singlemode terminations.

The 10PSC and 10PST panels are equipped with six SC or ST multimode adapters (respectively), and the 10PLC is equipped with twelve LC multimode adapters. The 10PSC-SM and 10PST-SM panels are equipped with six SC or six ST singlemode adapters (respectively), and 10PLC-SM panel is equipped with twelve LC singlemode adapters.



The **400A1 LIU** directly terminates 64 fibers or accommodates 24 splices plus 48 terminations. The 400A1 LIU is not provided with keylocks.

## Physical Specifications

Height: 22.22 cm (8.7 in)

Width: 19 cm (7.5 in)

Depth: 10.16 cm (4 in)

Product	Material ID	Connector/Splice Qty	Packaging
200A LIU	105535926	24	1/Pkg
400A1 LIU	106266901	64	1/Pkg

## Panels

Product	Material ID	Description	Packaging
10PLC Panel	108491697	LC Multimode	1/Pkg
10PSC Panel	108259458	SC Multimode	1/Pkg
10PST Panel	108259466	ST Multimode	1/Pkg
10PLC-SM Panel	700025984	LC Singlemode	1/Pkg
10PSC-SM Panel	700011430	SC Singlemode	1/Pkg
10PST-SM Panel	700011422	ST Singlemode	1/Pkg

## Fiber

## Accessories

The **10A**, **10SC1**, **10SC1-Duplex**, **10LC1** and **Blank Panels** are designed for use in the 100A3 and 200A Interconnection Units (LIUs).

The **10A** accommodates up to 6 ST-type adapters (**C2000A-2**); the **10SC1** accommodates up to 6 SC-type adapters (**C6000A-4**); the **10SC1-Duplex** accommodates up to 3 Duplex SC-type adapters (**C6060A-4**); the **10LC1** accommodates up to 6 Duplex LC-type adapters (**C1000A-2**) and the **Blank Panel** is intended to fill any empty panel slot in the 100A3 or 200A where the other panels are not required.

The adapters are not included with the panels. They can be ordered separately.

## LIUs

## Panels



**Figure 102**  
Blank and 10A Panels

## Physical Specifications

**Height:** 9.8 cm (3.8 in)

**Width:** 3.7 cm (1.5 in)

**Depth:** 0.3 cm (0.1 in)

Product	Material ID	Ports	Packaging
10A	104141858	6 x ST cpl	1/Pkg
10SC1	106371800	6 x SC cpl	1/Pkg
10SC1-DPLX	107025835	3 x Dplx SC	1/Pkg
10LC1	107783755	6 x Dplx LC cpl	1/Pkg
Blank Panel	105276570	N/A	1/Pkg

## Fiber

## Accessories

The **1A4 Fiber-Optic Trough** is a vertical aluminum trough which is used to arrange fiber patch cords vertically from one Interconnection Unit (LIU) to another in a multiunit fiber cross-connect, or from the LIU to the active electronics. The **1A4** is packaged with two mounting screws for wall mounted applications.

## Physical Specifications

**Height:** 22.2 cm (8.7 in)

**Width:** 10.2 cm (4 in)

**Depth:** 5.1 cm (2 in)

Product	Material ID	Packaging	Color
1A4	104141866	1/Pkg	White

## LIUs

## 1A4 Vertical Trough



**Figure 103**  
1A4 Vertical Trough

## Fiber

## Accessories

The **1A6 Fiber-Optic Trough** is a horizontal aluminum trough which is used to arrange fiber patch cords horizontally from one Interconnection Unit (LIU) to another in a multiunit fiber cross-connect, or from the LIU to the active electronics. The **1A6** is packaged with two mounting screws for wall mounted applications.

## Physical Specifications

**Height:** 10.2 cm (4 in)

**Width:** 29.2 cm (11.4 in)

**Depth:** 10.2 cm (4 in)

Product	Material ID	Packaging	Color
1A6	104141874	1/Pkg	White

## LIUs

## 1A6 Horizontal Trough



**Figure 104**  
1A6 Horizontal Trough



## Fiber

## Accessories

These kits adapt the 100LS, 200LS, 100A3 and 200A Interconnect Units (LIUs) for mechanical or fusion splice retention. The **D-181706** holds 12 CSL splices while the **D-181707** can hold 16 fusion splices. Splices can be ordered separately.

## LIUs

## Splice Adapter



**Figure 105**  
*D-181706 Splice  
Adapter Kit*

Product	Material ID	Length	Packaging
D-181706	105289656	12 CSL	1/Pkg
D-181707	105289664	16 Fusion	1/Pkg

## Fiber

## Shelves

A rack-mountable, one unit high shelf, the 600ALS Combination Shelf houses 24 ST, 24 SC, or 48 LC terminations. This space-saving shelf offers an easy solution for housing the connection of two cables or the interconnection of equipment. The 600ALS Combination Shelf is applicable for use in local area networks (LANs), premises distribution systems, and small count splice and termination applications. A detachable front panel allows easy access to the cable connectors. Optional accessories include a metallic cover, a 2U trough wire management (it is fitted below the shelf and comes up to cover it), (DTLS/600A-5) and an optional splice tray (1AMF1-6LG).

Each 600ALS is 1U and includes all adapters needed to terminate up to 48 fibers using LC connectors or 24 fibers using SC or ST connectors. Its versatile design can accommodate up to 48 mechanical splices, 64 fusion splices, or 12 ribbon (mass *fusion*) *splices using optional splice trays*.

## LazrSPEED

## 600ALS Combination Shelf

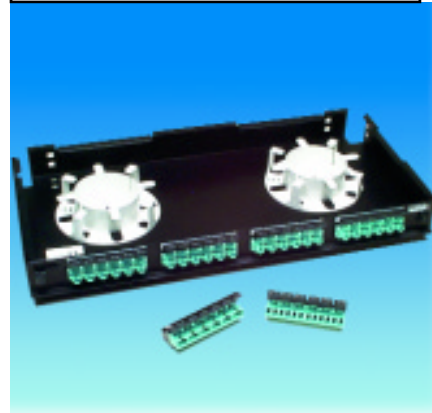


Figure 106  
600ALS Combination Shelf

## Physical Specifications

Height: 4.4 cm (1.7 in)

Width: 43.2 cm (17 in)

Depth: 20.3 cm (8 in)

Product	Material ID	Port	Packaging
600ALS/MM/LC-48	108565698	48 x LC	1/Pkg
600ALS/MM/SC-24	108565706	24 x SC	1/Pkg
600ALS/MM/ST-24	108565714	24 x ST	1/Pkg
Lid Cover for 600A (c/600a)	108565433	–	1/Pkg
DTLS/600A-5 Trough Manager	700008303	–	1/Pkg
1AMF1-6LG Splice Tray	700006281	–	1/Pkg

## Fiber

## Shelves

The 600BLS Combination Shelf is an easy-to-install solution that meets your splicing and termination needs for up to 24 ST or SC connections and up to 48 LC connections. Its space saving slimline design features a front access, sliding shelf for easy access and installation. The lightweight, frame mounted shelf is suitable for your local area network, general premises distribution, and small count splice and termination applications.

Each 600BLS is 1U and includes all adapters needed to terminate up to 48 fibers using LC connectors or 24 fibers using SC or ST connectors. Its versatile design can accommodate up to 48 mechanical splices, 64 fusion splices, or 12 ribbon (mass fusion) splices using optional splice trays. The shelf contains a sliding tray with two 7.6 cm (3 in) storage drums and two openings with liquid tight fastens. Optional accessories include a metallic cover, a 1U trough wire management that attaches to the front of the shelf (DTLS/600B-1.75) and an optional splice tray (1AMF1-6LG).

## LazrSPEED

### 600BLS Combination Shelf



Figure 107  
600BLS Combination Shelf

## Physical Specifications

**Height:** 4.4 cm (1.7 in)

**Width:** 43.7 cm (17.2 in)

**Depth:** 28.4 cm (11.2 in)

Product	Material ID	Port	Packaging
600BLS/MM/LC-48	108565755	48 x LC	1/Pkg
600BLS/MM/SC-24	108565763	24 x SC	1/Pkg
600BLS/MM/ST-24	108565771	24 x ST	1/Pkg
Lid Cover for 600B (c/600b)	108565458	–	1/Pkg
DTLS/600B-1.75	700008295	–	1/Pkg

## Fiber

## Shelves

The **LSTLS High Density Termination Shelf** features a fully modular design, increased protection and security, front and rear accessibility, and versatility as a stand-alone unit. The shelves can be used to perform the functions most commonly required in the field, such as termination and interconnection.

The **LSTLS** is a 4U (7-inch high) shelf designed for high fiber density locations, including equipment rooms and telecom closets.

The shelf is loaded with adapters and is capable of terminating up to 144 LC connections, 72 SC connections or 72 STII+ connections. Built-in slack management for each color-coded LazrSPEED adapter strip facilitates fiber administration. The adapter bezel is detachable from the front, to provide easy access to the rear connector and fiber slack.

The **LSTLS** is designed for mounting in a 19-inch rack for enterprise applications.

## LazrSPEED

## LSTLS High Density Termination Shelf



**Figure 108**  
LSTLS High Density  
Termination Shelf

Product	Material ID	Port	Packaging
LSTLS/MM/LC-144/7	108565631	144 x LC	1/Pkg
LSTLS/MM/SC-072/7	108565649	72 x SC	1/Pkg
LSTLS/MM/ST-072/7	108565656	72 x ST	1/Pkg

## Fiber

600ASY and 600BSY  
Combination Shelf

## OptiSPEED

## Shelves

The 600ASY and 600BSY OptiSPEED One Unit High Combination Shelves consist of a housing for terminating and/or splicing fiber-optic cables and allows for organization of fiber interconnects.

The 600ASY Shelf can be equipped with multiport adapter panels (not included) to terminate up to 48 fibers using LC connectors, 24 fibers using ST or SC connectors. The shelf can be used to terminate 24 fibers or to accommodate 48 mechanical splices, 64 fusion splices or 24 ribbon (mass fusion) splices using optional splice trays. An optional lid cover provides protection from dust and falling debris. The 600ASY Shelf contains a detachable front panel for fast access to the rear connectors and cable slack.

The 600BSY Shelf can be equipped with adapter panels to terminate up to 48 fibers using LC connectors, or 24 fibers using ST or SC connectors. Its versatile design can accommodate up to 48 mechanical splices, 64 fusion splices, or 24 ribbon (mass fusion) splices using optional splice trays. An optional lid cover provides protection from dust and falling debris. The 600BSY Shelf contains a slide-out shelf for fast access to the rear connectors and cable slack.

## Physical Specifications

**Height:** 1.72 in (4.37 cm) - 1U rack space

**Width** 600ASY: 17.0 in (43.18 cm)

600BSY: 17.19 in (43.7 cm)

**Depth** 600ASY: 8 in (20.32 cm)

600BSY: 11.2 in (28.5 cm)

Product	Material ID
<b>SHELVES</b>	
600ASY Combination Shelf without Adapters	700007305
600BSY Combination Shelf without Adapters	700007297
<b>ACCESSORIES</b>	
DTSY/600A-5 Door/Cable Manager	700008337
C/600A Optional Coverplate	108565433
1AF1-16LG Fusion Splice Organizer	700006257
1AMF1-6LG Mass Fusion Splice Organizer	700006281
1AM1-12LG Mechanical Splice Organizer	700006240
C600B Optional Coverplate	108565458
DTSY/600B 1.75 Door/Cable Manager	700008329
<b>MULTIPORT ADAPTERS</b>	
C12SMLC-ADPTR CPLNG	700206972
C6MSC-ADPTR CPLNG	700206980
C6SMST-ADPTR CPLNG	700206998
C12MMLC-ADPTR CPLNG	700206949
C6MMS-ADPTR CPLNG	700206956
C6MMST-ADPTR CPLNG	700206964

## Fiber

LSTSY  
Combination Shelf

## OptiSPEED

## Shelves

The **LSTSY OptiSPEED Termination Shelf** can be equipped with adapter panels to terminate up to 144 fibers using LC connectors, or 72 fibers using ST or SC connectors. The **LSTSY Termination Shelf** accommodates 12 multipair adapters. Cable slack is maintained behind each adapter panel.

## Physical Specifications

**Height:** 7 in (17.8 cm)

**Width:** 17 in (43.2 cm)

**Depth:** 11 in (27.9 cm)

Product	Material ID	Port	Packaging
LSTSY Termination Shelf	700011166		
<b>ACCESSORIES - MULTIPORT ADAPTERS</b>			
C12SMLC-10	700007891	(12)LC Singlemode	10/Pkg
C6SMSC-10	700007917	(6)SC Singlemode	10/Pkg
C6SMST-10	700007909	(6)ST Singlemode	10/Pkg
C12MMLC-10	108168824	(12)LC Multimode	10/Pkg
C6MMSC-10	108168774	(6)SC Multimode	10/Pkg
C6MMST-10	108168808	(6)ST Multimode	10/Pkg
C12SMLC	700206972	(12) LC Singlemode	1/Pkg
C6SMSC	700206980	(6) SC Singlemode	1/Pkg
C6SMST	700206998	(6) ST Singlemode	1/Pkg
C12MMLC	700206949	(12) LC Multimode	1/Pkg
C6MMSC	700206956	(6) SC Multimode	1/Pkg
C6MMST	700206964	(6) ST Multimode	1/Pkg
C6MMST-LS-10	108626268	(6) ST - LS Multimode	10/Pkg
C6MMST-LS	700207020	(6) ST - LS Multimode	1/Pkg
C6MMSC-LS-10	108626250	(6) SC - LS Multimode	10/Pkg
C6MMSC-LS	700207012	(6) SC - LS Multimode	1/Pkg
C6MMLC-LS-10	108626243	(6) LC - LS Multimode	10/Pkg
C6MMLC-LS	700207004	(6) LC - LS Multimode	1/Pkg

## Fiber

## 1100GS3 Panels

## Patch Panels

## 1100GS3 Panels

The 1100GS3 Fiber Panel offering supports both our LazrSPEED and OptiSPEED Solutions. The 1100GS3 Fiber Panel product line includes two panel kits and nine fiber modules. In addition, a copper GigaSPEED XL (700212137) module can be fitted in the same panel. This modularity gives the customer the flexibility of deploying all fiber, copper or both solutions.



The panels can be mounted on a 19-inch rack for enterprise applications. The 1100GS3 kits contain cable retainers and fasteners, labels, mounting screws and instructions. Modules are not included in the panel kits.

The GigaSPEED XL 1100 panel can also use self adhesive labels. The label sheets are available in standard letter size (8-1/2 x 11 inch) or A4 (210 x 297 mm) format and can be printed using a standard laser printer (card stock is also inkjet-printer compatible). The new Self Adhesive Labels are available in the following colors: Red, White, Blue, Orange and Green. The label sheets are sold, in packages of five.

Material ID	Description	Solution
<b>Panel Kits</b>		
760001776	1100 GS3-1U Panel Kit	LazrSPEED/ OptiSPEED
760001784	1100 GS3-2U Panel Kit	LazrSPEED/ OptiSPEED

Material ID	Description	Solution	Ports
<b>Modules</b>			
760001792	1100 GS3 DM-LS-SC/SC	LazrSPEED	6 x SC MM
760001800	1100 GS3 DM-LS-ST/ST	LazrSPEED	6 x ST MM
760001818	1100 GS3 DM-LS-LC/LC	LazrSPEED	12 x LC MM
760001826	1100 GS3 DM-MM-SC/SC	OptiSPEED	6 x SC MM
760001834	1100 GS3 DM-MM-ST/ST	OptiSPEED	6 x ST MM
760001842	1100 GS3 DM-MM-LC/LC	OptiSPEED	12 x LC MM
760001859	1100 GS3 DM-SM -SC/SC	OptiSPEED	6 x SC SM
760001867	1100 GS3 DM-SM-ST/ST	OptiSPEED	6 x ST SM
760001875	1100 GS3 DM-SM-LC/LC	OptiSPEED	6 x LC SM

Material ID	Description	Label Size	Color
<b>Self Adhesive Labels 8-½ x 11</b>			
760006221	AVL-PM/1100XL-BL-xx	3.60 x 0.63 in (91.5 x 16 mm)	Blue
760006254	AVL-PM/1100XL-WH-xx	3.60 x 0.63 in (91.5 x 16 mm)	White
760009787	AVL-PM/1100XL-RD-xx	3.60 x 0.63 in (91.5 x 16 mm)	Red
760009795	AVL-PM/1100XL-OR-xx	3.60 x 0.63 in (91.5 x 16 mm)	Orange
760009803	AVL-PM/1100XL-GN-xx	3.60 x 0.63 in (91.5 x 16 mm)	Green
<b>Self Adhesive Labels A4</b>			
760009761	AVL-PM/1100XL-BL-xx	3.60 x 0.63 in (91.5 x 16 mm)	Blue
760009779	AVL-PM/1100XL-WH-xx	3.60 x 0.63 in (91.5 x 16 mm)	White
760009811	AVL-PM/1100XL-RD-xx	3.60 x 0.63 in (91.5 x 16 mm)	Red
760009829	AVL-PM/1100XL-OR-xx	3.60 x 0.63 in (91.5 x 16 mm)	Orange
760009837	AVL-PM/1100XL-GN-xx	3.60 x 0.63 in (91.5 x 16 mm)	Green

## Fiber

1100 LS Fiber  
Distribution Panel

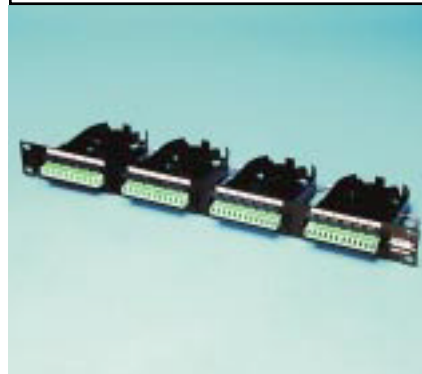
The **1100LS Fiber Distribution Panel** is a high quality panel for terminating or inter-connecting fibers in a premise wiring system. The shallow panel depth makes the **1100LS** ideal for wall mounted racks. Front access to the connectors behind the adapter strip is possible simply by removing the adapter bezel from the panel. The trim design and front access make the **1100LS Panel** an excellent solution for cramped and crowded telecommunication closets.

The **1100LS** was built to accommodate repeated line moves, additions and rearrangements. The kit includes adapter panels for 48 LC, 24 SC, or 24 ST terminations. The black housing design matches equivalent copper apparatus, and color-coded adapter panels simplify identification and administration.

This can be mounted in a 19-inch rack designed for enterprise applications, or directly on a wall with an optional adapter kit. A convenient kit comes equipped with the distribution shelf, color-coded adapter strips with either LC, ST or SC adapters, and all mounting hardware.

## Patch Panels

## LazrSPEED Shelves



**Figure 109**  
1100LS Fiber  
Distribution Panel

## Physical Specifications

**Height:** 4.4 cm (1.7 in)

**Width:** 48.3 cm (19 in)

**Depth:** 12.1 cm (8.3 in)

Product	Material ID	Ports	Packaging
1100LS/MM/LC-48	108565557	48 x LC MM	1/Pkg
1100LS/MM/SC-24	108565573	24 x SC MM	1/Pkg
1100LS/MM/ST-24	108565581	24 x ST MM	1/Pkg



## Fiber

## PATCHMAX GS3

## Patch Panels

## PATCHMAX GS3

The **PATCHMAX GS3 Fiber Panel** offering supports both our LazrSPEED and OptiSPEED Solutions. The **PATCHMAX Fiber Panel** product line, includes two panel kits and nine fiber modules. In addition, a copper GigaSPEED XL (700173776) module can be fitted in the same panel. This modularity gives the customer the flexibility of deploying all fiber, copper or both solutions.



The panels can be mounted on a 19-inch rack for enterprise applications. The kits contain cable retainers and fasteners, labels, mounting screws and instructions. Modules are not included in the panel kits.

Material ID	Description	Solution
<b>Panel Kits</b>		
760001669	PATCHMAX GS3-2U Panel Kit	LazrSPEED/ OptiSPEED
760001677	PATCHMAX GS3-3U Panel Kit	LazrSPEED/ OptiSPEED

Material ID	Description	Solution	Ports
<b>Modules</b>			
760001685	PATCHMAX GS3 DM-LS-SC/SC	LazrSPEED	6 x SC MM
760001693	PATCHMAX GS3 DM-LS-ST/ST	LazrSPEED	6 x ST MM
760001701	PATCHMAX GS3 DM-LS-LC/LC	LazrSPEED	12 x LC MM
760001719	PATCHMAX GS3 DM-MM-SC/SC	OptiSPEED	6 x SC MM
760001727	PATCHMAX GS3 DM-MM-ST/ST	OptiSPEED	6 x ST MM
760001735	PATCHMAX GS3 DM-MM-LC/LC	OptiSPEED	12 x LC MM
760001743	PATCHMAX GS3 DM-SM -SC/SC	OptiSPEED	6 x SC SM
760001750	PATCHMAX GS3 DM-SM-ST/ST	OptiSPEED	6 x ST SM
760001768	PATCHMAX GS3 DM-SM-LC/LC	OptiSPEED	6 x LC SM

## Fiber

## PATCHMAX OptiSPEED

A selection of fiber termination modules is now available to order. These modules are available with ST, SC, LC and hybrid ST-SC and SC-ST adapter assemblies for multimode applications - the first connector designation is what is found on the front of the module. For customers that want the aesthetics of the PATCHMAX panel and modules, as well as the functionality of the system, the fiber module additions provide the same look in the closet or the equipment room as well as providing a compact termination method.

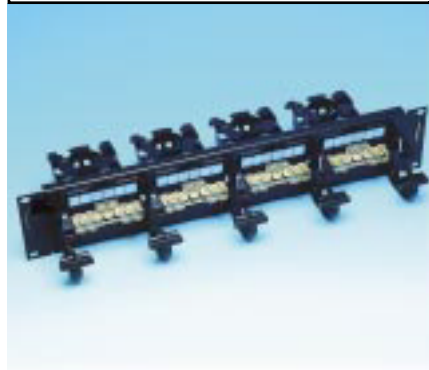
Fibers can be terminated in the same panel with copper pairs if the requirements are small, or separate panels can be used for the fiber and the copper. Access to the modules can be from the front, or from the rear of the panel, with the fiber distribution modules resting in the front retainer rings as is done with copper terminations.

The **PATCHMAX Fiber Panel Kits** contain all the parts necessary to complete the installation of the **OptiSPEED** hardware.

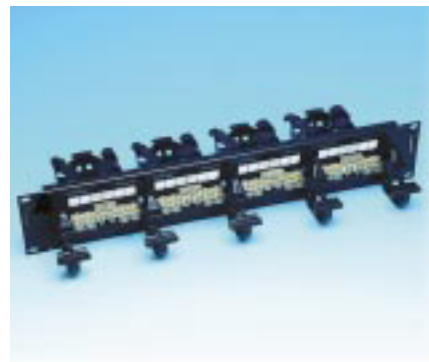
PATCHMAX fiber distribution modules can be ordered separately. The fiber distribution modules have the ports numbered 1 through 6, have areas for labels and icons to be attached and incorporate a slack storage tray in the rear of the module which also maintains the correct bend radius for the buffered fiber. The fiber adapters used for **PATCHMAX** ST, SC and LC modules provide the same low connection loss that the ST, SC and LC couplings and adapters have when used in other cabinets, shelves, and panels. Panels, front retainer rings, rear retainer bar, Velcro straps, icons, and labels are the same pieces found in the original hardware sold for the copper solution.

24 and 48-port panels (48 or 96 for LC) are available. They hold 4 or 8 snap-in six-port modules respectively. Individual fiber distribution modules are available when additions to a panel are desired. Guidelines on the cable routing and slack requirements in the rear of the panel are illustrated in the instruction sheet that is included with the **PATCHMAX** fiber panel kits.

## Patch Panels

OptiSPEED Fiber  
Panel Kits

**Figure 110**  
*PATCHMAX OptiSPEED  
SC/SC Panel*



**Figure 111**  
*PATCHMAX OptiSPEED  
ST/ST Panel*

Product	Material ID	Packaging	Adapter Type
<b>PATCHMAX Fiber Panel Kits</b>			
PM2302 SC/SC-24	108118027	1/Pkg	24 x SC/SC MM
PM2302 ST/ST-24	108118068	1/Pkg	24 x ST/ST MM
PM2302 SC/SC-48	108118100	1/Pkg	48 x SC/SC MM
PM2302 ST/ST-48	108118142	1/Pkg	48 x ST/ST MM

## Fiber

## PATCHMAX OptiSPEED

## Patch Panels

OptiSPEED Fiber Panels  
(cont'd)

Product	Material ID	Packaging	Ports
PM 2302 LC/LC-48	108267659	1/Pkg	48 x LC/LC MM
PM 2302 LC/LC-96	108267675	1/Pkg	96 x LC/LC MM
PM 2302 SC/ST-24	108118043	1/Pkg	24 x SC/ST MM
PM 2302 ST/SC-24	108118084	1/Pkg	24 x ST/SC MM
PM 2302 SC/ST-48	108118126	1/Pkg	48 x SC/ST MM
PM 2302 ST/SC-48	108118167	1/Pkg	48 x ST/SC MM
PM 2303 SC/SC-24	108118035	1/Pkg	24 x SC/SC SM
PM 2303 ST/ST-24	108118076	1/Pkg	24 x ST/ST SM
PM 2303 SC/SC-48	108118118	1/Pkg	48 x SC/SC SM
PM 2303 ST/ST-48	108118159	1/Pkg	48 x ST/ST SM
PM 2303 LC/LC-48	108267667	1/Pkg	48 x LC/LC SM
PM 2303 LC/LC-96	108267683	1/Pkg	96 x LC/LC SM
<b>PATCHMAX Fiber Distribution Modules</b>			
DM 2302 SC/SC	108116484	1/Pkg	6 x SC/SC MM
DM 2302 SC/ST	108116500	1/Pkg	6 x SC/ST MM
DM 2302 ST/SC	108116542	1/Pkg	6 x ST/SC MM
DM 2302 LC/LC	108267634	1/Pkg	12 x LC/LC MM
DM 2303 LC/LC	108267642	1/Pkg	12 x LC/LC SM

\* These fiber modules will not fit the PATCHMAX GS3 GigaSPEED panels.

## Fiber

## PATCHMAX LazrSPEED

PATCHMAX LazrSPEED distribution hardware provides a common look and feel with GigaSPEED and PowerSUM PATCHMAX panels, allowing your network to grow and change without investing in an entirely new patch panel system. As your fiber cabling demands grow, installers simply add PATCHMAX LazrSPEED panels equipped with STII+, SC or LC adapter modules.

Constructed of lightweight aluminum, PATCHMAX panels comply with the Electronic Industries Association (EIA) RS-310D standard for 19-inch (48.2 cm) frames. The panels mount on either a 19-inch rack/frame or 1100C-type wall mounted brackets.

PATCHMAX fiber distribution modules are equipped with LC, STII+ and SC adapters for maximum flexibility. Each ST or SC distribution module handles 6 fibers, while the LC distribution module handles 12 fibers. Distribution modules snap into the panels, allowing quick field assembly and easy installation. Modules can be added, removed or service mounted in the panel without special tools. A fiber slack tray attaches to the rear of the modules to provide slack storage and maintain proper bend radius. The distribution module and slack tray are removable from the front of the panel, allowing easy access to the rear connectors and cable. In addition each module uses new hingemounted, flip-up dust covers to protect the adapter ports.

## Patch Panels

## LazrSPEED Fiber Panel Kits

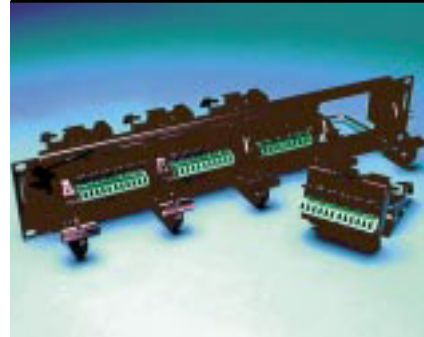


Figure 112  
PATCHMAX LazrSPEED

Product	Material ID	Packaging	Ports
<b>PATCHMAX 2U Termination Panels</b>			
PM2304LC/LC-48	108662024	1/Pkg	48 x LC/LC
PM2304SC/SC-24	108662065	1/Pkg	24 x SC/SC
PM2304ST/ST-24	108662107	1/Pkg	24 x ST/ST
<b>PATCHMAX 4U Termination Panels</b>			
PM2304LC/LC- 96	108662040	1/Pkg	96 x LC/LC
PM2304SC/SC-48	108662081	1/Pkg	48 x SC/SC
PM2304ST/ST- 48	108662123	1/Pkg	48 x ST/ST

## Fiber

## InstaPATCH™ System

The **SYSTIMAX InstaPATCH™ System** features a high-density, factory terminated, factory tested, modular fiber connectivity solution that allows the field engineer to simply and quickly connect system components together. This modular system approach enables 96 fibers to be ready for service in the time it takes to make a single fiber connection with traditional systems.

SYSTIMAX 10 Gb/s pre-terminated LazrSPEED fiber systems combine fast network turn-up with industry-leading connection density.

Developed by SYSTIMAX Labs, the new **InstaPATCH System** is designed to support locations, such as datacenters, which require space saving applications and also save on time and labor.

The InstaPATCH System incorporates the industry leading SYSTIMAX LazrSPEED multimode fiber technology, which provides 10 Gb/s throughput over a single fiber for enterprise applications, without the need for expensive singlemode electronics.

The **InstaPATCH System** includes pre-terminated hardware, pre-terminated backbone trunk cables and fiber jumpers. The InstaPATCH pre-terminated hardware is offered in two series. The high-density series features pre-terminated, one unit (1U) height LC and SC shelves with twice the density of traditional shelves. The modular series features interchangeable 12-fiber LC, SC, or ST modules in two distinct mounting arrangements to provide design and service flexibility.

Pre-terminated with MPO connectors and offered in customer-specified lengths, the InstaPATCH backbone trunk cables are constructed with either a 12-fiber or 2x12-fiber ribbon cables. Standard fiber patch cords are used to complete the optical data network installation.

## InstaPATCH

### The InstaPATCH System

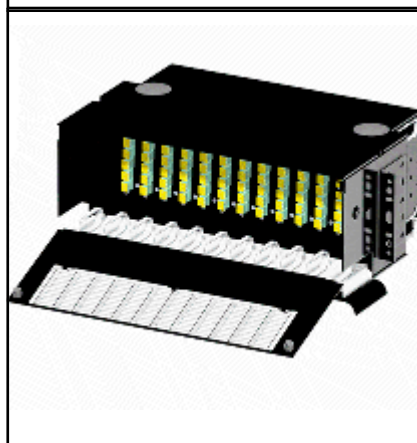


Figure 112a  
InstaPATCH 4 Unit Panel

## Fiber

## InstaPATCH System

## InstaPATCH

The InstaPATCH System  
(Cont'd)**Features and Benefits:**

- Supports 10 Gb/s applications up to 300 meters
- All shelves and modules are based on LazrSPEED 300 fibers to provide headroom for future system upgrades
- Factory terminated and tested cable and apparatus for instant field connections and guaranteed quality and performance
- 12-fiber MPO connector-based modular design enables simple connections
- Provides opportunities for lower total system cost (material plus labor)
- Up to 96% savings in installation time for 96 LC connections
- Up to 50% savings in space due to the increased density
- Designed for administrative convenience - guaranteed transmit-to-receive connectivity
- No special or non-standard polarity components
- Supports easy reconfiguration for moves, adds and changes
- Easy upgrade path to parallel connectivity and associated applications
- Improved fiber patch cord management and system labelling capabilities
- High density data shelf pull-out up to eight inches to ease fiber patch cord installation
- Automatic shutter for LC adapters to minimize dust contaminations and occupational safety risks
- Developed by SYSTIMAX Labs and backed by the best-in-industry SYSTIMAX warranty

**InstaPATCH DS High-Density Shelves:**

The **InstaPATCH DS High-Density Shelf** is a 1U high, rack mountable shelf, which features a pull-out tray for easy access to front side connectors. The shelf includes a top cover and a fiber management trough that provides ample room for labelling. The InstaPATCH High-Density 1U Shelf can be mounted either on a 19", 23", or ETSI rack via extension brackets. With density doubling that of the traditional termination shelf, the InstaPATCH High-Density DS Shelves are offered in both LC and SC versions. The high-density LC shelf features forty-eight pre-installed duplex LC adapters at the front panel and routed to eight pre-installed 12-fiber MPO adapters at the rear of the shelf. The high-density SC shelf has preinstalled twenty-four duplex SC adapters at the front panel and routed to four pre-installed 12-fiber MPO adapters at the rear of the shelf. The InstaPATCH DS Shelves also include a rear fiber management bar, labels for network mapping, mounting hardware, and installation instructions.

**InstaPATCH Modular Series:**

The **InstaPATCH Modular Series** include a 1U 19" panel and a 4U 19" shelf, which house pre-terminated 12-fiber MPO modules. The modular design allows fast moves and changes to the optical data network.

**InstaPATCH Modular Panel-1U:**

The **InstaPATCH 1U Panel** houses any combination up to three 12-fiber MPO modules to achieve 36 fiber terminations per Unit. The panel is equipped with a front trough for fiber management that provides ample room for labelling. As with the high-density 1U shelf, it comes with conversion brackets for mounting on a 19", 23", or ETSI rack. The InstaPATCH MP-1U Panel also includes a rear cable management bar, labels for network mapping, mounting hardware, and installation instructions.

## Fiber

## InstaPATCH System

## InstaPATCH

The InstaPATCH System  
(Cont'd)**InstaPATCH Modular Shelf-4U:**

The **InstaPATCH MS-4U Shelf** houses any combination up to twelve 12-fiber MPO modules to achieve 144 fiber terminations per Unit. This provides the same density as the traditional 4U (LST1U) termination shelf with LC, and double the density with SC or ST. As with the LST1U shelf, it can be mounted either on a 19", 23" or ETSI rack. The **InstaPATCH MS-4U Shelf** includes all labels for network mapping, mounting hardware, and installation instructions.

**InstaPATCH MPO DM Data Modules:**

Three versions of pre-terminated modules are offered: LC, SC or ST. The **InstaPATCH DM Module** can be fitted in any combination in both InstaPATCH Modular Panel-1U and Modular Shelf-4U to provide flexibility when configuring the fiber-optic network. Blank panels are available to cover any unused spaces.

**InstaPATCH Duplex Module-12LC-LS:**

This module features six pre-installed duplex LC adapters at the front routed to a pre-installed 12-fiber MPO adapter at the back. As with the InstaPATCH DS-LC shelf, this module features spring-loaded shutters for improved dust prevention and occupational safety.

**InstaPATCH Duplex Module-12SC-LS:**

This module features six pre-installed duplex SC adapters routed to a pre-installed 12-fiber MPO adapter. The duplex SC adapter includes two "easy-pull" protective dust caps.

**InstaPATCH Duplex Module-12ST-LS:**

This module features twelve simplex ST adapters routed to a pre-installed 12-fiber MPO adapter. The ST adapter includes a protective dust cap.

## Fiber

## InstaPATCH System

## InstaPATCH

The InstaPATCH System  
(Cont'd)

## Optical Performance

Component	Total Insertion Loss
DS Shelf- LC	$\leq 1.15$ dB
DS Shelf-SC	$\leq 1.3$ dB
LC DM Module	$\leq 1.15$ dB
SC DM Module	$\leq 1.3$ dB
ST DM Module	$\leq 1.3$ dB

## Specifications/Listings

Component	Dimension (HxWxD) cm (inch)	Listing
DS Shelf- LC, SC	4.37 x 43.7 x 41.1 (1.7 x 17.2 x 16.2)*	UL
DM Modules, LC, SC, ST	2.9 x 13.0 x 12.8 (1.1 x 5.1 x 5.0)	UL
MP 1U Panel	4.37 x 48.3 x 24.6 (1.7 x 19.0 x 9.7)*	UL
MS 4U Shelf	17.8 x 43.2 x 27.9 (7.0 x 17.0 x 11.0)	UL

\* The depth of the DS shelf and MP panel include the fiber management trough.

## Material ID

## Description

## High Density Series

760014076	InstaPATCH DS-96LC-LS high density data shelf
760014084	InstaPATCH DS-48SC-LS high density data shelf

## Modular Series

760013466	InstaPATCH DM-12LC-LS data module
760013474	InstaPATCH DM-12SC-LS data module
760013482	InstaPATCH DM-12ST-LS data module
760013458	InstaPATCH MP-1U modular panel, accept three DM modules (not included)
760013722	InstaPATCH MS-4U modular shelf, accept twelve DM modules (not included)
760016063	Blank panel for MP-1U and MS-4U, 6/pk



## Fiber

## InstaPATCH System

## InstaPATCH

The InstaPATCH System  
(Cont'd)**Pre-terminated LazrSPEED-IPR Trunk Cables:**

The **LazrSPEED-IPR Trunk Cables**, offered in both LazrSPEED 300 and LazrSPEED 150, are specifically designed for the InstaPATCH installation. These are available in two cable constructions: a single 12-fiber jacketed ribbon, and a side-by-side 2x12-fiber "zipcord" jacketed ribbon that may be easily separated. All trunk cables are plenum-rated and are factory terminated on both ends with 12-fiber MPO connectors. Both constructions may be ordered in customer lengths.

**Optical Performance**

Ribbon Cable	LazrSPEED 150	LazrSPEED 300
Maximum Cable Loss, dB/km	3.5 @ 850 nm 1.5 @1300 nm	3.5 @ 850 nm 1.5 @1300 nm
Minimum Bandwidth, MHz-km		
Overfilled	700 @ 850 nm 500 @ 1300 nm	1500 @850nm 500 @ 1300nm
Laser	950 @ 850 nm 500 @ 1300 nm	2000 @ 850 nm 500 @ 1300 nm
Cable Dimension		
Single Ribbon	2.10 x 4.60 mm	2.10 x 4.60 mm
Dual Ribbon	2.10 x 9.20 mm	2.10 x 9.20 mm
Cable Listing	OFNP (UL), OFN FT-6 (CSA)	OFNP (UL), OFN FT-6 (CSA)
Temperature Range	-40 to 70°C	-40 to 70°C

**Pre-terminated Trunk Cable**

MPO Connector Type	Female
Total Connection Insertion Loss	≤1.45dB
Mating Durability (per EIA 455-21A)	< 0.2 dB change 1000 mating cycles

Material ID	Description
FPCHMPMP9A-P*	LazrSPEED 150 IPR 12-fiber ribbon trunk cable, Plenum, MPO(f)-MPO(f)
FPCHMPMP9B-P	LazrSPEED 150 IPR 2x12-fiber ribbon trunk cable, Plenum, MPO(f) -MPO(f)
FPCZMPMP9A-P	LazrSPEED 300 IPR 12-fiber ribbon trunk cable, Plenum, MPO(f) -MPO(f)
FPCZMPMP9B-P	LazrSPEED 300 IPR 2x12-fiber ribbon trunk cable, Plenum, MPO(f) -MPO(f)

Note: \* y = unit of measure for cable length. F= feet, M = meters  
xxx = length of the cable (000-999)

## Fiber

## 600A1 Shelf

The 600A1 One Unit Combination Shelf is a 19-inch rack mountable fiber distribution shelf for terminating and/or splicing indoor fiber-optic cables. The assembly consists of a tray which contains rear corner and side slots for cable entry, steel brackets for rack flush/recessed mounting, fiber retainers for holding buffered fibers in place, and fiber storage drums that maintain a fiber bend radius of 3.81 cm.

The Front Connector Panels, 183U1 Cover, Splice Organizers, Jumper Trough, Connectors and Couplings should be ordered separately.

## Shelves

## Combination Shelf

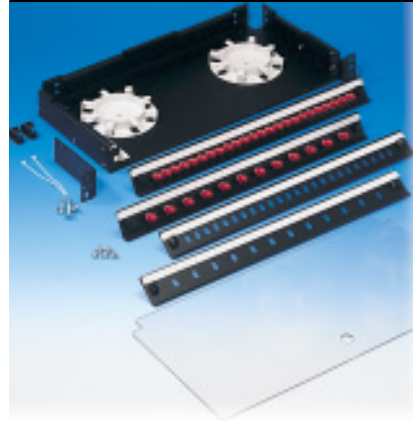


Figure 113  
600A1 Shelf, 24 ST-EW,  
12 ST-EW, 24 ST &  
12 ST Panels, 183U1 Cover

## Physical Specifications

Height: 4.37 cm (1.7 in)

Width: 43.18 cm (17 in)

Depth: 20.32 cm (8 in)

Product	Material ID	Packaging	Color
600A1	700007354	1/Pkg	Black

## Fiber

## 600A2 Shelf

The 600A2 Combination Shelf is a 19-inch and 23-inch rack mountable fiber distribution shelf for terminating and/or splicing indoor fiber-optic cables. .

## Shelves

## Combination Shelf

Product	Material ID	Packaging	Color
600A2	700007347	1/Pkg	Black

## Fiber

## 600A1 Shelf Accessories

## Shelves

## Connector Panels

The **600A1 Front Connector Panels** are used with the 600A1 Combination Shelf for holding the connector couplings in place. They are available to accommodate 12 ST, 24 ST, 12 SC, 24 SC, 12 SC Duplex or 24 LC Duplex couplings. The Connector Panels are also available with the couplings already installed.

## Physical Specifications

**Height:** 3.7 cm (1.5 in)

**Width:** 42.8 cm (17 in)

Product	Material ID	Ports	Packaging
12 ST Panel	700006620	12 x ST cpl (Not included)	1/Pkg
12 SC Panel	700006588	12 x SC cpl (Not included)	1/Pkg
24 ST Panel	700006646	24 x ST cpl (Not included)	1/Pkg
24 SC Panel	700006604	24 x SC cpl (Not included)	1/Pkg
12 SC Duplex Panel	700006562	12 x SC Duplex cpl (Not included)	1/Pkg
12 LC Duplex Panel	700006414	12 x LC Duplex cpl (Not included)	1/Pkg
24 LC Panel	700006380	24 x LC Simplex (Not included)	1/Pkg
24 LC Duplex Panel	700011380	24 x LC Duplex (Not included)	1/Pkg
12 ST-EW Panel	700006638	12 x ST cpl (Included)	1/Pkg
12 SC-EW Panel	700006596	12 x SC cpl (Included)	1/Pkg
24 ST-EW Panel	700006653	24 x ST cpl (Included)	1/Pkg
24 SC-EW Panel	700006612	24 x SC cpl (Included)	1/Pkg
12 SC-Duplex-EW Panel	700006570	12 x SC Duplex cpl (Included)	1/Pkg
12 ST (SM)-EW	700006554	12 x ST (SM) cpl	1/Pkg
24 ST (SM)-EW	700006547	24 x ST (SM) cpl	1/Pkg

## Fiber

## 600A1 Shelf Accessories

## Shelves

## Cover

The **183U1 Cover** is a clear polycarbonate cover to be placed on top of the 600A1 Combination Shelf. It protects the fibers from damage and dust.

## Physical Specifications

**Height:** 42.8 cm (17 in)

**Width:** 20.4 cm (8 in)

Product	Material ID	Packaging	Color
183U1	700005028	1/Pkg	Transparent

## Fiber

## 600A1 Shelf Accessories

## Shelves

## Trough

The **1U-19 Trough** is a 1 unit high aluminum trough which is mounted under the 600A1 Combination Shelf. The **1U-19 Trough** is used to accommodate the slack from fiber jumper cables routed to/from the shelf.



Figure 114  
1U-19 Trough

## Physical Specifications

**Height:** 5.6 cm (2.2 in)

**Width:** 48.3 cm (19 in)

**Depth:** 10.4 cm (4 in)

Product	Material ID	Packaging	Color
1U-19	700008352	1/Pkg	Black
1U-23	700008345	1/Pkg	Black

## Fiber

## 600 Series Shelf Accessories

## Shelves

## Splice Organizer Trays

The **1AM1-12LG** and **1AF1-16LG Splice Organizers** are used both with the 600A1 and 600B2 Combination Shelves. The **1AM1-12LG** is a Mechanical Splice Organizer, which holds up to 12 mechanical splices, while the **1AF1-16LG** is a Fusion Splice Organizer, which holds up to 16 fusion splices. Both the 600A1 and the 600B2 Shelves can accommodate up to 24 mechanical splices or 32 fusion splices.

Product	Material ID	Description	Packaging
1AF1-16LG	700006257	Fusion Splice Organizer Tray	10/Pkg
1AM1-12LG	700006240	Mechanical Splice Organizer Tray	10/Pkg

## Fiber

## 600B2 Shelf

The 600B2 One Unit Combination Shelf is a 19-inch rack mountable fiber distribution shelf for terminating and/or splicing fiber-optic cables. The assembly features a pullout aluminum tray for easy access to fibers and splices. The tray has two rear openings with liquid-tight cable glands, space for adding splice trays, and fiber storage drums that maintain a fiber bend radius 3.81 cm (1.5 in).

The front Connector Panels IU-17 trough, 184U1 Cover, Splice Organizers, Connectors and couplings should be ordered separately. The 600B2 Shelf uses the same splice trays as the 600A1.

The 600B2 can be used for indoor and dielectric outdoor (DNX and DDX cables) applications.

## Shelves

## Combination Shelf



Figure 115  
600B2 Shelf

## Physical Specifications

Height: 4.37 cm (1.7 in)

Width: 43.7 cm (17 in)

Depth: 28.5 cm (11.2 in)

Product	Material ID	Packaging	Color
600B2	700007321	1/Pkg	Black

## Fiber

## 600B1 and 600B3 Shelves

The 600B1 and 600B3 Combination Shelves are a 19-inch, 23-inch and ETUI frame mountable fiber distribution shelf for terminating and/or splicing fiber-optic cables.

## Shelves

## Combination Shelf

Product	Material ID	Packaging	Color
600B1	700007339	1/Pkg	Black
600B3	700007313	1/Pkg	Black

## Fiber

600B2 Shelf  
Accessories

## Shelves

## Connector Panels

The **600B2 Front Connector Panels** are used with the 600B2 Combination Shelf for holding the adapters in place. They are available to accommodate 12 ST, 24 ST, 12 SC, 24 SC, 12 SC Duplex or 24 LC Duplex couplings. The panels feature an integrated jumper trough. The panels are supplied stand alone or with couplings pre-loaded.

## Physical Specifications

**Height:** 3.7 cm (1.5 in)

**Width:** 42.8 cm (17 in)

Product	Material ID	Ports	Packaging
12ST1 Panel	700006497	12 x ST cpl (Not included)	1/Pkg
12SC1 Panel	700006539	12 x SC cpl (Not included)	1/Pkg
12SC1 DPLX Panel	700006521	12 x SC duplex (Not included)	1/Pkg
24ST1 Panel	700006455	24 x ST cpl (Not included)	1/Pkg
24SC1 Panel	700006471	24 x SC cpl (Not included)	1/Pkg
12LC1 DPLX Panel	700006406	12 x LC duplex (Not included)	1/Pkg
24LC1 DPLX Panel	700006398	24 x LC duplex (Not included)	1/Pkg
12ST1EW Panel	700006489	12 x ST MM cpl (Included)	1/Pkg
12SC1EW Panel	700006505	12 x SC cpl (Included)	1/Pkg
12SC1 DPLX-EW Panel	700006513	12 x SC duplex (Included)	1/Pkg
24ST1EW Panel	700006448	24 x ST MM cpl (Included)	1/Pkg
24SC1EW Panel	700006463	24 x SC cpl (Included)	1/Pkg
12ST1S-EW Panel	700006430	12 x ST SM cpl (Included)	1/Pkg
24ST1S-EW Panel	700006422	24 x ST SM cpl (Included)	1/Pkg
1U-17 Trough	700002348	N/A	1/Pkg

## Fiber

600B2 Shelf  
Accessories

## Shelves

## Cover

The **184U1 Cover** is a clear polycarbonate cover to be placed on top of the 600B2 Combination Shelf. It protects the fibers from damage and dust.

## Physical Specifications

**Height:** 42.8 cm (17 in)

**Width:** 20.4 cm (8 in)

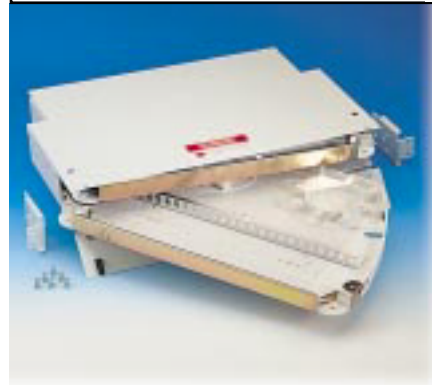
Product	Material ID	Packaging	Color
184U1	700005010	1/Pkg	Transparent

## Fiber

## LGX Shelves

The **LST1P-048ST/2.5 Shelf Terminating Unit** is a 6.35 cm (2.5 in) high shelf that can be mounted in a 19 or 23-inch rack. The shelf comes equipped with two front access pivoting trays that will each accommodate 24 fiber ST-type terminations of buffered fibers. Each tray has two fiber slack storage drums which limit the fiber bend radius to 3.81 cm (1.5 in). The trays have built-in adapter panels. However, ST connectors and adapters should be ordered separately.

## Shelves

**LST1P-048ST**  
**Termination Shelf**


**Figure 116**  
*LST1P-048ST*  
*Termination Shelf*

**Physical Specifications**

**Height:** 6.3 cm (2.5 in)

**Width:** 43.2 cm (17 in)

**Depth:** 27.9 cm (11 in)

Product	Material ID	Terminations	Packaging
LST1P-48ST	700007263	48 x ST cpl	1/Pkg

## Fiber

## LGX Shelves

The **LST1U-072/7 Termination Shelf** is 17.8 cm (7 in) high and is used for terminating up to 72 fibers from indoor or outdoor outside plant(OSP) Cables. The LST1U-144/9 termination shelf is 22.86 cm (9 in) high and is used for terminating 144 fibers from indoor or outdoor outside plant (OSP) cables.

Inside the cabinet, there is a hinged panel mounting bracket which can accept up to twelve 6-way coupling panels. The coupling panels, couplings and connectors should be ordered separately. OSP cable terminating hardware such as the 12A Cable Clamp, Buffer Tubing Kit, B-Sealant and Blocking Kits should also be ordered separately.

## Physical Specifications

**Height:** 17.8 cm (7 in) Or 22.86 cm (9 in)

**Width:** 43.2 cm (17 in)

**Depth:** 27.9 cm (11 in)

Product	Material ID	Terminations	Packaging
LST1U-072/7	700007289	72 ST or SC, 144 LC	1/Pkg
LST1U-144/9	700007214	144 ST or SC, 216 LC	1/Pkg
LST1U-144/9	760010199	144 ST or SC, 216 LC BLK	1/Pkg

## Shelves

LST1U-072/7 and  
LST1U-144/9  
Termination Shelf

Figure 117  
LST1U-072/7  
Termination Shelf

## Fiber

## LGX Shelves

The **LST1F-072/7 Termination Shelf** is the same as the LST1U-072/7 except the entire contents of the shelf is mounted on a slide out panel for easy front access.

## Physical Specifications

**Height:** 17.8 cm (7 in)

**Width:** 43.2 cm (17 in)

**Depth:** 27.9 cm (11 in)

Product	Material ID	Terminations	Packaging
LST1F-072/7	700007271	72 ST or SC, 144 LC	1/Pkg

## Shelves

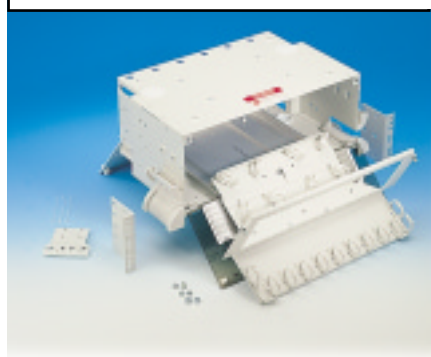
LST1F-072/7  
Termination Shelf

Figure 118  
LST1F-072/7  
Termination Shelf



## Fiber

## LGX Shelves

The LSS1U-072/5 Splice Shelf is 12.7 cm (5 in) high and is generally used in conjunction with an LST1U072/7 (700007289) terminating shelf or in splice-only applications to house mechanical or fusion splices such as LT1A-F/F which retains 24 splices (700025588). The LSS1U-144/7 splice shelf is 17.8 cm (7 in) high and will terminate 144 fibers.

OSP cable terminating hardware such as the 12A Cable Clamp, B-Sealant and Blocking Kits should be ordered separately. Splice Organizer Trays and Pigtails should also be ordered separately.

## Shelves

**LSS1U-072/5 and  
LSS1U-144/7  
Splice Shelf**


Figure 119  
LSS1U-072/5  
Splice Shelf

### Physical Specifications

**Height:** 12.7 cm (5 in) Or 17.8 cm (7 in)

**Width:** 43.2 cm (17 in)

**Depth:** 27.9 cm (11 in)

Product	Material ID	Terminations	Packaging
LSS1U-072/5	700007230	72	1/Pkg
LSS1U-144/7	700007222	144	1/Pkg
LT1A-F/F	700025588	-	1/Pkg

## Fiber

## LGX Shelves

The **LSC2U-024/5 Combination Shelf** is used for a combination of splicing and terminating up to 24 fibers from indoor or up to four outdoor Outside Plant (OSP) Cables. The shelf is designed as a termination only or splicing and termination of pigtails. The shelf comes with a hinged, smoked transparent, plastic front door and white hinged polycarbonate rear door for both front and rear access. Also included are: universal brackets for mounting the shelf in 19 and 23-inch racks or directly onto the wall; cable clamp brackets for securing indoor cables and 12A clamps for OSP cable; and blank labels attached to the inside of the front door for fiber identification.

Inside the cabinet, there is a panel mounting bracket which can accept up to four 6-way coupling panels. Under the termination area, there is provision for one LT1A-type splice tray. The coupling panels, couplings, connectors, and splice trays should be ordered separately. OSP cable terminating hardware such as the 12A Cable Clamp, Buffer Tubing Kit, B-Sealant and Blocking Kits should also be ordered separately.

## Shelves

**LSC2U-024/5  
Combination Shelf**


**Figure 120**  
*LSC2U-024/5  
Combination Shelf*

**Physical Specifications**

**Height:** 12.7 cm (5 in)

**Width:** 43.2 cm (17 in)

**Depth:** 27.9 cm (11 in)

Product	Material ID	Terminations	Packaging
LSC2U-024/5	700007255	24	1/Pkg

## Fiber

## LGX Accessories

## Shelves

## Panels

The LGX Coupling Panels are mounted in LGX shelves and used to accept ST, SC, Duplex SC, Duplex LC adapters (not included). The ST and SC Coupling Panels can accept up to 6 couplings, the Duplex SC panel accepts up to three couplings, the Duplex LC panel accepts up to six couplings, and the FDDI panel accepts up to 6 FDDI couplings (but requires the space of two of the other Coupling Panels).



Figure 121  
1000ST, 1000SC1-DPLX  
and 1000SC Panels

## Physical Specifications

Height: 2.85 cm (1.1 in)

Width: 12.9 cm (5 in)

## Panels for LST1F-072/7 and LSC2U-024/5 Shelves

Product	Material ID	Ports	Packaging
1000ST	700011406	6 x ST	1/Pkg
1000SC	700011398	6 x SC Simplex	1/Pkg
1000SC 1 - 8	700168966	8 x SC Simplex	1/Pkg
1000BK	700162936	Blank Panel	6/Pkg
1000ST	700011109	6 x ST cpl	12/Pkg
1000SC1-DPLX	700010952	3 x Dpx SC cpl	1/Pkg
1000LC1-DPLX	700011414	6 x Dpx LC cpl	1/Pkg

## Panels for LST1U-144/9 Shelf

Product	Material ID	Ports	Packaging
1200SC 1- 12	700162910	12 x SC Simplex	1/Pkg
2200SC 1- Dplx	760006197	12 x SC Dplx	1/Pkg
1200ST 1 -12	700208754	12 x ST	1/Pkg
1200LC 1 - Dplx	700208762	9 x LC Dplx	1/Pkg
1200BK	700209653	Blank Panel	1/Pkg

# Outlets

Chapter 4

# Outlets

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### Copper

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## Copper GigaSPEED® XL MGS400 Series

The **MGS400 Information Outlet** represents the latest in a series of industry leading SYSTIMAX Labs innovations in the field of high-speed LAN connectors. SYSTIMAX Labs pioneered the industry's first Category 5 outlet in the early 1990s, the first Category 5e outlet in 1996, and the very first modular outlet certified to support Category 6 applications with the introduction of the GigaSPEED® MGS200 Outlet in 1997, and MGS300 Outlet in 2000. Built upon this phenomenal success and supported by 18 patents, the **MGS400 Outlet** features proprietary cross-talk cancellation techniques for superior near-end cross-talk (NEXT & PSNEXT) performance that provides unmatched throughput performance when installed as part of a complete GigaSPEED XL channel.

The **MGS400 Information Outlet** is an integral part of the GigaSPEED XL Solution portfolio. The GigaSPEED XL Solution offers guaranteed margins over the minimum Category 6/Class E requirements even in worst-case configurations with up to six connections.

The **MGS400 Outlet** meets or exceeds the Category 6 requirements in TIA/EIA 568B.2-1, ISO/IEC 11801 (2002) and EN50173-1 (2002).

### Information Outlets

#### MGS400



**Figure 122**  
MGS400 Series  
High Density  
Modules



### Physical Specifications

<b>Width:</b> 0.787 in (2 cm)
<b>Length:</b> 0.787 in (2 cm)
<b>Depth:</b> 1.22 in (3.1 cm)
<b>Plastic:</b> High-impact, flame retardant, UL-rated 94V-0 thermoplastic
<b>Jack Wires:</b> Copper alloy, 1.27 $\mu$ m lubricated gold plating over 2.54 $\mu$ m nickel underplate
<b>Outlet Wires:</b> Copper alloy, 50 micro-inch lubricated gold plating over 100 micro-inch nickel underplate
<b>Connector:</b> Copper alloy, 100 micro-inch bright solder over 100 micro-inch nickel underplate
<b>Insertion Life:</b> > 750 insertions of an FCC 8 position telecommunications plug
<b>Min. Contact Force:</b> 100 g using FCC-approved modular plug
<b>Min. Plug Retention Force:</b> 133 N
<b>Operating Temperature Range:</b> 14 to 140 °F (-10 to 60 °C)

### Electrical Specifications

<b>EIA/TIA Category:</b> 6
<b>Min. Insulation Resistance:</b> 500m $\Omega$
<b>Min. Dielectric Withstand Voltage (Contact to contact @ 60 Hz):</b> 1000 VAC RMS
<b>Min. Dielectric Withstand Voltage (To exposed conductive surface @ 60 Hz):</b> 1500 VAC RMS
<b>Max. Contact Resistance:</b> 20 m $\Omega$
<b>Current Rating @ 20°C:</b> 1.5 A

Copper

GigaSPEED XL  
MGS400 Series

## Information Outlets

MGS400 *cont'd*

## Information Outlets

Product	Material ID	Packaging	Color
MGS400-003-BLACK	700206667	1/Pkg	Black
MGS400-112-ORANGE	700206683	1/Pkg	Orange
MGS400-123-YELLOW	700206691	1/Pkg	Yellow
MGS400-226-GREEN	700206709	1/Pkg	Green
MGS400-246-IVORY	700206717	1/Pkg	Ivory
MGS400-262-WHITE	700206725	1/Pkg	White
MGS400-270-GRAY	700206733	1/Pkg	Gray
MGS400-317-RED	700206741	1/Pkg	Red
MGS400-318-BLUE	700206758	1/Pkg	Blue
MGS400-361-VIOLET	700206675	1/Pkg	Violet

## Copper

PowerSUM  
MPS100E Series

The **MPS100E Information Outlet** is a Modular RJ45 to insulation displacement connector (IDC). It is typically installed in the faceplate at the work location and provides termination for the horizontal 4-pair cable at the IDC end, and workstation cord insertion at the RJ45 end. It is designed for high-speed data and video applications. A feature of the **MPS100E Outlet** is a universal colored wiring label that eliminates the need for separate Material IDs for 568A/B wiring schemes.

The insulation displacement connectors accept 22 and 24-AWG insulated wire. High-tooth pair splitters have been enhanced to separate very tightly twisted PowerSUM cable pairs to maintain the twist up to the connection. A D-Impact Tool can be used to terminate conductors. The Information Outlet is shipped with a space saving wire flat cap, that should be used to provide protection from contamination and to secure the connections. Multi-color labels with straight forward wire placement sequence mark wire terminals, assuring fast, accurate installation.

Snap on Icons identify the outlet as an MPSE product as either a computer or a data connection.

The **MPS100E Information Outlets** are designed to snap into any M-Series faceplate, frame, or surface-mount box. As an added feature, the outlet can mount either at 90 degrees (straight) or 45 degrees (angled) into these faceplates, frames or boxes: this allows angled mounting of the outlet without having to use special faceplates. Once inserted in either the straight or angled mounting, the outlets lock into place and can only be released using the dual-purpose wire insertion cap.

These 8-position/8-conductor jacks are part of the PowerSUM Solution that offers guaranteed margins exceeding the Category 5e channel requirements.

The **MPS100E Series**, which meets Category 5e standard, is compatible with 10 Mb/s IEEE 802.3 10BASE-T applications. Fully supports 100 Mb/s TP-PMD at 100 m (328 ft) over UTP per ANSI X3T9.5, and is also compatible with 16 Mb/s IEEE 802.5 Token Ring applications. **MPS100E Outlets** meet or exceed the Category 5 and Category 5e requirements in ISO/IEC 11801, CENELEC EN 50173, and EIA/TIA 568A.



## Information Outlets

## MPS100E



**Figure 123**  
*MPS100E*  
Information Outlets



## Copper

PowerSUM  
MPS100E Series

## Information Outlets

## MPS100E (cont'd)

## Physical Specifications

Length: 0.787 in (2 cm)

Width: 0.787 in (2 cm)

Depth: 1.22 in (3.1 cm)

Plastic: High-impact, flame retardant, UL-rated 94V-0 thermoplastic

Jack Wires: Copper alloy, 1.27 µm lubricated gold plating over 2.54 µm nickel underplate

Connector: Insulation displacement connectors (IDC) accept 22 &amp; 24-AWG wire

Insertion Life: &gt; 750

Min. Contact Force: 100 g

Min. Plug Retention Force: 133 N

Operating Temperature Range: - 40 to 150.0 °F (- 40 to 66 °C)

## Electrical Specifications

EIA/TIA Category: 5e

Min. Insulation Resistance: 500 mΩ

Min. Dielectric Withstand Voltage (Contact to contact @ 60 Hz): 1000 VAC RMS

Min. Dielectric Withstand Voltage (To exposed conductive surface @ 60 Hz): 1500 VAC RMS

Max. Contact Resistance: 20 mΩ

Current Rating @ 20°C: 1.5 A

Product	Material ID	Wiring Scheme	Packaging	Color
MPS100E - 003	108232695	T568A/B	1/Pkg	Black
MPS100E - 112	108232703	T568A/B	1/Pkg	Orange
MPS100E - 123	108232711	T568A/B	1/Pkg	Yellow
MPS100E - 215	108480484	T568A/B	1/Pkg	Cream
MPS100E - 226	108232729	T568A/B	1/Pkg	Green
MPS100E - 246	108232737	T568A/B	1/Pkg	Ivory
MPS100E - 262	108232745	T568A/B	1/Pkg	White
MPS100E - 270	108232752	T568A/B	1/Pkg	Slate Gray
MPS100E - 317	108232760	T568A/B	1/Pkg	Red
MPS100E - 318	108232778	T568A/B	1/Pkg	Blue
MPS100E - 361	108337726	T568A/B	1/Pkg	Violet

## Copper

## Icons &amp; M-Series Cap

## Information Outlets

## MGS400 and MPS100E

Icons for the **MGS400** and the **MPS100E** Information Outlets are available in ten colors. These icons come in strips of three. The MPS100E icons are the following: a computer symbol, "DATA" and "MPSE." The MGS400 icons are available with the following written on the front: a computer symbol, one with "DATA", and "GS." Also available are icons for voice applications which display the word "VOICE." These icons are snapped into the top of the MGS400 or the MPS100E when flush mounted and on the top angled surface when mounted at an angle. The icons are packaged 100 to a bag with 5 bags in a box.

## ICONS FOR MGS400

Product	Material ID	Description	Packaging	Color
M61A-003	108065657	Computer Icon, DATA, GS	500/Pkg	Black
M61A-112	108065673	Computer Icon, DATA, GS	500/Pkg	Orange
M61A-123	108065707	Computer Icon, DATA, GS	500/Pkg	Yellow
M61A-226	108065731	Computer Icon, DATA, GS	500/Pkg	Green
M61A-246	108065756	Computer Icon, DATA, GS	500/Pkg	Ivory
M61A-262	108065780	Computer Icon, DATA, GS	500/Pkg	White
M61A-270	108065806	Computer Icon, DATA, GS	500/Pkg	Slate Gray
M61A-317	108065814	Computer Icon, DATA, GS	500/Pkg	Red
M61A-318	108065822	Computer Icon, DATA, GS	500/Pkg	Blue
M20AP-003 Dust Cover	107065583	Computer Icon, DATA, GS	100/Pkg	Black
M20AP-246 Dust Cover	107067860	Computer Icon, DATA, GS	100/Pkg	Ivory
M20AP-2662 Dust Cover	107067928	Computer Icon, DATA, GS	100/Pkg	White

## Accessories

## Material ID

D-Impact Tool, 914 handle, w/110 Blade

406477794

## ICONS FOR MPS100E AND VOICE ICONS

Product	Material ID	Description	Packaging	Color
M61H-003	108373515	Computer Icon, MPSE, DATA	500/Pkg	Black
M61H-112	108373523	Computer Icon, MPSE, DATA	500/Pkg	Orange
M61H-123	108373531	Computer Icon, MPSE, DATA	500/Pkg	Yellow
M61H-226	108373549	Computer Icon, MPSE, DATA	500/Pkg	Green
M61H-246	108373564	Computer Icon, MPSE, DATA	500/Pkg	Ivory
M61H-262	108373572	Computer Icon, MPSE, DATA	500/Pkg	White
M61H-270	108373580	Computer Icon, MPSE, DATA	500/Pkg	Slate Gray
M61H-317	108373598	Computer Icon, MPSE, DATA	500/Pkg	Red
M61H-318	108373606	Computer Icon, MPSE, DATA	500/Pkg	Blue
M61H-361	108373614	Computer Icon, MPSE, DATA	500/Pkg	Violet

## Copper

## Icons &amp; M-Series Cap

## Information Outlets

MGS400 and MPS100E  
(Cont'd)

## ICONS FOR MPS100E AND VOICE ICONS (cont'd)

Product	Material ID	Description	Packaging	Color
M61F-226	108066267	VOICE Icon Connector	500/Pkg	Green
M61F-246	108066275	VOICE Icon Connector	500/Pkg	Ivory
M61F-262	108066283	VOICE Icon Connector	500/Pkg	White
M61F-270	108066291	VOICE Icon Connector	500/Pkg	Slate Gray
M61F-317	108066309	VOICE Icon Connector	500/Pkg	Red
M61F-318	108066317	VOICE Icon Connector	500/Pkg	Blue

100 per bag, 5 bags per box

## M-SERIES WIRE TERMINATION CAP

Product	Material ID	Packaging	Color
CAP M-Series Information Outlet	108180894	100/Pkg	White

## Copper

## Category 3 - M1 Series

## Information Outlets

## M1 Outlets

The M1 Information Outlet is a Modular RJ45 to Insulation Displacement Connector (IDC). It is typically installed in the faceplate at the work location and provides termination for the horizontal 4-pair cable at the IDC end, and workstation cord insertion at the RJ45 end.

The M1 was designed and patented by SYSTIMAX Labs. The insulation displacement connectors of the M1 can accept 0.643 mm - 0.511 mm diameter (22 - 24 AWG) solid or stranded insulated copper conductors. Each M1 comes with two modular insertion caps which can be used to seat 0.511 mm (24AWG) solid conductors into the IDC. Other conductors should be seated with the 8762 D-Impact Tool. The caps remain clipped onto the M1 after termination to provide added protection from contamination as well as to secure the connection.

A feature of the M1BH outlet is a universal colored wiring label that eliminates the need for separate material IDs for 568A/B schemes.



The M1 meets or exceeds attenuation and crosstalk Category 3 requirements for connecting hardware as specified in ISO/IEC 11801 (1995), EN50173-1 (1995) and EIA/TIA 568B. The M1 is UL listed.

## Physical Specifications

**Length:** 0.787 in (2 cm)

**Width:** 0.787 in (2 cm)

**Depth:** 1.22 in (3.1 cm)

**Plastic:** High-impact, flame retardant, UL-rated 94V-0 thermoplastic

**Jack Wires:** Copper alloy, 1.27  $\mu$ m lubricated gold plating over 2.54  $\mu$ m nickel underplate

**Connector:** Insulation displacement connectors (IDC) accept 22 & 24-AWG wire

**Insertion Life:** > 750

**Min. Contact Force:** 100 g

**Min. Plug Retention Force:** 133 N

**Operating Temperature Range:** -40 to 66 °C

## Electrical Specifications

**EIA/TIA Category:** 3

**Min. Insulation Resistance:** 500 M $\Omega$

**Min. Dielectric Withstand Voltage (Contact to contact @ 60 Hz):** 1000 VAC RMS

**Min. Dielectric Withstand Voltage (To exposed conductive surface @ 60 Hz):** 1500 VAC RMS

**Max. Contact Resistance:** 20 m $\Omega$

**Current Rating @ 20°C:** 1.5 A

Product	Material ID	Packaging	Color
M1BH-H003	107321697	1/Pkg	Black
M1BH-H246	107321721	1/Pkg	Ivory
M1BH-H262	107321739	1/Pkg	White
M1BH-H215	108480575	1/Pkg	Misty Cream

## Copper

## Category 3 - M1 Series

## Information Outlets

M1 Outlets  
(cont'd)

Product	Material ID	Packaging	Color
M1BH-H1-123	107321705	1/Pkg	Yellow
M1BH-H1-112	107346744	1/Pkg	Electric Orange
M1BH-H1-226	107321713	1/Pkg	Green
M1BH-H1-270	107321747	1/Pkg	Electric Gray
M1BH-H1-317	107321754	1/Pkg	Red
M1BH-H1-318	107321762	1/Pkg	Blue

## Copper

## US Standard

## Features:

- Designed for use with M-Series modular information outlets and M81 hardware.
- Fits modular furniture knockout size 1.374 in (3.49 cm) H x 2.649 in (6.73 cm) L ( $\pm 0.0118$  in [0.03 cm]).
- Can be used with Haworth and Hon.

## Faceplates

M13C Modular Furniture  
3-Port Faceplate

**Figure 125**  
M13C Modular Furniture  
3 Port Faceplate

Product	Material ID	Color
M13C-003	106650864	Black
M13C-246	106650880	Ivory
M13C-262	106650898	White
M13C-270	106701154	Slate Gray

## Copper

## US Standard

**M4CA Variable Furniture Faceplate** is for modular furniture applications requiring either fiber and/or copper connectivity. The **M4CA Faceplate** has "M" series sockets with snap indentations orientated top and bottom to accommodate up to 4 M-Series jacks. The **M4CA Faceplate** will also accommodate 4 fiber modular telecommunications outlets such as the LC couplings and jumpers for modular furniture within TIA standard cavity depth of 1.181 in (3 cm) minimum. The LazrSPEED angle mount fiber jumper assembly may also be used with this faceplate.

These will fit Haworth, Herman Miller and Steelcase furniture.

## Faceplates

M4CA Variable Furniture  
Faceplate

**Figure 126**  
M4CA Variable Furniture  
Faceplate

Product	Material ID	Color
M4CA-003	700189046	Black
M4CA-262	700191588	White
M4CA-246	700191570	Ivory
M4CA-270	700191596	Gray

## Copper

## US Standard

The **M14C Faceplates** are four-port flush mount faceplates designed for use with the M-Series modular information outlets. It is designed specifically to support applications within the “Ethospace- BELTLINE” line of Herman Miller Modular furniture. The overall faceplate dimensions are 2 in W x 3.125 in H x 0.380 in D. While the modular furniture knockout size is (2.832 ± .005 in W x 1.750 in ± .005 in H).

**Features:**

- Designed for use with M-Series modular information outlets and M81 hardware.
- Fits modular furniture knockout size 1.61 in (4.09 cm)  
H x 3.358 in (8.53 cm) L x 1.2992 in (3.30 cm)  
D (± 0.0118 in [0.03 cm]).

Product	Material ID	Color
M14C-003	106650849	Black
M14C-148	107167488	Almond
M14C-270	107167462	Slate Gray
M14CH-003	108406414	Black
M14CH-246	108406422	Ivory
M14CH-270	108406448	Gray
M14CH-262	108406430	White

## Faceplates

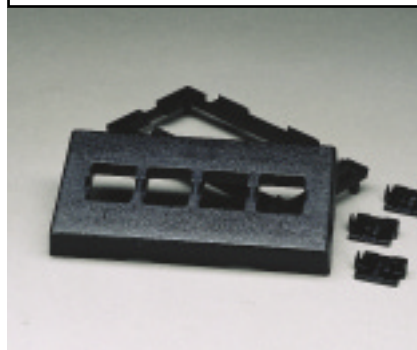
M14C Modular Furniture  
4-Port Faceplate

Figure 127  
M14C Modular Furniture  
4-Port Faceplate

## Copper

## US Standard

The **M26C Modular Furniture Sixplex Outlet Faceplate** is a flush-mounted faceplate designed for openings in the Steelcase 9000 modular furniture or other manufacturer's with similar knockout sizes. The **M26C Faceplate** holds up to six M-series modules. Both sides of the faceplate are numbered for easy installation and maintenance identification.

**Features:**

- Designed for use with M-Series modular information outlets and M81 hardware.
- Fits modular furniture knockout size 5.251 in (13.34 cm)  
L x 1.3740 in (3.49 cm) H (± 0.0118 in [0.03 cm]).

Product	Material ID	Color
M26C-246	107167496	Ivory

## Faceplates

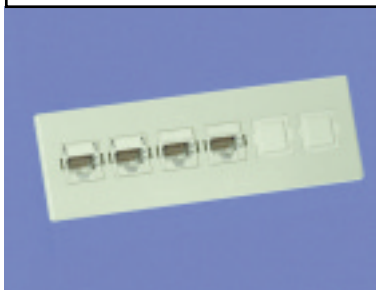
M26C Modular Furniture  
6-Port Faceplate

Figure 128  
M26C Modular  
Furniture  
6-Port Faceplate

## Copper

## US Standard

## Faceplates

M14CE Modular Furniture  
4-Port Faceplate

The **M14CE Modular Furniture Quadplex Outlet Faceplate** is a non-flush mounted faceplate designed for openings in the Steelcase 9000 series modular furniture or other manufacturer's with similar knockout sizes. The **M14CE Faceplate** holds up to four M-series modules.

**Features:**

- Designed for use with M-Series outlets.
- Fits modular furniture opening 1.381 in (3.51 cm)  
H x 2.708 in (6.88 cm) L ( $\pm 0.0118$  in [0.03 cm]).
- Stands off the furniture panel.



**Figure 129**  
M14CE Modular Furniture  
4-Port Faceplate

Product	Material ID	Color
M14CE-003	108216151	Black
M14CE-262	108216128	White
M14CE-270	108216136	Slate Gray
M14CE-246	108216144	Ivory



**Copper****US Standard****Faceplates****M10MMFP Multimedia Faceplate**

The M10MMFP faceplate provides the opportunity to deploy copper and fiber media to the workstation for new and existing installations. The product enables you to fasten a flush mount faceplate (i.e. M12L, M14L, M12LE, M14LE, etc.) to the front of the unit - for installation of up to 6 copper M-Series modules (M1s, MGS400, MPS100E). And provides alternatives for fiber connectors installed vertically at the base of the product. It may be configured with ST, SC or LC adapters in various densities.

Adapter plates are provided for use with twelve strands of fiber using the LC duplex. It can also be used with the SC duplex, or the high density modular adapter strips available for ST, SC and LC connectors. The plates can be installed either right at the base (exposed) or recessed in a unit providing additional protection for the fibers. Additionally, the fiber adapter strips provide high density capability for customer applications. M10MMFP incorporates fiber slack storage to manage fiber termination.

The M10MMFP also features either rear (4) or side (2) entry ports for cabling providing flexibility for either wall-mount or raceway installs. The Multimedia Faceplate enables independent access to either copper or fiber terminations on the wall side of the unit. It may be installed in existing copper networks without disconnection or removing the modular jacks from the faceplate. The faceplate base has a convenient pivot and snap mount that permits easy access to the copper terminations from the back of the faceplate.

Product	Material ID	Color
M10MMFP-270	108502337	Gray
M10MMFP-246	108502303	Ivory
M10MMFP-262	108502329	White
M10MMFP-215	108502295	Cream
M10MMFP-003	108502287	Black

## Copper

## Multimedia Faceplate

The **M13CLS Modular Furniture Triplex Outlet Faceplate** is a flush-mounted triplex modular faceplate designed for use in modular furniture raceway covers.

The **M13CLS** holds up to three M-Series modular telecommunications outlets and has numbering on both sides of the faceplate for installation and maintenance identification. The M20AP dust cover/blank can be used to protect unused outlets and cover unused faceplate openings.

## Furniture

## Furniture Faceplate



**Figure 130**  
M13CLS w/LC Adapter

## Physical Specifications

**Width:** 3.11 in (7.9 cm)

**Length:** 1.811 in (4.6 cm)

**Depth:** 0.20 in (0.51 cm)

**Plastic:** High-impact, flame-retardant, UL-rated 94 V-0 thermoplastic

Product	Material ID	Packaging	Color
M13CLS-246	108564675	1/Pkg	Ivory
M13CLS-262	108564683	1/Pkg	White
M13CLS-270	108564691	1/Pkg	Slate Gray
M13CLS-003	108564709	1/Pkg	Black
M13CLS-215	108564725	1/Pkg	Cream

## Copper

## US Standard Furniture

## Faceplates

## M108FR3

The M108FR3 Decora Frame is a flush mounted triplex outlet modular mounting frame designed for use with the M-Type modular information outlets. A standard "Duplex" style Decora faceplate (not provided) fits over the frame.

Features:

- Use with Decora® faceplates.

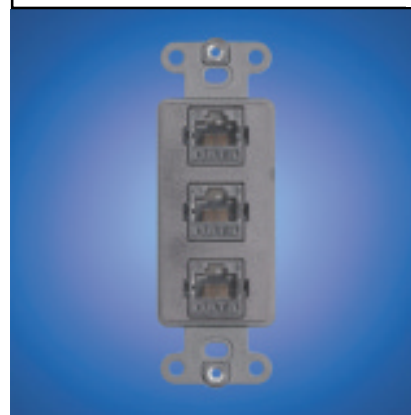


Figure 131  
M108FR3 Decorative  
Frame

## Physical Specifications

Depth: M108FR3: 0.25 in (0.7 cm)

Length: M108FR3: 4.5 in (10.3 cm)

Width: M108FR3: 1.4 in (3.5 cm)

Mounting Flush: Plastic High-impact, Flame-retardant , UL-rated 94 V-0 Thermoplastic

Product	Material ID	Color
M108FR3-003	108265430	Black
M108FR3-246	108265448	Ivory
M108FR3-262	108265455	White
M108FR3-270	108265463	Slate Gray

## Copper

## US Standard Furniture

## Faceplates

M105, M106 and M108  
Modular Mounting Frames

The M105FR1, M106FR2, M108FR3 and M106FR4 Modular Mounting Frames are flush-mounted multi-outlet modular mounting frames designed for use with the M-Type modular information outlets. The M105FR1 is a single outlet modular mounting frame. The M106FR2 is a duplex outlet modular mounting frame. The M106FR4 is a quadplex outlet modular mounting frame. They are also used with standard duplex electrical faceplates.

## Physical Specifications

Depth: M108FR3: 0.2755 in (0.7 cm)

Length: M108FR3: 1.377 in (3.5 cm)

Width: M108FR3: 4.055 in (10.3 cm)

Mounting Flush: Plastic High-impact, flame-retardant, UL-rated 94 V-0 thermo-plastic

Product	Material ID	Description	Color
M105FR1-246	106622160	Simplex	Electrical Ivory
M105FR1-262	106622178	Simplex	Electrical White
M105FR1-270	106688401	Simplex	Electrical Gray
M106FR4-246	106622277	Quadplex	Electrical Ivory
M106FR4-262	106622285	Quadplex	Electrical White
M106FR4-270	106688385	Quadplex	Electrical Gray
M106FR2-262	106622251	Duplex	Electrical White
M106FR4-003	106627763	Quadplex	Black
M106FR2-270	106688393	Duplex	Electrical Gray
M106FR2-003	106628852	Duplex	Black
M106FR2-246	106622210	Duplex	Electrical Ivory
M108FR3-270	108265463	Triplex	Electrical Gray
M108FR3-262	108265455	Triplex	Electrical White
M108FR3-246	108265448	Triplex	Electrical Ivory
M108FR3-003	108265430	Triplex	Black

## Copper

## US Standard Furniture

## Faceplates

## Modular Faceplates

The M10L, M12L, M13L, M14L and M16L are flush-mounted US standard M-Series Modular Faceplates designed for use with one, two, three, four, or six M-Series Information Outlets (M1, MPS100E or MGS400). The M12L is duplex, the M13L is triplex, and the M14L is quadplex. The faceplate outlet openings are numbered on both sides for installation and maintenance identification. The M10LW is a single-outlet faceplate for use with wall-mounted telephones with a mounting stud spacing distance of 3.280 inches.

## Features:

- Designed for use with M-Series modular information outlets.
- Faceplate outlet openings are numbered on both sides for installation and maintenance identification.
- Includes faceplate, (2) mounting screws, and (2) label cards with covers (M10LW includes two studs for wall phone mounting).
- Optional M20AP or M81 Dust Covers/Blanks may be used to cover any unused outlets.

## Physical Specifications

Width: 2.799 in (7.11 cm)

Length: 4.60 in (11.7 cm)

Depth: 1.118 in (0.76 cm)

Plastic: High-impact, flame retardant, UL-rated 94V-0 thermoplastic

## M10L 1-PORT OUTLET FACEPLATES

Product	Material ID	Color
M10L-003	108258401	Black
M10L-246	108258419	Ivory
M10L-262	108258427	White
M10L-270	108258435	Slate Gray

## M10LW 1-PORT OUTLET WALL FACEPLATES

Product	Material ID	Color
M10LW-246	108258450	Ivory
M10LW-262	108258468	White

## Copper

## US Standard Furniture

## Faceplates

Modular Flush-Mount  
Faceplates

## M12L 2-PORT OUTLET FACEPLATES

Product	Material ID	Color
M12L-003	108168485	Black
M12L-246	108168477	Ivory
M12L-262	108168469	White
M12L-270	108168451	Slate Gray

## M12AP VERTICAL 2-PORT OUTLET FACEPLATES

Product	Material ID	Color
M12AP-246	107276172	Ivory
M12AP-262	107276180	White

## M13L VERTICAL 3-PORT OUTLET FACEPLATES

Product	Material ID	Color
M13L-003	108168527	Black
M13L-246	108168519	Ivory
M13L-262	108168501	White
M13L-270	108168493	Slate Gray

## M14L 4-PORT OUTLET FACEPLATES

Product	Material ID	Color
M14L-003	108168568	Black
M14L-246	108168550	Ivory
M14L-262	108168543	White
M14L-270	108168535	Slate Gray

## M16L 6-PORT OUTLET FACEPLATES

Product	Material ID	Color
M16L-003	108168600	Black
M16L-246	108168592	Ivory
M16L-262	108168584	White
M16L-270	108168576	Slate Gray

## M28A DOUBLE GANG 8-PORT OUTLET FACEPLATES (4 SCREWS)

Product	Material ID	Color
M28L-003	108685009	Black
M28L-246	108685017	Ivory
M28L-262	108685025	White
M28L-270	108685033	Slate Gray

Copper

US Standard Furniture

Faceplates

Stainless Steel Faceplate

Features:

- M-Series module snaps directly into stainless steel flush-mount faceplate.



Figure 133  
Stainless Steel Faceplate

Product	Material ID	Ports
M12SP	108615188	2 Ports
M13SP	108615196	3 Ports
M14SP	108615204	4 Ports
M16SP	108615212	6 Ports

## Copper

## US Standard Furniture

## Faceplates

## Designer Faceplate

## Faceplate:

- Contemporary contour style.
- Includes faceplate, 2 mounting screws, 2 label cards, covers.
- Dimensions: 4.81 in (12.217 cm). H x 2.84 in (7.2136 cm). W x 0.33 in (0.8382 cm) D.



**Figure 134**  
Designer Faceplate

Product	Material ID	Port	Color
M10LE-003	108332982	1 Port	Black
M10LE-215	108332990	1 Port	Cream
M10LE-246	108333006	1 Port	Ivory
M10LE-262	108333014	1 Port	White
M10LE-270	108333022	1 Port	Slate Gray
M12LE-003	108333030	2 Ports	Black
M12LE-215	108333048	2 Ports	Cream
M12LE-246	108333055	2 Ports	Ivory
M12LE-262	108333063	2 Ports	White
M12LE-270	108333071	2 Ports	Slate Gray
M13LE-003	108333089	3 Ports	Black
M13LE-215	108333097	3 Ports	Cream
M13LE-246	108333105	3 Ports	Ivory
M13LE-262	108333113	3 Ports	White
M13LE-270	108333121	3 Ports	Slate Gray
M14LE-003	108333139	4 Ports	Black
M14LE-215	108333147	4 Ports	Cream
M14LE-246	108333154	4 Ports	Ivory
M14LE-262	108333162	4 Ports	White
M14LE-270	108333170	4 Ports	Slate Gray
M16LE-003	108333188	6 Ports	Black
M16LE-215	108333196	6 Ports	Cream
M16LE-246	108333204	6 Ports	Ivory
M16LE-262	108333212	6 Ports	White
M16LE-270	108333220	6 Ports	Slate Gray



## Copper

## US Standard Furniture

## Faceplates

## Dust Cover

The **M20AP Covers** are dual-purpose blank **Dust Covers** designed for use with the modular outlets (M1, MPS100E or MGS400) and modular faceplate kits (except for the Shuttered clips and Benelux faceplates).

When the **M20AP** is used as a **Dust Cover**, it is inserted over the outlet opening and will protect the jack wires from dust. The **M20AP** can also be used with modular faceplates as a blank cover for empty jack openings which are not populated with modular outlets.

The **M21** Dust Covers are used with the M12A, M13A, M13C, M14A, and M16A modular faceplates as a blank cover for faceplates not fully populated with modular outlets.



**Figure 135**  
M20AP Dust Covers

## Physical Specifications

**Width:** 0.5984 in (1.52 cm)

**Length:** 0.700 in (1.78 cm)

**Depth:** 0.200 in (0.51 cm)

**Plastic:** High-impact, flame retardant, UL-rated 94V-0 thermoplastic

Product	Material ID	Packaging	Color
M20AP-003	107065583	100/Pkg	Black
M20AP-246	107067860	100/Pkg	Ivory
M20AP-262	107067928	100/Pkg	White
M20AP-270	107067951	100/Pkg	Gray
M20AP-215	108481003	100/Pkg	Cream
M21A-003	108066325	500/Pkg	Black
M21A-112	108066333	500/Pkg	Orange
M21A-123	108066341	500/Pkg	Yellow
M21A-226	108066358	500/Pkg	Green
M21A-246	108066457	500/Pkg	Ivory
M21A-262	108066465	500/Pkg	White
M21A-270	108066473	500/Pkg	Gray
M21A-317	108066481	500/Pkg	Red
M21A-318	108066499	500/Pkg	Blue
M21A-361	108337692	500/Pkg	Violet
M21A-215	108480997	500/Pkg	Cream

## Copper

## US Standard Furniture

## Faceplates

## M36 Zone Box

The **M36PA36M Data/Communication Distribution Box** is a zone wiring box (i.e. consolidation point (CP)) that provides for the distribution of data and telecommunication signals throughout the work area environment. The box has 36 positions for M-Series copper and/or fiber connectors. It is intended to mount above ceilings or below floors in open office buildings.

The key benefit is that it saves costs in moves, adds, and changes (MACs) when zone cabling is required in a plenum environment. The Box is UL Listed to meet the stringent plenum requirements. The National Electric Code allows locating this type of zone box in space used for environmental air.

The **M36PA36M Distribution Box Assembly** comes with: connector bracket, plenum cover, plenum box, foam fence, fiber reel (optional to use), foam retainer, bushing (optional to use), fire foam, interconnection label, installation instructions, hex nut (No. 4-40), long pan-head screw (No. 8-32 by 3/38 in [9.5 mm]), and plenum cable tie.

### Physical Specifications

**Width:** 14.13 in (35.9 cm)

**Length:** 19.13 in (48.6 cm)

**Depth:** 2 in (5.1 cm)

#### Product

M36PA36M Data/Comm Dist Box

#### Material ID

108482845

## Copper

## Universal Standard

The **D-180880 Mounting Magnets** are designed to mount the M104SMB, M106SMB, and M112SMB surface-mount outlets/outlet boxes to any steel surface such as office furniture or modular walls. One magnet is required for the M104SMB, and four for the M106SMB and M112SMB. The magnets are inserted into the base of the outlet and secured by the outlet cover.

## Physical Specifications

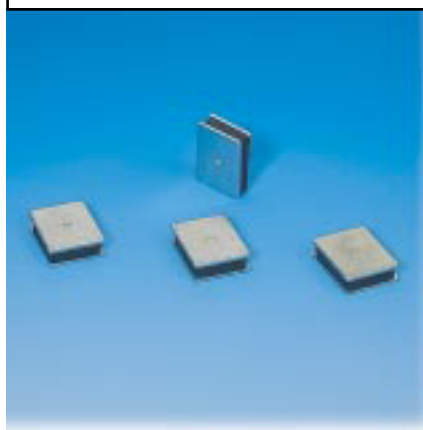
**Height:** 0.314 in (0.8 cm)

**Width:** 0.984 in (2.5 cm)

**Depth:** 0.3070 in (2 cm)

## Faceplates

## Magnets



**Figure 136**  
D-180880 Magnets

Product	Material ID	Packaging
D-180880	103184156	4/Pkg
3345A	106928765	2/Pkg

## Copper

## Universal Standard

## Faceplates

## MCAN Faceplate

The **MCAN Faceplate** is a dual flushmount faceplate which mounts on a CAN/Clickline electrical box (or equivalent) and accepts two High Density Modules (M1, MPS100E or MGS400).

The **MCAN Kit** consists of a faceplate and an adapter frame for mounting in a standard IEC (c/c 2.362 in (6 cm) electrical box.

The **MCAN Adapter Frame** provides secure and tidy mounting for the **MCAN Faceplate** in a standard IEC wall box (c/c 2.362 in (6 cm)).

## Physical Specifications

**Height:** 3.346 in (8.5 cm)

**Width:** 3.346 in (8.5 cm)

**Depth:** 3.464 in (8.8 cm)

Product	Material ID	Ports	Packaging	Color
MCAN-DL-262	106790165	2x HDM	1/Pkg	White

## Copper

## Universal Standard

The **Universal Standard Surface Mounted Boxes** are designed to accept 1, 2, 4, 6, or 12 M-Series Information Outlets (M1, MPS100E or MGS400). The product family consists of the **M101SMB**, **M102SMB**, **M104SMB**, **M106SMB**, and **M112SMB**. These boxes can be mounted on any flat surface using the screws or double-sided adhesive tape provided. Optional magnets can be ordered for use with the **M104SMB** (1 required), **M106SMB** (4 required) and **M112SMB** (4 required). M20AP Dust Covers are provided with the **M104SMB** (3), **M106SMB** (3), and **M112SMB** (6).

## Faceplates

## Surface Mounted Boxes



**Figure 137**  
M101SMB, M102SMB,  
M104SMB and  
M112SMB Outlets

## Physical Specifications

<b>M101:</b>	<b>Height:</b>	1.181 in (3 cm)	<b>M102:</b>	<b>Height:</b>	2.08 in (5.3 cm)
	<b>Width:</b>	2.40 in (6.1 cm)		<b>Width:</b>	2.40 in (6.1 cm)
	<b>Depth:</b>	1.299 in (3.3cm)		<b>Depth:</b>	1.299 in (3.3 cm)
<b>M104:</b>	<b>Height:</b>	2.91 in (7.4 cm)	<b>M106:</b>	<b>Height:</b>	4.80 in (12.2 cm)
	<b>Width:</b>	4.01 in (10.2 cm)		<b>Width:</b>	5.472 in (13.9 cm)
	<b>Depth:</b>	1.299 in (3.3 cm)		<b>Depth:</b>	1.2992 in (3.3 cm)
<b>M112:</b>	<b>Height:</b>	4.80 in (12.2 cm)			
	<b>Width:</b>	9.01 in (22.9 cm)			
	<b>Depth:</b>	1.299 in (3.3 cm)			
<b>Plastic:</b> High-impact, flame retardant, UL-rated 94V-0 thermoplastic					

Product	Material ID	Ports	Packaging	Color
M101SMB-246	107984007	1	1/Pkg	Ivory
M101SMB-262	107984015	1	1/Pkg	White
M101SMB-270	107984023	1	1/Pkg	Slate Gray
M101SMB-003	107983983	1	1/Pkg	Black
M102SMB-246	107984049	2	1/Pkg	Ivory
M102SMB-262	107984056	2	1/Pkg	White
M102SMB-270	107984064	2	1/Pkg	Slate Gray
M102SMB-003	107984031	2	1/Pkg	Black
M104SMB-246	107952442	4	1/Pkg	Ivory
M104SMB-262	107952459	4	1/Pkg	White
M104SMB-270	107952467	4	1/Pkg	Slate Gray
M104SMB-003	107952475	4	1/Pkg	Black
M106SMB-246	107431546	6	1/Pkg	Ivory
M106SMB-262	107431538	6	1/Pkg	White
M106SMB-270	107431553	6	1/Pkg	Slate Gray
M106SMB-003	107431520	6	1/Pkg	Black
M112SMB-246	106658149	12	1/Pkg	Ivory
M112SMB-262	106658156	12	1/Pkg	White
M112SMB-270	106688419	12	1/Pkg	Slate Gray
M112SMB-003	106658164	12	1/Pkg	Black

## Multimedia

## Surface Mounted

The **40A1 Outlet** is a surface-mounted multimedia outlet box. Its modular design makes it adaptable, via panel inserts (ordered separately), for termination of fiber-optic and/or copper cables. The **40A1 Outlet** can accept two modular panels which hold the copper or fiber terminations. Some of the available panels are: 40ST4 which accepts 4 ST couplings, M40DSC which accepts 4 duplex SC couplings, and the M40RJ4A which accepts 4 M-Series Information Outlets.

The cover of the outlet has six knockouts for surface-run cable entry from several directions and can be mounted directly on a wall or over a US standard electrical box.

The M40 outlet comes equipped with one M40RJ4A and one M40ST8 panel. Other panels must be ordered separately. The panels are orderable in minimum quantities of 10 panels per order.

## Multimedia

## 40A1 Outlet



**Figure 138**  
40A1 Multimedia Outlet,  
40ST4 and M40DSC Panels

## Physical Specifications

**Outlet Height:** 6.889 in (17.5 cm)

**Outlet Width:** 5.590 in (14.2 cm)

**Outlet Depth:** 1.614 in (4.1 cm)

**Panel Height:** 1.4566 in (3.7 cm)

**Panel Width:** 2.637 in (6.7 cm)

**Panel Depth:** 2.086 in (5.3 cm)

Product	Material ID	Ports	Packaging	Color
M40A1-B-262	107992927	Basic Outlet w/ M40RJ4A and M40ST8	1/Pkg	White
M40ST4-B-262	107800658	Insert Panel holds 4 ST Couplings	1/Pkg	White
M40DSC-B-262	107239493	Insert Panel holds 4 Duplex SC Couplings	1/Pkg	White
M40RJ4A-B-262	108004268	Insert Panel holds 4 RJ45 Jacks, 4 M81 Mounting Modules	1/Pkg	White

# Multimedia

## Surface Mounted

# Multimedia

## M14MMO Outlet

The **M14 Multimedia Outlet (MMO)** is designed to mount on a wall surface, and will fit any standard National Electrical Manufacturers Association (NEMA) electrical box. The flush-mounted faceplate has 45 angular ports for fiber and copper connectors and has a protective angled hood. The hinged base of the faceplate allows changes and maintenance to occur without reinstalling the faceplate. The fiber organizer spool blend-radius provides control and storage for fiber slack. The M14 comes packaged in quantities of 10.

### Features:

The M14 MMO can be used in the following environments:

- In an ALL COPPER environment the M14MMO will support up to four M-Series connectors, for M81LC mounting modules, or up to two M-Series connectors, or M81C mounting modules.
- When fiber is introduced into the application the number of ports available for connectors is reduced by one.
- In an ALL FIBER environment the M14MMO will support two simplex ST or SC connectors, four M81LC connectors, or two duplex SC connectors.
- In an integrated FIBER/COPPER environment, the M14MMO will support one M-Series copper connector and one duplex SC connector.

## Physical Specifications

<b>Height:</b> 1.3 in (3.3 cm) faceplate, 2.8 in (7.1 cm) hood and faceplate, 5.3 in (13.5 cm) hood, faceplate and spool
<b>Width:</b> 3.3 in (8.3 cm)
<b>Length:</b> 5.4 in (13.1 cm)

Product	Material ID	Color
M14MMO-003	107655169	Black
M14MMO-246	107655177	Ivory
M14MMO-262	107655185	White
M14MMO-270	107655193	Slate Gray

Multimedia

24-Port Zone Wiring Box

The **24-Port non-plenum Zone Wiring Box** is a low profile M224CPN Consolidation Box. This product provides a connection and distribution point for data and telecom cables in installations requiring a consolidation point. The slim design (8" x 12" x 1.5") (203 mm x 305 mm x 38 mm) permits installation in a variety of non-plenum spaces such as under floors, limited space closets, in side-panelled furniture, on walls in plain view, and on shelves. The box can be mounted, with additional support, to single or dual-gang electrical type boxes. For best results, the box is mounted on a flat surface, horizontally or vertically.

The box design utilizes four removable panels that can accommodate a variety of copper and fiber based connectors. Each panel will hold up to six connectors each. The box has a capacity of 24 dual SC connectors, single SC connectors, dual LC connectors, STII+ & ST+ connectors, M-Series type copper connectors, S-Video, RCA, BNC and F-Type video connectors, or any combination thereof. Connector types can be mixed and matched within the box by using two different panels. The box comes equipped with four 6-port inserts, two blank inserts, 12 dust covers for M-Series outlet holes, closing screws, wire ties, and instructions. The M-Series panel has the most variety in connector options; it accommodates all but the dual SC connectors. Three fiber-optic splice organizers are available which will accommodate fusion, mechanical, or mass fusion splices.

Features:

- Non metallic housing
- Accommodates copper M-Series outlets, fiber connectors as well as copper and fiber terminations
- Expandable / Stackable features
- Easy access for terminations, moves, adds and changes
- Designed for mounting in various non-plenum environments (floor, under floor, surface mount or wall)
- Supports cable / port labeling
- Equipped with removable cover section for cord/label access and doesn't expose horizontal cables

Multimedia

M224 Zone Wiring Box



**Figure 138a**  
M224 24-Port Zone  
Wiring Box

Physical Specifications

**Height:** 1.5 in (38 mm)

**Width:** 8 in (205 mm)

**Length:** 12 in (305 cm)

Product	Material ID	Color
M224CPN	700016462	Black
M224CPN	700016740	Ivory
M224CPN	700016488	White
M224CPN	700016496	Gray
M224MSP	700016504	Black
M224MSP	700016512	Ivory
M224MSP	700016520	White
M224MSP	700016538	Gray
M224SCP	700019482	Black
M224SCP	700019490	Ivory
M224SCP	700019508	White
M224SCP	700019516	Gray
M224FOS	700016553	White

Multimedia

32-Port Zone Wiring Box

The **32-Port Zone Wiring Box** provides a connection and distribution point for data and telecom cables in installations requiring a consolidation point. The design includes a 3.35 in x 2.566 in (85.04 mm x 65.18 mm) rectangular bottom knockout to be used in conjunction with a standard dual gang electrical box, in addition to twelve 3/4 inch (19.05 mm) knockouts for use with conduit.

The size of the M32CPP/100HCP design (13.08" x 14" x 4.25") (33.22 cm x 35.56 cm x 10.79 cm) will allow installation in a variety of plenum spaces such as under floors and above ceilings. The design has 32 positions that accommodate a variety of M-Series type copper, fiber, and video connectors and an area for a 100-pair 110 IDC blocks. The M32CPP/100HCP has one fire foam entrance and four fire foam exit areas for plenum rated cable (4-pair & 25-pair).

Features:

- Supports copper M-Series outlets, fiber connectors, copper and fiber terminations
- Easy access for terminations, moves, adds and changes
- Designed for mounting in various plenum and non-plenum environments (floor, under floor, surface mount or wall)
- Supports cable / port labeling
- Equipped with removable cover section for cord/label access and doesn't expose horizontal cables

Physical Specifications	
Height:	4.25 in (10.79 cm)
Width:	13.08 in (33.22 cm)
Length:	14 in (35.56 cm)

Product	Description	Material ID
M32CPP	32-Port Zone Wiring Box	700188931

Multimedia

M32 Zone Wiring Box

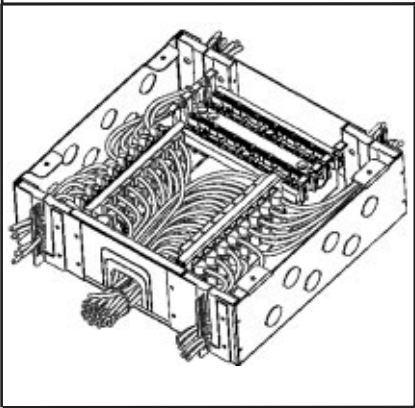


Figure 138b  
M32 CCP Zone  
Wiring Box



## Multimedia

## 48-Port Zone Wiring Box

The **48-Port Plenum Zone Wiring Box** provides a connection and distribution point for data and telecom cables in installations requiring a consolidation point. The design includes a 3.35 in x 2.566 in (85.04 mm x 65.18 mm) rectangular bottom knockout to be used in conjunction with a standard dual gang electrical box, in addition to twelve 3/4 inch (19.05 mm) knockouts for use with conduit.

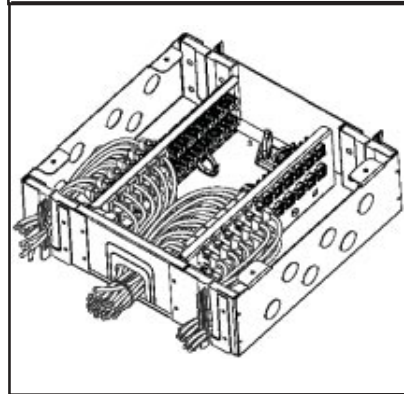
The size of the M48CCP design (13.08" x 14" x 4.25") (33.22 cm x 35.56 cm x 10.79 cm) will allow installation in a variety of plenum spaces such as under floors and above ceilings. The design has 48 positions that accommodate a variety of M-Series type copper, fiber, and video connectors. It also has one fire foam entrance and four fire foam exit areas for plenum rated cable (4-pair and 25-pair).

**Features:**

- Supports copper M-Series outlets, fiber connectors, copper and fiber terminations
- Easy access for terminations, moves, adds and changes
- Designed for mounting in various plenum and non-plenum environments (floor, under floor, surface mount or wall)
- Supports cable / port labeling
- Equipped with removable cover section for cord/label access and doesn't expose horizontal cables

## Multimedia

## M48 Zone Wiring Box



**Figure 138c**  
M48 CCP Zone  
Wiring Box

**Physical Specifications**

**Height:** 4.25 in (10.79 cm)

**Width:** 13.08 in (33.22 cm)

**Length:** 14 in (35.56 cm)

Product	Description	Material ID
M48CPP	48-Port Zone Wiring Box	700188923

## Multimedia

### Flexible Faceplate

The **Flexible Faceplate** is a front access modular structure. It is universal and accommodates all M-Series jacks for copper and fiber. In addition it will accommodate existing S-video and RCA bezels. The frame is made up of a main frame and three types of adapters that snap into it. The design includes five separate components: A single gang frame M13FP, a double gang M26FP and three adapters single, double and blank. All five come in four colors, black, white, ivory and gray.

## Multimedia

### Flexible Outlet

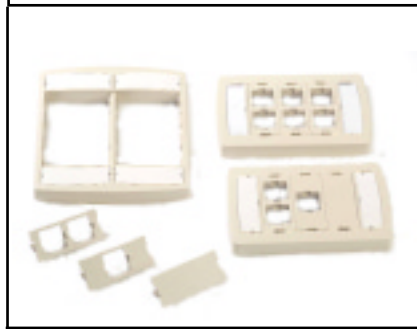


Figure 138d  
Flexible Faceplate

#### Features:

- Modular design supports voice, data, audio and video applications
- Support M-Series Information Outlets
- Front access supports future moves, adds and changes
- Supports cable / port labeling
- Available in four different colors
- UL® listed
- Compatible with the SYSTIMAX IDentifier labeling software

### Physical Specifications

	Length	Width	Depth
Double Gang	4.61 in (117.09 mm)	4.81 in (122.17 mm)	0.67 in (16.93 mm)
Single Gang	2.84 in (72.14 mm)	4.81 in (122.17 mm)	0.67 in (16.93 mm)
Adapters	2.0 in (50.85 mm)	0.90 in (23.04 mm)	0.49 in (12.45)

Product	Description	Material ID			
		Black	Ivory	White	Gray
M13FP	Single Gang Frame	760010009	760010017	760010025	760010033
M26FP	Double Gang Frame	760008607	760008615	760008623	760008631
M30FP-1RJ45	Single Outlet Adapter	760009423	760009431	760009449	760009456
M30FP-2RJ45	Double Outlet Adapter	760008649	760008656	760008664	760008672
M30FP-1BLNK	Blank Adapter	760009464	760009472	760009480	760009498

## Copper

## UK/Ireland Standard

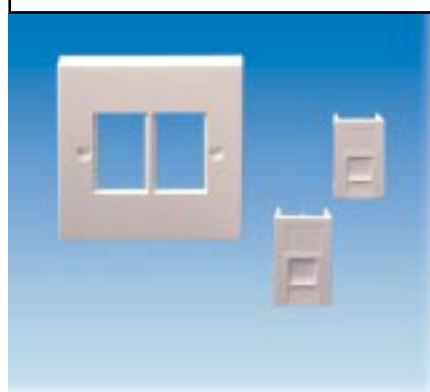
The range of UK/Ireland Standard Information Outlets consist of the **M12D and M14D Faceplates**, and the **LF80 and LF00 Clips**. The **M12D** is a flush-mounted, duplex, 2-gang UK/Ireland standard faceplate designed to accept two **LF80 or LF00 Clips**. It also mounts in a German/Benelux standard electrical box with centerplate mounting dimensions of 2.3622 in (6 cm) center to center. The **M14D** is a flush-mounted, quadplex, 4-gang UK/Ireland standard faceplate designed to accept four **LF80 or LF00 Clips** (or any combination of the two). The standard package for each includes the faceplate plus two mounting screws for installation in a UK standard 1.377 in (3.5 cm) (for **Mark V**) or 1.259 in (3.2 cm) (for **Mark VI**) electrical box.

The **LF80 Clips (Mark V and VI)** fit into the **M12D** and **M14D** and accept one Information Outlet (**M1, MPS100E or MGS400**). The **Mark V** is equipped with a spring-loaded shutter to protect the Information Outlet from dust. It can be cabled through the faceplate and fits into minimum 1.377 in (3.5 cm) depth boxes. There is a provision for port labeling. The **Mark VI** is angled and has a unique self-cleaning shutter design. It can be cabled through the faceplate and fits into minimum 1.259 in (3.2 cm) depth boxes.

The **LF00 Clip** is a blank snap-in clip used in vacant slots of the **M12D or M14D Faceplate**.

## Faceplates

## Faceplates and Clips



**Figure 139**  
Faceplate Clip  
UR Stand

## Physical Specifications

<b>Faceplate Height:</b> 3.346 in (8.5 cm)
<b>Faceplate Width:</b> <b>M12D:</b> 3.346 in (8.5 cm); <b>M14D:</b> 5.748 in (14.6 cm)
<b>Faceplate Depth:</b> 0.3543 in (0.90 cm)
<b>Clip Height:</b> 1.496 in (3.8 cm)
<b>Clip Width:</b> 0.984 in (2.5 cm)
<b>Clip Depth:</b> <b>Mark V &amp; LF00:</b> 0.551 in (1.4 cm); <b>Mark VI:</b> 0.787 in (2 cm)

Product	Material ID	Ports	Packaging	Color
M12D Back Box 37mm	999901706	-	1/Pkg	White
M12D Back Box 45mm	999901702	-	1/Pkg	White
M12D	407900471	2 x LF80/LF00	1/Pkg	White
M14D Back Box 37mm	999901704	-	1/Pkg	White
M14D Back Box 45mm	999901705	-	1/Pkg	White
M14D	407900463	4 x LF80/LF00	1/Pkg	White
LF80 Mark V clip	407900422	1 x IO	1/Pkg	White
LF80 Mark VI clip	407901909	1 x IO	1/Pkg	White
LF00	407900448	N/A	1/Pkg	White

## Copper

## French Standard

## Faceplates

## LF81 Clip

The **LF81 Clip** accepts one Information Outlet (M1, MPS100E or MGS400) and is equipped with a spring-loaded shutter to protect the Information Outlet from dust. It is designed specifically for the French market and fits in a standard 1.968 in x 0.984 in (5 cm x 2.5 cm) molded Legrande faceplate. The clip (while inserted in the faceplate) can be mounted into a French standard electrical box with a minimum depth of 1.2598 in (3.2 cm). There is a provision for port labeling.

## Physical Specifications

**Height:** 1.968 in (5 cm)

**Width:** 0.984 in (2.5 cm)

**Depth:** 0.5511 in (1.4 cm)

Product	Material ID	Ports	Packaging	Color
LF81	108230632	1 x IO	1/Pkg	White

## Copper

## French Standard

## Faceplates

## M12LG Clip

The **M12LG Clip** accepts one Information Outlet (M1, MPS100E or MGS400) and is equipped with a spring-loaded shutter to protect the Information Outlet from dust. It is designed specifically for the French market and fits in the *Le grand* Mosaic faceplate. The clip (inserted in the faceplate) can be mounted into a French standard electrical box with a minimum depth of 1.2598 in (3.2 cm). There is a provision for port labeling.

## Physical Specifications

**Height:** 1.771 in (4.5 cm)

**Width:** 1.771 in (4.5 cm)

**Depth:** 0.984 in (2.5 cm)



Figure 140  
M12LG Clip

Product	Material ID	Ports	Packaging	Color
M12LG-262	107347080	1 x IO	1/Pkg	White

## Copper

## French Standard

## Faceplates

## M12 Dual Clip

The M12 Dual Clip accepts two Information Outlets (M1, MPS100E or MGS400). It is designed specifically for the French market and fits in the Le grand Mosaic faceplate. The clip (inserted in the faceplate) can be mounted into a French standard electrical box with a minimum depth of 1.2598 in (3.2 cm). There is a provision for port labeling.

## Physical Specifications

Height: 1.771 in (4.5 cm)

Width: 1.771 in (4.5 cm)

Depth: 0.984 in (2.5 cm)



Figure 141  
M12 Dual Clip

Product	Material ID	Ports	Packaging	Color
M12-262	107991143	2 x IOs	1/Pkg	White

## Copper

## Italian Standard

## Faceplates

## Click-in Clips

The LF82 and LF83 Clips each accept one Information Outlet (M1, MPS100E or MGS400) and are designed specifically for the Italian market. The LF82 Clip is black in color while the LF83 is ivory. The LF82 and LF83 Clips fit in a standard Italian faceplate which can then be mounted onto an Italian standard electrical box with a minimum depth of 1.2598 in (3.2 cm). There is a provision for port labeling.

## Physical Specifications

Height: 1.728 in (4.39 cm)

Width: 0.9763 in (2.48 cm)

Depth: 0.984 in (2.5 cm)



Figure 142  
LF82IT and  
LF83IT Clips

Product	Material ID	Ports	Packaging	Color
LF82IT-Living	106961311	1 x IO	1/Pkg	Black
LF83IT-Magic	106961329	1 x IO	1/Pkg	Ivory

## Copper Scandinavian Standard

The **MFUGAS Danish Faceplate** is a dual flushmount faceplate which mounts in a FUGA box (or equivalent) and accepts two Information Outlets (M1, MPS100E or MGS400). It consists of the cover and baseplate.

### Physical Specifications

**Height:** 2.795 in (7.1 cm)

**Width:** 1.771 in (4.5 cm)

**Depth:** 0.334 in (0.85 cm)

### Faceplates

#### MFUGA Faceplate



Figure 143  
MFUGA Faceplate

Product	Material ID	Ports	Packaging	Color
MFUGA-262	106790140	2 x IOs	1/Pkg	White
MFUGA-290	106790157	2 x IOs	1/Pkg	Slate Gray

## Copper Scandinavian Standard

The **MFUGAS Danish Faceplate** is a single flushmount faceplate which mounts in a FUGA box (or equivalent) and accepts one Information Outlet (M1, MPS100E or MGS400).

### Physical Specifications

**Height:** 2.795 in (7.1 cm)

**Width:** 1.771 in (4.5 cm)

**Depth:** 0.334 in (0.85 cm)

### Faceplates

#### MFUGAS Faceplate



Figure 144  
MFUGAS Faceplate

Product	Material ID	Ports	Packaging	Color
MFUGAS-262	106969066	1 x IO	1/Pkg	White
MFUGAS-290	106973480	1 x IO	1/Pkg	Slate Gray

## Copper

### Benelux/German Standard

The range of Benelux/German Standard Information Outlets include the **M18930** Surface Outlet, **M18932** Flushmount Centerplate, **M02714** Coverplate and **M81** Dust Covers.

The **M18930** Outlet is a surface-mounted duplex M-Series Modular Information Outlet designed for use with two M-Series Information Outlets (M1, MPS100E or MGS400). The outlet openings have provision for label identification.

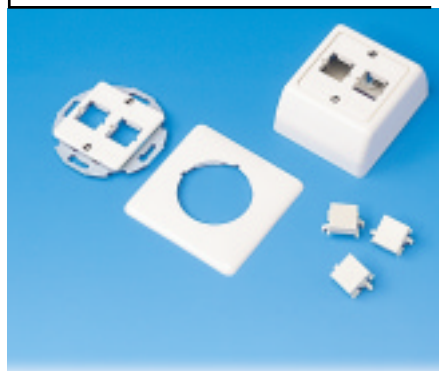
The **M18932** Centerplate is a flush-mounted centerplate which is also designed to accept two M-Series Information Outlets. The **M18932** mounts in a German/Benelux standard electrical box with centerplate mounting dimensions of 2.362 in (6 cm) center to center and with a minimum depth of 1.2598 in (3.2 cm). The outlet openings have provision for label identification.

The **M02714** Flushmount Coverplate is used with the **M18932** centerplate to provide a frame around the mounting screws of the centerplate.

The **M81** are dust covers designed for use with the **M18930** and **M18932** Faceplates. The **M81** is used in empty jack openings which are not populated with Information Outlets.

## Faceplates

### Faceplates and Accessories



**Figure 145**  
M18932 Centerplate,  
M02714 Coverplate,  
M18930 Faceplate and  
M81 Dust Covers

### Physical Specifications

<b>M18930:</b>	<b>Height:</b>	3.149 in (8 cm)	<b>M18932:</b>	<b>Height:</b>	1.968 in (5 cm)
	<b>Width:</b>	2.559 in (6.5 cm)		<b>Width:</b>	1.968 in (5 cm)
	<b>Depth:</b>	1.377 in (3.5 cm)		<b>Depth:</b>	0.287 in (0.73 cm)
<b>M02714:</b>	<b>Height:</b>	3.149 in (8 cm)	<b>M81:</b>	<b>Height:</b>	0.7086 in (1.8 cm)
	<b>Width:</b>	3.149 in (8 cm)		<b>Width:</b>	1.023 in (2.6 cm)
	<b>Depth:</b>	0.216 in (0.55 cm)		<b>Depth:</b>	0.5118 in (1.3 cm)

Product	Material ID	Ports	Packaging	Color
M18930-246	999901618	2 x IOs	1/Pkg	Ivory
M18930-262	999901620	2 x IOs	1/Pkg	White
M18932-246	999901617	2 x IOs	1/Pkg	Ivory
M18932-262	999901619	2 x IOs	1/Pkg	White
M02714-246	999901621	M18932	1/Pkg	Ivory
M02714-262	999901622	M18932	1/Pkg	White
M81-246	106837222	N/A	100/Pkg	Ivory
M81-262	106837230	N/A	100/Pkg	White

## Copper

## Universal Standard

The **M30MC Universal Mounting Collar** is designed to flush-mount one M-Series Modular Information Outlet (M1, MPS100E or MGS400) onto any flat surface with a pre-cut rectangular opening. See Physical Specifications for required dimensions of opening.

The M30CC Circular Collar is a plastic circular collar designed to support the M-Series modules. The M30CC can be used in furniture such as a desk or cabinet, on a flat wall panel, or on a flat metal panel. The supporting panel or wall structure must be between 0.0393 in and 0.1259 in (0.1 cm and 0.32 cm) in thickness, inclusively.

The M30CC collar supports a single telecommunications outlet such as the M-Series, and can also support the M81-Series mounting modules.

## Face plates

## Mounting Collar



**Figure 146**  
M30MC  
Mounting Collar

## Physical Specifications

**Collar Support Thickness:** 0.0248 in - 0.1220 in (0.063 cm - 0.31 cm)

**Opening Height:** 0.783 in (1.99 cm)

**Opening Width:** 0.759 in  $\pm$  0.00315 in (1.93 cm  $\pm$  0.008 cm)

**Mounting Collar Height:** 1 in (2.54 cm)

**Mounting Collar Length:** 1 in (2.54 cm)

**Mounting Collar Depth:** 0.460 in (1.17 cm)

**Plastic:** High-impact, flame retardant, UL-rated 94V-0 thermoplastic

Product	Material ID	Packaging	Color
M30MC-246	106664139	100/Pkg	Ivory
M30MC-262	106664147	100/Pkg	White
M30MC-003	106664154	100/Pkg	Black
M20MC-270	106697089	100/Pkg	Gray
M30CC-246	106986110	25/Pkg	Ivory



## Copper

## Universal Standard

The MTDL80 Universal Faceplate is a dual semi-surface mounted faceplate which can be surface or flush-mounted on a standard IEC box (c/c 60 mm (2.36 in)) and also mounted on any type of electrical trunking. It accepts two Information Outlets (M1, MPS100E or MGS400). It comes complete (without Information Outlets) and ready to mount.

EMEA ONLY

Faceplates

MTDL80



Figure 147  
MTDL80 Faceplate

## Physical Specifications

Height: 3.149 in (8 cm)

Width: 3.149 in (8 cm)

Depth: 1.417 in (3.6 cm)

Product	Material ID	Ports	Packaging	Color
MTDL80-262	106790132	2 x IOs	1/Pkg	White

## Fiber

M81 Series Modular  
Fiber-Optic  
Coupling/Adapter

## Indoor

Fiber-Optic  
Coupling/Adapter

The **M81 M-Series Modular Coupling/Adapter Modules** are designed for fiber-optic applications. The **M81ST-B Coupling/Adapter Module** comes packaged with an M81 type mounting module with a circular opening and an ST fiber-optic coupling/adapter (A2000 multimode). The ST coupling/adapter is mounted on the module via a locking washer and nut. The assembly mates two ST II fiber-optic connectors.

The **M81SC-B Coupling/Adapter Module** comes packaged with an M81 type mounting module with a rectangular opening and a simplex SC fiber-optic coupling/adapter (C6000A- 5). The SC coupling/adapter snaps into the rectangular opening of the M81 type mounting module. The assembly mates two simplex SC fiber-optic connectors.

The **M81LC-029 Coupling/Adapter Module** comes packaged with an M81 type mounting module with a rectangular opening and an adapter. The coupling/adapter snaps into the rectangular opening of the M81 type mounting module.

The **M81LS Duplex Adapters** provide a duplex LC connection with a fiber management spool. They are color-coded for ease of fiber type identification, and provide slack management to maintain proper bend radius behind the wall.

The **M81** is an M-Series modular blank; rear snap-in, used to fill empty ports in M-series modular faceplates, surface-mount boxes or mounting collars.

The **M81BNC** is an M-Series modular BNC (50 W) Coupler Module designed for data applications. It can be mounted in any of the M-Series modular faceplates, surface-mount boxes or mounting collars. The **M81BNC** now comes with four collars (black, ivory, white and gray).

The **M81C** is an M-Series Modular F-81 Coaxial (75 W) Coupler Module designed for video applications. It can be mounted in any of the M-Series modular faceplates. The **M81C-Coupler** now comes with four collars (black, ivory, white and gray).

## Physical Specifications

**Width:** M81ST-B: M81SC-B: 0.708 in (1.8 cm) M81LC-029: 0.629 in (1.6 cm)

**Length:** M81ST-B: M81SC-B: 0.669 in (1.7 cm) M81LC-029: 0.669 in (1.7 cm)

**Depth:** M81ST-B: M81SC-B: 0.3779 in (0.96 cm) M81LC-029: 0.275 in (0.7 cm)

Product	Material ID	Description
M81SC-B	108009416	Coupling/Adapter with Mounting Module
M81ST-B	108009408	Coupling/Adapter with Mounting Module
M81LC-029	107782641	Multimode Adapter with Clear Collar
M81LS-MM Spool	108623109	LazrSPEED LC Duplex Adapter w/Fiber Spool (Aqua)
M81LS-MM- Spool	108562174	MM LC Duplex Adaptor w/Fiber Spool (Beige)
M81LS-SM- Spool	700007420	SM LC Duplex Adaptor w/Fiber Spool (Blue)
M81-246	106837222	Blank Ivory Cover
M81-262	106837230	Blank White Cover
M81 BNC-B Coupler	108009424	BNC Coax Coupler
M81C-Coupler	108009432	Coax Coupler

## Fiber

## Surface Mounted

The **Surface Mounted Fiber Outlet** provides termination for two buffered fibers. The outlet can be surface mounted, fuse box mounted (60 mm x 60 mm (2.36 in x 2.36 in)) box, or mounted on any type of electrical trunking. The **Surface Mounted Fiber Outlet** retains the slack fiber and controls the minimum bending radius of the individual fiber. They are available to terminate either **ST** or **SC Duplex** connectors. There is provision for circuit labeling.

The Fiber Outlet comes packaged with its fiber-routing base, cover, cable tie for securing the indoor cable, and blank identification label.

The Fiber Outlets come with an additional fusion splice holder. This splice holder can take a maximum of 4 fusion splices and is specifically designed for fusion splices with a length of 4 cm to 6 cm (1.574 in to 2.362 in) and a diameter of 0.3 cm (0.118 in).

E M E A   O N L Y

Fiber

Surface Mounted



**Figure 148**  
Surface Mounted  
Fiber Outlet

## Physical Specifications

**Width:** 3.307 in (8.4 cm)

**Length:** 4.330 in (11 cm)

**Depth:** 1.6929 in (4.3 cm)

**900  $\mu$ m Buffered Fiber Bending Radius:** 0.787 in (2 cm)

Product	Material ID	Ports	Packaging	Color
Fiber Outlet	407050988	2 x ST cpl	1/Pkg	Ivory
Fiber Outlet	407036763	2 x ST cpl	1/Pkg	White
Fiber Outlet	407036002	1 x SC DPLX cpl	1/Pkg	Ivory



# Connectors

Chapter **5**

# Connectors

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## Copper

## 700A8 Modular Plug

## RJ45 Family

## 700A8 Plug

The **700A8 Modular Wire Plug** is a modular 4-pair plug that attaches to 0.511 mm diameter (24 AWG) solid wire to create a modular cord. This field mountable plug can be used to make an RJ45 interface plug with customized pinout.



The **700A8** can be used for voice and data applications running under 10 Mb/s.



Figure 149  
700A8 Plug

## Physical Specifications

**Width:** 2.5 cm (0.984 in)

**Length:** 4 cm (1.574 in)

**Depth:** 1.3 cm (0.511 in)

**Plastic:** High-impact, flame retardant, UL-rated 94V-0 thermoplastic

Product	Material ID	Packaging	Color
700A8	103941472	1/Pkg	Beige

## Fiber

## LC Connectors

## LC Family

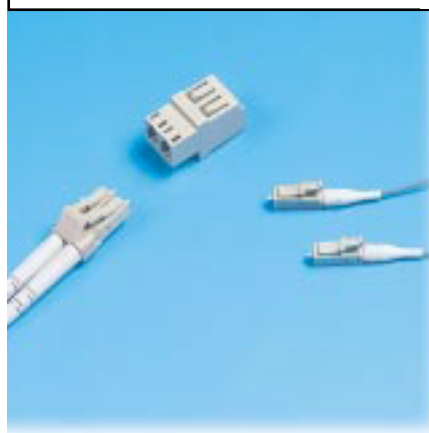
LC 900  $\mu$ m Buffered  
Fiber Connector

The **LC Connector** is a revolutionary fiber-optic connector. This small form factor connector is only half the size of ST or SC connectors yet it has superior optical performance and reduced installation time. It uses the familiar insertion release mechanism similar to an RJ45 plug and has a Pull-Proof design. Fast becoming the connector of choice, the physical and optical performance of the **LC** allows engineers to design optical fiber infrastructures suited to the low loss needs of the High-Speed Data Networks. The **LC Connector** offers a complete connection solution with a product range designed for Field Termination onto 900  $\mu$ m Buffered Fiber, 1.6 mm Fiber Cordage, Multimode and Singlemode Fiber.

The high-performance **LC Connector** is the recommended connector for all SYSTIMAX® installations. The superior insertion loss performance offered by the **LC Connector** makes it the ideal connector for gigabit applications including all proposed 10 Gigabit Ethernet specifications for multi-mode and singlemode fiber.

**900  $\mu$ m Fiber Connector**

This connector is designed to allow for the simple and speedy termination of the connector onto 900  $\mu$ m fiber. So whether terminating a cable into a patch panel, connection box, or outlet, the **LC Connector** offers the best-in-class solution.



**Figure 150**  
P1001A LC  
Connector, Duplex  
MM LC Patch Cord  
and C1001B-2  
Adapter

**Physical Specifications**

**Length:** 3.2 cm (1.259 in)

**Tip Material:** Ceramic

**Optical Specifications**

**Multimode: Average Loss:** 0.1 dB Standard deviation 0.1 dB

**Singlemode: Average Loss:** 0.2 dB Standard deviation 0.1 dB

**Insertion Loss Change:** <0.3 dB Mating durability for 500 reconnect

**Cable Retention:** <0.3 dB Temperature stability -40 to 75 °C

Product	Material ID	O D	Mode	Packaging	Color
P1001A-Z-125	700007008	900 $\mu$ m	MM	1/Pkg	Beige
P1001A-Z-125/100	700006299	900 $\mu$ m	MM	100/Pkg	Beige
P1101A-Z-125	700011372	900 $\mu$ m	SM	1/Pkg	Blue



## Fiber

## LC Connectors

The **LC Fiber-Optic Simplex and Duplex Jumper Connectors** can be used to terminate simplex and duplex 1.6 mm jumper cords. It is intended for use in Central Offices, Local Area Networks (LANs), and in patch cords for Premises Distribution Systems. The connector can also be used in computer backplane connections, computer peripheral interconnections, device terminations, and other applications where quality, small-size, high-density, low-loss, and a low-cost infrastructure are required.

## LC Family

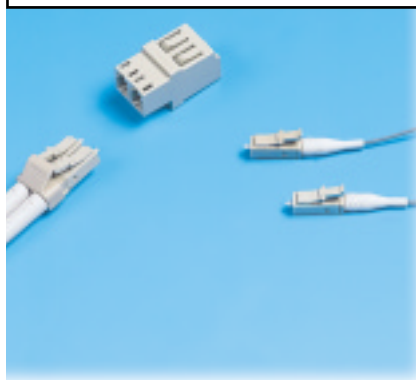
LC 1.6 mm  
Jumper Connector

Figure 151  
LC 1.6 mm Jumper  
Connector (left)

Product	Material ID	OD (mm) in	Fiber Type	Fiber Count	Packaging	Color
P1000A-Z-125	700004260	1.6 (0.062 in)	MM	1	1/Pkg	Beige
P1002A-Z-125	700006992	1.6 (0.062 in)	MM	2	1/Pkg	Beige
P1002A-Z-125/100	700006307	1.6 (0.062 in)	MM	2	100/Pkg	Beige
P1100A-Z-125	700071830	1.6 (0.062 in)	SM	1	1/Pkg	Blue

## Fiber

## LazrSPEED

**LazrSPEED Duplex Adapters** are aqua color-coded for easy fiber identification, and are available in LC (recommended) and SC versions.

## LazrSPEED Family

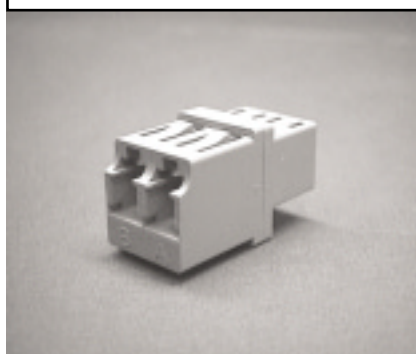
LazrSPEED  
Duplex Adapter

Figure 152  
LazrSPEED  
Duplex Adapter

Product	Material ID	Fiber Type	Connector Type	Packaging
C1001B-2-LS	108622887	MM	LC Adapter	1/Pkg
C6061A-4-LS	108622895	MM	SC Adapter	1/Pkg

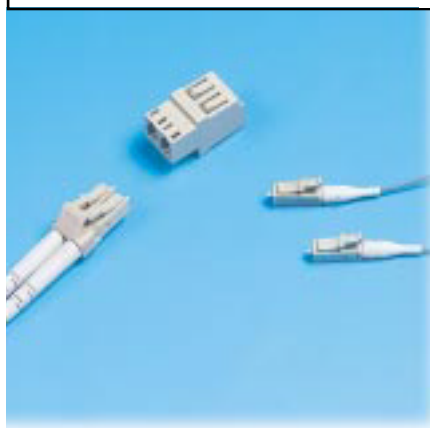
## Fiber

## OptiSPEED®

The **LC Duplex Adapter** accommodates 2 LC connectors while only occupying the space of a simplex SC coupling. It features a self-adjusting mechanism designed to accommodate panel thickness variations from 0.15 cm to 0.175 cm (0.059 to 0.068 in). It is available in both single-mode and multimode. LC Duplex Adapters are color-coded beige for multimode and blue for singlemode.

## LC Family

## LC Duplex Adapters



**Figure 153**  
P1001A LC  
Connectors (right),  
Duplex MM LC Patch  
Cord (left) and  
C1001B-2 Adapter  
(center)

Product	Material ID	Fiber Type	Packaging	Color
<b>DUPLEX ADAPTERS</b>				
C1001B-2	700002355	MM	1/Pkg	Beige
C1101A-2	700002215	SM	1/Pkg	Blue
<b>SIMPLEX ADAPTERS</b>				
C1001B-1	700002173	MM	1/Pkg	Beige
C1101A-1	700002132	SM	1/Pkg	Blue

## Fiber

## SC Connectors

The **SC Multimode Fiber-Optic Connector** is a field mountable, tuneable connector which utilizes a domed zirconia ferrule for fiber alignment, and push-pull hardware that provides easier connections as well as high optical stability. The connector can be used in high-density applications while not being affected by axial cable loads. The cable is crimped to the outer hardware and therefore prevents momentary disconnect when axial load is placed on the cable. Available in multimode and singlemode versions. The un-tuned SC connector has a higher dB loss because the connector has not calibrated to reduce the dB loss.

The **P600A-Z-125** and **P6200A-Z-125** can be mounted on 3.0 mm cordage only while the **P6001A-Z-125** and **P6201A-Z-125** mounts on the 0.9 mm buffered fiber.

## SC Family

## SC Connectors



Figure 154  
P6200A SC  
Connector

## Physical Specifications

Length: 5 cm (1.96 in)

Loss Repeat (200 reconnects): < 0.3 dB

Min. Axial Load: Cable: 13.6 kg; Buffer: 0.9 kg (1.98 lb)

Temperature Stability (-40 to 75 (C): < 0.3 dB increase

## Optical Specifications

Average Loss MM: 0.3 dB

Average Loss SM: 0.2 dB (Tuned)

Average Loss SM: 0.3 dB (Untuned)

Product	Material ID	OD.	Fiber Type	Packaging
*P6200A-Z-125	700007040	3.0 mm	MM	1/Pkg
P6201A-Z-125	700007024	900 µm	MM	1/Pkg
*P6000A-Z-125	700006984	3.0 mm	SM	1/Pkg
P6001A-Z-125	700006976	900 µm	SM	1/Pkg
P6201A-Z-125-100	700004278	900 µm	MM	100/Pkg
P6000A-Z-125-100	700004286	3.0 mm	MM	100/Pkg

\*These connector kits can be used on 1.6mm cordage or mini-breakout cable with the addition of tool kit D-182918 and 500B tool as shown in the Tools Chapter.

## Fiber

## SC Connector Clip

The **2A1 Duplex Connector Clip** accepts two simplex **SC** connectors to form a single duplex connector. The **2A1** is made of black plastic.

## SC Family

## SC Connector Clip



**Figure 155**  
*2A1 Connector  
Holder*

Product	Material ID	Packaging
2A1	700002165	10/Pkg

## Fiber

## SC Adapters

The **C6000A-4 Adapter** accommodates the multimode or singlemode simplex SC connector plugs and ensures the proper alignment of the fibers. This adapter is easily mounted by snapping them into the adapter panel. The coupling has a ceramic sleeve.

## SC Family

## Simplex Adapter

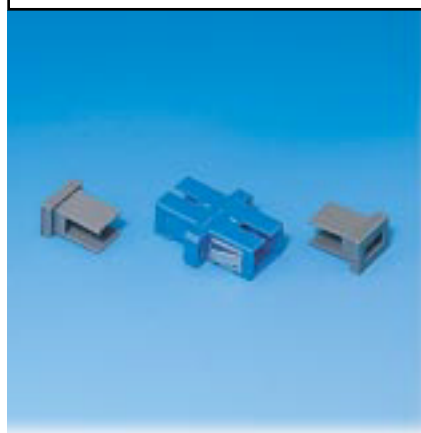


Figure 156  
C6000A-4 SC  
Adapter

Product	Material ID	Fiber Type	Packaging
C6000A-4	700004807	SM/MM	1/Pkg
C6000A-5	700004799	SM/MM Flangeless	1/Pkg

## Fiber

## SC Adapters

The **SC Adapter** accommodates the multimode or singlemode duplex SC connectors and ensures the proper alignment of the fibers. This adapter is easily mounted by snapping them into the adapter panel. The **C6061A-4** sleeve is metallic and the **C6060A-4** sleeve is ceramic.

## SC Family

## Duplex Adapter

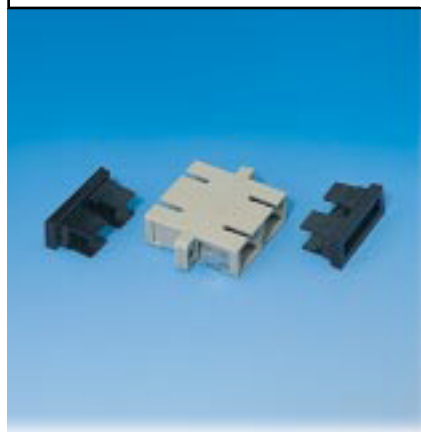


Figure 157  
C6061A-4 SC  
Duplex Adapter

Product	Material ID	Fiber Type	Packaging	Color
C6061A-4	700004880	MM	1/Pkg	Beige
C6060A-4	700004815	SM/MM	1/Pkg	Blue
C6061A-4-100	700004872	MM	100/Pkg	Beige
C6070A-4	700004898	MM ST-SC Hybrid Duplex	1/Pkg	Beige

## Fiber

## STII Connectors

## ST Family

## STII Connectors

The **STII Connector Plug** is a keyed ceramic fiber-optic connector plug that uses a bayonet-type “ramped-latching” mounting arrangement. The ferrule is made of zirconium which provides for easy, accurate field polishing. **STII Connectors** will accept 125 micron outside diameter multimode fiber.

The design of the **STII** provides high optical performance and easy mounting in a rugged, compact connector plug.

The **STII** can mount on either 0.9 mm buffered fiber, 2.4 mm, or 3.0 mm cordage (or equivalent). The **STII** is available in both singlemode and multimode.



**Figure 158**  
P2020C ST Connector

## Physical Specifications

**Length:** 5.64 cm (2.2 in)

**Temperature Stability (-40 to 85°C):** < 0.1 dB increase

**Loss Repeat (500 Reconnectors):** <0.2 dB

**Min. Axial Load - Cable:** 15.9 kg (35 lb)

## Optical Specifications

**Multimode Average Loss:** 0.3 dB

**Singlemode Average Loss:** 0.2 dB

Product	Material ID	OD	Fiber Type	Tip	Packaging
P2020C-Z-125	700004328	900 µm/2.4 mm/3.0 mm	MM	Ceramic/Zirconia	1/Pkg
P2020C-Z-125/100	700004310	900 µm/2.4 mm/3.0 mm	MM	Ceramic/Zirconia	100/Pkg
P3020A-Z-125	700011067	900 µm/2.4 mm/3.0 mm	SM	Ceramic/Zirconia	1/Pkg
P2020C-C-125	700004583	900 µm/3.0 mm	MM	Ceramic/Zirconia	1Pkg
P2020C-C-125/100	700004336	900 µm/3.0 mm	MM	Ceramic/Zirconia	100Pkg

\*These connector kits can be used on 1.6 mm cordage or mini-breakout cable with the addition of tool kit D-182918 and 500B tool as shown in the Tools Chapter.

## Fiber

## STII Connectors

The **STII+ Connector Plug** is a keyed fiber-optic connector plug that uses a bayonet-type “ramped-latching” mounting arrangement. The **STII+** has a patented enhanced hardware design which provides high performance and easy field mounting. It features a domed zirconia ferrule and utilizes a PC polish to ensure fiber-to-fiber physical contact for low loss and low reflections. Its enhanced hardware and pull proof design provides high mechanical stability.

The **STII+** can mount on either 900  $\mu\text{m}$  buffered fiber or on 3.0 mm cordage (or equivalent). When mounted on cordage, the cable is crimped to the outer hardware, preventing momentary disconnect when axial load is applied. The **STII+** is available in both multimode and singlemode.

## ST Family

## STII+ Connector



Figure 159  
P2070C STII+  
Connector

## Physical Specifications

**Length:** 5.64 cm (2.2 in)

**Loss Repeat (500 reconnects):** < 0.3 dB

**Min. Axial Load: Cable:** 15.9 kg; **Buffer:** 0.9 kg (1.98 lb)

**Temperature Stability (-40 to 85°C):** < 0.3 dB increase

## Optical Specifications

**Average Loss:** 0.3 dB

Product	Material ID	OD	Fiber Type	Packaging
Multimode				
P2070A-Z-125	700002389	900 $\mu\text{m}$ /3 mm	MM	1/Pkg
P2071A-Z-125	700002363	900 $\mu\text{m}$	MM	1Pkg
P2070A-Z-125-100	700005556	900 $\mu\text{m}$ /3 mm	MM	100/Pkg
P2071A-Z-125-100	700005549	900 $\mu\text{m}$	MM	100Pkg
Singlemode				
P3070A-Z-125	700002231	900 $\mu\text{m}$	SM	1/Pkg
P3071A-Z-125	700002223	900 $\mu\text{m}$	SM	1Pkg

\*These connector kits can be used on 1.6 mm cordage or mini-breakout cable with the addition of tool kit D-182918 and 500B tool as shown in the Tools Chapter.

## Fiber

## ST Adapters

The C2000A and C3000A Couplings accommodate the ST, STII, and STII+ Connector plugs and ensure the proper alignment of the fibers. The coupling is based on a longitudinally split sleeve; the thickness of the sleeve's wall varies, causing its inside diameter to remain circular even when a cylindrical ferrule forces it open. The connector coupling is designed for use with all ST connector panels in LIU's, LGX's, 660A1, 600B2 and fiber outlets.

The C2000A Coupling is packaged with the coupling itself, lock washer and hex nut for mounting onto the coupling panels.

A2000 and A3000 Adapters come with a circular nut and one designed specifically for use with LSTIU - 144/9 in shelf.

The Universal Fiber-Optic Buildout System provides the hardware needed to interconnect pairs of preconnectorized fibers for both multimode and singlemode applications. The unique modularity of the Universal Buildout System allows conversion between SC and ST connectors. The ST buildout block is equipped with a circular nut for mounting in ST style panels. The buildouts snap into the SC or ST buildout block providing a tight precise alignment.

The ST couplers also has a dust cap. White for singlemode and gray multimode.

## ST Family

## ST Adapters



Figure 160  
C2000A2  
ST Coupling

Product	Material ID	Fiber Type	Packaging
C2000A-2	700004864	MM	1/Pkg
C2000A-2-100	700004906	MM	100/Pkg
C3000A-2	700011133	SM	1/Pkg
C3000A-2-100	700011075	SM	100/Pkg
A2000 Circular Nut	700004914	MM	1/Pkg
A3000 Circular Nut	760000638	SM	1/Pkg
ST Buildout Block	700025828	MM /SM	1/Pkg
SC Buildout Block	700025877	MM/SM	1/Pkg
SC MM/SM Buildout	700025695	A3060	1/Pkg



# Adapters

Chapter

6

# Adapters

## Contents

### Copper

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Copper RJ45 to RJ45 Adapter

The **451A Adapter** is an in-line, double-ended RJ45 modular jack that accepts either an RJ45 or RJ11 modular plug. It is a type of coupler used to connect two modular cords, maintaining proper continuity/polarity.



These adapters are not suitable for applications running above 10 Mb/s.

Connectivity

451A Adapter



Figure 161  
451A Adapter

Physical Specifications

Height: 1.6 cm (0.62 in)

Width: 1.6 cm (0.62 in)

Depth: 4 cm (1.57 in)

Product	Material ID	Packaging	Color
451A-50	103786240	1/Pkg	Ivory
451A-61	103942272	1/Pkg	Slate Gray

Copper RJ45 to 110

The **1110A1 Modular Adapters** are 1-piece devices available in 3 or 4-pair sizes for terminating modular RJ45 Connectors onto the 110 Connector System. One side is equipped with blades that sit in the insulation displacement clip of the 110 Connecting Block. The other side is equipped with a 4-pair modular RJ45 jack. Each adapter has a label attached to its underside which provides a wiring diagram to show pairs and standard pinout. The word "TOP" is stamped on the adapter for orientation.



Connectivity

1110A1 Adapters



Figure 162  
1110A1-3 and  
1110A1-4 Adapters

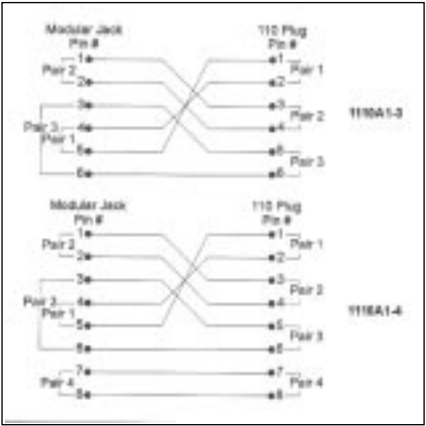


Figure 163  
1110A1-3 and  
1110A1-4 Pinout

Product	Material ID	Pair Size	Packaging
1110A1-3	406678755	3	1/Pkg
1110A1-4	406678763	4	1/Pkg

Copper RJ45 to 50-Pin

The **258-Type Adapter** has a 50-pin, male or female telco connector, which distributes the pairs from a 25-pair connectorized telco cable to six 8-pin modular RJ45 jacks. The **258-Type** is available with either the jacks located perpendicular (the A series), or parallel to the telco connector (the B series).

These adapters can support applications running at 10 Mb/s or less.

Connectivity

258 Adapters



Figure 164  
258A, 258B and  
356A Adapters

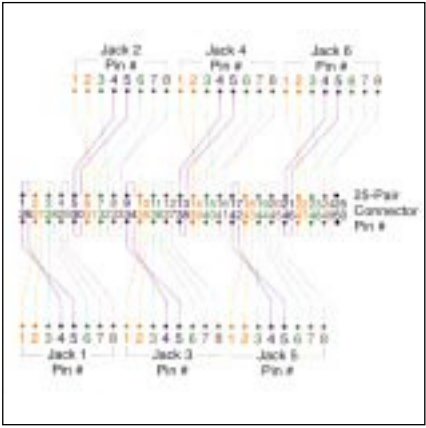


Figure 165  
258A Pinout

Product	Material ID	Connector Type	Telco Gender	Packaging
258A	102605136	50-pin telco to 6 x RJ45 Jacks - Perpendicular	Male	1/Pkg
258AF	103796561	50-pin telco to 6 x RJ45 Jacks - Perpendicular	Female	1/Pkg
258B	103923025	50-pin telco to 6 x RJ45 Jacks - Parallel	Male	1/Pkg

Copper

RJ45 to 50-Pin

Connectivity

356A Adapter

The **356A Adapter** has a 50-pin, male or female telco connector, which distributes the pairs from a 25-pair connectorized telco cable to eight 8-pin RJ45 modular jacks (only six of the eight pins are connected on each jack).

The adapters are used to join connectorized 25-pair cable to 4-pair cords equipped with RJ45 modular plugs, such as linking clusters of balun adapters onto UTP connecting hardware in a telecommunication closet, equipment room, or computer room. These adapters should not be used with devices that require connections to all eight pins of the RJ45. The **356A** can support applications running at 10 Mb/s or less.

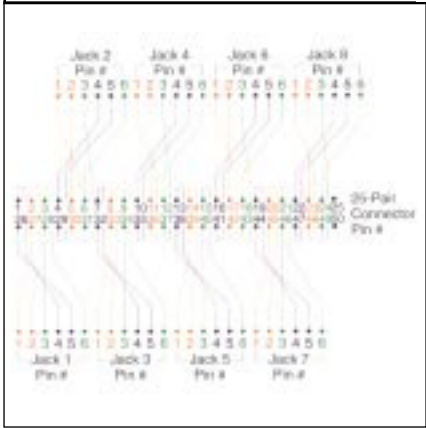


Figure 166  
356A Pinout



Product	Material ID	Connector Type	Telco Gender	Packaging
356A	104158829	50-Pin telco to 8 x RJ45 Jacks	Male	1/Pkg

Copper

RJ45 to DB-25

Connectivity

355 Adapter

The **355-Type Adapters** are used to adapt an EIA-232-D 25-pin connector to an RJ45 modular jack. The adapter helps protect asynchronous equipment against damage from ringing voltages and standard battery power. It is not necessary to use a **355 Adapter** if an Asynchronous Data Unit (ADU) is in place. The **355A** supports software flow control or no flow control. The adapters are available with either male or female 25-pin connectors.

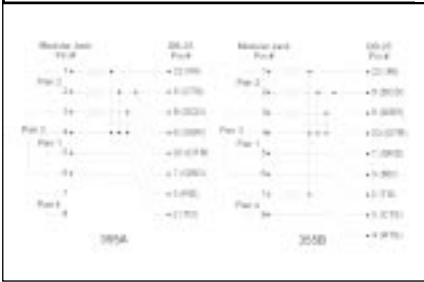


Figure 167  
355 Pinout



Physical Specifications

<b>Height:</b> 1.75 cm (0.68 in)	<b>Weight:</b> 41 g (1.44 oz)
<b>Width:</b> 4.40 cm (1.73 in)	<b>Temperature:</b> 4 to 49 °C
<b>Depth:</b> 6.35 cm (2.5 in)	<b>Humidity:</b> 5-95% (noncondensing)

Product	Material ID	Connector Type	Packaging
355A	105012637	Male EIA-232 to RJ45 Jack	1/Pkg
355AF	105012645	Female EIA-232 to RJ45 Jack	1/Pkg

Copper

RJ45 to DB-25

Connectivity

368A Adapter

The **368A Adapter Kit** is a customer-configurable kit that is used to adapt an EIA-232-D 25-pin connector to an RJ45 modular jack. The kit can be ordered with either a male or female DB25 Connector. All components snap together for easy assembly.

The kit includes:

- One DB25 Connector (male or female) with captive screw.
- One 8-position, 8-conductor modular jack with eight leads.
- One plastic housing (two-sides).
- Two jumper leads.



Figure 168  
368A Adapter Kit

Product	Material ID	Connector Type	Packaging
368A	105345342	Male DB-25 To RJ45 Jack	1/Pkg



Copper RJ45 Splitters

The **400K Splitter** has one 8-pin RJ45 modular plug wired to two modular jacks. One of the jacks is an 8-position RJ45 with all 8 conductors connected, the other jack is a 6-position RJ11 with only two conductors connected (pair 1).

The **400K** is used to split a single RJ45 outlet so that an application (using pairs 2, 3, and/or 4) can share the outlet with an analog telephone (which uses pair 1). The adapter can support applications running at 10 Mb/s or less. The **400K** is Category 3 compliant.



Connectivity

400K Splitter



Figure 169  
400K Splitter

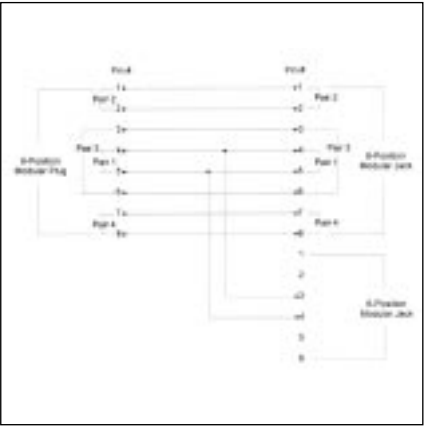


Figure 170  
400K Pinout

Product	Material ID	Packaging
400K	105307177	1/Pkg

Copper RJ45 Splitters

The **400E Splitter** has one 8-pin RJ45 modular plug wired to two 6-position, 4-pin RJ11 modular jacks. Of the RJ45 plug, pairs 1 and 2 are wired to the first RJ11 jack, and pairs 3 and 4 are wired to the second RJ11 jack.



The **400E** is used to split the 4-pair RJ45 input into two 2-pair RJ11 outputs. The adapter can support applications running at 10 Mb/s or less. The **400E** is Category 3 compliant.

Connectivity  
400E Splitter



Figure 171  
400E Adapter

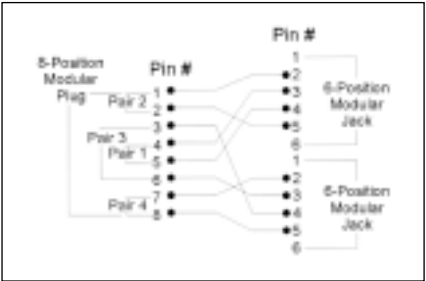


Figure 172  
400E Pinout

Product	Material ID	Packaging
400E	103895538	1/Pkg

Copper RJ45 Bridge

Connectivity

367A Bridging Adapter



The **367A Bridging Adapter** has eight 8-pin RJ45 modular jacks (internally bridged together) and is used to connect up to seven workstations in a multipoint environment to an IBM System 36/38 or IBM AS/400 host port via the 365A Balun Adapter. This adapter may further be used with other applications that require a bridged configuration (See SYSTIMAX®SCS Application Guides for design guidelines).



Figure 173  
367A Adapter

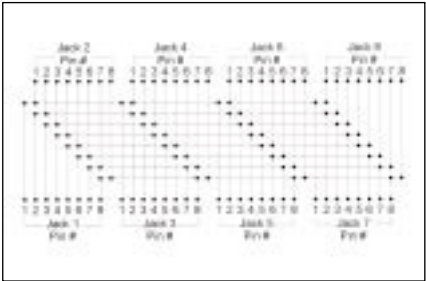


Figure 174  
367A Pinout

Product	Material ID	Ports	Packaging
367A	105275606	8 x RJ45 Jacks	1/Pkg

## Copper

## IBM AS/400

The **365A Balun Adapter** is a twinaxial-to-twisted-pair balun that eliminates the need for twinaxial cable to connect equipment in an IBM System 34/36/38 or an IBM Application System/400 (AS/400) product line environment. The adapter balances the unbalanced twinaxial signals from the IBM equipment so that they are compatible with SYSTIMAX unshielded twisted-pair wiring. Each **365A** consists of a flame-retardant plastic housing with a short section of twinaxial cable on one side, terminated with a male twinaxial connector. The other side of the adapter contains an 8-pin modular jack for attaching an 8-conductor SYSTIMAX SCS workstation Line Cord (sold separately).

## Transmission

## 365A Balun and Terminating Adapter



**Figure 175**  
365A Balun  
Terminating Adapter



See the SYSTIMAX SCS published "IBM System 36 and AS/400 Application Guide" for design/configuration guidelines. The **365A** is UL Listed.

## Physical Specifications

<b>Height:</b> 2.79 cm (1.09 in)	<b>Weight:</b> 120 g (4.23 oz)
<b>Width:</b> 4.19 cm (1.64 in)	<b>Temperature:</b> 0 to 60 °C
<b>Depth:</b> 20.6 cm (8 in)	<b>Humidity:</b> 5-95% (noncondensing)

## Electrical Specifications

<b>Impedance Source:</b> 110 $\Omega$ Unbal.	<b>Twisted Pair:</b> 100 $\Omega$ Bal.
--	--

Product	Material ID	Packaging	Color
365A	105282610	1/Pkg	Slate Gray

## Copper

## IBM AS/400

The **369A Matching Adapter** provides an impedance-matching network that minimizes signal reflections back to the host port when bridging between two and seven workstations on SYSTIMAX SCS. It is used with the 365A Balun Adapter to connect IBM workstations to an Application System/400 (AS/400) hosted over SYSTIMAX Solutions.

The **369A** consists of a plastic housing with a short section of cord on one side terminating in an 8-position modular plug. The other side of the housing contains an 8-pin modular jack.

The **369A Matching Adapter** is required in all multipoint arrangements involving an AS/400 or a 5294/5394 Remote Control Unit and is compatible with all other IBM workstations designed for twinaxial cable connection to an AS/400 or 5294/5394 Remote Control Unit. It is used with the 365A Balun Adapter to connect IBM workstations to an AS/400 host over SYSTIMAX SCS.

## Transmission

## 369A Matching Adapter



**Figure 176**  
369A Matching Adapter



See the SYSTIMAX SCS published "IBM System 36 and AS/400 Application Guide" for design/configuration guidelines. The **369A Adapter** is UL Listed.

## Physical Specifications

<b>Height:</b> 1.78 cm (0.7 in)	<b>Weight:</b> 84 g (185 lb)
<b>Width:</b> 2.03 cm (0.79 in)	<b>Temperature:</b> 0 to 60 °C
<b>Length (with cord):</b> 8.13 cm (3.2 in)	<b>Humidity:</b> 5-95% (noncondensing)

Product	Material ID	Packaging	Color
369A	105689772	1/Pkg	Black

## Copper

## Video

The **380A Video Adapter** is a baseband video/high-fidelity audio adapter that provides connectivity to the 1010/ 2010, 1061/2061, or 1071/2071 24-AWG unshielded twisted-pair cable of SYSTIMAX SCS. The **380A Video Adapter** is used in pairs to transmit National Television Standards Committee (NTSC) and Phase-Alternation Line (PAL) standard composite video and dual-channel high fidelity audio signals.

The **380A** is connected to the building wiring at an information outlet (IO) in the work area and to SYSTIMAX SCS unshielded twisted-pair connecting hardware in the telecommunications closet or equipment room.

The **380A** can be mounted on the equipment in the work area using the adhesive-backed Velcro strip provided, or it may be panel mounted in the work area, telecommunications closet or equipment room using screws and the mounting holes.

Six **380As** can be installed on the 811A panel. The 811A Panel is a sheet-metal panel that mounts on a standard Electronic Industries Association (EIA) 48.3 cm (19 in) rack or on a wall. The 811A Panel is 4.5 cm (1.8 in) high and occupies one rack unit (1U). The **380A Video Adapters** can be installed, removed, or rearranged in the 811A Panel either before or after it is mounted.

See the SYSTIMAX SCS published "Baseband Video Application Guide" for design/configuration guidelines. The **380A** is UL Listed.

## Transmission

## 380A Baseband Video and Audio Adapter



**Figure 177**  
380A Baseband  
Video Adapter



## Physical Specifications

<b>Height:</b> 2 cm (0.78 in)	<b>Weight:</b> 90 g (3.17 oz)
<b>Depth:</b> 6.9 cm (2.7 in)	<b>Temperature:</b> 0 to 60 °C
<b>Width:</b> 5.8 cm (2.28 in)	<b>Humidity:</b> 5-95% (noncondensing)

## Connections

<b>Video:</b> BNC (Female)
<b>Audio:</b> Standard Phono Jack (2)
<b>Output:</b> 8-Position Modular Jack

## Electrical Specifications

<b>Video Bandwidth:</b> DC to 8 MHz	<b>Audio Bandwidth:</b> 50 Hz to 15 kHz
<b>Video Input Impedance (Source):</b> 75 $\Omega$ Unbal.	<b>Audio Input Impedance (Source):</b> 600 $\Omega$ Unbal.
<b>Video Output Impedance (Twisted Pair):</b> 100 $\Omega$ Bal.	<b>Audio Output Impedance (Twisted Pair):</b> >600 $\Omega$ Bal.
<b>Video Common Mode Rejection @ 50 MHz:</b> >40 dB	<b>Audio Common Mode Rejection @ 100 kHz:</b> >40 dB
<b>Tested to FCC Rules and Regulations Part 15 and CISPR Pub. 22 for Class B Computing Devices</b>	

Copper

Video

Transmission

**380A Baseband Video  
and Audio Adapter (*cont'd*)**

## OPERATIONAL DISTANCES

Cable Type	Distance	Black & White
1010/2010	365 m (1200 ft)	670 m (2200 ft)
1061/2061/1071/2071	457 m (1500 ft)	762 m (2500 ft)

Product	Material ID	Ports	Packaging
380A	106727944	1 x BNC + 2 x RCA To RJ45 Jack	1/Pkg
PWR SUP-1880214	407847300	US Plug in	1/Pkg

## Copper

## Video

The **380B Baseband Video Adapter** is an adapter that provides connectivity over 1010/2010, 1061/2061 or 1071/2071 24-AWG unshielded twisted-pair cable for security and surveillance monitoring. It is used in pairs to transmit National Television Standards Committee (NTSC) and Phase-Alternation Line (PAL) standard composite video signals.

The **380B** supports end-user applications in various environments such as: educational institutions, airport displays, penal institutions, video bulletin boards, outdoor campus monitoring, video capture, product process monitoring and remote medical video.

The **380B** is enclosed in a hard plastic casing and is equipped with an 8-position/8-conductor modular jack and a single BNC jack. The BNC connects the adapter to the baseband video equipment and the modular jack connects to the SYSTIMAX SCS unshielded twisted-pair wiring infrastructure. A D8AU modular cord is used to provide the interface between the adapter and the modular jack.

The **380B Baseband Video Adapter** can be mounted on the equipment in the work area using the adhesive-backed Velcro strip provided, or it may be panel mounted in the work area or telecommunications closet using screws and the mounting holes. See the SYSTIMAX SCS published "Baseband Video Application Guide" for design/configuration guidelines. The **380B** is UL Listed.

## Transmission

**380B Baseband  
Video Adapter**

**Figure 178**  
380B Baseband  
Video Adapter

**Physical Specifications**

<b>Height:</b> 2 cm (0.78 in)	<b>Weight:</b> 90 g (3.17 oz)
<b>Depth:</b> 6.9 cm (2.7 in)	<b>Temperature:</b> 0 to 60 °C
<b>Width:</b> 5.8 cm (2.28 in)	<b>Humidity:</b> 5-95% (noncondensing)

**Connections**

<b>Video:</b> BNC (Female)
<b>Output:</b> 8-Position Modular Jack

**Electrical Specifications**

<b>Bandwidth:</b> DC to 8 MHz	<b>Input Impedance (Source):</b> 75 $\Omega$ Unbal.
<b>Output Impedance (Twisted Pair):</b> 100 $\Omega$ Bal.	<b>Common Mode Rejection @ 50 MHz:</b> >40 dB
<b>Return Loss:</b> >25 dB	<b>Signal to Noise Ratio:</b> >60 dB
<b>Tested to FCC Rules and Regulations Part 15 and CISPR Pub. 22 for Class B Computing Devices</b>	



Copper

Video

Transmission

**380B Baseband  
Video Adapter (cont'd)**

## OPERATIONAL DISTANCES

Cable Type	Distance	Black and White
1010/2010	365 m (1200 ft)	670 m (2200 ft)
1061/2061/1071/2071	457 m (1500 ft)	762 m (2500 ft)

Product	Material ID	Ports	Packaging
380B	107136822	1 x BNC, 1 x RJ45	1/Pkg

## Copper

## Video

## Transmission

**380BA Baseband  
Video Adapter**

The **380BA Video Adapter** is an active (powered), coax-to-unshielded twisted pair (UTP), closed circuit television (CCTV) distribution solution. This twisted-pair media device can deliver an analog composite baseband video signal over a UTP cabling distance of up to 909 m (3000 ft) while ensuring a minimum receive signal of less than -3 dB, thus eliminating the need for coax.

A certified SYSTIMAX SCS component, the **380BA** is equipped with a BNC connector for CCTV signal input. So in combination with the 380B Adapter (on one end of the cable), the **380BA** (on the other end of the cable) can provide intrabuilding connectivity of baseband CCTV video and pan/tilt/zoom (PTZ) control signals.



**Figure 179**  
380BA Baseband  
Video Adapter



The **380BA** uses existing building wiring and information outlets. The **380BA** can be surface mounted either by using the adhesive-backed Velcro & No 153 strip provided or the screw tab holes.

**Physical Specifications**

<b>Height:</b> 2 cm (0.78 in)	<b>Weight:</b> 90 g (3.17 oz)
<b>Depth:</b> 6.9 cm (2.7 in)	<b>Temperature:</b> 0 to 60 °C
<b>Width:</b> 5.8 cm (2.28 in)	<b>Humidity:</b> 5-95% (noncondensing)

**Connections**

<b>Video:</b> BNC (Female)
<b>Output:</b> 8-Position Modular Jack (Female) Positions 7+8 Active

**Electrical Specifications**

<b>Bandwidth:</b> DC to 8 MHz	<b>Input Impedance (Source):</b> 75 Ω Unbal.
<b>Output Impedance (Twisted Pair):</b> 100 Ω Bal.	<b>Common Mode Rejection:</b> >50 dB
<b>Return Loss:</b> >20 dB	<b>Signal to Noise Ratio:</b> >60 dB
<b>Insertion Loss:</b> < 1.0 dB	

**OPERATIONAL DISTANCES**

Cable Type	Distance
1010/2010	636 m (2100 ft)
1061/2061/1071/2071	909 m (3000 ft)

Product	Material ID	Packaging
380BA	107988719	1/Pkg

## Copper

## Video

The **381A Video Adapter** is a baseband video adapter that provides connectivity to the 1010/2010, 1061/2061 or 1071/2071 24-AWG unshielded twisted-pair cable of SYSTIMAX SCS. The **381A Video Adapter** is used in pairs to support all red-green-blue (RGB) video monitors up to resolutions of 640 by 480 pixels and refresh rates up to 72 Hz.

The **381A** is connected to the building wiring in the work area and to SYSTIMAX SCS unshielded twisted-pair connecting hardware in the telecommunications closet or equipment room.

The **381A** can be mounted on the equipment in the work area using the adhesive-backed velcro strip provided, or it may be panel mounted in the work area or the telecommunications closet using screws and the mounting holes.

Six **381As** can be installed on the 811A Panel. The 811A Panel is a sheet-metal panel that mounts on a standard Electronic Industries Association (EIA) 48.3 cm (19 in) rack or on a wall. The 811A Panel is 4.5 cm (1.8 in) high and occupies one rack unit (1U). The **381A Video Adapters** can be installed, removed, or rearranged in the 811A Panel either before or after it is mounted.

See the SYSTIMAX SCS published "Baseband Video Application Guide" for design/configuration guidelines. The **381A** is UL Listed.



## Transmission

## 381A RGB Video Adapter



Figure 180  
381A RGB  
Video Adapter

## Physical Specifications

<b>Height:</b> 2.5 cm (0.98 in)	<b>Weight:</b> 90 g (3.17 oz)
<b>Depth:</b> 7.9 cm (3.11 in)	<b>Temperature:</b> 0 to 60 °C
<b>Width:</b> 6.2 cm (2.4 in)	<b>Humidity:</b> 5-95% (noncondensing)

## Connections

<b>Video:</b> BNC (Female) x 3	<b>Output:</b> 8-Position Modular Jack
--------------------------------	--

## Electrical Specifications

<b>Bandwidth:</b> DC to 30 MHz	<b>Input Impedance (Source):</b> 75 $\Omega$ Unbal.
<b>Output Impedance (Twisted Pair):</b> 100 $\Omega$ Bal.	<b>Common Mode Rejection @ 50 MHz:</b> >40 dB
<b>Tested to FCC Rules and Regulations Part 15 and CISPR Pub. 22 for Class B Computing Devices</b>	

## OPERATIONAL DISTANCES

Cable Type	Distances
1010/2010	100 m (328 ft)
1061/2061/1071/2071	152 m (500 ft)

Product	Material ID	Ports	Packaging
381A	106857402	3 x BNC to RJ45 Jack	1/Pkg

## Copper

## Video

The "S-Video" or Super VHS (SVHS) Modular Outlets provide baseband video connectivity to 24-AWG unshielded twisted pair (UTP) SYSTIMAX wiring. These outlets provide point-to-point transmission of analog baseband National Television System Committee ((NTSC)/Phase-Alteration Line (PAL)/SECAM S-Video signals. The **S-Video** outlet uses a 110 IDC (Insulation Displacement Contact) block to directly terminate to 4-pair building wiring. Each **S-Video** module connects to one UTP 4-pair cable.

The Outlets are compatible with SYSTIMAX M-Series modular faceplates, surface mount boxes, modular furniture faceplates and multimedia panels. While the M81SVHS-B Coupler Kit comes packaged with four M81 type mounting

**Features:**

- Provides the cost effective solution for Video
- Quick and easy installation
- Flexibility for Zone Wiring Applications
- SYSTIMAX Certified

## Transmission

## S-Video



Figure 180a  
S-Video

**S-Video Transmission Performance**

<b>Video Quality Across 200 ft (61 M)</b> UTP Cable <b>Attenuation:</b> DC to 5.5 MHz: 1.5 dB max <b>Crosstalk:</b> -60 dB at 5.5 MHz <b>Impedance:</b> S-Video female connector: 75 Ohms <b>UTP 110 Terminal Block:</b> 100 Ohms <b>Typical Frequency Bandwidth:</b> 42MHz	<b>Signal Strength Luminance Signal (Y):</b> 1 Vp-p (with 75 Ohms Termination) <b>Chrominance Signal (C):</b> 0.29 Vp-p (with 75 Ohms Termination)	<b>Wire Type Standard:</b> UTP Cat 5, 5e, or 6 #24 AWG 4 pair <b>Installation Resistance:</b> Minimum of 50 Mega-Ohms <b>Meet IEC Specification:</b> 933-5
---	---	--

**Punch Down S-Video**

Product	Material ID	Color
M81-SVHS-110-003	760005256	Black
M81-SVHS-110-246	760005264	Ivory
M81-SVHS-110-272	760005272	White
M81-SVHS-110-270	760005280	Gray
<b>Pass Through S-Video</b>		
M81-SVHS-PT	760003012	Black

## Copper

## Video

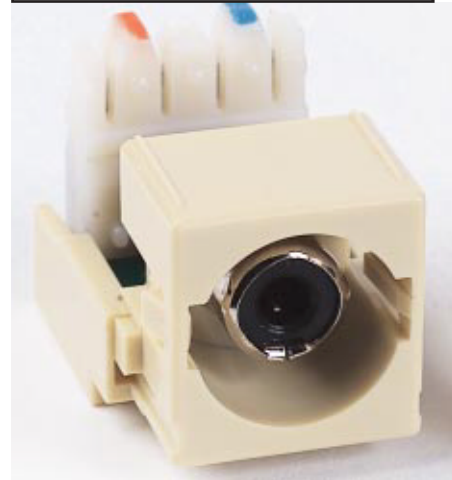
RCA outlets use a 110 IDC (Insulation Displacement Contact) block to directly terminate the 4-pair building wiring. RCA outlets are used for connecting audio and video appliances to 24-AWG (UTP) SYSTIMAX wiring. Each RCA outlet will connect to one pair of a UTP cable. The RCA modular outlets are offered with Red, White, Black or Yellow inserts. While the housings are offered in Electrical White, Electrical Ivory, Electrical Gray, or Black. The adapters are compatible with SYSTIMAX M-Series modular faceplates, surface mount boxes, modular furniture faceplates and multimedia panels. The M81RCA-B Coupler Kit comes packaged with four M81 type mounting adapters with 3 / 8 inch circular openings and a female to female RCA coupler.

**Features:**

- Provides the cost effective solution for Video
- Quick and easy installation
- Flexibility for Zone Wiring Applications
- SYSTIMAX Certified

## Transmission

## RCA Video Adapter



**Figure 180b**  
RCA Video Adapter

**RCA Performance across 200 ft (60 m) UTP**

<b>Impedance:</b>	RCA Female Connector: 75 Ohms
<b>UTP 110 Terminal Block:</b>	100 Ohms
<b>Signal Strength:</b>	1 Vp-p (with 75 Ohms Termination)
<b>Wire Type Standard UTP:</b>	Cat 5, 5e, or 6 #24 AWG 4 pair
<b>Insulation Resistance:</b>	Minimum of 50 Mega-Ohms

Product	Material ID	Color
M81-RCA-PT	760005454	White
M81-RCA-PT	760005462	Yellow
M81-RCA-PT	760005470	Red
M81-RCA-PT	760005488	Black

## Copper

## Video

The **384A Video Adapter** is a broadband (CATV) video device that performs common mode filtering, balancing and impedance matching to provide connectivity to SYSTIMAX SCS. It permits connectivity between broadband CATV video distribution equipment placed up to 100 m (328 ft) apart using SYSTIMAX Category 5 components (the distance limit is determined by the number of channels transmitted). Sheath sharing, within the same 4-pair cable, with baseband voice and/or data is supported.

The **384A** is equipped with an F-Type male connector plug on one end, and a 3.6 m (12 ft) section of 2-pair cordage with an RJ45 on the other (runs over one pair orange/white). The RJ45 should be connected to the work area information outlet, or the modular RJ45 jack panel in the telecommunication closet or equipment room. The F-Type plug is used to connect to the broadband video distribution equipment. See the SYSTIMAX SCS published "Video Application Guide" for design/configuration guidelines.



The **384A** is UL Listed.

## Transmission

## 384A Broadband Video Adapter



**Figure 181**  
384A Broadband  
Video Adapter

## Physical Specifications

**Length (Housing & F-Connector):** 5.8 cm (2.28 in)      **Cord Length:** 3.6 m (11.8 ft)

## Electrical Specifications

<b>Bandwidth:</b> 55 to 550 MHz	<b>Input Impedance (Source):</b> 75 $\Omega$ Unbal.
<b>Output Impedance (Twisted Pair):</b> 100 $\Omega$ Bal.	<b>Common Mode Rejection @ 50 MHz:</b> >40 dB
<b>Signal to Noise Ratio:</b> >60 dB	<b>Insertion Loss:</b> <3 dB
<b>Return Loss:</b> >20 dB	
<b>Distance Supported (CISPR Class B):</b> from 55.25 to 121.25 MHz: 100 m	
from 127.25 to 151.25 MHz: 70 m	
from 157.25 to 253.25 MHz: 50 m	
<b>Tested to FCC Rules and Regulations Part 15 and CISPR Pub. 22 for Class B Computing Devices</b>	

## Connections

**Input:** F-Type Connector Plug (Male)  
**Output:** 8-Position Modular Plug Positions 1+2 Active

Product	Material ID	Ports	Packaging
384A	107213605	F-Type to RJ45 Plug	1/Pkg

## Copper

## Video

## Transmission

385DP Broadband  
Distribution Panel

The **385DP Broadband CATV Distribution Panel** allows analog broadband video distribution over enhanced SYSTIMAX PowerSUM and GigaSPEED® Solutions.

The 19-inch wide rack mountable **385DP Broadband CATV Distribution Panel** is a passive self-terminating 1 by 16 coax-to-UTP CATV distribution solution that provides connectivity over 1061/2061 or 1071/2071 SYSTIMAX UTP LAN cables.

The **385DP** is equipped with an F-type coaxial input connector (female) and (16) 8-pin output modular jacks (female). A single 385DP distributes CATV signals for up to 16 locations.

The **385DP** is typically installed in a telecommunications closet or equipment room and transmits CATV signals in the horizontal subsystem to 384A Adapters located in the work location.



**Figure 182**  
385DP Broadband  
Distribution Panel

## Connections

**Input:** F-Type Connector Jack (Female)

**Output:** (16) 8-pin Modular Jacks (Female) Positions 1 & 2 active

**Emission:** Tested to FCC Part 76 and CISPR 22 Class B

**Safety:** UL, CSA and IEC 950

## Electrical Specifications

**Bandwidth:** 5 MHz - 550 MHz

**Total Channels (8 MHz per channel):** 58 Channels

**Insertion Loss:** 14.5 dB  $\Omega$  0.5 dB

**Return Loss:** > 15 dB

**Common Mode Rejection:** > 40 dB

**Signal to Noise Ratio:** > 60 dB

**Input Impedance:** 75  $\Omega$

**Isolation:** > 20 dB

## Operational Distances

60 meters - 77 channels for a minimum received signal level of 0dBmV

100 meters - 28 channels for a minimum received signal level of 0dBmV

100 meters - 50 channels for a minimum received signal level of -10dBmV

## Product

385DP

## Material ID

108120460

## Packaging

1/Pkg

## Copper Video

The **386S Video Adapter** is a passive S-Video/ high-fidelity audio surface mount adapter that provides point-to-point connectivity to the 1010/2010, 1061/2061, 1071/2071 24-AWG twisted-pair wiring of SYSTIMAX SCS. The **386S Adapter** is intended to primarily support S-Video/audio applications, found typically in schools (K-12), utilizing higher resolution video projectors and VCR/laser disk players.

The **386S Adapter** is connected to the building wiring at an information outlet (IO) in the work area and can be mounted with an 811A Panel (optional) located in the telecommunications closet (TC). The **386S Adapter** can be mounted in the work location using either the adhesive-backed velcro strip(s) or screw tab holes provided with the product. The 811A Panel can hold up to six **386S Adapters** in an EIA-310 48.3 cm (19 in) rack.

Phono plug cables and S-Video cables must be obtained locally and are not provided with the **386S Adapter**. The proper cord must also be used for the cable type.

Workstation or Modular Patch Cords may be used with 1010/2010 cable. However, only use the Modular Patch Cord with 1061/2061 and 1071/2071 cables to ensure the operational distances.

The **386SD Video Adapter** features Decora® strap for in-wall outlet installation and offers the same functionality as the 386S adapter.

## Transmission

### 386S Video Adapter



**Figure 183**  
386S Video Adapter



**Figure 184**  
386SD  
Video Adapter

### OPERATIONAL DISTANCES

Cable Type	Distance
1010/2010	365 m (1200 ft)
1061/2061/1071/2071	547 m (1500 ft)

Product	Material ID	Packaging
386S	108544487	1/Pkg
386SD	108544495	1/Pkg



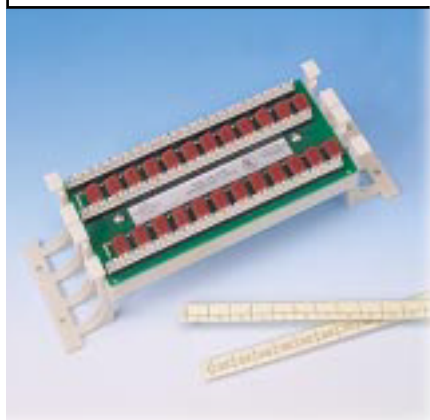
## Copper

## ISDN

The **110RA2-12 Terminating Resistor Block** provides the standard 100-ohm circuit termination used on Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) circuits. The **Terminating Resistor Block** consists of 110D-4 connecting blocks and a resistor/capacitor circuit that is soldered to a printed wiring board mounted on a SYSTIMAX SCS 110AW2 Wiring Block. The circuit consists of a 100-ohm resistor and DC-blocking capacitor in series across adjacent pairs of 110 Terminal Blocks. Each **110RA2-12 Terminating Resistor Block** provides twelve 2-pair circuit terminations and provides two output rows for use with point-to-multipoint as well as point-to-point configurations. The block comes with designation labels and holders to provide circuit identification. The termination circuit conforms to both ANSI and CCITT ISDN standards. The **110RA2-12 Terminating Resistor Block** provides the standard 100-ohm circuit termination used on Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) circuits. The **Terminating Resistor Block** consists of 110D-4 connecting blocks and a resistor/capacitor circuit that is soldered to a printed wiring board mounted on a SYSTIMAX SCS 110AW2 Wiring Block. The circuit consists of a 100-ohm resistor and DC-blocking capacitor in a series across adjacent pairs of 110 Terminal Blocks. Each **110RA2-12 Terminating Resistor Block** provides twelve 2-pair circuit terminations and provides two output rows for use with point-to-multipoint as well as point-to-point configurations. The block comes with designation labels and holders to provide circuit identification. The termination circuit conforms to both ANSI and CCITT ISDN standards.

## Transmission

## 110 RA2-12 Terminating Resistor Block



**Figure 185**  
110RA2-12 ISDN  
Terminating  
Resistor Block



## Physical Specifications

<b>Height:</b> 9.12 cm (3.59 in)	<b>Weight:</b> 380 g (0.83 lb)
<b>Width:</b> 27.23 cm (10.7 in)	<b>Temperature:</b> 0 to 60 °C
<b>Depth:</b> 8.25 cm (3.24 in)	<b>Humidity:</b> 5-95% (noncondensing)
<b>Input:</b> 12 x 2-pair ISDN BRI	
<b>Output:</b> 24 x 2-pair ISDN BRI (12 x 2-terminal multipoint configuration)	

## Electrical Specifications

**Termination Resistance:** 100  $\Omega$   $\pm$  5%

## Product

110RA2-12

## Material ID

107059875

## Circuit Size

12-2pr

## Packaging

1/Pkg



# Protectors

Chapter **7**

# Protectors

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### Copper

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## Copper

### Small Pair Count - 110ANA1

The **110ANA1 Multipair Protector Panel** provides indoor station protection for small-pair-count applications using the 3B, 3C, 4B, or 4C Series Protector Units. The unique internal wiring design prevents protector bypass. Designed with 110-Type connecting blocks for input and output terminations, the **110ANA1 Multipair Protector Panel** provides a modular, space-efficient package with quiet-front and simplified installation directly on the wall.

The individual protector modules should be ordered separately. The **110ANA1 Multipair Protector Panel** is UL Listed.



## Panels

### 110ANA1 Protector Panel



**Figure 186**  
110ANA1  
Protector Panel

## Physical Specifications

**Height:** 25.4 cm (10 in)

**Width:** 9.9 cm (3.9 in)

**Depth:** 6.6 cm (2.6 in)

Product	Material ID	Pair Size	Packaging
110ANA1-25	105736490	25	1/Pkg
110ANA1-6	105736482	6	1/Pkg
110ANA1E-6	105736540	6	1/Pkg
110ANA1E-6	105736565	6	1/Pkg
110ANA1C3-6	105736508	6	1/Pkg
110ANA1C4-6	105736524	6	1/Pkg
110ANA1E3-25	105736557	25	1/Pkg
110ANA1E4-25	105736573	25	1/Pkg
110ANA1C3-25	105736516	25	1/PKG
110ANA1C4-25	105736532	25	1/Pkg
110ANA1-10	107408551	10	1/Pkg

## Copper

### 190-Type Multipair Panel

## Panels

### 190 Protector Panel

The **190-Type Multipair Protector Panel** provides indoor station protection for exposed lines, where the cross-connect field is separated from the protector panels, at building entrance terminals.

#### Physical Specifications

**Height:** 50 Pair 13 in (33.0 cm) 100-Pair 24 in (61.0 cm)

**Width:** 4 in (10.2 cm)

**Depth:** 2.75 in (6.99 cm)

Product	Material ID	Pair Size	Packaging
190A1 - 50	102995073	50	1/Pkg
190A1 - 100	102995099	100	1/Pkg

## Copper

### 195-Type Multipair Protector panel

## Panels

### 195 Protector Panel

The **195-Type Multipair Protector Panel** provides indoor station protection for exposed lines, where the cross-connect field is separated from the protector panels, at the building entrance terminals. This 100-pair protector panel consists of a metal housing containing mountings for 3B-, 3C-, 4B-, or 4C-Series Protector Units (sold separately). It also includes 26-AWG stub cable that serves as a fusible link, four 24-AWG 12 inch (30.5 cm) output cables terminated with male or female connectors, and two connectors for external ground connections. The internal wiring design prevents protector bypass. Designed for large-pair-size installations, the 195 Multipair Protector Panel may be frame-mounted or wall-mounted with the wall-mounting bracket (included).



#### Physical Specifications

**Height:** 8 in (20.3 cm)

**Width:** 8 in (20.3 cm)

**Depth:** With wall bracket 9.25 in (23.5 cm) Without wall bracket 5 in (12.7 cm)

Product	Material ID	Input Stub	Output Connector
195A1-100-25 <sup>1</sup>	105564033	25 ft	Female
195A1-100-25 <sup>1</sup>	105404776	25 ft	Female
195A1-100-25M <sup>1</sup>	105564025	25 ft	Male
195B1-100-25M	105564058	25 ft	Male
195A1-100-50M <sup>1</sup>	105564041	50 ft	Male
195B1-100-25	105501050	25 ft	Female
195B1-100-50	105564066	50 ft	Female
195B1-100-100M	105564090	100 ft	Male
195B1-100-100	105564082	100 ft	Female
195B1-100-50M	105564074	50 ft	Male

<sup>1</sup> Bracket included.

## Copper

## 489 A&amp;B Models

## Panels

## Building Entrance Protector

The 489 Type Multipair Protector Panel provides protection for communication equipment and circuits exposed to voltage surges and sneak currents. The protector panel, designed for use with the 110 Connector System, consists of a plastic housing containing mountings for 3B, 3C, 4B or 4C Series Protector Units (sold separately). The 489A replaces the 188-Type equipped with 110-Type connecting blocks and the 489B replaces the 189-Type equipped with the 66-Type connecting block.

Input options for the protector panel include a swivel input stub and splice chamber equipped with a 110 Wiring Block or 710 or 3M connector. Both input options allow cable to be fed from the top or bottom. The conductors in the swivel stub and splice chamber are 26 AWG and satisfy the fuse link requirements. Insertion of the protector units into the protector panel complete the circuit to the 110 Connector System termination field output.

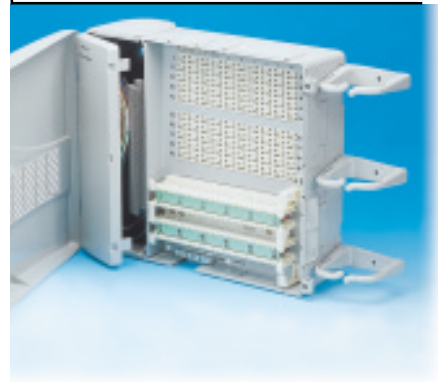


Figure 187  
489 A&B Building  
Entrance Protector



## Physical Specifications

Height: 31.4 cm (12.3 in)

Depth: 13.4 cm (5.2 in)

Width: 38.2 cm (15 in)

Product	Material ID	INPUT	OUTPUT	Pair Size	Packaging
489BCCI-025	107895138	Swivel Stub	66 Block	25	1/Pkg
489BCCI-050	107895146	Swivel Stub	66 Block	50	1/Pkg
489BCCI-100	107895153	Swivel Stub	66 Block	100	1/Pkg
489BCBI-025	107895096	66 Block	66 Block	25	1/Pkg
489BCBI-100	107895112	66 Block	66 Block	100	1/Pkg
489BCSI-025	107895203	710 Connector	66 Block	25	1/Pkg
489BCSI-100	107895229	710 Connector	66 Block	100	1/Pkg
489BCSI-050	107895211	710 Connector	66 Block	50	1/Pkg
489ACAI-050	107894917	110 Connector	110 Connector	50	1/Pkg
489ACAI-100	107894925	110 Connector	110 Connector	100	1/Pkg
489BCBI-050	107895104	66 Block	66 Block	50	1/Pkg
489ACCI-025	107894941	Swivel Stub	110 Connector	25	1/Pkg
489ACCI-050	107894958	Swivel Stub	110 Connector	50	1/Pkg
489ACCI-100	107894966	Swivel Stub	110 Connector	100	1/Pkg
489ACAI-025	107894909	110 Connector	110 Connector	25	1/Pkg
489ACMI-025	107894974	3M Connector	110 Connector	25	1/Pkg
489ACMI-050	107894982	3M Connector	110 Connector	50	1/Pkg
489ACSI-025	107895039	710 Connector	110 Connector	25	1/Pkg
489ACSI-050	107895047	710 Connector	110 Connector	50	1/Pkg
489ACSI-100	107895070	710 Connector	110 Connector	100	1/Pkg
489BCMI-025	107895161	3M Connector	66 Block	25	1/Pkg
489BCMI-100	107895187	3M Connector	66 Block	100	1/Pkg

## Copper

### 4B1-EW and 4C3S-75 Protector Units

SYSTIMAX® **Surge Arresters** are UL-listed five-pin devices that plug into the 110-ANA1 and 489-Type Multipair Protector Panels. Each unit is moulded to glass-reinforced, high-heat-distortion plastic (polybutylene terephthalate). Line pins are gold-plated for long-term, reliable performance and ground pins are solder-plated.

The 3B1-EW and 4B1-EW Gas-Tube Protector Units are 31-RL wide-gap, gas-tube surge arresters that provide overvoltage protection. The service life of these wide-gap gas tubes exceeds that of other gas-tube protectors. The **4B1-EW** includes heat coils for sneak current protection.

The 3C1S and 4C1S Solid-State Protector Units offer a solid-state alternative to gas-tube protectors. Solid-state protectors provide precision overvoltage protection for more sensitive circuits, and offer unlimited service life as long as the maximum rated impulse discharge current (200 amps) is not exceeded. The 4C1S includes heat coils for sneak current protection.

The **4C3S-75 Protector Unit** is a solid-state protector for use on circuits which do not normally experience ringing voltages and also includes heat coils for sneak current protection.



## Units

### Surge Arrester



**Figure 188**  
4B1-EW Protector Unit

### Physical Specifications

#### 4B1-EW and 4C3S-75

**Height:** 5.0 cm (2 in)

**Operational Temperature Range:** -40 to 65 °C

**Width:** 1.9 cm (0.74 in)

**Pair Size:** 1-pair

**Depth:** 1.3 cm (0.5 in)

### Electrical Specifications

#### 4C3S-75

**DC Breakdown Voltage @ 2kV/sec:** 60-90 V

**Surge Breakdown Voltage @100 V /μsec:** 220-300 V

**Insulation Resistance (PE-80):** > 100 M Ω

**DC Holdover Current:** 260 mA/52 V

**On-State Voltage @ 75 A:** < 10 V

**Response Time:** < 100 nsec

**Rated Impulse Discharge:** 100 A

**Capacitance(VDC=50 V, f=1 kHz, V AC=1 Vrms):** < 100pF

**Line Series Resistance:** < 4 Ω

**Sneak Current Operation (heat coils):** 540 mA <210 sec, 1 A <15 sec



# Copper

## 4B1-EW and 4C3S-75 Protector Units

### Units

### Surge Arrester (cont'd)

### Electrical Specifications (cont'd)

#### 4B1-EW

**DC Breakdown Voltage @ 2 kV/sec:** 265-425 V

**Surge Breakdown Voltage @ 100 V/μsec:** 200-800 V

**Insulation Resistance (PE-80):** 100 MΩ Typical

**DC Holdover Current (ANSI C62.31):** 150 V Typical

**Vented Breakdown Voltage (surpasses UL requirements):** <1000 V

**DC Arc Voltage:** 20 V Typical

**Glow-to-Arc Transition Current (ANSI C62.31):** 0.5 A Typical

**Capacitance (PE-80):** 10 pF

**AC Discharge (PE-80):** 65 A (11 cycles @ 60 Hz)

**Max. Impulse Discharge (PE-80):** 20 kA (8x 20 μsec waveform)

**Sneak Current Operation (heat coils @ 20°C):** 540 mA: <210 sec; 1A: <15 sec

**Service Life Characteristics:** 1 sec. 1 A AC Burst @ 60 Hz: >60 operations

1 sec. 10 A AC Burst @ 60 Hz: >20 operations

**Continuous 0.5 A AC @ 60 Hz:** 140 sec.

**10 A Surges (10 x 1 msec waveform):** >1000 operations

**100 A Surges (10 x 1 msec waveform):** >100 operations

**300 A Surges (10 x 1 msec waveform):** >50 operations

**For the stated number of operations, VB, VL and RL values remain within required ranges as follows:**

**VB:** 265-425 V, **VL:** <1000V and **RL:** >10 MΩ

Product	Material ID	Description	Application	Packaging	Color
3B1-EW	104410147	Gas-tube (wide gap)	Standard Service	1/Pkg	Black
3C1S	105514756	Solid-state	Standard Service	1/Pkg	Black
4C1S	104386545	Solid-state w/heat coils	Standard Service	1/Pkg	Black
4C3S-75	105581086	Solid-state (75V nominal) w/heat coils	Nonringing	1/Pkg circuits	Red
4B1-EW	104401856	Gas-tube (wide gap) w/heat coils	Standard Service	1/Pkg	Black

# Copper

## Category 5e OSP Protector

### Units

#### Protector

The **Category 5e OSP Protector unit** is designed to give protection for data circuits entering the building. Each unit protects a 4-pair (8-wire) circuit. When this protector is used with SYSTIMAX **Category 5e OSP Cable** and Components for a complete end-to-end installation, they form a Certified SYSTIMAX installation.

This solid state device protects sensitive network equipment from damage caused by transient voltage surges. UL 497 Listed, this primary protector serves high performance OSP cable between buildings and remote workstations, as well as hostile industrial environments within buildings. In order to protect data circuits, this protector meets the electrical specifications of Commercial Building Telecommunications Cabling Standard ANSI/TIA/EIA-568-A.



**Figure 189**  
Category 5  
OSP Protector



Not for use with voice applications over the Category 5e OSP cable.

### Physical Specifications

**Height:** 10.8 cm (4.25 in)

**Depth:** 3.6 cm (1.4 in)

**Width:** 10.8 cm (4.25 in)

### Electrical Specifications

**Protector Type:** 100% Solid State

**Clamping Voltage:** 16 VAC, nominal

**Maximum Response Time:** 2 - 5 nanoseconds

**Grounding Requirements:** 10 AWG for primary or 10 AWG for isolated Loop Applications

**Grounding Connection:** 8-32 screw to ground plate module

Product	Material ID	Pair Size	Packaging
C5P4T-16	108224874	4	1/Pkg



# Tools

Chapter

8

TOOLS

# Tools

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### Copper

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## Copper

## Termination Tools

There are several tools which can be used for terminating copper conductors on the SYSTIMAX® 110 Connector System.

The **D-914 Impact Tool** is used for hard-wire terminations (one at a time) on 110C Connecting Blocks. It consists of a plastic handle with a metal head. An adjustment switch on the handle allows HI or LO impact settings. Consult the connecting hardware installation instructions for the correct setting. The **D-914 Impact Tool** is red and “CUT” is labeled on the cut side.

The **D-914 Tool** uses a 110 Reversible Blade that inserts, or inserts and cuts off one conductor. In addition to the built-in blade storage compartment and impact adjustment control, the **D-914 Tool** handle has a spudger, wire picker and screw-driver bit.

The **788H1 Impact Tool** consists of a metal spring loaded handle with metal head housing a reversible insert (one side of the insert is for termination only and the other side is for terminate and trim). The handle is fitted with a rubber grip for better gripping and comfort. The **788H1** is used for terminating or terminating and trimming ten conductors at a time. It is also used for seating the 110C Connecting Block onto the 110 Wiring Block. The 788M2 Replacement Head can be ordered separately.

The **788K1 Wire Retention Tool** is used as an aid in holding down cable conductors when removing 110C Connecting Blocks from the 110 Wiring Block.

The **KS-22035-L2** (commonly known as the “Spudger”) is a small pencil shaped tool with a sharp, pointed L-shaped metal pick used to lift and remove small pieces of conductor insulation caught in the 110-type Wiring Block or between the plastic teeth of the 110C Connecting Block.

## Copper

## Impact &amp; Retention Tools



**Figure 190**  
788H1 Impact Tool,  
788K1 Wire Retention  
Tool, D-914 Impact Tool &  
788M2 Head



**Figure 191**  
D-914 Impact Tool

Product	Material ID	Description	Packaging
8762D Kit	406477794	Impact Tool (Handle + Blade), 1 cond.	1/Pkg
D-914 Impact Tool	407484971	Impact Tool (handle only), 1 cond.	1/Pkg
M110 Blade	407728427	Replacement Blade for the 8762D Impact Tool	1/Pkg
788H1 Tool	108062043	Impact Tool (Handle + Blade), 10 cond.	1/Pkg
788M2 Head	107975864	Replacement Head for the 788H1 Impact Tool	1/Pkg
788 KIT	407732585	Replacement Blades	1/Pkg
788K1 Tool	102655495	Wire Retention Tool	1/Pkg
KS-22035-L2	405423260	Spudger	1/Pkg
78A	108788201	Return Spring Kit	1/Pkg
78B	108788219	Release Washer Kit	1/Pkg

## Fiber

Connector Termination  
Tool Kit

The 1032F1 Tool Kit contains all the tools needed to field mount ST, STII, STII+ and SC fiber connectors on 3.0 mm cordage and on 900 micron buffered fiber using the EZ method.

A 102A Crimping Tool (Material ID: 700008253) can be ordered separately to allow installation of ST or STII connectors on 3.0 mm cordage. This kit can also be used to mount connectors using the epoxy method with the separately orderable 200A Curing Oven (for 110V with US-style plug, Material ID: 700008055) or 200A1 Curing Oven (for 220V with UK-style plug, Material ID: 700008048).

Connectors and consumable kits must be ordered separately.

## Fiber

## 1032F1 - Tool Kit



Figure 192  
1032F1 Fiber Connector  
Tool Kit

Product		Material ID	
1032F1 KIT		700005929	

Kit Quantity	Description	Replacement	
		Material ID	Quantity
1	1510B Crimping Tool	700008220	1
1	300B Microscope	700008063	1
1	1510A Polishing Tool	700008238	1
12	600B Connector Holders	700005143	1
1	700A Stripping Tool	700008261	1
1	1026A Heat Strip Tool	Unable to order individually	
2	971A-1 Holder Blocks	700008279	1
1	975A Cleaving Tool	700008287	1
1	Scissors	700008022	2
1	6-inch Scale	700008030	5
1	Alcohol Bottle	700008105	1
1	Glass Plate	Unable to order individually	
1	Stripping Tool (R4366)	700011158	1
1	Instruction Manual	Unable to order individually	
15	Micro Clips (1043A)	Unable to order individually	
12	SC Curing Fixtures	700008212	12
2	Modified SM/MM SC Grips	Unable to order individually	
1	ST II+ EZ Instruction Sheet	Unable to order individually	
1	SC EZ Instruction Sheet	Unable to order individually	
1	Rubber Polishing Pad	700005564	10
1	1039B Cut Length Template	700008204	5

## Fiber

Connector Termination  
Tool Kit

## Fiber

## 1032B5 - Tool Kit

The 1032B5 Tool Kit contains tools needed to field mount ST, STII, STII+ and SC fiber connectors on 3.0 mm cordage and on 900 micron buffered fiber using the epoxy method or EZ method (depending on the consumables ordered).

This tool kit comes with the 200A Curing Oven.

Connectors and consumable kits must be ordered separately.

Product	Material ID
1032B5 KIT	700006026

Kit Quantity	Description	Replacement	
		Material ID	Quantity
1	1510B Crimping Tool	700008220	1
1	300B Microscope	700008063	1
1	1510A Polishing Tool	700008238	1
12	600B Connector Holders	700005143	12
1	700A Stripping Tool	700008261	1
1	1026A Heat Strip Tool	Unable to order individually	
2	971A-1 Holder Blocks	700008279	1
1	975A Cleaving Tool	700008287	1
1	Scissors	700008022	2
1	6-inch Scale	700008030	5
1	Alcohol Bottle	700008105	1
1	Glass Plate	Unable to order individually	
1	Stripping Tool (R4366)	700011158	1
1	Instruction Manual	Unable to order individually	
15	Micro Clips (1043A)	Unable to order individually	
1	200A Curing Oven	700008055	1
12	SC Curing Fixtures	700008212	12
2	Modified SM/MM SC Grips	Unable to order individually	
1	ST II+ Epoxy Instruction Sheet	Unable to order individually	
1	ST II+ EZ Instruction Sheet	Unable to order individually	
1	SC Epoxy Instruction Sheet	Unable to order individually	
1	SC EZ Instruction Sheet	Unable to order individually	
1	Rubber Polishing Pad	700005564	10
1	1039B Cut-length Template	700008204	5



## Fiber

Connector Termination  
Tool Kit

## Fiber

## 1032H - Tool Kit

The 1032H Mini Tool Kit is intended for connectorization of buffered fiber with LC, SC, and ST multimode or singlemode connectors using the anaerobic method.

The kit does not contain the crimp tool for cordage connectorization.

Product	Material ID
1032H KIT	700005838

Kit Quantity	Description	Replacement	
		Material ID	Quantity
1	Acrylic Polishing Plate	Unable to order individually	
1	LC Microscope	700005887	1
1	Rubber Polishing Pad	700005564	10
1	ST/SC Microscope Adapter	Unable to order individually	
1	Stripping Tool (R4366)	700011158	1
1	1039B Cut-length Template	700008204	5
2	1510A1 Polishing Tools Plastic (ST/SC)	700008162	1
1	1039A ST Cut Length Template	Unable to order individually	1
2	T2001A1 Plastic Polishing Tools (LC)	700008170	1
2	LC Cut Length Template	700007974	1
12	600B1 Connector Holders (ST)	700005143	12
12	1510C Connector Holders (SC)	700008212	12
12	LC Connector Holders	700005135	12
1	975A Cleaving Tool	700008287	1
1	Scissors	700008022	2
1	5 x Eye Loupe	Unable to order individually	
15	1043A Micro Clips	Unable to order individually	
1 ea.	Microstrip Tool	106826886	1
1	700A Stripping Tool	700008261	1

## Fiber

Connector Termination  
Tool Kit

## Fiber

## D-182905 Upgrade Kit

This upgrade kit, when added to the 1032B5 or 1032F1 Tool Kit, provides the necessary tools and instructions to field-assemble LC multimode or singlemode connectors on 900 micron buffered fiber.

Product	Material ID
D-182905 KIT	700005895

Kit Quantity	Description	Replacement	
		Material ID	Quantity
1	LC Plastic Polishing Fixture	700008212	1
1	LC Microscope w/adapter	700005887	1
12	LC Connector Holder	700005135	12
1	Plastic Polishing Pad	Unable to order individually	
1	Instruction Sheet	Unable to order individually	

## Fiber

Connector Termination  
Tool Kit

## Fiber

## D-182959 Upgrade Kit

The **D-182959 Tool Upgrade Kit** for LC connectors provides the tools such as crimp jaws, heater pipes, and a polishing puck to terminate the LC connector onto either 900 micron buffered fiber or 1.6 mm cordage. The **D-182959 Kit** is to be used in concert with the 1032B5 and 1032F1 Tool Kits.

Product	Material ID
D-182959 KIT	700005853

Kit Quantity	Description	Replacement	
		Material ID	Quantity
1	T2001A Polishing Tool	700008170	1
1	LC Microscope	700005887	1
12	LC BTW Connector Holders	700005135	12
12	LC Jumper Connector Holders	700005846	12
1	971A-2 Holder Block	700008139	1
1	LC Cut Length Template	700007974	5
1	LC Instructions	Unable to order individually	
1	1510LC Crimping Tool	700008154	1
1	LC Stripper Guide Tube for 1026A	700008147	1
1	Ultra-Fine-Point Permanent Pen	Unable to order individually	
6	Heat Tube Assemblies	700002330	6
1	C1001B-2 Multimode LC Adapter	700002355	1

## Fiber

## Kits

This Consumables Kit contains supplies to field-assemble approximately 100 enhanced multimode STII+/SC connectors on jumper cordage, fiber cable or direct termination on outside plant cable fibers using the epoxy method. The kit does not include epoxy, alcohol, compressed air, connectors, or the buffer tubing kit required for termination of outside plant cable fibers.

For Epoxy information reference page 320.

## Consumables

STII+/SC Consumables -  
Epoxy Method

Figure 193  
D-182038  
Consumable Kit

Product		Material ID	
Kit-C-250M-P-100		700218043	

Kit Quantity	Description	Replacement	
		Material ID	Quantity
2 Pkgs.	Wipes	700006166	250 / pkg
1 Vial	Music Wire	700008394	4 Vials
1 Pkg.	Syringes	700007982	
1 Pkg.	Dispensing Tips	700011141	25 / pkg
25 Sheets	Paper Polishing Pad	Unable to order individually	
25 Sheets	Type A Polishing Paper	700006737	
25 Sheets	Type B Polishing Paper	700006745	

## Fiber

## Kits

## Consumables

## STII+/SC - EZ Method

This Consumables Kit contains supplies to mount approximately 100 multimode SC or STII+ (also ST and STII with a zirconia ferrule) connector plugs using the EZ method (with the 1032F1 tool kit).

The kit does not include the EZ Adhesive Kit, alcohol, compressed air, connectors, or the buffer tubing kit required for termination of outside plant cable fibers.

For Epoxy information reference page 320.

Product	Material ID
KIT -C-250M-Z-100	700218035

Kit Quantity	Description	Replacement	
		Material ID	Quantity
2 Pkgs.	Wipes	700006166	250 / pkg
1 Vials	Music Wire	700008394	4 Vials
15 Syringes	Syringes	700007982	
25 Tips	Dispensing Tips	700011141	25 / pkg
1 Copies	Instruction Sheet (STII+)	Unable to order individually	
1 Copies	Instruction Sheet (SC)	Unable to order individually	
25 Sheets	Type G Polishing Paper	Unable to order individually	
25 Sheets	Paper Polishing Pad	Unable to order individually	
25 Sheets	Type A Polishing Paper	700006737	25 Sheets

## Fiber

## Kits

## Consumables

**STII+/SC Consumables**  
**Singlemode- EZ Method**

This Consumables Kit contains supplies to field-assemble approximately 100 singlemode SC, STII, STII+ connectors with pre-radiused zirconia ferrules using EZ adhesive on cordage and Outside Plant (OSP) cables. The kit does not include the EZ Adhesive Kit, alcohol, compressed air, connectors, or the buffer tubing kit required for termination of outside plant cable fibers.

For Epoxy information reference page 320.

Product	Material ID
Kit-C-250S-Z-100	700218050

Kit Quantity	Description	Replacement	
		Material ID	Quantity
1 Vials	Music Wire	700008394	4 Vials
15	Syringe	700007982	
25	Dispensing Tips	7000011141	25 / pkg
2 Sheets	Type F Polishing Paper	700006695	10 Sheets
1 Copy	Instruction Sheet (SC)	Unable to order individually	
1 Copy	Instruction Sheet (STII+)	Unable to order individually	
25 Sheets	Paper Polishing Pad	Unable to order individually	
2 Pkgs.	Wipes	700006166	250 / pkg
25 Sheets	Type A Polishing Paper	700006737	25 Sheets
25 Sheets	Type G Polishing Paper	Unable to order individually	
20 Sheets	Type E Polishing Paper	Unable to order individually	

## Fiber

## Kits

## Consumables

STII+/SC Consumables  
Singlemode-Epoxy

This Consumables Kit contains supplies to field-assemble approximately 100 singlemode SC, or STII+ connectors with zirconia ferrules using heat-cured epoxy on jumper cordage cable or direct termination Epoxy. The kit does not include Epoxy, alcohol, compressed air, connectors, or the buffer tubing kit required for termination of outside plant cable fibers.

For Epoxy information reference page 320.

Product	Material ID
Kit-C-250S-P-100	700218068

Kit Quantity	Description	Replacement	
		Material ID	Quantity
1 Vials	Music Wire	700008394	4 Vials
20 Sheets	Type E Polishing Paper	Unable to order individually	
2 Sheets	Type F Polishing Paper	700006695	10 Sheets
25 Sheets	Type A Polishing Paper	700006737	100 Sheets
25 Sheets	Type D Polishing Paper	700006711	
25 Sheets	Paper Polishing Pad	Unable to order individually	
15	Syringe	700007982	
25	Dispensing Tips	700011141	25 / pkg
2 Pkgs	Wipes	700006166	250 / pkg
1	Instructions For STII+	Unable to order individually	
1	Instructions For SC	Unable to order individually	

## Fiber

## Kits

## Consumables

## D-182918 Kit

The D-182918 Kit contains Crimp Sleeves to terminate 1.6 mm cordage with STII+ fiber-optic connectors. The connectors, consumable kits adhesives or epoxy, and the 500B (700008188) insertion tool must also be ordered.

Product	Material ID
D-182918 KIT	700005879

Kit Quantity	Description	Replacement	
		Material ID	Quantity
1	Instruction Manual	Unable to order individually	-
100	Crimp Sleeves (STII+)	Unable to order individually	-

## Fiber

## Kits

## Consumables

## D-182919 Kit

The D-182919 Kit contains Crimp Sleeves to terminate 1.6 mm Cordage with SC fiber-optic connectors. The connectors, consumable kits adhesives or epoxy, and the 500B (700008188) insertion tool must also be ordered.

Product	Material ID
D-182919 KIT	700005861

Kit Quantity	Description	Replacement	
		Material ID	Quantity
1	Instruction Manual	Unable to order individually	-
100	Crimp Sleeves (SC)	Unable to order individually	-



## Fiber

## Kits

## Consumables

LC Consumables -  
Multimode-EZ or Epoxy

This Consumables Kit contains supplies to mount approximately 200 multimode LC connector plugs using the heat-cured epoxy or the EZ method.

The kit does not include the Epoxy or EZ Adhesive kit, alcohol, compressed air, connectors, or the buffer tubing kit required for termination of outside plant cable fibers.

For Epoxy information reference page 320.

Product	Material ID
Kit-C-125M-C-200	700218084

Kit Quantity	Description	Replacement	
		Material ID	Quantity
2 Pkgs.	Wipes	700006166	250 / pkg
1 Vials	Music Wire	700008394	4 Vials
15 Syringes	Syringes	700007982	
25 Tips	Dispensing Tips	700011141	25 / pkg
1	LC Instruction	Unable to order individually	
10 Sheets	Clear Spacers	Unable to order individually	
10 Sheets	Foam Pad (white)	Unable to order individually	
20 Sheets	Type J Polishing Paper (purple)	700006661	20 Sheets
5 Sheets	Type F Polishing Paper (yellow)	700006695	10 Sheets
6 Brushes	LC Adapter Brush	Unable to order individually	

## Fiber

## Kits

## Consumables

**LC Consumables -  
Singlemode Epoxy or EZ**

The **Consumables Kit** contains supplies to mount approximately 200 singlemode LC connectors onto 0.9  $\mu\text{m}$  buffered or 1.6 mm (0.06 in) cord for the epoxy or EZ installation method.

The kit does not include the Epoxy or EZ Adhesive kit, alcohol, compressed air, connectors, or the buffer tubing kit required for termination of outside plant cable fibers.

For Epoxy information reference page 320.

Product	Material ID
Kit-C-125S-C-200	700233638

Kit Quantity	Description	Replacement	
		Material ID	Quantity
50	Wipes	700006166	250
1 Vial	Music Wire	700008394	4 Vials
15 Syringes	Syringes (3 cc)	700007982	10 pkg
25 Tips	Dispensing Tips	700011141	125
6	LC Adapter Brush	108262569	6
1	LC Instructions	Unable to order individually	
10 Sheets	Clear Spacers	Unable to order individually	
10 Sheets	Foam Pad (White)	Unable to order individually	
5 Sheets	Type F Polishing Paper	700006695	10
20 Sheets	Type J Polishing Paper	700006661	20
5 Sheets	Type K Polishing Paper	700006687	5
10 Sheets	Type L Polishing Paper	700006679	

\* This Kit does not contain epoxy or adhesives.

## Fiber

## Supplies

## Consumables

## EZ and Epoxy Method

These consumable kits are for installing 100 SC/STII+ and up to 200 LC multimode or singlemode connectors using either the EZ method or the Epoxy method. Also available is a Loctite EZ adhesive kit.

Product Code	Material ID	Description
Kit-C-2.50M-Z-100	700218035	Consumable Kit to install 100 SC/STII+ multimode connectors using the EZ Method
Kit-C-2.50M-P-100	700218043	Consumable Kit to install 100 SC/STII+ multimode connectors using the Epoxy Method
Kit-C-2.50S-Z-100	700218050	Consumable Kit to install 100 SC/STII+ singlemode connectors using the EZ Method
Kit-C-2.50S-P-100	700218068	Consumable Kit to install 100 SC/STII+ singlemode connectors using the Epoxy Method
Kit-C-1.25M-C-200	700218084	Consumable Kit to install 200 LC multimode connectors using the Epoxy or EZ Method
Kit-C-1.25S-C-200	700233638	Consumable Kit to install 200 LC singlemode connectors using the Epoxy or EZ Method
EZ Adhesive Kit	760000810	Loctite 7090 Solvent less Primer/495 Super Bonder/648 Retaining Compound

## Fiber

## Supplies

## Consumables

## Epoxy

**Epoxy** is used with the consumable kits for the Epoxy Method. **Epoxy** consists of two compounds that, when mixed, eventually solidify. Heating the **Epoxy** mixture allows it to solidify much quicker as it hardens during the cooling process. **Epoxy** is injected into an LC, ST or SC fiber connector, the fiber is then inserted and placed in the curing oven. The Epoxy secures the fiber within the connector and provides extra protection to the fiber end during the polishing process. The kit provides 8-gram, 2-part **Epoxy** packages. Approximately 100 ST/SC or 200 LC can be terminated using an Epoxy package.

Product	Material ID	Packaging
Epoxy	700006109	15/Pkg

# Miscellaneous

Chapter **9**

# Miscellaneous

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## Copper

## SYSTIMAX® IDentifier

The **SYSTIMAX® IDentifier Labeling Solution** is a standards-compliant labeling software package using a Windows based software system. This software will support the SYSTIMAX cabling installation, including voice, data, video and/or building automation systems (BAS). Label types include card stock, adhesive and cable tie for cables, connecting hardware, patch panels and telecommunications outlets/faceplates.

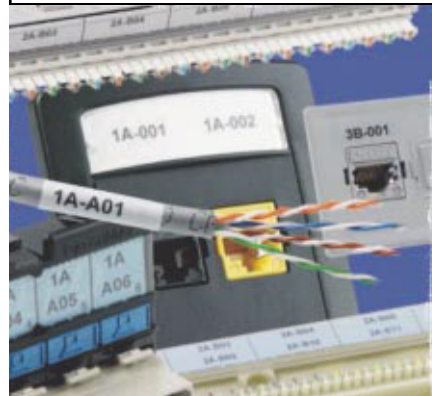
The **SYSTIMAX IDentifier Labeling Solution** allows quick creation of labels and eliminates the need for typing each individual identifying number. The software is designed for use with a Windows 32-bit platform compatible with Windows 95/98/NT/2000.

#### Features

- SYSTIMAX IDentifier labels are designed and sized to fit a wide variety of SYSTIMAX cables, connecting hardware, patch panels, and telecommunications outlets/faceplates.
- Labels are pre-cut or perforated for quick and easy use.
- Laser-printer compatible (card stock is also inkjet-printer compatible) printed with pair-division lines allowing one label type to be used for different 110-pair configurations.
- Available in Letter (8-1/2 x 11 in) or A4 (210 X 297 mm) format have space provided for job details.
- Labels are available in a variety of standard colors: White, blue, clear, purple, yellow, and assorted two-color card stock labels (e.g. blue/white, purple/yellow) come available with one color on each side of the sheet.
- Two-color adhesive labels come available with 3 sheets of blue and 2 sheets of white, or 3 sheets of purple and 2 sheets of yellow.
- Assorted color packs are available with one page of each of the following colors: gray, orange, green, brown, and red.

## Labeling Software

## SYSTIMAX® IDentifier



**Figure 194**  
SYSTIMAX IDentifier Labels

Product	Material ID	Packaging
SYSTIMAX IDentifier Professional	700054844	1/Pkg

For further information on this product please contact your local Account Representative or BusinessPartner.

## Copper

## SYSTIMAX IDentifier

## Labeling Software

SYSTIMAX IDentifier *cont'd*

Product	Material ID	Descriptions	Package	Label Color	Paper Size
<b>Cables &amp; Cords</b>					
AVL-CBL1-W-LT	700014012	Cable OD 4 mm - 8 mm (.157 in - .314 in) - All 4-pair cables/cords, 5201-002 to 012, BC-ZPX	PK of 5	White	8.5 x 11
AVL-CBL1-W-A4	700014046	Cable OD 4 mm - 8 mm (.157 in - .314 in) - All 4-pair cables/cords, 5201-002 to 012, BC-ZPX	PK of 5	White	A4
AVL-CBL2-W-LT	700014020	Cable OD 10 mm - 20 mm (.393 in - .787 in) - 1010A-025 to 100, 2010B-025 to 075, LGBC-018 to 072, 3xxX/4xxX Fiber (indoor use)	PK of 5	White	8.5 x 11
AVL-CBL2-W-A4	700014053	Cable OD 10 mm - 20 mm (.393 in - .787 in) - 1010A-025 to 100, 2010B-025 to 075, LGBC-018 to 072, 3xxX/4xxX Fiber (indoor use)	PK of 5	White	A4
AVL-CBL3-Y-LT	700014038	Cable OD 13 mm (.5 in) and above (water resistant label) - 2010B-100, 2001C-150, 2001C-200, 2001C-300, ARMM (all sizes), ANMW (all sizes), 3xxX/4xxX Fiber	PK of 5	Yellow	8.5 x 11
AVL-CBL3-Y-A4	700014061	Cable OD 13 mm (.5 in) and above (water resistant label) - 2010B-100, 2001C-150, 2001C-200, 2001C-300, ARMM (all sizes), ANMW (all sizes), 3xxX/4xxX Fiber	PK of 5	Yellow	A4
<b>*1100 Panel</b>					
AVL-1100-BW-LT	700014079	1100 Panels (Blue - Horizontal, White - Backbone Riser)	PK of 5	Blue/ White	8.5 x 11
AVL-1100-PY-LT	700014087	1100 Panels (Purple - Voice/Data Equipment, Yellow - BAS/Auxiliary Equipment)	PK of 5	Purple/Yellow	8.5 x 11
AVL-1100-AS-LT	700014095	1100 Panels (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	8.5 x 11
AVL-1100-BW-A4	700014103	1100 Panels (Blue - Horizontal, White - Backbone Riser)	PK of 5	Blue/White	A4
AVL-1100-PY-A4	700014111	1100 Panels (Purple - Voice/Data Equipment, Yellow - BAS/Auxiliary Equipment)	PK of 5	Purple/Yellow	A4
AVL-1100-AS-A4	700014129	1100 Panels (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	A4
<b>FlexiMAX Panel</b>					
AVL-FMM-BW-LT	700014137	FlexiMAX, MultiMAX Panels (Blue - Horizontal, White - Backbone Riser)	PK of 5	Blue 3 Sheets /White 2 Sheets	8.5 x 11
AVL-FMM-PY-LT	700014145	FlexiMAX, MultiMAX Panels (Purple - Voice/Data Equipment, Yellow - BAS/Auxiliary Equipment)	PK of 5	Purple 3 Sheets /Yellow 2 Sheets	8.5 x 11
AVL-FMM-AS-LT	700014152	FlexiMAX, MultiMAX Panels (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	8.5 x 11
AVL-FMM-BW-A4	700014160	FlexiMAX, MultiMAX Panels (Blue - Horizontal, White - Backbone Riser)	PK of 5	Blue 3 Sheets/ White 2 Sheets	A4
AVL-FMM-PY-A4	700014186	FlexiMAX, MultiMAX Panels (Purple - Voice/Data Equipment, Yellow - BAS/Auxiliary Equipment)	PK of 5	Purple 3 sheets/ Yellow 2 sheets	A4
AVL-FMM-AS-A4	700014194	FlexiMAX, MultiMAX Panels (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	A4
<b>*PATCHMAX® Panel</b>					
AVL-PM-BW-LT	700014202	PATCHMAX Panels (Blue - Horizontal, White - Backbone Riser)	PK of 5	Blue/White	8.5 x 11
AVL-PM-PY-LT	700014210	PATCHMAX Panels (Purple - Voice/Data Equipment, Yellow - BAS/Auxiliary Equipment)	PK of 5	Purple/Yellow	8.5 x 11
AVL-PM-AS-LT	700014228	PATCHMAX Panels (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	8.5 x 11
AVL-PM-BW-A4	700014236	PATCHMAX Panels (Blue - Horizontal, White - Backbone Riser)	PK of 5	Blue/White	A4
AVL-PM-PY-A4	700014244	PATCHMAX Panels (Purple - Voice/Data Equipment, Yellow - BAS/Auxiliary Equipment)	PK of 5	Purple/Yellow	A4
AVL-PM-AS-A4	700014251	PATCHMAX Panels (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	A4
<b>110 Hardware</b>					
AVL-110-BW-LT	700014269	110 Hardware (Blue - Horizontal, White - Backbone Riser)	PK of 5	Blue/White	8.5 x 11
AVL-110-PY-LT	700014277	110 Hardware (Purple - Voice/Data Equipment, Yellow - BAS/Auxiliary Equipment)	PK of 5	Purple/Yellow	8.5 x 11
AVL-110-AS-LT	700014293	110 Hardware (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	8.5 x 11
AVL-110-BW-A4	700014335	110 Hardware (Blue - Horizontal, White - Backbone Riser)	PK of 5	Blue/White	A4
AVL-110-PY-A4	700014343	110 Hardware (Purple - Voice/Data Equipment, Yellow - BAS/Auxiliary Equipment)	PK of 5	Purple/Yellow	A4
AVL-110-AS-A4	700014350	110 Hardware (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	A4

\*Note - The 1100 and PATCHMAX panels use a self adhesive holder which is ordered separately - Material ID 760001404.

Product	Material ID	Descriptions	Package	Label Color	Paper Size
<b>110 VisiPatch™</b>					
AVL-VPP-BW-LT	700014368	110 VisiPatch Hardware (Blue - Horizontal, White - Backbone Riser)	PK of 5	Blue/White	8.5 x 11
AVL-VPP-PY-LT	700014376	110 VisiPatch Hardware (Purple - Voice/Data Equipment, Yellow - BAS/Auxiliary Equipment)	PK of 5	Purple/Yellow	8.5 x 11
AVL-VPP-AS-LT	700014384	110 VisiPatch Hardware (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	8.5 x 11
AVL-VPP-BW-A4	700014392	110 VisiPatch Hardware (Blue - Horizontal, White - Backbone Riser)	PK of 5	Blue/White	A4
AVL-VPP-PY-A4	700014400	110 VisiPatch Hardware (Purple - Voice/Data Equipment, Yellow - BAS/Auxiliary Equipment)	PK of 5	Purple/Yellow	A4
AVL-VPP-AS-A4	700014418	110 VisiPatch Hardware (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	A4
AVL-VP4-BL-LT	700014426	110 VisiPatch 4-Pair Cords (Blue - Horizontal)	PK of 5	Blue	8.5 x 11
AVL-VP4-W-LT	700014434	110 VisiPatch 4-Pair Cords (White - Backbone Riser)	PK of 5	White	8.5 x 11
AVL-VP4-P-LT	700014442	110 VisiPatch 4-Pair Cords (Purple - Voice/Data Equipment)	PK of 5	Purple	8.5 x 11
AVL-VP4-Y-LT	700014459	110 VisiPatch 4-Pair Cords (Yellow - BAS/Auxiliary Equipment)	PK of 5	Yellow	8.5 x 11
AVL-VP4-AS-LT	700014467	110 VisiPatch 4-Pair Cords (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	8.5 x 11
AVL-VP4-BL-A4	700014475	110 VisiPatch 4-Pair Cords (Blue - Horizontal)	PK of 5	Blue	A4
AVL-VP4-W-A4	700014483	110 VisiPatch 4-Pair Cords (White - Backbone Riser)	PK of 5	White	A4
AVL-VP4-P-A4	700014491	110 VisiPatch 4-Pair Cords (Purple - Voice/Data Equipment)	PK of 5	Purple	A4
AVL-VP4-Y-A4	700014509	110 VisiPatch 4-Pair Cords (Yellow - BAS/Auxiliary Equipment)	PK of 5	Yellow	A4
AVL-VP4-AS-A4	700014517	110 VisiPatch 4-Pair Cords (Orange, Green, Gray, Brown, and Red Labels)	PK of 5	Assorted	A4
<b>FACEPLATES</b>					
AVL-FPL-W-LT	700014525	L-Series, AS-Series Faceplates, A-Series Label Kit (White)	PK of 5	White	8.5 x 11
AVL-FPL-W-A4	700014533	L-Series, AS-Series Faceplates, A-Series Label Kit (White)	PK of 5	White	A4
AVL-FPLE-W-LT	700014541	LE-Series Faceplates (White)	PK of 5	White	8.5 x 11
AVL-FPLE-W-A4	700014558	LE-Series Faceplates (White)	PK of 5	White	A4
AVL-FPS1-W-LT	700014566	Single Adhesive 6 mm (0.25in)	PK of 5	White	8.5 x 11
AVL-FPS1-CL-LT	700014574	Single Adhesive 6 mm (0.25in)	PK of 5	Clear	8.5 x 11
AVL-FPS1-W-A4	700014582	Single Adhesive 6 mm (0.25in), LF8x Clip (EMEA-French, Italian, UK)	PK of 5	White	A4
AVL-FPS1-CL-A4	700014590	Single Adhesive 6 mm (0.25in), LF8x Clip (EMEA-French, Italian, UK)	PK of 5	Clear	A4
AVL-FPS2-W-LT	700014608	Surface-Mount Boxes, Modular Furniture, Consolidation Points, Single Adhesive 8 mm (0.314in) - SMB, Faceplates, CPs	PK of 5	White	8.5 x 11
AVL-FPS2-CL-LT	700014616	Surface-Mount Boxes, Modular Furniture, Consolidation Points, Single Adhesive 8 mm (0.314in) - SMB, Faceplates, CPs	PK of 5	Clear	8.5 x 11
AVL-FPS2-W-A4	700014624	Surface-Mount Boxes, Modular Furniture, Consolidation Points, Single Adhesive 8 mm (0.314in) - SMB, Faceplates, CPs	PK of 5	White	A4
AVL-FPS2-CL-A4	700014632	Surface-Mount Boxes, Modular Furniture, Consolidation Points, Single Adhesive 8 mm (0.314in) - SMB, Faceplates, CPs	PK of 5	Clear	A4
AVL-FPD1-W-LT	700014640	Dual (1 x 2) / Quadplex (2 x 2) Adhesive Faceplates	PK of 5	White	8.5 x 11
AVL-FPD1-CL-LT	700014657	Dual (1 x 2) / Quadplex (2 x 2) Adhesive Faceplates	PK of 5	Clear	8.5 x 11
AVL-FPD1-W-A4	700014665	Dual (1 x 2) / Quadplex (2 x 2) Adhesive, MTDL80 (EMEA-Scandinavian) Faceplates	PK of 5	White	A4
AVL-FPD1-CL-A4	700014673	Dual (1 x 2) / Quadplex (2 x 2) Adhesive, MTDL80 (EMEA-Scandinavian) Faceplates	PK of 5	Clear	A4
AVL-FPCE-W-LT	700014681	CE-Series Faceplates for Modular Furniture (1 x 4)	PK of 5	White	8.5 x 11
AVL-FPCE-W-A4	700014699	CE-Series Faceplates for Modular Furniture (1 x 4)	PK of 5	White	A4
AVL-FPFR1-W-A4	700014707	M12, M12LG Faceplates (EMEA-French)	PK of 5	White	A4
AVL-FPSC1-W-A4	700014715	MFUGA, MFUGAIS Faceplates (EMEA-Scandinavian)	PK of 5	White	A4
AVL-FPSC2-W-A4	700014723	MFUGAS, MCAN, M12D/M12E/SENSIQ Faceplates (EMEA-Scandinavian)	PK of 5	White	A4
AVL-FPSC2-CL-A4	700014731	MFUGAS, MCAN, M12D/M12E/SENSIQ Faceplates (EMEA-Scandinavian)	PK of 5	Clear	A4
AVL-FPBG1-W-A4	700014749	M12D, M14D (EMEA-UK), M1893 x Faceplates (EMEA-Benelux/German)	PK of 5	White	A4
AVL-FPBG1-CL-A4	700014756	M12D, M14D (EMEA-UK), M1893 x Faceplates (EMEA-Benelux/German)	PK of 5	Clear	A4



Fiber

Cable Clamps

The **12A1 Clamp** is used to secure and ground one fiber-optic metallic sheath cable. The clamp consists of a mounting bracket, two plastic half-clamps, and suitable grounding hardware.

The **12A2 Clamp** is for use with nonmetallic sheath fiber-optic cables.

Clamps

Metallic Sheath  
Cable Clamp



Figure 195  
Cable Clamps

Product	Material ID	Packaging
12A1	700025513	1/Pkg
12A2	700025653	1/Pkg

## Fiber

## Buffer Tubing Kit

The D-181755 PVC Buffer Tubing Kit contains buffer tubing and cable end prep materials for direct termination of connectors on campus cable. This kit will buffer approximately 100 fibers, but contains only one blocking kit (one splitter kit should be ordered for each additional cable end). B-Sealant should also be ordered separately.

## Consumables

## Tubing Kit



Figure 196  
D-181755 Buffer  
Tubing Kit

Product		Material ID	
D-181755		700006117	

Kit Quantity	Description	Replacement	
		Material ID	Quantity
1 Reel	64 m Buffer Tube (900 micron)	845769272	5 Reels
5	Syringes	700007982	10 Syringes
1	Wire Marker Book	700007966	1
1 Bag	Rosin Bag	700002405	5
10 Ties	Miniature Cable Ties	105257448	50 Ties
1	Instruction Sheet	Unable to Order Individually	–
61 cm	4.2 mm Ins. Diam. Clear PVC Tubing	Unable to Order Individually	–
30 cm	6 mm Ins. Diam. Clear PVC Tubing	Unable to Order Individually	–
30.5 cm	7.5 mm Ins. Diam. Clear PVC Tubing	Unable to Order Individually	–
7.6 m	2.9 x 0.4 mm Ins. Diam. PVC Tubing	Unable to Order Individually	–
61 cm	4.8 mm Ins. Diam. Heat-Shrinkable Tubing	Unable to Order Individually	–
1 Splitter	Six-Unit Splitter D-181781	700011125	1 Splitter
1 Splitter	Eight-Unit Splitter D-181683	700006125	1 Splitter

Fiber

Splitter Kit

The **D-181781 Six-Unit Splitter** is used for blocking and organizing fibers when prepping campus cable. The splitter has one core tube size (1.0 cm (0.393 in)) inlet and six PVC tube size outlets.

The **D-182806 Six-Unit Splitter** fits 4.1 mm (0.16 in) and 5.1 mm (0.20 in) core tubes. This splitter can be used with low fiber count campus cable which has a small core tube size.

They are the ideal devices to split bundled fibers into separate groups for routing to locations for shelves and cabinets.

Buffer Tubing Kits and B-Sealant should be ordered separately.

Consumables

D-181781 Six-Unit



Figure 197  
Splitter Kit

Product	Material ID	Packaging
D-181781	700011125	1/Pkg
D-182806	700010960	1/Pkg

Fiber

Splitter Kit

Consumables

D-181683 Eight-Unit

The **D-181683 Eight-Unit Splitter** is used for blocking and organizing fibers when prepping campus cable. The splitter has one core tube size (1.2 cm (0.472 in)) inlet and eight PVC tube size outlets.

Buffer Tubing Kits and B-Sealant should be ordered separately.

Product	Material ID	Packaging
D-181683	700006125	1/Pkg

## Fiber

## Splitter Kit

## Consumables

## B-Sealant

The **B-Sealant** is used for water blocking campus cable ends. It comes in a tooth paste-like 85 g (3 oz) tube. One tube can effectively water block approximately 5-10 cable ends.

Product	Material ID	Packaging
AT-8502	700010911	1/Pkg

## Fiber

## Splitter Kit

## Consumables

## D-183016

The **D-183016 Ribbon Break Out Kit** supports the fiber while the technician terminates the cable.

Product	Material ID	Packaging
D-183016	108459488	1Pkg

## Fiber

## Splitter Kit

## Consumables

Loose Tube Single Fiber  
Breakout Kit

Each kit breaks out 250  $\mu$ m fibers from a multi fiber, loose tube into individual 900  $\mu$ m buffer tubes.

Product	Material ID	Packaging
6 Fiber Kit	Foo-300-008	1Pkg
12 Fiber Kit	Foo-300-009	1Pkg

## Miscellaneous

SYSTIMAX Cable  
Management SoftwareManagement  
SoftwareSYSTIMAX Cable  
Management Software

**SYSTIMAX Cabling Manager (CM)** is a powerful Windows-based cable management software tool designed to help you manage the physical layer of your telecommunications network efficiently and cost-effectively. Backed by SYSTIMAX Labs – known worldwide for quality and innovation – it is engineered to work seamlessly with your SYSTIMAX connectivity solution.

**SYSTIMAX CM** is designed for installations with up to 20,000 outlets per building and requiring frequent moves, adds and changes. In installations where buildings are physically separate, it can support multiple databases.

Much more than software, SYSTIMAX CM is a full-service solution that includes training plus assistance with set-up and operation. These services are provided at the local level by a network of Authorized **SYSTIMAX CM** Service Providers -- Value-Added Resellers (VARs) who understand your individual site requirements and organizational needs and have completed extensive training in SYSTIMAX products and related services. Beyond training, they can count on support from our own regional service centers and experienced software development team.

**SYSTIMAX Cable Management hardware requirements**

Operating System	Microsoft Windows NT™ 4.0 (Service Pack 3) or Windows 95® or Windows 98® Windows 2000®
Central Processor Unit	IBM or 100% compatible computer with 450 MHz Pentium™ II (or equivalent) processor
Memory	128 MB Random Access Memory (RAM)
Hard Drive	200 MB required for system software, plus 100 MB per 1,000 outlets documented
Display	XVGA (1024 x 768) or higher-resolution monitor with display card, set at 65K colors or more (a 17-inch monitor is recommended)
Peripherals	A mouse or compatible pointing device. Access to a CD-ROM drive for system installation. Microsoft Windows-compatible printer required for printing reports and work orders. An Internet Connection is recommended to access SYSTIMAX CM support web site and download component library and software updates.
Import File Formats	CAD AutoCAD DWG, DXF, and other formats supported by TurboCAD Pro
User Directory	Comma Separated Values (CSV)

Product	Material ID
SYSTIMAX CM software and user documentation (2,500 outlet capacity)	108413733
SYSTIMAX CM capacity upgrade (adds 2,500 outlets to a system with 2, 500 or more outlets)	108413964
Cabling Mgr., 1,000 outlet or upgrade demo	108550682
Cabling Mgr., add 1 concurrent user	108833873
Cabling Mgr., doc. only, no license	700053481
Cabling Mgr., add 1,500 outlets	108550674

\*For more information please access our web at <http://connectivity.avaya.com/systimax/products/software.htm>

# Material IDs & Products

Chapter **10**

# Material IDs & Products

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# Appendix

Chapter

11

# Appendix

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## Glossary

<b>μm</b>	See Micron (μm).
<b>10BASE-FL</b>	An implementation of the Institute of Electrical and Electronic Engineers (IEEE) Ethernet standard on 62.5/125-μm fiber-optic cable, a baseband medium of 10 Mb/s.
<b>10BASE-T</b>	An implementation of the Institute of Electrical and Electronic Engineers (IEEE) Ethernet standard on 24-AWG, unshielded, twisted-pair wiring, a baseband medium of 10 Mb/s.
<b>10BASE2</b>	An implementation of the Institute of Electrical and Electronic Engineers (IEEE) Ethernet standard on thin coaxial cable, a baseband medium of 10 Mb/s. The maximum segment length is just under 200 m (656 ft).
<b>10BASE5</b>	An implementation of the Institute of Electrical and Electronic Engineers (IEEE) Ethernet standard on twinaxial cable, a baseband medium of 10 Mb/s. The maximum segment length is 500 m (1,640 ft).
<b>100BASE-T</b>	Official project name for 100 Mb/s Fast Ethernet.
<b>100BASE-T4</b>	100 Mb/s Fast Ethernet using 4-pair Category 3 cable.
<b>100BASE-TX</b>	100 Mb/s Fast Ethernet using 2-pair Category 5 cable.
<b>100VG-ANY LAN</b>	100 Mb/s LAN using Demand Priority Protocol originally developed by Hewlett Packard and AT&T for Category 3 cable.
<b>1000BASE-T</b>	A specification for Gigabit Ethernet over copper wire (IEEE Standard 802.3ab). The standard defines 1 Gb/s data transfer over distances of up to 100 meters using four pairs of Category 5e balanced copper cabling and a 5-level coding scheme.
<b>1000BASE-LX</b>	A specification for Gigabit Ethernet over fiber-optic cable (IEEE Standard 802.3 z) at 1300 nm wavelength.
<b>1000BASE-SX</b>	A specification for Gigabit Ethernet over fiber-optic cable (IEEE Standard 802.3 z) at 850 nm wavelength.
<b>1000BASE-TX</b>	A specification for Gigabit Ethernet over copper wire (TIA/EIA). The standard defines 1 Gb/s data transfer over distances of up to 100 meters using four pairs of Category 6 balanced copper cabling.
<b>10GBASE-ER</b>	Serial 10 Gb/s Ethernet operating on singlemode fiber with long-wave lasers (1550 nm). Intended for distances up to 40 Km.
<b>10GBASE-EW</b>	WAN-capable serial 10 Gb/s Ethernet operating on singlemode fiber with longwave lasers (1550 nm), including a simplified SONET/SDH framer.
<b>10GBASE-LR</b>	Serial 10 Gb/s Ethernet operating on singlemode fiber with long-wave lasers (1300 nm). Intended for distances up to 10 Km.
<b>10GBASE-LW</b>	WAN-capable serial 10 Gb/s Ethernet operating on singlemode fiber with longwave lasers (1300 nm), including a simplified SONET/SDH framer.
<b>10GBASE-LX4</b>	Coarse Wave Division Multiplexing (CWDM) 10 Gb/s Ethernet operating on multimode or singlemode fiber with long-wave lasers (1300 nm). This version is intended to support 10 Gb/s on the installed base of multimode fiber, but the complexity of CDWM and 1300 nm transmission places a significant premium on this optical implementation. It requires mode-conditioning patch cords for operation on multimode fiber.

Glossary (*cont'd*)

<b>10GBASE-SR</b>	Serial 10 Gb/s Ethernet operating on multimode fiber with short-wave lasers (850 nm). This is the lowest cost optical implementation of 10 Gigabit Ethernet, and supports up to 300 m on Laser Optimized Multimode Fiber.
<b>10GBASE-SW</b>	WAN-capable Serial 10 Gb/s Ethernet operating on multimode fiber with sortwave lasers (850 nm), including a simplified SONET/SDH framer.
<b>10 Gigabit Ethernet</b>	As specified in IEEE 802.3af, a range of Ethernet implementations supporting 10 Gb/s for LAN and WAN implementations.
<b>802.3</b>	Defined by the Institute of Electrical and Electronic Engineers (IEEE), these standards govern the use of the Carrier Sense Multiple Access/Collision Detection (CSMA/CD) network access method used by Ethernet networks.
<b>802.5</b>	Defined by the Institute of Electrical and Electronics Engineers (IEEE), these standards govern the use of the token ring network access method.
<b>802.11</b>	Defined by the Institute of Electrical and Electronics Engineers (IEEE), these standards govern the use of wireless LANs.
<b>A</b>	<i>See</i> Ampere ( <b>A</b> ).
<b>Adapter</b>	A device that (1) enables different sizes or types of plugs to mate with one another or to fit into an information outlet, (2) provides for the rearrangement of leads, (3) allows large cables with numerous wires to fan out into smaller groups of wires, or (4) makes interconnections between cables.
<b>Ad Hoc Cabling</b>	Cabling scheme where different types of cabling components from different vendors are linked together to form a cabling system.
<b>Administration Point</b>	A location at which communications circuits are administered; that is, rearranged or rerouted by means of cross connections, interconnection, or information outlets.
<b>Administration Subsystem</b>	The part of a premises distribution system that includes the distribution hardware components where you can add or rearrange circuits. These components include cross-connects, interconnects, telecommunication outlets, and their associated patch cords and plugs. Also called "administration points." <i>See also</i> <b>Cross-Connect and Telecommunications Outlet (TO)</b> .
<b>American National Standards Institute (ANSI)</b>	Organization responsible for the definition and maintenance of the Fiber Distributed Data Interface (FDDI) standard. ANSI is the principal group in the United States for defining standards. ANSI represents the U.S. in the International Standards Organization (ISO).
<b>American Wire Gauge (AWG)</b>	The standard gauge for measuring the diameter of copper, aluminum and other conductors.
<b>Ampere (A)</b>	A standard unit of current. One ampere of current is produced by one coulomb of charge passing a point in one second.
<b>Analog Signal</b>	A signal that represents information in a continuously variable and directly measurable physical quantity, such as voltage. Shaped like a wave, analog signals, such as those transmitted over a telephone channel, vary in both frequency and amplitude proportionate to the voice or other signals initiating them. <i>See also</i> <b>Digital Signal</b> .

## Glossary (*cont'd*)

<b>Analog Transmission</b>	A method of signal transmission in which the shape of the signal is a continuously variable and directly measurable physical quantity such as voltage.
<b>ANSI</b>	<i>See American National Standards Institute (ANSI).</i>
<b>Application</b>	A system, with its associated transmission method which is supported by telecommunications cabling.
<b>Application Layer</b>	The uppermost layer (layer 7) of the open systems interconnection (OSI) model. This layer is concerned with support to the user application and is responsible for managing the communication between applications, e.g. Email, File transfer, etc.
<b>ASCII</b>	The American Standard Code for Information Interchange. A widely-used 7 or 8-bit binary code used to represent alphabetic and numeric characters in computer understandable form.
<b>Asynchronous</b>	Two or more signals sourced from independent clocks, therefore having different frequency and phase relations.
<b>Asynchronous Data Transfer</b>	A method of data transfer in which each alphabetic or numeric character (represented by 7 or 8 bits) is preceded by 'start' and 'stop' bits to delineate the 7/8 bit pattern from the ideal pattern which otherwise occupies the (digital) transmission medium.
<b>Asynchronous Transfer Mode (ATM)</b>	A high-speed cell-based switching and multiplexing technology based on segmentation of voice, data and video into fixed packets (cells). These cells are transferred along switched paths and are not received on a regular basis (hence the term asynchronous).
<b>Asynchronous Transmission</b>	A data transmission technique controlled by start and stop bits at each end of a character and characterized by an undetermined time interval between characters.
<b>ATM</b>	<i>See Asynchronous Transfer Mode.</i>
<b>Attenuation</b>	The effect of signal reduction, experienced with accumulating line length or distance of radio transmission.
<b>AWG</b>	<i>See American Wire Gauge (AWG).</i>
<b>Backbone(s)</b>	The part of a premises distribution system that includes a main cable route and facilities for supporting the cable from the equipment room to the upper floors, or along the same floor to the wiring closets.
<b>Backbone/Riser Closet</b>	<i>See Telecommunications Closet/Room.</i>
<b>Backbone/Riser Subsystem</b>	<i>See Riser Backbone Subsystem.</i>
<b>Balanced Circuit</b>	A circuit where equal and opposite signals are generated and sent on to two conductors. The better the balance of a circuit, the lesser is its emissions and the greater is its noise immunity (hence the better is its EMC performance).
<b>Balanced Twisted Pair Cable</b>	A cable consisting of one or more metallic symmetrical cable elements (twisted pairs or quads).
<b>Balun</b>	A device for matching impedance between a balanced to unbalanced line, usually twisted-pair and coaxial cable.



## Glossary (*cont'd*)

<b>Bandwidth</b>	The range of frequencies that can be used for transmitting information on a channel. It indicates the transmission-carrying capacity of a channel. Thus, the larger the bandwidth, the greater the amount of information that can pass through the circuit. Measured in Hertz or b/s or MHz-km (for fiber).
<b>Baseband</b>	A network in which the entire bandwidth of the transmission medium is used as a single digital signal. Unlike broadband, no modulation techniques are used.
<b>Basic Rate Interface (BRI)</b>	The simplest form of network access available on the ISDN (integrated services digital network). The BRI comprises of 2B + D channels for carriage of signaling and user information.
<b>Bend Radius</b>	The radius of curvature that fiber or copper can bend without breaking or causing excessive loss.
<b>Bit Error Rate (BER)</b>	A measure of quality of a digital transmission line, either quoted as a percentage, or more usually as a ratio, typically 1 error in 10E8 or 10E9 bits carried. The lower the number of errors, the better the quality of the line.
<b>BNC Connector</b>	The connector type used on many types of coaxial data communication equipment.
<b>Bonding</b>	The connecting together of all building and equipment electrical grounds to eliminate differences in electrical ground potentials.
<b>BRI</b>	See <b>Basic Rate Interface (BRI)</b> .
<b>Bridge(s)</b>	A device used to link two subnetworks using the same communications method and sometimes the same kind of transmission medium.
<b>Broadband</b>	A network in which the bandwidth can be shared by multiple simultaneous signals that are encoded with radio frequency modulations.
<b>Building Backbone Cable</b>	A cable that connects the building distributor to a floor distributor. Building backbone cables may also connect floor distributors in the same building.
<b>Building Distributor</b>	A distributor in which the building backbone cable(s) terminate(s) and at which connections to the campus backbone cable(s) may be made.
<b>Building Entrance Facility</b>	A facility that provides all necessary mechanical and electrical services, that complies with all relevant regulations, for the entry of telecommunications cables into a building.
<b>BUS</b>	Consists of a common transmission path with a number of nodes attached to it. Sometimes referred to as linear network topology.
<b>Bus Topology</b>	A local area network (LAN) topology in which endpoints connect to a single wire or fiber, or set of wires or fibers, at any point. The Ethernet LAN is one example.
<b>Cable Fill</b>	The ratio of cable installed into a conduit/trunking against the theoretical maximum capacity of the conduit/trunking.
<b>Cable Rack</b>	The vertical or horizontal supports, usually made of aluminum or steel, that are attached to a ceiling or wall. Cables are laid in and fastened to the rack. Sometimes called trays.
<b>Cable Routing Diagram</b>	A detailed drawing showing the layout of the cable routes.

## Glossary (*cont'd*)

<b>Cabling</b>	A system of telecommunications cables, cords and connecting hardware that can support the connection of information technology equipment.
<b>CAD/CAM</b>	Computer-Aided Design/Computer-Aided Manufacturing.
<b>Campus</b>	A premises containing more than one building adjacent or near to one another.
<b>Campus Backbone Cable</b>	The communications cable that is part of the Campus Backbone Subsystem and runs between buildings. There are four methods of installing campus backbone cable: in-conduit (in underground conduit), direct-buried (in trenches), aerial (on poles), and in-tunnel (in stream tunnels). A cable that connects the campus distributor to the building backbone distributor(s). Campus backbone cables may also connect building cabling distributors directly.
<b>Campus Cable Entrance</b>	The point at which Campus Backbone Subsystem cabling (aerial, direct-buried, or underground) enters a building.
<b>Capacitance</b>	The property in a system of conductors and dielectrics that permits the storage of electrically separated charges whenever a difference in potential exists between the conductors. Capacitance is undesirable in copper wire cable because it interferes with signals travelling on the wire by opposing the desired flow of current.
<b>Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)</b>	Network access method using contention similar to Carrier Sense Multiple Access/Collision Detection (CSMA/CD) used by Local Talk networks. Unlike CSMA/CD, in this method the sending node requests permission to transmit. It defines protocols for user or applications programs.
<b>Carrier Sense Multiple Access/ Collision Detection (CSMA/CD)</b>	Network access method in which nodes contend for the right to send data. If two or more nodes attempt to transmit at the same time, they abort their transmission until a random time period of microseconds has transpired and then attempts to resend.
<b>Category 3</b>	For cable and connecting hardware products with transmission characteristics specified to 16 MHz, typically used to support digital transmission of 10 Mb/s.
<b>Category 5</b>	For cable and connecting hardware products with transmission characteristics specified to 100 MHz, typically used to support digital transmission of 100 Mb/s and above.
<b>Category 5e</b>	This is an enhanced version of Category 5, with additional parameters specified to enable parallel transmission with full duplex across the four pairs. Enhanced Category 5 specifications for cable and connecting hardware products with transmission characteristics specified to 100 MHz, intended to support digital transmission of 1000 Mb/s.
<b>Category 6</b>	For cable and connecting hardware products with transmission characteristics specified to 250 MHz, used to support digital transmission of 1 Gb/s and above.
<b>Category 7</b>	For cable and connecting hardware products with transmission characteristics specified to 600 MHz. Category 7 is a cable standard only and will require a new connector standard to fully exploit transmission at the above frequencies.

## Glossary (*cont'd*)

<b>Ceiling Distribution</b>	Distribution system that uses the space between the false or suspended ceiling and the structural ceiling for housing horizontal cable routes.
<b>Cell Relay</b>	A fast packet switching technique which uses fixed-length cells. Generic name for ATM, SMDS and BISDN.
<b>CENELEC</b>	European committee for electrotechnical standardization.
<b>CENELEC EN 50173</b>	The European standard for generic cabling for customer premises.
<b>CENELEC EN 50174</b>	A proposed European cabling systems planning & installation standard developed by CENELEC.
<b>Central Processing Unit (CPU)</b>	A personal computer's (PC's) primary microprocessor chip.
<b>Channel</b>	The end-to-end transmission path connecting any two pieces of application-specific equipment. Equipment cables and work area cables are included in the channel.
<b>Characteristic Impedance</b>	A frequency-dependent resistance that quantifies the complex opposition to current flow offered by a transmission line.
<b>Chromatic Dispersion</b>	Chromatic dispersion describes the tendency for different wavelengths to travel at different speeds in a fiber. If operated at wavelengths where chromatic dispersion is high, optical pulses tend to temporarily broaden, leading to intersymbol interference, which can produce an unacceptable bit error rate.
<b>Churn</b>	The relocation of an individual or a group of individuals within a building such that the workspace or services to the workspace require change.
<b>Circuit</b>	A two-way communications path between electronic devices.
<b>Cladding</b>	The low refractive index material that surrounds the core of an optical fiber, usually pure silica.
<b>Client</b>	A node that requests network services from a server.
<b>Client-Server</b>	A technique by which processing can be distributed between nodes requesting information (clients) and those maintaining data (servers).
<b>Closet</b>	SYSTIMAX® SCS location for hardware, conduits, power panels, and electronics such as multiplexers and concentrators.
<b>Coating</b>	A protective layer of material over the cladding of an optical fiber.
<b>Coaxial Cable (Coax)</b>	A cable with a center conductor surrounded by a thick insulation, surrounded by an outer conductor made of metal braid. An outer jacket insulation is optional.
<b>Collapsed Backbone</b>	This architecture is a backbone topology where wiring concentrators located at floor levels are attached in a star configuration to a central high performance switching concentrator.
<b>Composite Cable</b>	A cable construction technique that combines multiple cables or media in a single overjacket.
<b>Conductor</b>	A medium such as copper wire that can carry electrical current.
<b>Conduit</b>	A pipe, usually metal, that runs underground from floor to floor, or along a floor or ceiling to protect cables. In the Riser Backbone Subsystem when riser telecommunications closets are not aligned, conduit is used to protect cable and provide the means for pulling cable from floor to floor. In the Horizontal Subsystem, conduit may

## Glossary (*cont'd*)

	be used between a telecommunications closet and an information outlet in an office or other room. Conduit is also used for in-conduit campus distribution, where it is run underground between buildings and intermediate manholes and is made of plastic encased in concrete. Multiduct, clay-tile conduit may also be used.
<b>Connecting Block</b>	A flame-retardant plastic block containing metal wiring terminal (quick clips) that establishes an electrically tight connection between the cable and the cross-connect wire.
<b>Connecting Hardware</b>	<i>See</i> <b>Cross-Connect</b> .
<b>Connector</b>	A device that allows you physically to connect and disconnect copper wires or fibers to cable equipment or to other wires or fibers. Copper wire and fiber-optic connectors must often join transmission media to equipment or cross-connects.
<b>Consolidation Point</b>	An interconnection point in horizontal cabling, typically used to support the re-arrangement of furniture cloisters.
<b>Cords</b>	A short length of copper wire or fiber-optic cable with connectors on each end. Used to connect equipment to cabling, or to connect cabling segments (cross-connection).
<b>Core</b>	The central transmission area of a fiber. The core always has a refractive index higher than that of the cladding.
<b>Coulomb (C)</b>	A quantity of electricity transferred by a current of one ampere in one second.
<b>CPU</b>	<i>See</i> <b>Central Processing Unit (CPU)</b> .
<b>CRC</b>	<i>See</i> <b>Cyclic Redundancy Check (CRC)</b> .
<b>Cross-Connect</b>	SYSTIMAX component where communication circuits are administered (that is, added or rearranged using jumper wire or patch cords). In 110 Connector Systems, Hook-Up Wire or patch cords are used to make circuit connections. In fiber-optic connector systems, fiber-optic patch cords are used. The cross-connect is located in an equipment room or telecommunications closet/room. <i>See also</i> <b>Jumper Wire and Patch Cord</b> .
<b>Cross-Connect Field</b>	Copper wire or fiber terminations grouped to provide cross-connect capability. The groups are identified by color-coded sections of back boards mounted on the wall in equipment rooms or telecommunications closet/room, or by designation strips or labels placed on the wiring block or unit. The color coding identifies the type of circuit that terminates at the field.
<b>Crosstalk</b>	An electromagnetic coupling between two physically isolated circuits in a system. This coupling causes a signal on one circuit to induce a noise voltage on adjacent circuits, thereby causing signal interference.
<b>CSA</b>	Canadian Standards Association.
<b>CSMA/CA</b>	<i>See</i> <b>Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)</b> .
<b>CSMA/CD</b>	<i>See</i> <b>Carrier Sense Multiple Access/Collision Detection (CSMA/CD)</b> .
<b>Customer Premises Equipment (CPE)</b>	Customer owned equipment used to terminate or process information from the public network e.g., Multiplexed or PABX.

## Glossary (*cont'd*)

<b>Cyclic Redundancy Check (CRC)</b>	A coded sequence of information allowing error checking and correction.
<b>Data Communications Equipment (DCE)</b>	General terminology for data communications equipment such as modems. A device that terminates a data communications session and provides encoding or conversion if necessary. <i>See also</i> <b>Data Terminating Equipment (DTE)</b> .
<b>Data Link Layer</b>	Layer 2 of the Open Systems Interconnect (OSI) model; it defines protocols governing data packets, and transmission into and out of each node.
<b>Data Terminating Equipment (DTE)</b>	The term used to describe any type of computer or other equipment, when connected to a data communications network.
<b>dB</b>	<i>See</i> <b>Decibel (dB)</b> .
<b>dB/km</b>	<i>See</i> <b>Decibel/kilometer (dB/km)</b> .
<b>DB9</b>	A standardized connector with nine pins for token ring and serial connections.
<b>DB15</b>	A standardized connector with 15 pins for Ethernet transceivers.
<b>DB25</b>	A standardized connector with 25 pins for parallel or serial connections.
<b>DCE</b>	<i>See</i> <b>Data Communications Equipment (DCE)</b> .
<b>Decibel (dB)</b>	A unit used to measure relative increase or decrease in power, voltage or current, using a logarithmic scale.
<b>Decibel/kilometer (dB/km)</b>	A unit of measurement for fiber-optic attenuation.
<b>Delay Skew</b>	Delay Skew is the difference in propagation delay between any two pairs within the same cable sheath.
<b>Dielectric</b>	A nonconducting or insulating material that resists passage of electric current.
<b>Dielectric Cable</b>	A nonconducting cable, such as fiber-optic cable, without metallic members.
<b>Dielectric Constant</b>	The ratio of the capacitance of the insulated wire to that of the same wire uninsulated in air.
<b>Dielectric Strength</b>	A measure of the maximum voltage that the insulation of a particular cable can withstand without breakdown.
<b>Digital Signal</b>	A signal that represents information by a series of fixed, encoded, rectangular pulses, usually consisting of two possible voltage levels. Each voltage level indicates one of two possible values or logic states, such as on or off, open or closed, true or false. <i>See also</i> <b>Analog Signal</b> .
<b>Digital Transmission</b>	A technique in which all information is converted into binary digits for transmission.
<b>Dispersion</b>	The tendency of a beam of light to spread out and lose its focus.
<b>Distributor</b>	The term used for the functions of a collection of components (for example, patch panels, patch cords) used to connect cables.
<b>DIW</b>	<i>See</i> <b>Network Communications Cable (NCC) and Twisted Pair</b> .

## Glossary (*cont'd*)

<b>DTE</b>	<i>See</i> <b>Data Terminating Equipment (DTE)</b> and also <b>Data Communications Equipment (DCE)</b> .
<b>Dual-Fiber Cable</b>	A type of fiber-optic cable that has two single-fiber cables enclosed in a jacket of extruded plastic.
<b>Ducts</b>	The main feeder channels in which communication cable is routed between buildings in a campus environment. <i>See also</i> <b>Campus Backbone Cable</b> .
<b>EIA</b>	<i>See</i> <b>Electronics Industries Association (EIA)</b> .
<b>EIA/TIA</b>	North American Standards organization.
<b>EIA/TIA 568B</b>	North American commercial building telecommunications wiring standard.
<b>EIA/TIA 569A</b>	North American commercial building standard for telecommunications pathways and spaces. Its purpose is to standardize specific design and construction practices within and between buildings which are in support of telecommunications media and equipment.
<b>EIA/TIA 606</b>	North American administration standard for the telecommunications infrastructure of commercial buildings. Its purpose is to provide guidelines for a uniform administration scheme for the cabling infrastructure.
<b>Electromagnetic Compatibility (EMC)</b>	The ability of a system, equipment or device to operate satisfactorily in its environment without introducing unacceptable electromagnetic disturbance, or being affected by that environment.
<b>Electronics Industries Association (EMA)</b>	North American Electronics Association.
<b>Electromagnetic Flux</b>	Electric and magnetic fields (commonly referred to as emissions) generated by equipment or system.
<b>Electromagnetic Interference</b>	The interference in signal transmission or reception caused by the radiation of electric and magnetic fields (EMI).
<b>ELFEXT</b>	<i>See</i> <b>Equal Level Far End Crosstalk</b> .
<b>EMC</b>	<i>See</i> <b>Electromagnetic Compatibility</b> .
<b>EMI</b>	<i>See</i> <b>Electromagnetic Interference</b> .
<b>EN 50173</b>	The European standard for generic cabling for customer premises.
<b>EN 50174</b>	European cabling systems planning and installation standard (CENELEC).
<b>Equal Level Far End Crosstalk (ELFEXT)</b>	Is the same as FEXT, except that the coupled signal at the remote end is relative to the attenuated signal at the remote end on the pair the signal was applied to at the local end.
<b>Equipment Cable</b>	A cable connecting equipment to a distributor.
<b>Equipment Room</b>	The room in which voice and data common equipment (for example, a DEFINITY® switch) is housed, protected, and maintained, and where circuit administration is done using the trunk and distribution cross-connects.

## Glossary (*cont'd*)

<b>Equipment Subsystem</b>	The part of a premises distribution system that includes the cable and distribution components in an equipment room and that interconnects system-common equipment, other associated equipment, and cross-connects.
<b>Ethernet</b>	The common name for the most widely used local area network (LAN), generally conforming to the Institute of Electrical and Electronic Engineers (IEEE) 802.3 Standard.
<b>Farad (F)</b>	The standard unit of capacitance.
<b>Far End Crosstalk (FEXT)</b>	Refers to the undesired coupling of signals from the transmit pair onto the receive pair at the other (=far) end. FEXT isolation is also expressed in dB. For some applications this is an important parameter, for most applications however, the NEXT values are more important.
<b>Fast Ethernet</b>	A 100 Mb/s LAN based on CSMA/CD Protocol. <i>See</i> <b>100BASE-T</b> .
<b>Federal Communications Commission (FCC)</b>	A board of five commissioners, appointed by the President, that regulates all electronic communications systems originating in the United States, including telephone systems.
<b>FEXT</b>	<i>See</i> <b>Far End Crosstalk</b> .
<b>FDDI</b>	<i>See</i> <b>Fiber Distributed Data Interface</b> .
<b>Fiber</b>	Any filament or fiber, made of dielectric materials, that guides light. <i>See also</i> <b>Fiber-Optics</b> .
<b>Fiber Channel</b>	This is an ANSI standard describing point to point and switched point to point physical interface, transmission protocol, signaling protocol, services and command set mapping of a high performance serial link for uses between mainframe computers and computer peripherals.
<b>Fiber Distributed Data Interface (FDDI)</b>	An American National Standards Institute (ANSI) standard for a fiber-based token ring physical and data link protocol that operates at a 100 Mb/s data transfer rate.
<b>Fiber-Optic</b>	A fiber-optic cable in which individual optical fibers are formed into a cable for primary use inside a building.
<b>Fiber-Optics</b>	The technique of conveying lights or images through glass or plastic fibers. Incoherent fiber-optics will transmit light but not an image; coherent fiber-optics will transmit both and should actually be called "aligned fiber-optics" because the fibers are all the same length and are held in a constant spatial relationship.
<b>Fiber-Optic Building Cable (LGBC)</b>	A fiber-optic cable in which individual optical fibers are formed into a cable for primary use in a side building.
<b>Fiber-Optic Cable</b>	A transmission medium consisting of a core of glass or plastic surrounded by a protective cladding, strengthening material, and outer jacket. Signals are transmitted as light pulses, introduced into the fiber by a light transmitter (either a laser or light-emitting diode [LED]). Some of the advantages offered by fiber-optic cable are low data loss, high-speed transmission, large bandwidth, small physical size, light weight, and freedom from electromagnetic interference and grounding problems.
<b>Fiber-Optic Connectors</b>	Connectors designed to connect and disconnect either single or multiple optical fibers repeatedly. Fiber-optic connectors are used to connect fiber cable to equipment and interconnect cables.



## Glossary (*cont'd*)

<b>Fiber-Optic Cross-Connection</b>	Fiber-optic apparatus for terminating cable in couplings. Designed for high-density cross-connection fields, the apparatus can terminate up to 72 fibers on each shelf, with up to nine shelves in a bay frame. Single shelves can also be wall mounted. Cross-connections are handled with fiber-optic patch cords. <i>See also</i> <b>Patch Cord</b> .
<b>Fiber-Optic Cross-Connect (LGX) Distribution System</b>	A component of fiber-optic cross-connect hardware. This component accommodates 24-216 fiber terminations. Also referred to as an LGX or shelf or frame.
<b>Fiber-Optic Interconnect</b>	An interconnection unit used for circuit administration and built from modular cabinets. It provides interconnection for individual optical fibers but, unlike the fiber-optic cross-connect panel, it does not use patch cords or jumpers. The fiber-optic interconnect provides some capability for routing and rerouting circuits, but is usually used where circuit rearrangements are infrequent.
<b>Fiber-Optic Interconnection Unit (LIU)</b>	A component of fiber patch cross-connect hardware. This component accommodates 12, 24 or 48-fiber terminations. Also referred to as an LIU.
<b>Fiber-Optic Splice</b>	A fiber-optic cable splice is used to join together 2 or 24 fiber-optic cable ends, permanently.
<b>Field</b>	<i>See</i> <b>Cross-Connect Field</b> .
<b>File Server</b>	A computer that stores data centrally for network users and manages access to that data. File servers can be dedicated so that no processes other than network management can be executed while the network is available, or nondedicated so that standard user applications can be run while the network is available.
<b>Fire Walls</b>	Walls that go from structural floor to structural ceiling and, therefore, help prevent fire from spreading from one area to another.
<b>Flood Wiring</b>	The concept of wiring for future growth, by providing full coverage of information outlets.
<b>Floor Distributor</b>	The distributor used to connect between the horizontal cable and other cabling subsystems or equipment (see telecommunications closet).
<b>Foil Screened Twisted Pair Cable (FTP)</b>	A cable that uses a metallic Foil to surround the conductors in a Twisted Pair cable.
<b>Frame</b>	A metallic structure for hanging switch hardware.
<b>Frequency</b>	The number of cycles completed by a signal in one second: measured in Hertz (Hz).
<b>FTP</b>	<i>See</i> <b>Foil Screened Twisting Pair Cable</b> .
<b>Full Duplex</b>	In contrast to half-duplex devices, full duplex ones allow permanent, simultaneous two-way transmission of information, without interaction or interference of receive and transmit signals.
<b>Full Duplex Ethernet</b>	Full Duplex Ethernet will allow nodes to transmit and receive data at the same time, bringing aggregate throughput to 20 Mb/s. The CSMA/CD protocol may have to be disabled for the full duplex mechanism to function.
<b>Gauge</b>	A measure of a conducting wire's physical size, usually referred to as AWG (American Wire Gauge). <i>See also</i> <b>American Wire Gauge (AWG)</b> .



## Glossary (*cont'd*)

<b>Generic Cabling</b>	A structured telecommunications cabling system, capable of supporting a wide range of applications. Generic cabling can be installed without prior knowledge of the required applications. Application-specific hardware is not a part of generic cabling.
<b>Graded-Index Fiber</b>	An optical fiber with a refractive index that gets progressively lower away from the axis. This causes the light rays to be continually refocused by refraction in the core. It bends the rays inwards and allows them to travel faster in the lower index of refraction regions. This type of fiber provides high bandwidth capabilities.
<b>Ground</b>	A conducting connection, intentional or accidental, between a circuit or equipment and the earth.
<b>H</b>	See <b>Henry</b> .
<b>Half Duplex</b>	A telecommunications device allowing two-way transmission of signals or other information, but only in one direction at a time. Thus a half-duplex device cannot simultaneously transmit and receive, though interspersed bursts in each direction are possible.
<b>Henry (H)</b>	The standard unit of inductance. The inductance of a current is one Henry when a current variation of one ampere per second induces one volt.
<b>Hertz (Hz)</b>	The standard unit of frequency; equal to one cycle per second.
<b>Horizontal Cable</b>	A cable connecting the floor distributor to the telecommunications outlet(s).
<b>Horizontal Length (HL)</b>	The cable distance from the information outlet to the blue field of the cross-connect. In SYSTIMAX SCS, this is referred to as the Horizontal Subsystem.
<b>Horizontal Runs</b>	The part of the premises distribution system installed on one floor that includes the cabling and distribution components connecting the riser backbone or equipment wiring to the information outlet. See <b>Horizontal Subsystem</b> .
<b>Horizontal Subsystem</b>	The part of a premises distribution system installed on one floor that includes the cabling and distribution components connecting the Riser Backbone Subsystem to the information outlet via cross-connect components of the Administration Subsystem.
<b>Hub(S)</b>	A concentrator or repeater in a star topology at which node connections meet.
<b>Hybrid Cable</b>	An assembly of two or more different types of cable units, cables or categories covered by an overall sheath. It may be covered by an overall shield.
<b>Hz</b>	See <b>Hertz (Hz)</b> .
<b>IBM</b>	International Business Machines Corporation.
<b>IEC 60332</b>	The international standard covering fire performance of cables.
<b>IEEE</b>	Institute of Electrical and Electronic Engineers in the USA. This organization is also involved in producing Local Area Network standards such as 10BASE-T and Token Ring.
<b>Individual Pair Screened</b>	Where each twisted pair in one overall cable has its own screen.
<b>InfiniBand™ Architecture</b>	A high bandwidth switched network topology currently being developed for Storage Area Networks (SANS).

## Glossary (*cont'd*)

<b>Insulation</b>	A material having high resistance to the flow of electric current. Thin conducting wires are covered with color-coded insulation for protection.
<b>Insulation Displacement</b>	The type of wire terminals that require no wire stripping; when the wire is correctly attached, its insulation is displaced (pierced) to form a connection.
<b>Insulation Resistance</b>	The measure of the ability of an insulation material to resist the flow of current through it; usually measured in Megohm-feet (M $\mu$ -ft).
<b>Integrated Services Digital Network (ISDN)</b>	Integrated voice and data network based on digital communications technology and standards interfaces.
<b>Intelligent Buildings</b>	Buildings that maximize the efficiency of its occupants and allow effective management of resources with minimum life-time costs. (Source: European Intelligent Building Group).
<b>Inter closet Cables</b>	Cables that connect telecommunications closets/rooms.
<b>Interconnect</b>	A circuit administration point, other than a cross-connect or information outlet, that provides capability for routing and rerouting circuits. It does not use patch cords or jumpers. Typically it is a jack-and-plug device used in smaller distribution arrangements or to connect circuits in large cables to those in smaller cables.
<b>Interface Cards</b>	<i>See Network Interface Cards.</i>
<b>Interference</b>	A signal impairment caused by the interaction of another unwanted signal.
<b>International Standards Organization (ISO)</b>	The organization responsible for the Open Systems Interconnect (OSI) standards.
<b>International Telegraphy and Telephone Consultative Committee (CCITT)</b>	A standards organization that, among numerous other activities, specializes in the electrical and functional characteristics of switching equipment. The CCITT sets standards for interfaces to ensure compatibility between data communications equipment (DCE) and data terminating equipment (DTE).
<b>Interoperability</b>	The ability to operate and exchange information in a heterogeneous network.
<b>IO</b>	Information Outlets (IO) is a connector where the horizontal cable terminates.
<b>ISDN</b>	<i>See Integrated Services Digital Network (ISDN).</i>
<b>ISO</b>	<i>See International Standards Organization (ISO).</i>
<b>ISO/IEC IS 11801</b>	An international standard for generic cabling for customer premises.
<b>ISO/IEC 14763-1</b>	The international standard for basic administration of generic cabling.
<b>Isochronous Ethernet</b>	This is part of the IEEE 802.9 integrated services LAN standard. It is an extension of 10BASE-T which provides for the inclusion of a 6.144 Mb/s isochronous (real time and delay sensitive) data service in addition to the 10 Mb/s 10BASE-T packet service. It will provide multimedia capability.
<b>ISO Seven Layer Model</b>	A 7 layer hierarchical reference structure developed by the ISO for defining, specifying and relating communications protocol.

Glossary (*cont'd*)

<b>J</b>	<i>See</i> <b>Joule (J)</b> .
<b>Jack</b>	A receptacle used with a plug to make electrical contact between communications circuits. Jacks and their associated plugs are used in a variety of connecting hardware applications including adapter, information outlets, and equipment connections.
<b>Jacket</b>	The flexible covering of a cable, used to protect the color-coded conductors inside.
<b>Joule (J)</b>	A unit of work or energy equal to 0.7375 foot-pounds.
<b>Jumper</b>	A cable unit or cable element without connectors used to make a connection on a cross-connect.
<b>Jumper Wire</b>	A short length of connectorized copper wire used to route a circuit by linking two cross-connect termination points.
<b>Keying</b>	A mechanical feature of a connector system which guarantees correct orientation of a connection or prevents the connection to a jack or optical fiber adapter of the same type intended for another purpose.
<b>LAN</b>	<i>See</i> <b>Local Area Network (LAN)</b> .
<b>Lays</b>	The twists in twisted-pair cable. Two single wires are twisted together to form a pair; by varying the length of the twists, or lays, the potential for signal interference between pairs is reduced.
<b>LC Connector</b>	A high density connector for fiber-optic applications used in both public and private networks. This high performance connector is available in both singlemode and multimode.
<b>Link</b>	The transmission path between any two interfaces of generic cabling. It excludes equipment cables and work area cables.
<b>Link Budget</b>	Optical loss budget that determines the maximum distance allowable between stations. Loss and dispersion factors are included.
<b>LIU</b>	<i>See</i> <b>Fiber-Optic Interconnection Unit (LIU)</b> .
<b>Local Area Network (LAN)</b>	A data communications network consisting of host computers or other equipment interconnected to terminal devices, such as personal computers, often via twisted-pair or coaxial cables. LANs allow users to share information and computer resources. Typically, a network is limited to a single premises.
<b>MAC</b>	<i>See</i> <b>Media Access Control (MAC)</b> .
<b>MAU</b>	<i>See</i> <b>Multistation Access Unit (MAU)</b> .
<b>Mb</b>	<i>See</i> <b>Megabit (Mb)</b> .
<b>MB</b>	<i>See</i> <b>Megabyte (MB)</b> .
<b>Mbaud</b>	<i>See</i> <b>Megabaud (Mbaud)</b> .
<b>Media Access Control (MAC)</b>	Refers to both the media access portion of the Fiber Distributed Data Interface (FDDI) standard and the hardware and firmware (MAC entity) which implements this portion of the standard.
<b>Media Interface Connector (MIC)</b>	A port connector also known as a "data connector" on a multistation access unit (MAU) in a token ring environment; also a dual-fiber connector for Fiber Distributed Data Interface (FDDI).
<b>Megabaud (Mbaud)</b>	One million baud.

## Glossary (*cont'd*)

<b>Megabit (Mb)</b>	One million binary bits.
<b>Megabyte (MB)</b>	One million binary bytes.
<b>MegaHertz (MHz)</b>	One million Hertz (cycles per seconds).
<b>MegaHertz-kilometer (MHz-km)</b>	A bandwidth-length product rating for multimode fiber. Bandwidth of the fiber is found by multiplying its length by its bandwidth-length product.
<b>MHz</b>	<i>See</i> <b>MegaHertz (MHz)</b> .
<b>MHz-km</b>	<i>See</i> <b>MegaHertz-kilometer (MHz-km)</b> .
<b>MIC</b>	<i>See</i> <b>Media Interface Connector (MIC)</b> .
<b>Microfarad (μF)</b>	One-millionth of a farad. This is the common unit for designating capacitance in electronics and communications.
<b>Micron (μm)</b>	A micrometer; one-millionth of a meter.
<b>Mil</b>	One-thousandth of an inch.
<b>Modal Bandwidth</b>	Bandwidth limited by modal dispersion inherent in multimode fiber-optic cable.
<b>Modal Dispersion</b>	In multimode fiber the dispersion is caused by modal dispersion. Modal dispersion exists because the different light rays (modes) have a different path length, therefore rays entering at the same time will not leave the fiber at the same time at the other end of the fiber.
<b>Modem</b>	A modulator/demodulator unit used for data transmission. It converts digital data into analog tones when transmitting over standard voice-grade telephone lines and reverses this process when receiving.
<b>Multimedia</b>	A means of conveying information with components in different media such as voice, music, text, graphics, image and video.
<b>Multimode</b>	Many light rays (modes) propagating through the fiber core.
<b>Multimode Fiber</b>	Optical fibers that have a large core and that permit nonaxial rays or modes to propagate through the core. 62.5 micron is the common standard core size for premises cabling systems.
<b>Multiplexing</b>	The process of combining multiple signals, usually by time-division multiplexing (TDM) on a high-frequency carrier, to optimize the use of available transmission media.
<b>Multistation Access Unit (MAU)</b>	A concentrator or transceiver for attracting nodes to a transmission medium.
<b>Mutual Capacitance</b>	The capacitance between two conductors when all other conductors, including the shield, are short-circuited to ground.
<b>Nanometer (nm)</b>	A unit of length in the metric system denoting one-billionth of a meter (10 μm).
<b>National Electrical Code (NEC)</b>	A nationally recognized safety standard for the design, construction, and maintenance of electrical circuits. The NEC, sponsored by the National Fire Protection Association (NFPA), generally covers electrical power wiring within buildings.

## Glossary (*cont'd*)

<b>NCC</b>	<i>See</i> <b>Network Communications Cable (NCC)</b> .
<b>Near End Crosstalk (NEXT)</b>	Refers to the undesired coupling of signals from the transmit pair onto the receive pair on the same (near) end. NEXT isolation is expressed in dB and is a measure of how well the pairs in a cable are isolated from each other.
<b>NEC</b>	<i>See</i> <b>National Electrical Code (NEC)</b> .
<b>Network</b>	The local and long-distance telecommunications capability provided by common carriers for switch and private line telecommunications services. A system of software and hardware connected in a manner to support data transmission.
<b>Network Architecture</b>	Network topology and design.
<b>Network Communications Cable (NCC)</b>	Network Communications Cable, often called NCC, is generally used in the Riser Backbone Subsystem in locations not involving plenums. The cable consists of 24-AWG, annealed-copper conductors insulated with color-coded polyvinyl chloride (PVC) in twisted pairs, encased in an outer PVC jacket whose frictional properties permit it to be pulled in conduit without the aid of lubricants. This type of cabling used to be referred to as Direct Inside Wire (DIW).
<b>Network Interface</b>	The point of interconnection between building communications wiring and outside communications lines (telephone company facilities).
<b>Network Interface Cards (NICs)</b>	The piece of equipment that is installed into the expansion port of a personal computer and allows communication between the PC and the network.
<b>Network Layer</b>	The network layer is layer 3 of the OSI model. This layer sets up an end-to-end connection across a network determining which permutation of individual links to be used. Thus the network layer performs overall routing functions.
<b>NEXT</b>	<i>See</i> <b>Near End Crosstalk (NEXT)</b> .
<b>nm</b>	<i>See</i> <b>Nanometer (nm)</b> .
<b>Node(s)</b>	A piece of communications equipment on the network.
<b>Noise</b>	The term used for spurious signals produced in a conductor by sources other than the transmitter to which it is connected. Noise can affect a legitimate signal to the extent that it is inaccurate or indecipherable when it reaches the receiver. The higher the speed of data transmission, the worse the effects of noise become.
<b>Numerical Aperture</b>	The size of the vertex angle of the largest core of rays that can enter or leave a multimode fiber-optic system, multiplied by the refractive index of the medium in which the vertex of the core is located.
<b>Ohm (<math>\Omega</math>)</b>	The standard unit of electrical resistance. One volt will cause one ampere of current to flow through one ohm of resistance.
<b>Open System Interconnection (OSI)</b>	A conceptual model specified by CCITT recommendations in the X200 series. The model describes the 7-layer process of communication between 'co-operating' computers. The model provides a standard for the development of communication protocols allowing for computers of different manufacturers to be interconnected.
<b>Optical Connectors</b>	<i>See</i> <b>Fiber-Optic Connectors</b> .

## Glossary (*cont'd*)

<b>Optical Cross-Connection</b>	<i>See</i> <b>Fiber-Optic Cross-Connection</b> .
<b>Optical Fiber</b>	A transmission medium consisting of a core of glass or plastic surrounded by a protective cladding. Signals are transmitted as light pulses, introduced into the fiber by a light transmitter i.e. Laser or an LED.
<b>Optical Interconnect</b>	<i>See</i> <b>Fiber-Optic Interconnect</b> .
<b>Optical Splice</b>	<i>See</i> <b>Fiber-Optic Splice</b> .
<b>Optical Time-Domain Reflectometer (OTDR)</b>	An instrument that characterizes cable loss by measuring the backscatter and reflecting of injected light as a function of time. It is useful for estimating attenuation and for locating splices, connections, and breaks.
<b>OSI</b>	<i>See</i> <b>Open System Interconnection (OSI)</b> .
<b>OTDR</b>	<i>See</i> <b>Optical Time-Domain Reflectometer (OTDR)</b> .
<b>Outlets</b>	A term used to describe the sockets provided in the work location of a Structured Cabling System. These are usually 8-pin modular sockets which can support a variety of services e.g., voice, video and data.
<b>PABX</b>	Private Automatic Branch Exchange. A private switching system that switches calls both internally within a building or premises and outside to the telephone network.
<b>Packet-Switching</b>	A type of exchange or network which conveys a string of information from origin to destination by cutting it up into a number of packets and carrying each independently. A packet-switched effect could be achieved by sending individual pages of a book through the post separately. The receiving device reassembles the message. Thus a direct connection between origin and destination does not exist at any point.
<b>Pair</b>	Two wires grouped (usually twisted) together and marked with reciprocal color coding. <i>See</i> also <b>Twisted Pair</b> .
<b>Patch Cord(s)</b>	A short length of copper wire or fiber-optic cable with connectors on each end used to join communications circuits as a cross-connect.
<b>Patch Panel(s)</b>	A cross-connect designed to accommodate the use of patch cords. It facilitates administration for moves and changes.
<b>Pathway(s)</b>	Designated cable routes and/or support structures in a false floor or ceiling.
<b>PBX</b>	<i>See</i> <b>Private Branch Exchange (PBX)</b> .
<b>PDS</b>	<i>See</i> <b>Premises Distribution System (PDS)</b> .
<b>Peripheral(s)</b>	Additions to a system, a resource e.g., printer, scanner, etc.
<b>Permanent Link</b>	The transmission path between two mated interfaces of generic cabling, excluding equipment cables, work area cables and cross-connections.
<b>pF</b>	<i>See</i> <b>Picofarad (pF)</b> .
<b>PHY</b>	Physical layer of the Fiber Distributed Data Interface (FDDI) standard. Also used to refer to the actual hardware used to implement the physical layer (PHY entity).

## Glossary (*cont'd*)

<b>Physical Layer</b>	Layer 1 of the open systems interconnection (OSI) model. The physical layer protocol is the hardware and software in the line terminating device which converts the databits needed by the datalink layer into the electrical pulses, modem tones, optical signals or other means which will transmit the data.
<b>Physical Topology</b>	Physical cabling layout i.e., ring, bus, star wired, etc.
<b>Picofarad (pF)</b>	A unit of capacitance used to designate capacitance unbalance between pairs or capacitance unbalance of the two wires of a pair to ground. One picofarad equals one trillionth of a farad.
<b>Pin</b>	A conductor on a plug or connector.
<b>Plenum Cable</b>	Cable specifically designed for use in a plenum, the space above a suspended ceiling used to circulate air back to the heating or cooling system in a building. Plenum cable has insulated conductors often jacketed with TEFLON or HALAR on copper and low smoke PVC on fiber-optics to give them low flame-producing and low smoke-producing properties.
<b>Plug</b>	A device used for connecting wires to a jack. It is typically used on one or both ends of equipment cords or on wiring for interconnects or cross-connects.
<b>PMD</b>	Physical Medium Dependent part of the Fiber Distributed Data Interface (FDDI) standard. Determines the specifications for the fiber-optic transmitters and receivers, fiber-optic cable, fiber-optic connectors, and fiber-optic bypass switch.
<b>Polyvinyl Chloride (PVC)</b>	A flame-retardant thermoplastic insulation material that is commonly used in jacks or building cables. Both plenum and riser.
<b>Port</b>	The cable terminations in the equipment system at which various types of communications devices, switching equipment, and other devices are connected to the transmission network.
<b>Ports</b>	A computer interface capable of transmitting and or receiving information.
<b>PowerSUM</b>	A method of testing and measuring crosstalk in multi-pair cables that accounts for the sum of crosstalk affecting a pair when all other pairs are active. This is the only method of specifying crosstalk performance that is suited to cables with more than four pairs.
<b>Premises Distribution System (PDS)</b>	The transmission network inside a building or group of buildings that connects various types of voice and data communication devices, switching equipment, and information management systems together, as well as to outside communications networks. It includes the cabling and distribution hardware components and facilities between the point where building wiring connects to the outside network lines, back to the voice and data terminals into the office or other work locations. The system consists of all the transmissions media and electronics, administration points, connectors, adapters, plugs, and support hardware between the building's side of the network interface and the terminal equipment required to make the system operational.
<b>Presentation Layer</b>	Layer 6 of the OSI model. Responsible for identifying the syntax of the data being transmitted.
<b>PRI</b>	See <b>Primary Rate Interface (PRI)</b> .



## Glossary (*cont'd*)

<b>Primary Rate Interface (PRI)</b>	ISDN standard interface comprising 23 B + 1 D Channel for North America, and 30 B + 1 D Channel for Europe. See Basic Rate Interface (BRI) and Integrated Services Digital Network (ISDN).  The North American 1.544 Mb/s T1 (23B + D) or European 2.048 Mb/s E1 (30B+D) ISDN interface is typically used to connect ISDN PBXs to the public ISDN.
<b>Private Branch Exchange (PBX)</b>	A private switching system usually serving an organization, such as a business or government agency, and located on the customer's premises. It switches calls both inside a building or premises and outside to the telephone network, and can sometimes also provide access to a computer from a data terminal.
<b>Propagation Delay</b>	A signal traveling from end to end of a simplex link is delayed in time by an amount equal to the length of cable divided by the velocity of propagation for that transmission medium. This delay is called Propagation Delay.
<b>Proprietary Networks</b>	Networks that are not designed, or installed to any standard based guidelines and do not relate specifically to any relevant standards.
<b>Proprietary Systems</b>	Systems that are not standards specific and therefore inoperable with standards based equipment.
<b>Protocol(s)</b>	A rule of procedure by which computer devices intercommunicate. Thus a protocol is the equivalent of a human language, with punctuation and grammatical rules.
<b>Public Network Interface</b>	A point of demarcation between public and private network. In many cases the public network interface is the point of connection between the network provider's facilities and the customer premises cabling.
<b>Pulling Tension</b>	The amount of pull, measured in pounds, placed on a cable during installation.
<b>Punch-Down</b>	A method of securing a wire to a wiring terminal. The insulated wire is placed in the terminal groove and pushed down with a special tool. As the wire is seated, the terminal cuts through the insulation to make an electrical connection, and the spring-loaded blade of the tool trims the wire flush with the terminal.
<b>PVC</b>	See <b>Polyvinyl Chloride (PVC)</b> .
<b>Quad Fiber Cable</b>	A type of fiber-optic cable that has four single cables enclosed in an extruded jacket of polyvinyl chloride (PVC), with a rip cord for pulling back the jacket to access the fibers.
<b>Raceway</b>	Any distribution method designed for holding cables, e.g., conduit, metal or plastic trunking, cable trays, etc.
<b>Rack</b>	A vertical or horizontal open support, usually made of aluminum or steel, that is attached to a ceiling or wall. Cables are laid in and fastened to the rack.
<b>Redundancy Risers</b>	A fail-safe method of splitting and routing riser/ backbone cables via two or more riser cores. Also known as diverse routing.
<b>Resistance</b>	The property of a conductor that determines the current produced by a given potential difference. It impedes the flow of current and results in the dissipation of power as heat. Resistance is measured in ohms.



## Glossary (*cont'd*)

<b>Return Loss</b>	The Channel Return Loss (RL) is a measure of the consistency of the impedance down the length of not just the cable, but also the connections and the patch cables.
<b>RI</b>	<i>See</i> <b>Ring In (RI)</b> .
<b>Ribbon Fiber Cable</b>	A cable that accommodates 1 to 12 ribbons, each ribbon having 12 fibers for a cable size range of 12 to 216 fibers. Ribbon cables are designed for use in large distribution systems where small cable size and high pulling strength are important.
<b>Ribbon Riser Cable</b>	An optical fiber, nonconductive, riser (OFNR)-rated premises cable containing optical fibers in ribbons.
<b>Ring</b>	A closed loop network topology.
<b>Ring In (RI)</b>	Port for connecting in multistation access units (MAUs) together.
<b>Ring Out (RO)</b>	Port for connecting out multistation access units (MAUs) together.
<b>Riser(s)</b>	The term used to describe a space utilized by backbone cabling to house communications cabling and other building services. This space should preferably be specified, or allowed for, at the time of the building design.
<b>Riser Backbone Subsystem</b>	The part of a premises distribution system that includes a main cable route and structure for supporting the cable from an equipment room (often in the building basement) to the upper floors, or along the same floor, where it is terminated on a cross-connect in a riser telecommunications closet, at the network interface, or at distribution components of the Campus Backbone Subsystem. The Riser Backbone Subsystem usually extends from an equipment room (often in a building's basement) to the upper floors in a multistory building, or along the same floor in a low-wide building. It is terminated on a cross-connect in a riser telecommunications closet/room, at the network interface, or on the distribution components of the Campus Backbone Subsystem.
<b>RO</b>	<i>See</i> <b>Ring Out (RO)</b> .
<b>Router(s)</b>	A router can be used to connect networks with similar protocols (802.5 token ring local area networks [LANs]) or dissimilar Open Systems Interconnection (OSI) model protocols (802.5 token ring LANs and X.25 packet-switching networks). Routers are more sophisticated than bridges and can be used to prevent some of the speed mismatch, security, and reliability problems that occur in large networks. An intermediate system between two or more networks capable of forwarding data packets at the network layer (layer 3).
<b>Satellite Cabinet</b>	Surface-mounted or flush-type wall cabinets for housing circuit administration hardware. Satellite cabinets, like satellite telecommunications closets/rooms, supplement riser telecommunications closets by providing additional facilities for connecting horizontal cables from information outlets in user work areas. Sometimes referred to as a "satellite location."
<b>Satellite Telecommunications Closet/Room</b>	A walk-in or shallow wall closet that supplements a riser telecommunications closet by providing additional facilities for connecting riser backbone cables to horizontal cables from information outlets. Also referred to as a "satellite location." <i>See also</i> <b>Telecommunications Closet/Room</b> .

## Glossary (*cont'd*)

<b>Scalable</b>	The ability to adapt to different bit rates.
<b>Screened Cable</b>	<i>See</i> <b>Foil Screened Twisted Pair Cable (FTP)</b> .
<b>Serial Communications</b>	<i>See</i> <b>Serial Data Transmission</b> .
<b>Serial Data Transmission</b>	Data transmission between computer devices using only a single circuit path. Whole bytes of information (8 bits) are sent in sequential pattern. Compares with parallel transmission. Parallel transmission is often used internally within computing devices because of the higher processing speeds which are possible, but for long-distance telecommunication, serial transmission is more economic in terms of line plant.
<b>Serial Port(s)/Transmission</b>	Normally a DB 9 pin connector located on the mother board of a PC. A technique in which each bit of information is sent sequentially on a single channel.
<b>Server(s)</b>	Host Computer(s).
<b>Service Entrance</b>	<i>See</i> <b>Campus Cable Entrance</b> .
<b>Serving Closet</b>	<i>See</i> <b>Satellite Telecommunications Closet/Room</b> .
<b>Session Layer</b>	Layer 5 of the OSI model. Responsible for establishment and control of dialogs between users on different machines. Synchronization for reliable data transfer and token management to control use of the connection are services provided by this layer.
<b>Sheath</b>	A common term for the collection of twisted pairs of multipair cables.
<b>Shield</b>	The metallic layer that surrounds insulated conductors in shielded cable. The shield may be the metallic sheath of the cable or the metallic layer inside a nonmetallic sheath.
<b>Signal To Noise Ratio (SNR)</b>	The ratio of the signal magnitude to the noise magnitude and is usually expressed in dB. The higher the SNR of a system, the better is its performance.
<b>Simplex</b>	A transmission means allowing only one direction of transmission. (For example public broadcast radio).
<b>Single-Fiber Cable</b>	A plastic-coated optical fiber surrounded by an extruded layer of plastic encased in a synthetic strengthening material, and enclosed in a plastic sheath.
<b>Singlemode</b>	Optical fiber with a small core diameter in which only a singlemode is propagated. 8.3 micron is the standard core size.
<b>Sleeves</b>	Short lengths of rigid metal pipe, approximately 4 in (10.1 cm) in diameter, located in riser telecommunications closets/rooms, that allows cables to pass from floor to floor when closets are vertically aligned. Sleeves also provide for easy pulling of cable.
<b>Slots</b>	Openings in the floor of riser telecommunications closets/rooms that allow cables to pass through from floor to floor when closets are vertically aligned. A slot accommodates more cables than an individual sleeve.
<b>SNR</b>	<i>See</i> <b>Signal to Noise Ratio SNR</b> .
<b>SONET</b>	Synchronous Optical Network; provides broadband connectivity for existing networks on a global scale.

## Glossary (*cont'd*)

<b>Source Routing</b>	A bridge uses source routing when the route to be followed is carried within each frame by the source stations. The source station acquires and maintains information by a search process, allowing parallel bridges to exist and to share traffic between the same two rings.
<b>Splice</b>	The physical joining of two or more copper wires or optical fibers to form a common connection.
<b>Star</b>	A physical point to point network topology.
<b>Star Physical Topology</b>	<i>See Star.</i>
<b>Star Quad</b>	A cable element which comprises of four insulated conductors twisted together. Two diametrically facing conductors form a transmission pair.
<b>Star Topology</b>	<i>See Star.</i>
<b>ST Connector</b>	<i>See Straight-Tip (ST) Connector.</i>
<b>Storage Area Network (SAN)</b>	A high-speed network or subnetwork of shared storage devices.
<b>Straight-Tip (ST) Connector</b>	A fiber-optic connector used to join single fibers together at interconnects or to connect them to fiber-optic cross-connects.
<b>Stranded Cable</b>	A strong woven-copper-wire cable used to support cable in aerial distribution systems. The cable is lashed to the stranded cable during installation.
<b>Structured Cabling</b>	Flexible cabling scheme which allows rapid reconfiguration for office moves through patching.
<b>Stud Cable</b>	A short cable (usually 25 ft (7.6 m) or less) that extends from a cable terminal, protector, or block and is used to make connections to such devices.
<b>Support Hardware</b>	The racks, clamps, cabinets, brackets, trays, tools, and other equipment that provide the physical means to attach the transmission media and connecting hardware to walls or ceilings.
<b>Surge</b>	A sudden voltage rise and fall in an electrical circuit.
<b>Switching</b>	A function carried out by a switching hub, alleviating traffic by making virtual connections between transmitting and receiving nodes.
<b>Synchronization</b>	The method by which the bit patterns appearing on digital line systems may be properly 'clocked' and interpreted — allowing the beginning of particular patterns and frame formats to be correctly identified.
<b>Synchronous</b>	Signals that are sourced from the same timing reference and hence are identical in frequency.
<b>Synchronous Data Transfer</b>	Data transfer employing a strictly regular pattern, rather than using start and stop bits to distinguish character patterns from idle line operation.
<b>System-Common Equipment</b>	The equipment on a premises that provides functions common to terminal devices such as telephones, data terminals, integrated workstations terminals and personal computers. Typically, the system-common equipment is the private branch exchange (PBX) switch, data packet switch, or central host computer. Often called common equipment.
<b>SYSTIMAX SCS</b>	Brand name of Our Structured Cabling System.
<b>TCP/IP</b>	<i>See Transport Control Protocol/Internet Protocol (TCP/IP).</i>

## Glossary (*cont'd*)

<b>Telecommunications</b>	A branch of technology concerned with the transmission, emission, and reception of signs, signals, writing, images and sounds; that is, information of any nature by cable, radio, optical or other electromagnetic systems.
<b>Telecommunications Closet/Room</b>	An enclosed space for housing telecommunications equipment, cable terminations, and cross-connect cabling. The telecommunications closet/room is a recognized cross-connect point between the backbone and horizontal cabling subsystems. <i>See also</i> <b>Satellite Telecommunications Closet/Room.</b>
<b>Telecommunications Outlet</b>	A connector where the horizontal cable terminates. The telecommunications outlet provides the interface to the work area cabling.
<b>Terminal Block</b>	A protected or unprotected unit of wiring blocks, connecting blocks, and troughs that serves as a transition point between cable conductors.
<b>Thermoplastic</b>	A plastic material that softens and flows when heated and becomes firm when cooled. This process can be repeated.
<b>Thermoset</b>	A plastic material that is crosslinked by a heating process known as curing. Once cured, thermosets cannot be reshaped.
<b>Thick Coax</b>	The transmission medium used for Ethernet or IEEE 802.3 10BASE5 LANs. It is a 50 ohm thick coax cable (commonly referred to as the thick yellow cable).
<b>Thin Coax</b>	The transmission medium used for IEEE 802.3 10BASE2 LANs (sometimes referred to as CheaperNet). It is a 50 ohm thin coax cable.
<b>TIA/EIA</b>	North American Standards Organization.
<b>TIA/EIA 568A or B</b>	North American Commercial Building Telecommunications Wiring Standard.
<b>TIA/EIA 569</b>	North American Commercial Building Standard for Telecommunications Pathways and Spaces. Its purpose is to standardize specific design and construction practices within and between buildings which are in support of telecommunications media and equipment.
<b>TIA/EIA 606</b>	North American Administration Standard for the Telecommunications Infrastructure of Commercial Buildings. Its purpose is to provide guidelines for a uniform administration scheme for the cabling infrastructure.
<b>Token</b>	A special data sequence that is continuously sent around the ring. The term "token" represents permission to transmit from one station to its downstream neighbor.
<b>Token Ring</b>	A data link protocol type which implements media access control (MAC) by the circulation of a token around a complete ring network. Each station in the ring sequentially receives the opportunity to send data on the network as the token is passed around the network.
<b>Token Ring LAN</b>	A 4 or 16 Mb/s LAN standard based on token passing access protocol originally developed by IBM. Sometimes referred to as IEEE 802.5 or ISO 8802-5 standard.
<b>Topology</b>	The physical or electrical configuration of a local communications network (that is, the shape or arrangement of the system). The most common distribution system topologies are the bus, ring, and star.

## Glossary (*cont'd*)

<b>TP-PMD</b>	Twisted Pair Physical Medium Dependent. A twisted pair version of the FDDI standard that allows 100 Mb/s transmission over Category 5 copper cable.
<b>Transducer</b>	A sensing device that converts a signal from one form to another e.g., mechanical to electrical.
<b>Transition Point</b>	A location in the horizontal cabling where a change of cable form takes place.
<b>Transmission Distance</b>	The actual length of the path from the transmitter of one node to the receiver of the next downstream node. The maximum transmission distance is determined by the maximum signal loss (attenuation limit) that can be withstood between any transmitter and receiver.
<b>Transmission Media</b>	The various types of copper wire and fiber-optic cable used for transmitting voice, data, or video signals.
<b>Transport Control Protocol/Internet Protocol (TCP/IP)</b>	A common network layer and transport layer data networking protocol.
<b>Transport Layer</b>	Layer 4 of the OSI model. The transport layer provides for end-to-end data relaying service across any type of data network and is responsible for end-to-end reliability.
<b>Trunk</b>	A communication link between two switching systems. The term switching typically includes equipment in a central office (or the telephone company) and PBXs. A tie trunk connects PBXs. Central office trunks connect a PBX to the switching system at the central office. <i>See also</i> <b>Private Branch Exchange (PBX)</b> .
<b>Twinaxial Cable (TWINAX)</b>	Two insulated conductors inside a common insulator, covered by a metallic shield and enclosed in a cable sheath.
<b>Twisted Pair(s)</b>	Two insulated copper wires twisted together. The twists, or lays, are varied in length to reduce the potential for signal interference between pairs. In cables greater than 25 pairs, the twisted pairs are grouped and bound together in a common sheath. Twisted pair is the most common type of transmission media.
<b>UL</b>	<i>See</i> <b>Underwriters Laboratories (UL)</b> .
<b>Underwriters Laboratories (UL)</b>	A private testing laboratory concerned with electrical and fire hazards of equipment. With SYSTIMAX SCS components, several abbreviations are used to designate the approved use.
<b>Unshielded Twisted Pair Cable (UTP)</b>	Normal copper building cable, capable of high-speed data transmission. Techniques exist to address the signal impairments due to the transmission characteristics of copper media and to limit the radiated emission of UTP media.
<b>UTP</b>	<i>See</i> <b>Unshielded Twisted Pair (UTP)</b> .
<b>Video Conferencing</b>	Real time communications via video between two or more users at separate locations.
<b>Volt (V)</b>	The standard unit of electromotive force or electrical pressure. One volt is the amount of pressure that will cause one amp of current to flow through one ohm of resistance.

## Glossary (*cont'd*)

<b>W</b>	<i>See</i> <b>Watt (W)</b> .
<b>WAN</b>	<i>See</i> <b>Wide Area Network (WAN)</b> .
<b>Watt (W)</b>	A unit of power equal to one joule per second.
<b>Wavelength</b>	The physical distance of one electromagnetic wave cycle.
<b>Wide Area Network (WAN)</b>	Any physical network technology that spans large geographic distances. WANs usually operate at slower speeds and have higher delays than local area networks (LANs).
<b>Windows</b>	Graphics based operating system developed by Microsoft.
<b>Wireless LANs</b>	Local area network that communicates using radio technology.
<b>Wiring Block</b>	A molded plastic block that is designed in various pair configurations to terminate cable pairs and establish pair location on 110 Connector Systems.
<b>Wiring Closet</b>	<i>See</i> <b>Telecommunications Closet/Room</b> .
<b>Work Area</b>	A building space where the occupants interact with telecommunications terminal equipment. A user's work area which is typically 9 sq. meters or 100 sq. ft.
<b>Work Area Cable</b>	A cable connecting the telecommunications outlet to the terminal equipment.
<b>Work Area Subsystem</b>	The part of a distribution system that includes the equipment and extension cords from the information outlet to the terminal device.
<b>X.25</b>	A communication architecture developed by the International Telegraph and Telephone Consultative Committee (CCITT).
<b>Zone Method</b>	A ceiling distribution method in which ceiling space is divided into sections or zones. Cable is then run to the center of each zone to serve the information outlets nearby.

## Abbreviations and Symbols

The following abbreviations and symbols may be used in this guide.

This list does not include acronyms for individual vendors' products

A.	Ampère(s)	Hz	Hertz
AC	Alternating Current	I	Current
ADU	Asynchronous Data Unit	IEC	International Electrotechnical Commission
ANSI	American National Standards Institute	IEEE	Institute Of Electrical And Electronic Engineers
ARMS	Ampère(s) Root Mean Square	ILD	Intelligent Line Driver
ATM	Asynchronous Transfer Mode	in.	Inch(es)
AWG	American Wire Gauge	IO	Information Outlet
C	Degrees Celsius	I/O	Input/Output
CATV	Community Antenna Television	IR	Current and Resistance
CAU	Control Access Unit	ISA	Industry Standard Architecture
CB	Cable Budget	ISDN	Integrated Services Digital Network
CCITT	International Telephone And Telegraph Consultative Committee	ISM	Industry, Scientific And Medical
CISPR	Comité International Spécial Des Perturbations Radioélectriques	ISO	International Organization For Standardization
Cond.	Conductor	ITU-T	International Telecommunications Union-Telecommunications
CSA	Canadian Standards Association	°K	Degrees Kelvin
DAS	Dual Attachment Station	kb/s	Kilobits Per Second
dB	Decibel(s)	km	Kilometer(s)
dB/ft	Decibels Per Foot	kHz	Kilohertz
dB/km	Decibels Per Kilometer	Komhs	Kiloohm(s)
dBmV	Decibel Millivolt(s)	LAN	Local Area Network
DC	Direct Current	LED	Light - Emitting Diode
DCP	Data Communications Processor	LGBC	Lightguide® Building Cable
DS1	Digital Signal Level 1	LGX	Lightguide Cross-Connect
DTMF	Dual Tone Multiple Frequency	LIU	Lightguide Interconnection Unit
EIA	Electronic Industries Association	æm	Micrometer(s) Or Micron(s)
EISA	Extended Industry Standard Architecture	m	Meter(s)
F	Degrees Fahrenheit	Ma	Milliamp(s)
FCC	Federal Communications Commission	MADU	Multiple Asynchronous Data Unit
FDDI	Fiber Distributed Data Interface	MAU	Multistation Access Unit
FOIRL	Fiber-Optic Inter-Repeater Link	Mbaud	Megabaud(s)
Ft	Foot, Feet	Mb/s	Megabits Per Second
GHz	Gigahertz	MC	Micro Channel
HVAC	Heating, Ventilation, and Air-Conditioning	MHz	Megahertz
		MHz km	Megahertz-Kilometer(s)
		mi	Mile(s)

Abbreviations and Symbols (*cont'd*)

MIC	Media Interface Connector	RMS	Root Mean Square
mod.	Modular	RO	Ring Out
MRP	Manufacturing Resource Planning	SAS	Single Attachment Station
msec	Millisecond(s)	SCS	Structured Cabling Solutions
mV	Millivolt(s)	SDU	Synchronous Data Unit
NC	Normally Closed	sec	Second(s)
NEC	National Electrical Code	SECAM	Sequential Color With Memory
NEXT	Near End Crosstalk	sq	Square
nm	Nanometer(s)	ST	Straight Tip
NO	Normally Open	STP	Shielded Twisted Pair
NTSC	National Television System Committee	TIA	Telecommunications Industry Association
Ohm(s)	The standard unit of electrical resistance. One volt will cause one amp of current to flow through one ohm of resistance.	TP-PMD	Twisted-Pair Physical-Layer Medium-Dependent
OIS	Office Information Systems	UL	Underwriters Laboratories
OLIU	Optical Lightguide Interface Unit	UTP	Unshielded Twisted Pair
PAL	Phase - Alternation Line	V	Volt(s)
PB	Power Budget	VA	Volt Amp(s)
PBX	Private Branch Exchange	VAC	Volts AC
PC	Personal Computer	VAC RMS	Volts AC Root Mean Square
PMD	Physical Layer Medium - Dependent	VCR	Video Cassette Recorder
PTZ	Pan/Tilt/Zoom	VDC	Volts DC
R	Resistance	VHF	Very High Frequency
RF	Radio Frequency	VRMS	Volts Root Mean Square
RGB	Red-Green-Blue	VS	Virtual Storage
RI	Ring In	W	Watt(s)
		WAN	Wide Area Network
		yd	Yard(s)



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