

800.982.1708 • 828.324.2200  
 Fax: 828.328.3400  
 International Fax: 828.323.4989  
 www.commscope.com

**We Thank You...**

for your interest in CommScope<sup>®</sup> cable products. Our catalog includes the products which you request most often. However, if you do not see the product that you need listed in this catalog, contact the sales representative in your area or contact our Broadband Customer Service Department at 800-982-1708.



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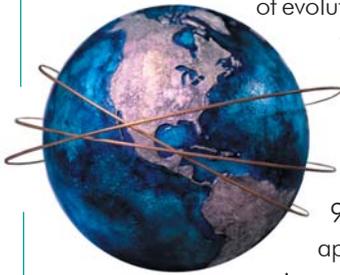
### Our Strategy Is Simple - Quality Products At Competitive Prices Delivered With Attentive, Personal Service

Advanced coax connections. Blazing fiber pipes. Streamlined headend products. Robust conduit. No wonder more broadband operators count on CommScope for quality HFC products than any other supplier. They share a common discovery that when you make us your cable supplier you get a suite of services and products offered by only one company—the industry’s technology leader – CommScope. We bridge the gap between yesterday’s analog systems and next generation networks with cables engineered specifically for each access point within a Hybrid Fiber Coax (HFC) topology.

### In the World of Cable... Nobody Beats CommScope

For more than 30 years, CommScope has been making mile after mile after mile of high-performance, high-bandwidth cables for telecommunications applications. Today, we are the only major supplier to offer a full range of coaxial, fiber optic, and twisted-pair cables for broadband and video, wired and wireless telephony, local area networks and other communications applications.

CommScope’s compelling access technology is a constant for broadband service providers doing business in a world of evolution and change, especially when it comes to the industry’s requirements for ever-increasing bandwidth and transmission speed. With access to more than 900 patents and patent applications, product innovation is clearly a



CommScope trademark. This leadership position means you can roll out new technology faster. The quicker and more robust we make cable, the sooner you realize the revenue generated by these services! Looking forward to the coming age of exciting communication challenges, CommScope aims to achieve even greater product innovations and growth to help meet your unique business requirements.

### CommScope Offers Value, No Matter What Function You Perform For Your Company.....

#### *If you are at the executive level,*

- CommScope offers advice and direction based on our market-leading reputation and experience in the cable industry.
- CommScope solutions create value by lowering construction costs and increasing the life of your network.

#### *If you are an engineer,*

- CommScope offers a wide variety of products to meet your specific needs.
- CommScope also offers training and support for construction crews and installers.

#### *If you are a purchasing agent,*

- You’ll recognize value in dealing with one supplier for all your cable needs.
- CommScope has logistics capabilities and delivery mechanisms to ensure you have the products you need, delivered where and when you need them.

#### *If you are an inventory or warehouse manager,*

- Even in the midst of construction frenzies, remain confident in knowing CommScope’s reputation for product availability, logistics and on-time delivery.

#### *If you are a design or consulting firm,*

- CommScope can assist you with technical advice and direction.
- Plus we have customized training for the installation and handling of our wide selection of cables.
- Best of all, we provide you with one source for all your cable needs!



### Quality – More than a Buzzword at CommScope

Factory floor automation and computer controlled processes work in tandem for exacting tolerances, peak performance and excellent consistency among all of our cable products. Every reel of cable manufactured by CommScope is the product of a 100% quality manufacturing environment. Proprietary testing systems, including electrical sweep-testing for coaxial cable and test reports attached to every reel of fiber optic cable are your assurance that the cable you get from CommScope performs to the standards specified. CommScope



maintains registration with the internationally recognized standard, ISO-9001 and we wear this designation with pride.

### Research & Development

CommScope is dedicated to cabling innovations. Our engineers participate in industry standards groups and critical committees. Bringing to market the most comprehensive choice of quality cable remains a primary focus. **Our products meet the requirements of existing electronics, yet empower service providers like you to push the limits of services offered by means of scalable architecture and optimal throughput.**

**Please Note:** The cables mentioned within this catalog are by no means comprehensive. Detailed specification sheets are available at the download area of our website, [www.commscope.com](http://www.commscope.com). To request more information on any CommScope product or service, please contact your sales representative or call CommScope's Customer Service Center at 1-800-982-1708.



### Broadband Customer Service Center

Retaining our reputation as the service leader among broadband industry suppliers is a top priority for CommScope.

No other cable manufacturer can offer the breadth of products and services we do. Through our Customer Service, Sales, Field Applications, and Technical Staff, CommScope has been able to stay ahead of the fast-shifting currents of the telecommunications industry.

Beginning with front-end support from our extensively trained worldwide sales force that will help you decide on the right cable for your job, you'll never be more than a phone call away from receiving the best possible information available.

### Key Customer Service Contact Numbers

Toll Free Telephone Number ..... 1-800-982-1708  
 Telephone ..... 828-324-2200  
 Domestic Fax ..... 828-328-3400  
 International Fax ..... 828-323-4989  
 Email ..... [custserv@commscope.com](mailto:custserv@commscope.com)



### Terms and Conditions

On approved credit, net 30 days from date of invoice; 1.5% finance charge equivalent to 18% annum will be added after due date. All orders subject to acceptance will be billed at price in effect at time of shipment. Prices, discounts, terms, conditions, and specifications are subject to change without notice. Please ask your sales representative for a complete copy of CommScope's Terms and Conditions.

### Reel Recycling

Unlike any other cable company in the world, CommScope is equipped to pick-up and recycle Trunk and Distribution, Fiber, and Conduit reels to help free up yard space, reduce disposal cost and protect the environment. In addition, CommScope will issue credit towards your next cable purchase for any returned reel that is reusable. This environmentally friendly service is available for all customers in the continental United States and Canada.



- Truckload quantities are preferred for pick-up.
- Approximately 50 to 100 reels consist of a truckload.
- CommScope will only accept company reels.
- Reels do not have to be stripped of excess cable.
- Credits will be issued for reels that are reusable.
- Please contact your customer service representative at (800) 982-1708 to schedule a reel pick-up.

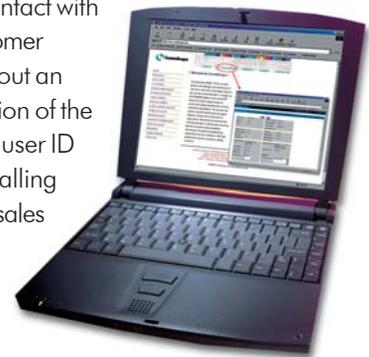


### Cable Transport, Inc.

CommScope even has our own fleet of transport trucks capable of delivering our wide breadth of products anywhere in the continental U.S. This dedicated fleet, Cable Transport, Inc. has approximately 100 tractors and 290 trailers, 125 of which are fitted with cargo-lifting equipment. With this exclusive fleet of trucks, CommScope is committed to delivering to you on time, all the time. Our strategically placed distribution centers are located so we can reach 95% of the continental U.S. within 24 hours. It is the CommScope commitment to put your needs first and deliver to your desired schedule on time. Our distribution centers are located in Catawba NC, Statesville NC, Scottsboro AL, and Sparks NV.

### CommScope Customer Service Web Portal - [mycommscope.com](http://mycommscope.com)

With [mycommscope.com](http://mycommscope.com), customers can check order status, verify shipping and/or delivery instructions, review orders, or get in contact with CommScope Customer Service. Inquire about an on-site demonstration of the portal or request a user ID and password by calling your CommScope sales representative.





**Corporate Sales Office**  
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**CommScope Cabos do Brasil Ltda.**  
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Rua Vigato, 661  
Jaguariúna, SP 13820-000  
Brazil  
+55.19.3867.6800



**Claremont Facility**  
3642 U.S. Hwy 70 East  
P.O. Box 879  
Claremont, NC 28610-0879  
828.459.5001



**Cable Technology Center**  
1545 St. James Church Rd.  
P.O. Box 149  
Newton, NC 28658  
828.466.8600



**Catawba Facility**  
6519 CommScope Rd.  
P.O. Box 199  
Catawba, NC 28609-0199  
828.241.3142



**Statesville Facility**  
125 CommScope Way  
Statesville, NC 28677-1876  
704.873.3519



**Scottsboro Facility**  
Scottsboro Industrial Park  
117 LeQuire St.  
Scottsboro, AL 35768  
256.259.0161



**Sparks Facility**  
1285 Southern Way  
Sparks, NV 89431  
775.351.1717

CommScope's history actually began in the early 1950's with the founding of Superior Cable Corporation. Today, CommScope is a strong vibrant company, a global leader in cable manufacturing.

**1953**

Superior Cable Corporation was founded in Hickory, North Carolina. Superior's primary product line was telephone cable.

**1964**

The CommScope name was first used by Superior Cable for their coaxial cables.

**1966**

CommScope began manufacturing at the current site in the Sherrill's Ford community in Catawba County, NC.



**1967**

Continental Telephone Company bought Superior Cable Corporation and formed CommScope as a division under the new company, Superior Continental Corporation.

**1976**

Superior Continental sold the CommScope division to a group of Hickory area investors headed by Frank Drendel, who now serves as CommScope CEO.

**1977**

Looking ahead to the importance of fiber optic cable in the CATV industry, CommScope merged with Valtec, Inc., an independent leader in fiber optic technology.

**1980**

Valtec was sold to M/A-COM, Inc. in order to strengthen and diversify both companies' product lines. CommScope became part of the Cable Home Group for M/A-COM.

**1983**

The Network Cable division was established for local area network, data communications, TVRO and specialized wire markets.



OUR COMPANY

**1986**  
CommScope became a division of General Instrument.



**1995**

CommScope launched a revolutionary, premium cable product under the Cell Reach name. This smooth wall 50-ohm transmission line cable offered superior reliability and performance over traditional corrugated cable.

**1997**

CommScope began trading as an independent company on the New York Stock Exchange (NYSE: CTV).



**1998**

CommScope purchased a coaxial cable manufacturing facility in Seneffe, Belgium.

**1999**

CommScope announced a 5-year, \$135 million expansion in Catawba County, NC significantly expanding its fiber optic and wireless manufacturing, research and development capabilities.

**2000**

CommScope purchased a facility in Jaguariúna, Brazil, and manufactures broadband cable products for the Latin American market. It also established a new manufacturing and distribution facility in Sparks, NV, which serves both West Coast and international broadband and wireless customers.

**2001**

CommScope partnered with Furukawa Electric of Japan to acquire OFS, formerly Lucent's fiber optic cable business, as part of Furukawa's purchase of Lucent's Optical Fiber Solutions business.

H I S T O R Y

## We Stand Ready to Bring Out the Cable Enthusiast In You!

Your reasons for choosing CommScope go much deeper than a long list of standard and optional cable features. There are also the intangibles. Responsive support and literally years of deployment experience make CommScope a unique build-out partner capable of walking you through logistics each step of the way.

To design and maintain high-speed, complex networks you'll need advanced levels of expertise. Are your technical personnel prepared to ascertain system requirements, understand engineering issues, select and install cable? We realize that this task is not an insignificant hurdle. Think of CommScope's Digital Broadband Resource Center™ as a way to help you overcome these obstacles. Our staff has skill sets from the RF, telephony, optical and internet worlds. We have a menu of services to help you develop technical competence and leadership within your own staff.

## What is It?

The Digital Broadband Resource Center is a repository of experience, knowledge, services and tools designed to assist broadband service providers successfully deploy state-of-the-art subscriber networks. CommScope's years of deployment experience are at your disposal, in the correct media and format to reach installers, technicians, engineers, designers or management.



Among many FREE resources from CommScope's Digital Broadband Resource Center, request DVD or VHS training modules, Construction Manuals, SpanMaster® sag and tension calculators or attenuation slide rules. Training videos are available on the following topics:

- Connectorizing (QR®, P3®, PowerFeeder®, and Drop Cable)
- Expansion Loops
- Drop Cable Compliance with NEC 830
- Fiber Optic Cable Entry and Splicing

## Navigate the Future With Over a Century of Experience

Our management and technical staff represents over a century of combined experience in coaxial, fiber optic and copper cable engineering and deployment. Members of CommScope's Digital Broadband Resource Center team hold several patents and have been published in a variety of industry publications.

## Simply Indispensable

Access to the Digital Broadband Resource Center affords access to a wide array of services and tools. The categories include:



## Training

- CommScope Training Center
- On-site custom application training includes courses such as:
  - Construction logistics
  - Broadband concepts
- Advice such as:
  - what cable to order
  - how to plan for construction
  - what to expect along the way
- SCTE regional training
- Training videos and various multimedia tools



### Digital Broadband Tools

- Comprehensive product catalogs
- Industry standard construction manuals (now available in English and Spanish!)
- Product Information Guide
- Published articles
- White papers
- Internet web site access to all documentation
- SpanMaster® software for sag and tension calculations
- ConQuest® PullMaster® software helps system engineering and construction groups model and optimize conduit cable pulls before construction begins
- Center conductor sizing guides
- Attenuation slide rules

### Engineering Services

- Laboratory analysis
- Standards committee support
- Field trials and troubleshooting support
- Sag and tension analysis



### Technical Services – Your One Stop Source for Cable Information

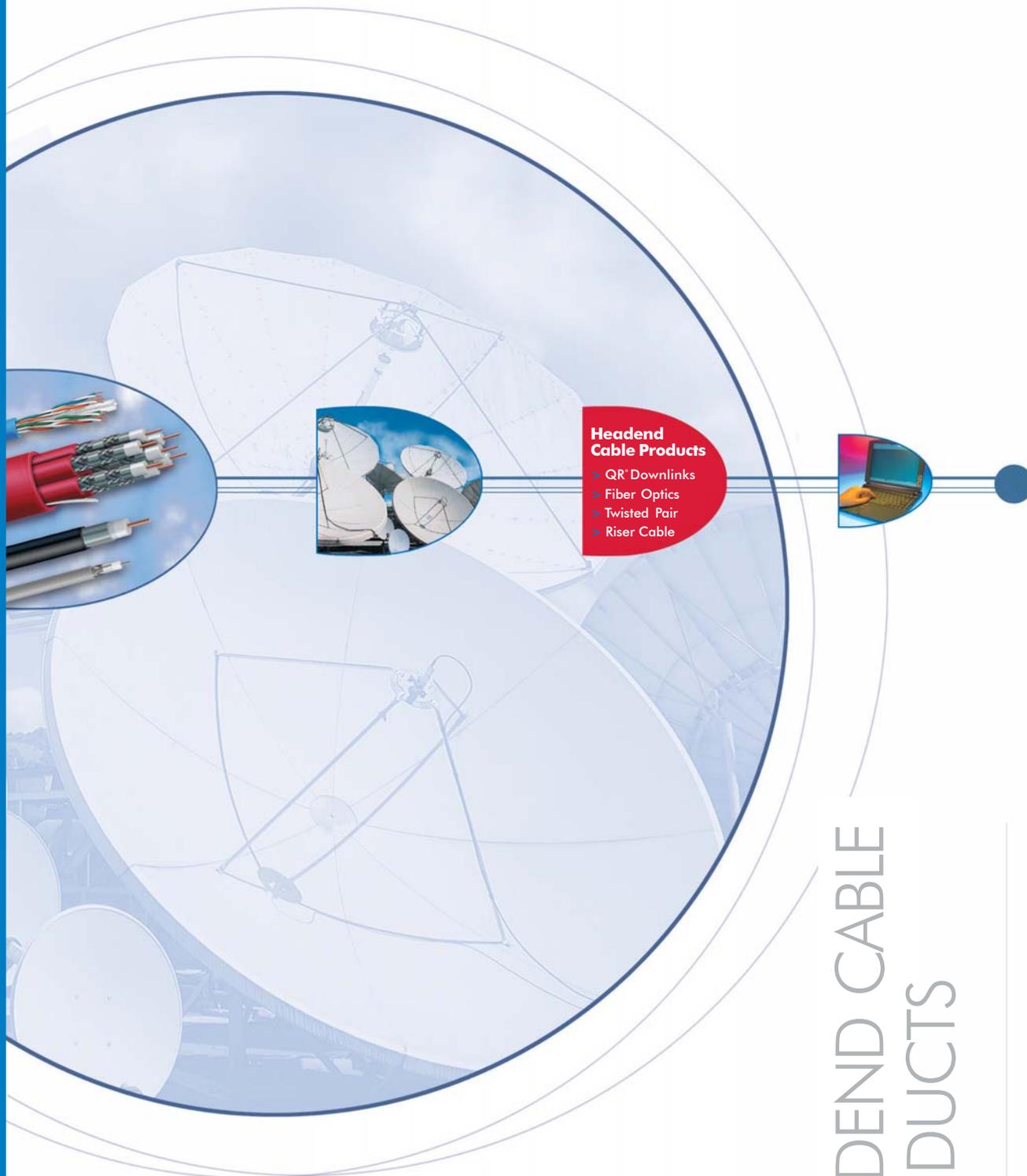
- Call center
- Specification assistance / review
- International experience
- Multilingual services available

Building a reliable, future-proof broadband network requires not only the best technology, but also experience and assistance in deploying that technology.

CommScope's Digital Broadband Resource Center stands ready to assist you in your goal – the timely and cost effective deployment of state-of-the-art broadband services.



For more information about our Digital Broadband Resource Center or for information on products, please contact us by phone at 1-866-333-dBRC (1-866-333-3272) or send us an e-mail at [dbrc@commscope.com](mailto:dbrc@commscope.com).



- Headend Cable Products**
- ▶ QR Downlinks
  - ▶ Fiber Optics
  - ▶ Twisted Pair
  - ▶ Riser Cable

# HEADEND CABLE PRODUCTS

**Headend Cable**

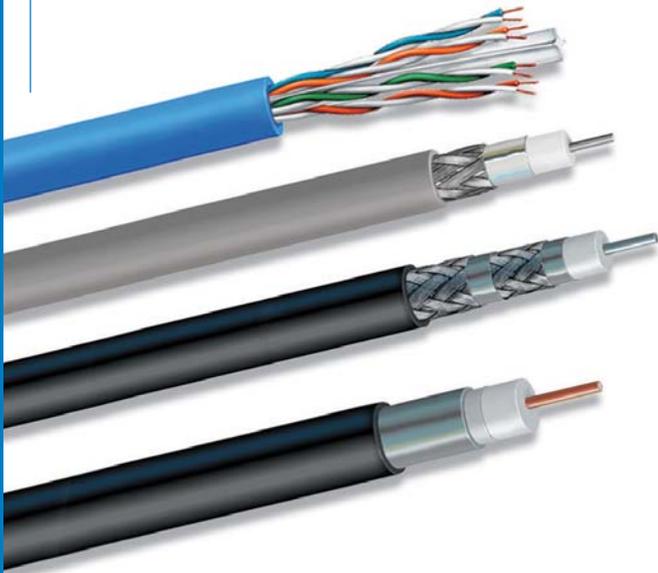
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### Headend Consolidation / Interconnection

Tomorrow's cable industry will deliver much more than broadcast video. Advanced cable services such as high-speed data, telephony and on-demand content are a reality today, and will become increasingly popular in the future for consumer and business applications. These services are imperative to your competitive landscape as they provide a means for additional revenue growth and improved customer retention.

In many cases, you provide service to a wide variety of areas ranging from densely populated urban settings to remote rural areas. In the past, there was no alternative to operating many autonomous headends. However, with the latest advancements in hardware, it makes economic sense to consolidate smaller properties and deliver content from one master headend to several smaller headends. As such, headends today are taking center stage as operational showcases.

Delivering more advanced services to consumers, cable performance and integrity are critical in the network, but aesthetics and the ease of identifying cables are important too. Along with cable identification, inventory management is simplified when you specify CommScope cable for your headend.



### Fiber Optic Cordage Cable for the Headend

Fiber optic riser and plenum rated cordage cables provide super low-loss interconnections throughout video/audio/data systems. All fiber optic products are engineered to facilitate handling, stripping and termination.

### Interconnect Signal Processing Equipment with F59 Headend Interconnect Cables

This quad-shielded product offers superior signal protection.

### Bundled F-59 Headend Cable - Both a Time Saver and Cost Reducer

Aesthetics and performance are improved with CommScope Bundled Headend Cable featuring up to eight individual cables housed within a single jacket. A complete line of high-capacity digital media access cables is offered for maximum performance and protection in flame retardant outer jackets.

### QR® Low-Loss Downlink Cable

- Superior attenuation characteristics provide a longer downlink to headend connections.
- Continuously RF-welded aluminum shield eliminates RF leakage.
- Craft-friendly – flexible, easy to pull and connectorize.

### DS-3/4 Telephony Cable

Interconnect and cross-connect cables are designed to meet the requirements of small sizes while providing clear transmissions. DS-3 & 4 cables are available in either plenum, non-plenum or with a halogen-free jacket.

### Precision Video Cable

These professional-grade cables are engineered for critical digital and audio applications. With high bandwidth and low-loss, CommScope's Precision Video Cables are perfect for the exacting signal requirements of HDTV, High Speed Data, and Digital Video. A high level of shielding prevents unwanted signal interference and preserves signal clarity even over long distances.

### Category Cables Meet the Demands of High Speed, Full Duplex Data Networks

Unshielded twisted pair (UTP) cable offered by CommScope includes premium designs to meet existing and proposed standards for Category 5e, 6 and 6e cable. Specify CommFlex™ jacketing for better resistance to kinking and for improved pulling and handling, critical for media access applications.

### CommScope's Digital Broadband Resource Center™

This repository of experience, knowledge, services & tools is provided to CommScope customers to assist installers, technicians, engineers, designers or managers of broadband service providers. Tools in various media and formats include: SpanMaster software for cable sag & tension calculations; center conductor sizing guides; attenuation slide rules; & call center spec assistance & review. Call us at 1-866-333-dBRC (3272) or e-mail [dbrc@commscope.com](mailto:dbrc@commscope.com) for answers to product questions or issues related to any CommScope broadband product.



**Dielectric**

Most CommScope coaxial cables have foamed (or cellular) dielectrics for better velocity of propagation characteristics. Different materials are used to meet electrical and fire-safety performance.

- Foam PE** - Foamed Polyethylene
- Solid PE** - Solid Polyethylene
- Foam FEP** - Foamed Fluorinated Ethylene
- Propylene** - (generic or Teflon® brand)
- Solid FEP** - Solid Fluorinated Ethylene Propylene
- AD/PE** - Air Dielectric created with a Polyethylene filament

**Jackets**

Jacket material may vary depending on application. Plenum-rated cables provide superior fire safety, while flame-retardant PVC are used in riser, general purpose and residential situations. Outdoor cables (especially those meant for burial) are usually sheathed in polyethylene.

- K** - Kynar® Polyvinylchloride (PDF - used in plenum cables)
- V** - CommFlex, our proprietary jacketing compound (used in plenum cables)
- PE** - Polyethylene (direct burial applications)
- PVC** - Polyvinylchloride

**Center Conductor**

Conductors in coaxial cable are either solid or stranded wire. Solid conductors are described by their diameter and material (i.e. 18 AWG Solid TC) while stranded conductors include their stranding (i.e. 20 AWG (19x32 AWG) Strand TC).

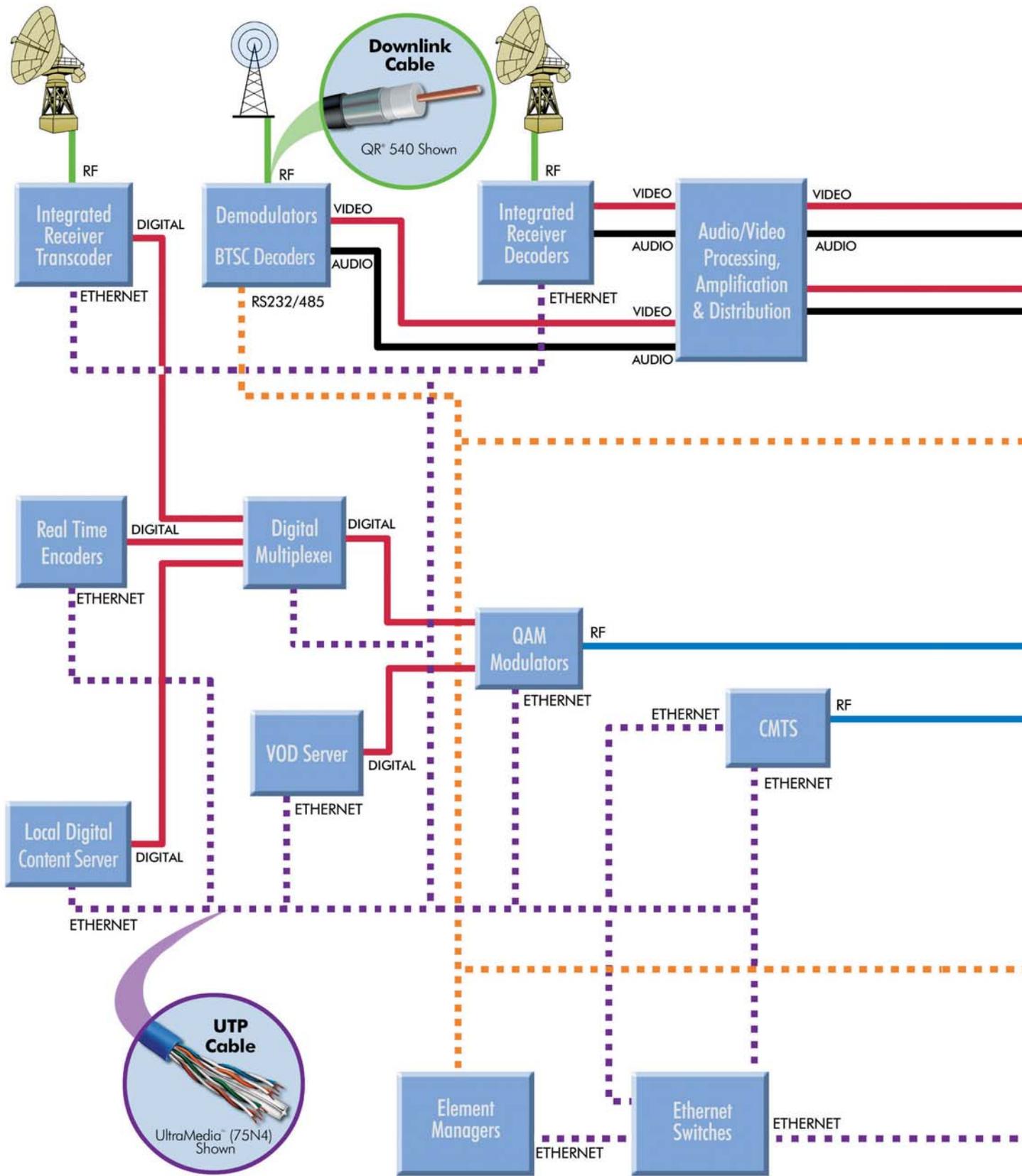
- BC** - Bare Copper
- SC** - Silver Copper
- TC** - Tinned Copper
- CCA** - Copper Clad Aluminum
- CCS** - Copper Covered Steel
- SCCS** - Silver Plated/Copper Covered Steel

**Shields**

Coaxial shields (also called the outer conductor) come in several varieties. Two types of coverage are: Foil, where aluminum is bonded to both sides of a polypropylene or polyester tape to provide 100% coverage and Braid where flexible wire is woven around the dielectric. Braid coverage designation is given as a percentage followed by a two letter code representing the material of the braid (i.e. 96% TC braid would be a 96% coverage of Tin Copper braid)

- ALS** - Aluminum sheath
- AL** - Aluminum braid
- BC** - Bare Copper braid
- TC** - Tin Copper braid

*Teflon is a registered trademark of E.I. DuPont de Nemours and Co.*





## QR® 320 Low-Loss Downlink Cables

### Very Low Attenuation Antenna/Headend Connections



CommScope's patented QR® coaxial cable was developed to meet the increasing demands of tomorrow's broadband networks. QR has the highest reliability and flexibility of any Trunk and Distribution coaxial cable, low RF attenuation and an unprecedented 10 year warranty.

All QR cable products offer tough polyethylene jackets and a standardized, environmentally sealed connector interface engineered for reliability and craft friendliness.

#### Standard QR Construction

A precision aluminum strip is formed and continuously RF welded around a high compression micro-cellular foam dielectric core, eliminating RF leakage, and the rigidity common in traditional coaxial products. The shield is fully bonded to the dielectric core, as is the copper clad aluminum center conductor. A tough polyethylene jacket is applied standard, which enhances cable reliability and allows QR's unique connector technology to form an environmental seal.

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 320 JCAR</b>  UL CATVR	has a flame-retardant polyethylene jacket that meets NEC's CATVR rating	56 lbs/kft (83 kg/km)	72 lbs/kft (108 kg/km)	3700 ft (1128 m)
<b>QR 320 JCA</b>  for outdoor, aerial	offers all of QR's standard construction features	47 lbs/kft (70 kg/km)	61 lbs/kft (91 kg/km)	3700 ft (1128 m)
<b>QR 320 JCASS</b>  for underground	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	47 lbs/kft (70 kg/km)	61 lbs/kft (91 kg/km)	3700 ft (1128 m)

\*Longer (and shorter) lengths are available

### Physical Dimensions

Component	Inches	mm
Nominal Center Conductor Diameter	0.071	1.80
Nominal Diameter Over Dielectric	0.294	7.47
Nominal Diameter Over Outer Conductor	0.320	8.13
Nominal Outer Conductor Thickness	0.013	0.34
Nominal Diameter Over Jacket	0.395	10.03
Nominal Jacket Wall Thickness	0.0375	0.89

### Mechanical Characteristics

Minimum Bending Radius	2.0 in.	50.8 mm
Maximum Pulling Tension	120 lbs.	54.5 kg <sub>f</sub>

### Electrical Characteristics

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 3 ohms	
Velocity of Propagation	87%	

### Maximum D.C. Resistance @ 68°F (20°C)

#### Copper Clad

Inner Conductor	3.28 ohms/1000 ft.	10.76 ohms/km
Outer Conductor	0.99 ohms/1000 ft.	3.25 ohms/km
Loop	4.27 ohms/1000 ft.	14.01 ohms/km

### Attenuation [@ 68° F. (20° C.)]

Frequency (MHz)	(dB/100 ft) Maximum	(dB/100 m) Maximum
5	0.24	0.79
30	0.62	2.03
45	0.76	2.49
50	0.80	2.62
55	0.84	2.76
83	1.07	3.51
108	1.22	4.00
150	1.45	4.76
181	1.60	5.25
193	1.65	5.41
211	1.73	5.68
220	1.76	5.77
250	1.86	6.10
270	1.94	6.37
300	2.04	6.69
325	2.17	7.12
350	2.25	7.38
375	2.30	7.55
400	2.38	7.81
425	2.45	8.04
450	2.52	8.27
500	2.72	8.92
550	2.85	9.35
600	2.98	9.78
750	3.34	10.96
865	3.62	11.87
1000	3.89	12.76
1050	3.99	13.09
1100	4.09	13.42
1150	4.19	13.75
1200	4.29	14.08
1250	4.38	14.37
1300	4.48	14.70
1350	4.57	14.99
1400	4.66	15.29
1450	4.75	15.58

Specifications are subject to change without notice.

## QR® 540 Low-Loss Downlink Cables

### Very Low Attenuation Antenna/Headend Connections



CommScope's patented QR® coaxial cable was developed to meet the increasing demands of tomorrow's broadband networks. QR has the highest reliability and flexibility of any coaxial cable, low RF attenuation and an unprecedented 10 year warranty.

All QR cable products offer tough polyethylene jackets and a standardized, environmentally sealed connector interface engineered for reliability and craft friendliness.

QR 540 is optimized for use in broadband feeder plants. QR 540 offers lower attenuation than larger traditional products, with unmatched flexibility, reliability and cost effectiveness.

#### Standard QR Construction

A precision aluminum strip is formed and continuously RF welded around a high compression micro-cellular foam dielectric core, eliminating RF leakage, and the rigidity common in traditional coaxial products. The shield is fully bonded to the dielectric core, as is the copper clad aluminum center conductor. A tough polyethylene jacket is applied standard, which enhances cable reliability and allows QR's unique connector technology to form an environmental seal.

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 540 JCAR</b>  UL CATVR	has a flame-retardant polyethylene jacket that meets NEC's CATVR rating	91 lbs/kft (135 kg/km)	126 lbs/kft (188 kg/km)	3700 ft (1128 m)
<b>QR 540 JCA</b>  for outdoor, aerial	offers all of QR's standard construction features	92 lbs/kft (137 kg/km)	120 lbs/kft (179 kg/km)	3700 ft (1128 m)
<b>QR 540 JCASS</b>  for underground	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	92 lbs/kft (137 kg/km)	120 lbs/kft (179 kg/km)	3700 ft (1128 m)

\*Longer (and shorter) lengths are available

**Physical Dimensions**

Component	Inches	mm
Nominal Center Conductor Diameter	0.124	3.15
Nominal Diameter Over Dielectric	0.514	13.03
Nominal Diameter Over Outer Conductor	0.540	13.72
Nominal Outer Conductor Thickness	0.0135	0.343
Nominal Diameter Over Jacket	0.610	15.49
Nominal Jacket Wall Thickness	0.035	0.89

**Mechanical Characteristics**

Minimum Bending Radius	4.0 in.	10.2 cm
Maximum Pulling Tension	220 lbs.	100 kg <sub>f</sub>

**Electrical Characteristics**

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	88%	

**Maximum D.C. Resistance @ 68°F (20°C)**

**Copper Clad**

Inner Conductor	1.02 ohms/1000 ft.	3.34 ohms/km
Outer Conductor	0.59 ohms/1000 ft.	1.94 ohms/km
Loop	1.61 ohms/1000 ft.	5.28 ohms/km

**Attenuation [ @ 68° F. (20° C.) ]**

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.13	0.14	0.43	0.46
30	0.34	0.34	1.12	1.12
45	0.41	0.41	1.35	1.35
50	0.43	0.44	1.41	1.44
55	0.45	0.47	1.48	1.54
83	0.55	0.58	1.80	1.90
108	0.63	0.66	2.07	2.17
150	0.74	0.79	2.43	2.59
181	0.84	0.88	2.76	2.89
193	0.87	0.90	2.85	2.95
211	0.91	0.95	2.99	3.12
220	0.93	0.98	3.05	3.22
250	0.99	1.03	3.25	3.38
270	1.03	1.07	3.38	3.51
300	1.08	1.13	3.54	3.71
325	1.13	1.18	3.71	3.87
350	1.17	1.23	3.84	4.03
375	1.22	1.27	4.00	4.17
400	1.26	1.32	4.13	4.33
425	1.30	1.37	4.27	4.49
450	1.35	1.40	4.44	4.59
500	1.41	1.49	4.63	4.89
550	1.51	1.56	4.95	5.12
600	1.59	1.64	5.23	5.38
750	1.80	1.85	5.92	6.07
865	1.90	2.00	6.23	6.56
1000	2.10	2.17	6.89	7.12
1050	2.16	2.23	7.09	7.32
1100	2.22	2.29	7.28	7.51
1150	2.28	2.35	7.48	7.71
1200	2.34	2.40	7.68	7.87
1250	2.40	2.46	7.87	8.07
1300	2.45	2.51	8.04	8.24
1350	2.51	2.57	8.24	8.43
1400	2.56	2.62	8.40	8.60
1450	2.62	2.68	8.60	8.79

Specifications are subject to change without notice.

# F59 Headend Interconnect Cables

For Audio/Video Rack Interconnection



### Application

- Interconnection of signal processing equipment

### Features

- Quad-shielded for superior signal protection
- UL-listed CATV

### Testing

- All reels swept-test to 1000 MHz/test report attached to reel

Catalog Number Safety Rating	Conductor Size & Type Nom DCR kft/km	Dielectric Type Nom OD in/mm	Shields Type & Coverage Nom DCR kft/km	Jacket Type & Thickness in/mm	Cable Color & Dimensions in/mm	Nominal Capacitance		Nom Vel. of Prop.	Nom Imp. ohms	Maximum Attenuation		
						pF/ft	pF/m			MHz	dB/100ft	dB/100m
<b>F59 HEC-2VV*</b>    ETL CATV	20 AWG Silver-plated copper covered steel 46.8Ω/151Ω	Foam PE .144/3.66	AL foil, 95% AL braid AL foil and 95% AL braid 0.99Ω/3.2Ω	FR PVC .028/.70	Various .270/6.9	16.2	53.1	85%	75	5	0.86	2.82
										55	2.05	6.73
										83	2.45	8.04
										187	3.60	11.81
										211	3.80	12.47
										250	4.10	13.45
										300	4.45	14.60
										350	4.80	15.75
										400	5.10	16.73
										450	5.40	17.72
										500	5.70	18.70
550	5.95	19.52										
600	6.20	20.34										
750	6.97	22.87										
865	7.52	24.67										
1000	8.12	26.64										
F59 HEC-2/3-22 has identical characteristics to F59 HEC with three siamese-jacketed audio pairs												
<b>F59 HEC-2/3-22</b> w/three audio pairs    ETL CATV										5	0.86	2.82
										55	2.05	6.73
										83	2.45	8.04
										187	3.60	11.81
										211	3.80	12.47
										250	4.10	13.45
										300	4.45	14.60
										350	4.80	15.75
										400	5.10	16.73
										450	5.40	17.72
										500	5.70	18.70
550	5.95	19.52										
600	6.20	20.34										
750	6.97	22.87										
865	7.52	24.67										
1000	8.12	26.64										
<b>7-F59 HEC-2 VV</b> <b>Bundled Headend</b> <b>Cable</b>    Also available with 8 conductors; request catalog # <b>8-F59 HEC-2 VV</b>	20 AWG Silver-plated copper covered steel 46.8Ω/151Ω	Foam PE .144/3.66	AL foil 95% AL braid AL foil and 95% AL braid 0.99Ω/3.2Ω	FR PVC .270/6.86	Various** .900/22.86	16.2	53.1	85%	75	5	0.86	2.82
										55	2.05	6.73
										83	2.45	8.04
										187	3.60	11.81
										211	3.80	12.47
										250	4.10	13.45
										300	4.45	14.60
										350	4.80	15.75
										400	5.10	16.73
										450	5.40	17.72
										500	5.70	18.70
550	5.95	19.52										
600	6.20	20.34										
750	6.97	22.87										
865	7.52	24.67										
1000	8.12	26.64										

\*S59 HEC is a solid dielectric version of F59 HEC-2 with two layers of TC braid shielding. Electrical specifications and dimensions are different. Call for details.

\*\*Available in black, white, gray, green, brown, red, yellow, blue, orange, violet, aqua and rose.

Specifications are subject to change without notice.

# DS3/4 Telephony Interconnect Cables

## Lucent 735A and 734D Equivalent (Other styles available)



### Application

- Low-attenuation interconnection of telephony devices (multiplexers, crossconnects, etc.)

### Features

- Small diameters and flexible construction save space and aid installation
- Meets Telcordia GR-139-CORE, NEC/CEC CMR riser safety requirements

### Testing

- All reels swept and tested for continuity and dielectric strength

Catalog Number Safety Rating	Conductor Size & Type Nom DCR kft/km	Dielectric Type Nom OD in/mm	Shield Type & Coverage Nom DCR kft/km	Jacket Type & Nom. Thickness in/mm	Cable Color OD in/mm	Nominal Capacitance		Nom Vel. of Prop.	Nom Imp. ohms	Nom Wt per kft on reel	Nominal Attenuation		
						pF/ft	pF/m				MHz Signal	dB/ 100ft	dB/ 100m
<b>734S1</b>    NEC CMR CEC CMR	20 AWG Solid SC 10.7Ω/35.1Ω	Foam PE .150/3.81	AL foil and 80% TC braid 2.7Ω/8.8Ω  Minimum SRL 30dB @ 15-90 MHz	PVC .025/.64	Gray .236/6.0	17.0	55.8	80%	75	33/15	1	0.27	0.88
											CEPT1	0.27	0.89
											CEPT2	0.51	1.67
											5	0.55	1.80
											10	0.77	2.53
											CEPT3	1.01	3.31
											DS3	1.16	3.80
											STS1	1.25	4.10
											50	1.74	5.71
											CEPT4	2.07	6.79
											STS3	2.19	7.18
											100	2.49	8.17
											DS4	2.94	9.64
200	3.58	11.74											
<b>73501</b>    NEC CMR CEC CMR	26 AWG Solid SC 39.5Ω/130Ω	Foam PE .077/1.96	AL foil and 92% TC braid 5.6Ω/18.4Ω  Minimum SRL 30dB @ 15-90 MHz	PVC .013/.33	Gray .127/3.23	17.5	57.4	78%	75	14/6	1	0.55	1.80
											CEPT1	0.56	1.84
											CEPT2	1.00	3.28
											5	1.10	3.61
											10	1.60	5.23
											CEPT3	2.40	7.87
											DS3	2.70	8.86
											STS1	2.80	9.18
											50	3.70	12.14
											CEPT4	4.60	15.09
											STS3	4.80	15.74
											100	5.40	17.17
											DS4	6.20	20.33
200	7.70	25.26											

Standard packaging is 1000 ft (±10%) reels  
 Minimum order quantities may apply

Specifications are subject to change without notice.

# Fiber Optic Cordage Cables

## Riser-rated Cordage for Video, Audio and Data



- Meets critical NEC/CEC riser (OFNR) safety standards
- Simplex and zipcord cables available in a variety of sizes
- Heavy-duty simplex cables help absorb extra handling stresses when using proper installation techniques
- Designed for ease of handling and termination

Cable Type/Unit Size	Catalog Number	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
			Loaded inch/cm	Unloaded inch/cm	Short term lbs./ Newtons	Long term lbs./Newtons	lbs/ kft	kg/ km
 Simplex/1.6mm	R-ØØ1-SP-XY-F16ZZ	0.067/1.70	2.0/5.0	1.2/3.0	35/156	11/47	1.8	2.7
Simplex/2.0mm	R-ØØ1-SP-XY-F20ZZ	0.079/2.00	2.0/5.0	1.2/3.0	50/222	15/67	2.8	4.1
Simplex/2.5mm	R-ØØ1-SP-XY-F25ZZ	0.098/2.50	2.0/5.0	1.2/3.0	60/267	18/80	4.2	6.3
Simplex/2.9mm	R-ØØ1-SP-XY-F29ZZ	0.114/2.90	2.3/5.8	1.2/3.0	60/267	18/80	5.9	8.7
 Zipcord/1.6mm	R-ØØ2-ZC-XY-F16ZZ	0.067 x 0.138/ 1.70 x 3.50	2.0/5.0	1.2/3.0	70/311	21/93	3.7	5.5
Zipcord/2.0mm	R-ØØ2-ZC-XY-F20ZZ	0.079 x 0.161/ 2.00 x 4.10	2.0/5.0	1.2/3.0	80/356	24/107	5.4	8.0
Zipcord/2.5mm	R-ØØ2-ZC-XY-F25ZZ	0.098 x 0.201/ 2.50 x 5.10	2.0/5.0	1.2/3.0	90/400	27/120	8.5	12.6
Zipcord/2.9mm	R-ØØ2-ZC-XY-F29ZZ	0.114 x 0.232/ 2.90 x 5.90	2.3/5.8	1.2/3.0	90/400	27/120	11.7	17.4
 Interconnect /2.9mm	R-ØØ2-IC-XY-F29ZZ	0.114/2.90	2.3/5.8	1.2/3.0	70/311	21/93	4.7	7.0

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore™ 150, 50µm, Multimode Fiber

**5L** LaserCore™ 300, 50µm, Multimode Fiber

**5K** LaserCore™ 500, 50µm, Multimode Fiber

**ZZ** = Standard Jacket Color **YL** (Yellow - Singlemode Cable)

**OR** (Orange - Multimode or Composite Cable)

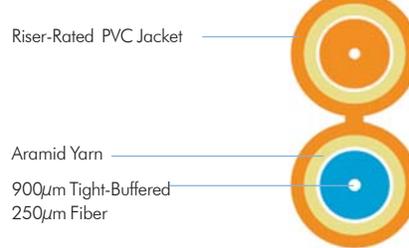
**AQ** (Aqua - LaserCore™ Cable)

**Fiber Identification Colors:** 1/Blue, 2/Orange

### Riser Simplex Cable



### Riser Zipcord Cable



### Riser 2-Fiber Interconnect Cable



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-4° to 158°F (-20° to 70°C)	FOTP-3
Installation Temperature	-4° to 158°F (-20° to 70°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	Exceeds 57 lbf/in (10N/mm)	FOTP-41
Impact Resistance	Exceeds 0.54 lb-ft (0.74 N·m)	FOTP-25
Flexing	Exceeds 300 cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Fiber Optic Premises Cables are qualified to the requirements of Telcordia GR-409-CORE, Issue 1

Specifications are subject to change without notice.

# Precision Video Cables

## 75Ω Coax Cable for Baseband Audio and Video Interconnection

Catalog Number Safety Rating	Conductor Size & Type Nom DCR kft/km	Dielectric Type Nom OD in/mm	Shields Type & Coverage Nom DCR kft/km	Jacket Type & Thickness in/mm	Cable Color & Dimensions in/mm	Nominal Capacitance		Nom Vel. of Prop.	Nom Imp. ohms	Nominal Attenuation		
						pF/ft	pF/m			MHz	100ft	dB/ 100m
<b>5565</b>   NEC CMR CEC CMR	20 AWG Solid BC 10.5Ω/34.4Ω	Foam PE .144/3.66	AL foil and 95% TC braid 2.8Ω/9.18Ω	Flame- retardant PVC .030/.76	black .242/61	16.2	53.1	82%	75	1	0.31	1.03
										3.6	0.56	1.85
										10	0.90	2.95
										71.5	2.13	6.97
										135	2.81	9.23
										270	3.88	12.71
										360	4.56	14.97
720	6.63	21.73										
1000	7.75	25.42										
<b>5765</b>   NEC CMR CEC CMR	18 AWG Solid BC 6.4Ω/21.0Ω	Foam PE .180/4.57	AL foil and 95% TC braid 2.0/6.6	Flame- retardant PVC .033/.84	black .272/6.9	16.2	53.1	82%	75	1	0.25	0.82
										10	0.45	1.48
										50	0.89	2.92
										100	1.21	3.97
										200	1.73	5.67
										400	2.48	8.13
										700	3.41	11.18
										900	3.97	13.02
										1000	4.18	13.71

# Precision Video Cables

## 75Ω Miniature Coax Cable for HDTV, CMTS and Signal Distribution

Catalog Number Safety Rating	Conductor Size & Type Nom DCR kft/km	Dielectric Type Nom OD in/mm	Shields Type & Coverage Nom DCR kft/km	Jacket Type & Thickness in/mm	Cable Color & Dimensions in/mm	Nominal Capacitance		Nom Vel. of Prop.	Nom Imp. ohms	Nominal Attenuation		
						pF/ft	pF/m			MHz	100ft	dB/ 100m
<b>7538B</b> <b>Miniature Low-loss</b>   NEC CMG(UL) CEC CMG(UL)	23 AWG Solid BC 20.3Ω/66.6Ω	Foam PE .100/2.51	AL foil and 95% TC braid 2.7Ω / 8.9Ω	Flame- retardant PVC .014/0.35	black, red or white  0.159/4.0	16.5	54.1	84%	75	1	0.38	1.24
										3.6	0.77	2.52
										10	1.29	4.23
										71.5	3.04	9.97
										135	4.18	13.71
										270	5.92	19.42
										360	6.70	21.98
										720	9.47	31.06
										1000	11.16	36.60
										1500	13.67	44.84
										2000	15.78	51.76
										2250	16.74	54.91
										3000	19.33	63.40
<b>753803B</b> <b>Miniature Low-loss</b>   NEC CMR(UL) CEC CMR(UL)	23 AWG Solid BC 20.3Ω/66.6Ω	Foam PE .100/2.51	AL foil and 95% TC braid 2.7Ω / 8.9Ω	TPE .054/1.36	red, green, blue  outer jacket black 0.415/10.44	16.5	54.1	84%	75	Same as Above		
<b>753805B HEC*</b> <b>Miniature Low-loss</b>   NEC CMG(UL) CEC CMR(UL)	23 AWG Solid BC 20.3Ω/66.6Ω	Foam PE .100/2.51	AL foil and 95% TC braid 2.7Ω / 8.9Ω	TPE .054/1.36	red, green, blue, yellow, white  outer jacket black 0.54/13.58	16.5	54.1	84%	75	Same as Above		
<b>753808B HEC</b> <b>Miniature Low-loss</b>   NEC CMG(UL) CEC CMR(UL)	23 AWG Solid BC 20.3Ω/66.6Ω	Foam PE .100/2.51	AL foil and 95% TC braid 2.7Ω / 8.9Ω	TPE .054/1.36	red or blue inner & outer jackets (blue shown)  outer jacket 0.665/16.89	16.5	54.1	84%	75	Same as Above		

\*HDTV version also available.

Specifications are subject to change without notice.

# UltraPipe™ Category 6e 550MHz

Extended Bandwidth High Performance UTP Category 6e Cable



## Highest Performance UTP Cable Available with Improved:

- Attenuation
- Crosstalk
- Return Loss



UltraPipe is the next evolution in Unshielded Twisted Pair (UTP). UltraPipe exceeds all Category 6 specifications and provides superior bandwidth performance up to 550MHz to support broadband video and high-speed, full-duplex transmission protocols.

UltraPipe offers a 60% improvement in signal strength by providing a 2db improvement in attenuation over proposed Category 6 cable. UltraPipe also offers a 300% improvement in PowerSum crosstalk performance, critical for Gigabit Ethernet networks. UltraPipe has a 25% improvement in return loss over proposed Category 6, maximizing cable balance and minimizing echo to improve overall channel performance.

CommScope proves this performance by individually testing every master reel of UltraPipe cable. In March, 2003, we began posting the test reports online. Our unique WebTrak™ system allows you to review this data online at [www.commscopewebtrak.com](http://www.commscopewebtrak.com)

UltraPipe's patented design includes the revolutionary Isolator™ pair separator, which resolves NEXT and ELFEXT issues required for accurate transmission using all four pairs.

## UltraPipe is an excellent Choice for Critical Network Applications.

### Electrical Performance of UltraPipe

Frequency MHz	Attenuation (dB/100m)		Near End Crosstalk (dB)		ACR (dB/100m)		PowerSum (dB)				ELFEXT (dB/100m)		Return Loss (dB)				
	CommScope Max UltraPipe	EIA/TIA568 Cat. 6	CommScope Min	EIA/TIA568 Cat.6	Min UltraPipe	Min 6EJCM	NEXT Min	ELFEXT Min		ACR Min		Min UltraPipe	Min 6EJCM	CommScope Min UltraPipe	EIA/ITA 568 Cat.6		
								6EJCM	UltraPipe	UltraPipe	6EJCM						
1.0	2.0	2.4	2.0	80.3	80.3	78.3	77.9	78.3	70.8	70.8	76.3	75.9	74.8	69.8	23.0	23.0	20.0
4.0	3.8	4.5	3.8	71.3	71.3	67.5	66.7	69.3	58.8	58.8	65.5	64.7	62.8	57.8	23.6	23.6	23.0
8.0	5.3	6.4	5.3	66.8	66.8	61.5	60.4	64.8	52.7	52.7	59.5	58.4	56.7	51.7	25.4	25.4	24.5
10.0	5.9	7.1	6.0	65.3	65.3	59.4	58.2	63.3	50.8	50.8	57.4	56.2	54.8	49.8	26.0	26.0	25.0
16.0	7.4	9.1	7.6	62.2	62.2	54.8	53.2	60.2	46.7	46.7	52.8	51.2	50.7	45.7	26.0	26.0	25.0
20.0	8.3	10.2	8.5	60.8	60.8	52.5	50.6	58.8	44.8	44.8	50.5	48.6	48.8	43.8	26.0	26.0	25.0
25.0	9.3	11.4	9.5	59.3	59.3	50.0	47.9	57.3	42.8	42.8	48.0	45.9	46.8	41.8	25.5	25.5	24.3
31.25	10.4	12.8	10.7	57.9	57.9	47.4	45.1	55.9	40.9	40.9	45.4	43.1	44.9	39.9	25.0	25.0	23.6
62.5	14.9	18.5	15.4	53.4	53.4	38.5	34.9	51.4	34.9	34.9	36.5	32.9	38.9	33.9	23.5	23.5	21.5
100.0	19.0	23.8	19.8	50.3	50.3	31.3	26.5	48.3	30.8	30.8	29.3	24.5	34.8	29.8	23.0	23.0	20.1
155.0	23.9	30.2	25.2	47.4	47.4	23.5	17.3	45.4	27.0	27.0	21.5	15.3	31.0	26.0	21.6	21.6	18.8
200.0	27.4	34.8	29.0	45.8	45.8	18.4	11.0	43.8	24.8	24.8	16.4	9.0	28.8	23.8	21.0	21.0	18.0
250.0	30.8	39.4	32.8	44.3	44.3	13.5	4.9	42.3	22.8	26.8	11.5	2.9	26.8	21.8	20.5	20.5	17.3
300.0	34.0	43.7		43.1	43.1	9.1		41.1	21.3	21.3	7.1	-2.6	25.3	20.3	20.1	20.1	
350.0	37.0			42.1		5.2		40.1	19.9		3.2		23.9		19.8		
400.0	39.7			41.3		1.5		39.3	18.8		-0.5		22.8		16.9		
550.0	47.3			39.2		-8.1		37.2	16.0		-10.1		20.0		15.9		

Specifications are subject to change without notice.

# UltraPipe™ Category 6e 550MHz

## Extended Bandwidth High Performance UTP Category 6e Cable



### Applications

- Broadband Video, Gigabit Ethernet, 155 Mb/s ATM, 100 Mb/s TP-PMD/CDDI and Fast Ethernet

### Exceeds

- ANSI/TIA-568-B.2-1 Cat 6, CENELEC EN50173, ICEA S-90-661, NEMA WC 66-1999 Cat 6, NEMA Low-Loss Extended Frequency, AS/NZS 3085.1, ISO/IEC 11801 and TIA/EIA PN-4657

### Features

- Patented design with Isolator™ pair separator for superior crosstalk performance
- Rugged design allows higher max pulling tensions
- Flexible jacket strips cleanly and resists kinking
- Coextruded color striped pairs for easy identification
- 1,000 to 0 footage markers every two feet (not available for outdoor cables)
- Larger gauge copper for low signal loss

### Test Report

- Test reports available online at [www.commscopewebtrak.com](http://www.commscopewebtrak.com)

### Plenum

Catalog Number Safety Rating	No. of Pairs	Conductor Size and Material	Insulation Type & Thickness in / mm	Cable Jacket Material & Thickness in / mm	Cable Jacket OD and colors in / mm	Nominal Capacitance Pf/Ft	Input Impedance	Maximum DCR	Velocity of Propagation	Shipping Wt. in lbs. kft / km
<b>6ECMP</b>  ETL CMP/C(ETL)CMP	4	23 AWG Solid BC	3 prs: FEP .008/.20  1 pr: PE .008/.20	CommFlex .019/.48	.250/6.3 teal, pink, white, blue, yellow, and gray	14	100Ω ± 15%	20.3Ω/kft 6.7Ω/100m	71%	27.5/90

### Non-Plenum

Catalog Number Safety Rating	No. of Pairs	Conductor Size and Material	Insulation Type & Thickness in / mm	Cable Jacket Material & Thickness in / mm	Cable Jacket OD and colors in / mm	Nominal Capacitance Pf/Ft	Input Impedance	Maximum DCR	Velocity of Propagation	Shipping Wt. in lbs. kft / km
<b>6ECMR</b>  ETL CMR/C(ETL)CMG	4	23 AWG Solid BC	PE .008/.20	FR-PVC .024/.61	.240/6.0 white, blue, yellow, teal, pink and gray	14	100Ω ± 15%	20.3Ω/kft 6.7Ω/100m	68%	25.6/84

### Patch Cable Swept to 300 MHz

Catalog Number Safety Rating	No. of Pairs	Conductor Size and Material	Insulation Type & Thickness in / mm	Cable Jacket Material & Thickness in / mm	Cable Jacket OD and colors in / mm	Nominal Capacitance Pf/Ft	Input Impedance	Maximum DCR	Velocity of Propagation	Shipping Wt. in lbs. kft / km
<b>6EJCM</b>  ETL CM/C(ETL)CMG	4	24 AWG Stranded TC	PE .007/.19	CommFlex FR-PVC .020/.51	.230/5.8 white, blue, yellow, gray, and black	14	100Ω ± 15%	20.3Ω/kft 6.7Ω/100m	67%	20.0/66

Specifications are subject to change without notice.

# UltraMedia™ Category 6 400 MHz

## Extended Bandwidth for High-Speed Voice/Video/Data Applications



CommScope's UltraMedia is the extended bandwidth cable that defines the new standard in UTP performance. UltraMedia's improved 400 MHz capability, unmatched ACR, PowerSum NEXT and precision balance make UltraMedia the best-performing Category 6+ UTP cable available.



Engineered specifically for high-speed, full-duplex, parallel transmission protocols that dominate new technologies, UltraMedia's patented design, which includes the revolutionary Isolator™ pair separator, resolves ELFEXT and balance issues required for accurate transmission using all four pairs. Exceeding both ANSI/TIA/EIA 568B.2-1 and ISO/IEC 11801 standards, UltraMedia is an excellent choice for critical network applications.

CommScope proves this performance by individually testing every master reel of UltraMedia cable. In March, 2003, we began posting the test reports online. Our unique WebTrak™ system allows you to review this data online at [www.commscopewebtrak.com](http://www.commscopewebtrak.com).

### Electrical Performance of UltraPipe

Parameter	UltraMedia Performance	% Improvement
Specified Frequency	400 MHz	60% improvement
Maximum Skew	≤25ns	300% improvement
PSUM ELFEXT & ELFEXT	1 dB vs. std. Cat 6	25% improvement
Capacitance Unbalance	58.2 pF ma @ 23°C	500% improvement
PSUM NEXT & NEXT	3 dB vs. std. Cat 6	25% improvement

### Electrical Performance of UltraMedia vs. ANSI/TIA/EIA Category 6

Frequency MHz	Attenuation (dB/100m)		Near End Crosstalk (dB)		ACR (dB/100m) Min/Avg	PowerSum (dB)			ELFEXT (dB/100m) Min	Return Loss (dB)	
	CommScope Max	EIA/TIA 568 Cat. 6	CommScope Min/Avg	EIA/TIA 568 Cat.6		NEXT Min	ELFEXT Min	ACR Min		CommScope Min	EIA/ITA 568 Cat.6
1.0	2.0	2.0	77.3/90	74.3	75.3/85	75.3	65.8	73.3	68.8	23.0	20.0
4.0	3.8	3.8	68.3/83	65.3	64.5/80	66.3	53.7	62.5	56.8	23.6	23.0
8.0	5.3	5.3	63.8/79	60.8	58.5/74	61.8	47.7	56.5	50.7	25.4	24.5
10.0	5.9	6.0	62.3/75	59.3	56.4/70	60.3	45.8	54.4	48.8	26.0	25.0
16.0	7.5	7.6	59.2/72	56.2	51.7/65	57.2	41.7	49.7	44.7	26.0	25.0
20.0	8.4	8.5	57.8/72	54.8	49.4/64	55.8	39.7	47.4	42.8	26.0	25.0
25.0	9.4	9.5	56.3/69	53.3	46.9/60	54.3	37.8	44.9	40.8	25.5	24.3
31.25	10.6	10.7	54.9/68	51.9	44.3/59	52.9	35.9	42.3	38.9	25.0	23.6
62.5	15.3	15.4	50.4/65	47.4	35.1/51	48.4	29.8	33.1	32.9	23.5	21.5
100.0	19.7	19.8	47.3/62	44.3	27.6/44	45.3	25.8	25.6	28.8	23.0	20.1
155.0	25.0	25.2	44.4/62	41.4	19.5/38	42.4	21.9	17.5	25.0	21.6	18.8
200.0	28.8	29.0	42.8/61	39.8	14.0/33	40.8	19.7	12.0	22.8	21.0	18.0
250.0	32.6	32.9	41.3/60	38.3	8.7/30	39.3	17.8	6.7	20.8	20.5	17.3
350.0	39.5		39.1/52		-0.4/20	37.1	14.9	-2.4	17.9	19.8	
400.0	42.7		38.3/52		-4.4/14	36.3	13.7	-6.4	16.8	16.9	

Specifications are subject to change without notice.

# UltraMedia™ Category 6 400 MHz

## Extended Bandwidth for High-Speed Voice/Video/Data Applications



### Applications

- Broadband Video, Gigabit Ethernet, 155 Mb/s ATM, 100 Mb/s TP-PMD/CDDI and Fast Ethernet

### Exceeds/Meets

- CENELEC EN50173, ICEA S-90-661, ANSI/TIA/EIA 568-B.2-1 Category 6, NEMA WC 66-1999 Cat 6, NEMA Low-Loss Extended Frequency, AS/NZS 3085.1 and ISO/IEC 11801
- 3rd party verified to CommScope performances

### Features

- Patented design with Isolator™ pair separator for superior bandwidth performance
- PSUM crosstalk compliant
- Flexible jacket strips cleanly and resists kinking
- Coextruded color striped pairs for easy identification
- 1,000 to 0 footage markers every two feet (not available for outdoor cables)

### Test Report

- Test reports available online at [www.commscopewebtrak.com](http://www.commscopewebtrak.com)

### Plenum

Catalog Number Safety Rating	No. of Pairs	Conductor Size and Material	Insulation Type & Thickness in / mm	Cable Jacket Material & Thickness in / mm	Cable Jacket OD and colors in / mm	Nominal Capacitance Pf/Ft	Input Impedance	Maximum DCR	Velocity of Propagation	Shipping Wt. in lbs. kft / km
<b>7504</b>  ETL CMP/C(ETL)CMP	4	23 AWG Solid BC	3 prs: FEP .008/.20  1 pr: FSPE .008/.20	CommFlex .019/.48	.220/5.6 teal, pink, white, blue, yellow, and gray	14	100Ω ± 15%	20.3Ω/kft 6.7Ω/100m	71%	28/92

### Non-Plenum

Catalog Number Safety Rating	No. of Pairs	Conductor Size and Material	Insulation Type & Thickness in / mm	Cable Jacket Material & Thickness in / mm	Cable Jacket OD and colors in / mm	Nominal Capacitance Pf/Ft	Input Impedance	Maximum DCR	Velocity of Propagation	Shipping Wt. in lbs. kft / km
<b>75N4</b>  ETL CMR/C(ETL)CMG	4	23 AWG Solid BC	PE .008/.20	FR-PVC .022/.6	.240/6.1 white, blue, teal, pink, yellow and gray	14	100Ω ± 15%	20.3Ω/kft 6.7Ω/100m	68%	26/85

Specifications are subject to change without notice.

# DataPipe™ Category 5e 200 MHz

For ANSI/TIA/EIA 568B.2 Category 5e LANs



Taking Category 5e a step further, DataPipe is a 200 MHz cable developed for simultaneous bi-directional transmission over 4-pairs. Improvements to Category 5e were made and additional electrical requirements such as ISO/IEC 11801 input impedance were added. Typical applications include those of Category 5e and full duplex encoding schemes such as gigabit Ethernet. CommScope's Category 5e DataPipe cable features a CommFlex jacket to reduce friction during installation resulting in less strain on the twisted pairs.



In March, 2003, we began posting the test reports online. Our unique WebTrak™ system allows you to review this data online at [www.commscopewebtrak.com](http://www.commscopewebtrak.com)

## Electrical Performance of DataPipe

Frequency MHz	Attenuation max dB/100m		Pair to Pair								PowerSum					
			NEXT dB min		ELFEXT dB/100m min		Return Loss dB min		ACR dB min		NEXT min dB		ELFEXT min dB/100m		ACR min dB	
	DataPipe	5EJ4	DataPipe	5EJ4	DataPipe	5EJ4	DataPipe	5EJ4	DataPipe	5EJ4	DataPipe	5EJ4	DataPipe	5EJ4	DataPipe	5EJ4
1.0	2.0	2.4	65.3	65.3	63.8	63.8	23.0	23.0	63.3	62.9	62.3	62.3	60.8	60.8	60.3	59.9
4.0	4.1	4.9	56.3	56.3	51.7	51.7	23.0	23.0	52.2	51.4	53.3	53.3	48.7	48.7	49.2	48.4
8.0	5.8	6.9	51.8	51.8	45.7	45.7	24.5	24.5	46.0	44.9	48.8	48.8	42.7	42.7	43.0	41.9
10.0	6.5	7.8	50.3	50.3	43.8	43.8	25.0	25.0	43.8	42.5	47.3	47.3	40.8	40.8	40.8	39.5
16.0	8.2	9.9	47.3	47.3	39.7	39.7	25.0	25.0	39.0	37.4	44.3	44.3	36.7	36.7	36.0	34.4
20.0	9.3	11.1	45.8	45.8	37.7	37.7	25.0	25.0	36.5	34.7	42.8	42.8	34.7	34.7	33.5	31.7
25.0	10.4	12.5	44.3	44.3	35.8	35.8	24.3	24.3	33.9	31.8	41.3	41.3	32.8	32.8	30.9	28.8
31.25	11.7	14.1	42.9	42.9	33.9	33.9	23.6	23.6	31.2	28.8	39.9	39.9	30.9	30.9	28.2	25.8
62.5	17.0	20.4	38.4	38.4	27.8	27.8	23.0	23.0	21.4	18.0	35.4	35.4	24.8	24.8	18.4	15.0
100.0	22.0	26.4	35.3	35.3	23.8	23.8	23.0	23.0	13.3	8.9	32.3	32.3	20.8	20.8	10.3	5.9
155.0	28.1	33.7	32.5	32.5	19.9	19.9	18.8	18.8	4.4		29.5	29.5	16.9	16.9	1.4	
200.0	32.4	38.9	30.8	30.8	17.7	17.7	18.0	18.0	-1.6		27.8	27.8	14.7	14.7	-4.6	

All tests include swept frequency measurements

Specifications are subject to change without notice.

**Applications**

- Gigabit Ethernet, 155 Mb/s ATM, 100 Mb/s TP-PMD/CDDI and Fast Ethernet

**Exceeds**

- ANSI/EIA 568B.2 Category 5e, ISO/IEC 11801, 3rd Party Verified to CommScope Performance Claims

**Features**

- PSUM crosstalk compliant
- Flexible jacket strips cleanly and resists kinking
- Coextruded color striped pairs for easy identification
- Performance specified to 200 MHz
- 1,000 to 0 footage markers every two feet (not available for outdoor cables)

**Test Report**

- Test report available online at [www.commscopewebtrak.com](http://www.commscopewebtrak.com).

**Plenum**

Catalog Number Safety Rating	No. of Pairs	Conductor Size and Material	Insulation Type & Thickness in / mm	Cable Jacket Material & Thickness in / mm	Cable Jacket OD and colors in / mm	Nominal Capacitance Pf/Ft	Input Impedance	Maximum DCR	Velocity of Propagation	Shipping Wt. in lbs. Kf / km
<b>5E55</b>  ETL CMP/C(ETL)CMP	4	24 AWG Solid BC	Foamed FEP .007/.18  FSPE .008/.20	CommFlex .019/.50	.175/4.45 white, blue, yellow, pink and gray	14	100Ω ± 15%	28.6Ω/kft 9.4Ω/100m	74%	21/68
<b>5E40</b>  ETL CMP/C(ETL)CMP	4	24 AWG Solid BC	FEP .007/.18	CommFlex .017/.43	.180/4.6 white, blue, pink, yellow, and gray	14	100Ω ± 15%	28.6Ω/kft 9.4Ω/100m	76%	21/68

**Non-Plenum**

Catalog Number Safety Rating	No. of Pairs	Conductor Size and Material	Insulation Type & Thickness in / mm	Cable Jacket Material & Thickness in / mm	Cable Jacket OD and colors in / mm	Nominal Capacitance Pf/Ft	Input Impedance	Maximum DCR	Velocity of Propagation	Shipping Wt. in lbs. Kf / km
<b>5EN5</b>  ETL CMR/C(ETL)CMG	4	24 AWG Solid BC	PE .008/.20	FR-PVC .022/.56	.200/5.0 white, blue, yellow, pink and gray	14	100Ω ± 15%	28.6Ω/kft 9.4Ω/100m	71%	21/68

**Patch Cable**

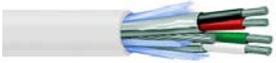
Catalog Number Safety Rating	No. of Pairs	Conductor Size and Material	Insulation Type & Thickness in / mm	Cable Jacket Material & Thickness in / mm	Cable Jacket OD and colors in / mm	Nominal Capacitance Pf/Ft	Input Impedance	Maximum DCR	Velocity of Propagation	Shipping Wt. in lbs. Kf / km
<b>5EJ4</b>  ETL CM/C(ETL) CMG	4	24 AWG Stranded TC	PE .008/.20	FR-PVC .020/.51	.218/5.5 white, blue, yellow, green, red, black, pink and gray	14	100Ω ± 15%	28.6Ω/kft 9.4Ω/100m	72%	20/66

Specifications are subject to change without notice.

# Data and Control Cables

For Interconnection of RS-232 and RS-485 Applications

- Pairs are individually shielded for extra protection from crosstalk and RF interference
- Cable-in-Conduit (CIC) versions are available

Catalog Number Safety Rating	Conductors Size and Type Nom. DCR kft / km	Insulation Type and Color Conductor OD in / mm	Shields Type and Coverage Nom DCR kft / km	Jacket Color and Type Cable OD in / mm	Nominal Capacitance pF/ft* pF/m* pF/ft† pF/m†	Drain Wire Size and Type Nom. DCR kft / km	Nominal Velocity of Propagation
<b>6600</b> <b>Riser</b>  NEC/CEC/CMR	22 AWG (7x30 AWG) TC 14.7Ω/48.2Ω	PE Red/Black White/Green .050/1.27	AL foil over each pair	Gray PVC .165/4.19	33* 108* 60† 196†	24 AWG (7x32 AWG) TC 23.3Ω/76.4Ω	66%
<b>6600TK</b> <b>Plenum</b>  NEC/CEC CMP	22 AWG (7x30 AWG) TC 14.7Ω/48.2Ω	FEP Red/Black White/Green .052/1.32	AL foil over each pair	White Plenum PVC .160/4.06	31* 102* 59† 194†	24 AWG (7x32 AWG) TC 23.3Ω/76.4Ω	69.5%

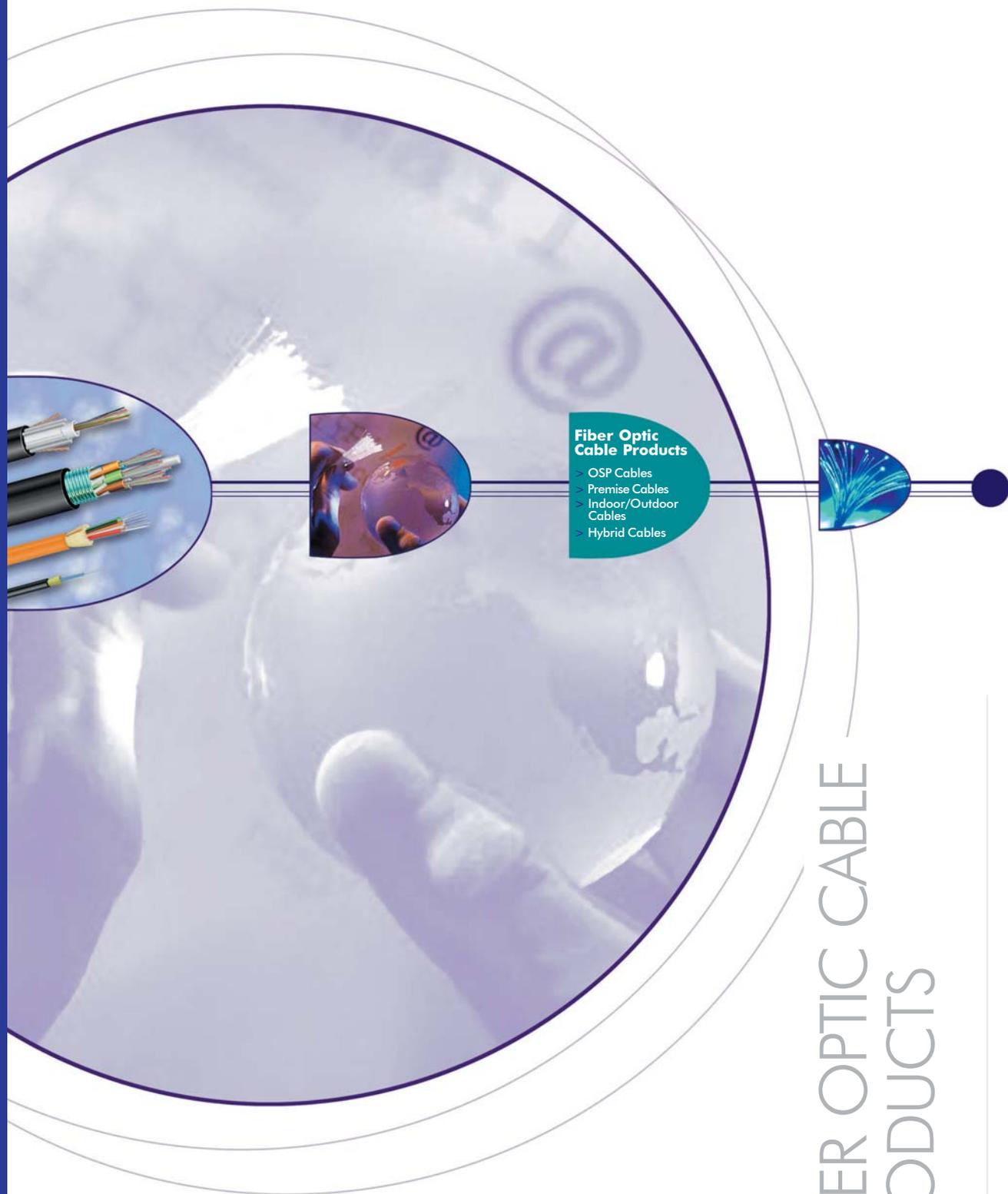
Catalog Number Safety Rating	Conductors Size and Type Nom. DCR kft / km	Insulation Type and Color Conductor OD in / mm	Shields Type and Coverage Nom DCR kft / km	Jacket Color and Type Cable OD in / mm	Nominal Capacitance pF/ft* pF/m* pF/ft† pF/m†	Nominal Velocity of Propagation	Typical Impedance
<b>5090</b>  NEC/CEC CMR (UL) c(UL)	22 AWG (7x30AWG) Tinned Copper 14.7Ω/48.2Ω  Drain wire: 22 AWG (7x30 AWG) TC	Foam PE blue w/ white stripe and white w/ blue stripe .070/1.77	AL foil 100% coverage (over data pair)  Overall: 90% TC braid 2.9Ω/9.5Ω	Black PVC .300/7.62	11.0* 36.1* 20.0† 65.6†	78%	120Ω

\*denotes capacitance between conductors

†denotes capacitance between one conductor and other conductors connected to the shield

Specifications are subject to change without notice.





FIBER OPTIC CABLE  
PRODUCTS

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## CommScope Fiber Optic Cable Products

Proven Quality and Performance



### The Cable Industry's Fiber Supplier™

Better fiber equals better fiber optic cable. CommScope provides key optical and geometrical features in its standard singlemode fiber for fusion splice compatibility with other fiber manufacturers and legacy fiber. LightScope ZWP™ singlemode optical fiber cable continues a CommScope tradition of being a leader in manufacturing innovative and performance-enhanced products for the cable industry. LightScope ZWP optical fiber cable makes available 30% more usable transmission spectrum, which can be used for return path, enhanced video services such as video on demand (VOD) or Dedicated Wavelength Services for business or other demanding applications.

Through its ownership interest in OFS™, CommScope has invested in one of the world's largest producers of optical fiber and cable. The venture, and other arrangements with OFS, provides CommScope access to a broad array of technologically advanced optical fibers including the LightScope ZWP family of products.

CommScope has developed key families of fiber optic cables specifically to be used throughout the HFC communication hierarchy as well as an offering of fiber optic components including connectors and other passive devices that are commonly required in broadband infrastructure.

### Outside Plant Cables for Standard and Rugged Environments

For direct buried, underground conduit and aerial installations, CommScope offers several designs, which include a variety of loose tube cables, from all-dielectric to double armored, triple-jacketed cables. Design options include Drop Armored, a smaller, lighter weight Central Tube cable construction; Central Tube and Stranded Loose Tube cables. Any of these cables may be factory-installed in a variety of CommScope's ConQuest® premium high density polyethylene conduit including Toneable Conduit™ – a patent pending location and damage prevention solution.

### Indoor/Outdoor Cables for Strength and Safety (Including Low Smoke/Zero-Halogen Types)

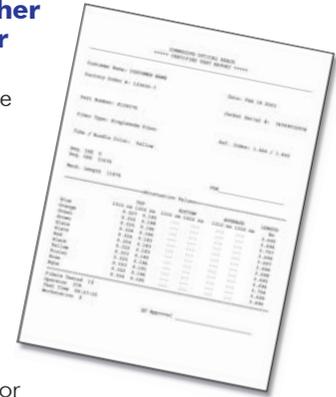
CommScope's design for these hybrid application cables offer construction and jacketing suitable for outside usage yet comply with UL and CSA riser (OFNR) or plenum (OFNP) flame standards. This design allows you to run cable through the building entrance without having to terminate and splice different cables together which results in significant savings in time and labor. Cable types include dielectric central tube designs, dielectric stranded loose tube cables and Triathlon®, a specially designed low-smoke/zero halogen distribution and cordage cable construction.

### Premise Cables for Safety and Performance

CommScope's premises cables are designed to handle the unique stresses of indoor applications. Design options include riser and plenum-rated distribution and cordage cables.

### Test Reports - A Higher Standard for Higher Speeds

Every reel of CommScope fiber optic cable is subjected to stringent testing throughout the entire manufacturing process. Our state-of-the-art process controls and testing systems ensure that every meter of CommScope cable consistently meets or exceeds our high standards.



To prove that our fiber optic cables exceed industry standards, we go to the extra step of attaching an individual cable test report to each reel. You get proof-positive that the cable you purchase will perform to the level you require. Remember, a network is only as good as the cable that connects it. Specify the cables that make networks work — fiber optic cables from CommScope.

### Request a FREE Broadband Applications & Construction Library

CommScope's Broadband Applications & Construction Library includes a 4-piece set of valuable reference manuals plus a DVD containing essential training videos on topics such as connectorization, expansion loop formation and fiber optic splicing. These tools teach you how to protect the integrity of your broadband plant while lowering operating/installation costs. From construction and installation practices, to performance and testing of cable—



CommScope Construction Manuals are simply a "must-have" for anyone upgrading or maintaining broadband networks. Download a PDF version at our website: <http://www.commscope.com> (in the literature center) or request a set by phone at 1-800-982-1708.

### CommScope's Digital Broadband Resource Center™

This repository of experience, knowledge, services and tools is provided to CommScope customers to assist installers, technicians, engineers, designers and managers of broadband service providers. Tools in various media and formats include: SpanMaster® software for cable sag and tension calculations; center conductor sizing guides; attenuation slide rules; and call center spec assistance and review. Call us at 1-866-333-dBRC (3272) or e-mail [dbrcc@commscope.com](mailto:dbrcc@commscope.com) for answers to product questions or issues related to any CommScope broadband product.

# Fiber Optic Catalog Numbering Key

Steps to Building the Catalog Number for the Cable You Need!



**CABLE STYLE (Position 1)**

- O .... Outdoor (Arid Core™ Standard)
- F .... Flooded Stranded Loose Tube
- S .... Self-Supporting (ADSS)
- M .... Messenger
- P .... Plenum
- R .... Riser
- Z .... Zero Halogen

**FIBER COUNT\* (Positions 2, 3, & 4)**

Total Fiber Count (in increments of two)

*\*Substitute for "XXX" variable in catalog number.*

**CONSTRUCTION (Positions 5 & 6)**

**Outside Plant Cables**

- LA ..... Stranded Loose Tube Armored
- LN ..... Stranded Loose Tube Non-Armored, All-Dielectric
- LD ..... Stranded Loose Tube Double Jacketed, All-Dielectric
- L2 ..... Stranded Loose Tube Double Jacketed, Single Armored
- L3 ..... Stranded Loose Tube Triple Jacketed, Double Armored
- DA ..... Drop Armored
- DN ..... Drop Non-Armored, All-Dielectric
- MN ..... Mini-Drop Non-Armored, All-Dielectric
- CS ..... Central Tube Self-Support, Armored
- CA ..... Central Tube Armored
- CN ..... Central Tube Non-Armored, All-Dielectric
- CP ..... Central Tube Pavement

**Indoor & Indoor/Outdoor Cables**

- DS ..... Distribution      IC ..... Interconnect
- SP ..... Simplex            ZC ..... Zipcord

**FiberGuard™**

Use the first character of the construction code above plus one of the following:

- W ..... Steel Armor, No Jacket
- X ..... Steel Armor with Jacket
- Y ..... Aluminum Armor, No Jacket
- Z ..... Aluminum Armor with Jacket

**FIBER TYPE (Positions 7 & 8)**

**Singlemode**

- 8W ..... LightScope ZWP™ Dispersion-Unshifted, Matched-Clad, Singlemode Fiber
- 8T ..... LightScope NZD™ Non-Zero Dispersion-Shifted, Singlemode Fiber

**Multimode**

- 6F ..... 62.5µm, FDDI Grade, Multimode Fiber
- 5M ..... LaserCore® 150, 50µm, Multimode Fiber
- 5L ..... LaserCore® 300, 50µm, Multimode Fiber
- 5K ..... LaserCore® 500, 50µm, Multimode Fiber
- CM ..... Composite (Singlemode & Multimode)

*\*XY variable in catalog number*

**CABLE MARKING (Position 9)**

- F ..... Jacket Sequentially Marked in Feet (standard)
- M ..... Jacket Sequentially Marked in Meters
- X ..... Custom Print Required

**CABLE CONSTRUCTION SPECIFICS (Position 10)**

- For outdoor and indoor/outdoor loose tube cables, this value indicates the fiber count per subunit:
  - 01-12 ..... Fiber Count Per Subunit
- For indoor distribution cables, this value indicates additional information pertaining to the cable construction:
  - SU ..... Single Unit Construction
  - MU ..... Multi-Unit Construction
- For cordage cables, this value indicates the outside diameter:
  - 16 ..... 1.6mm Jacket Outer Diameter
  - 25 ..... 2.5mm Jacket Outer Diameter
  - 29 ..... 2.9mm Jacket Outer Diameter

**COLOR FIELD (Positions 11 & 12)**

- For outdoor cables, this field designates the tracer/stripe requirements:
 

NS ..... No Stripe (Std)	WH ..... White
BL ..... Blue	YL ..... Yellow
OR ..... Orange	VI ..... Violet
GR ..... Green	
- For indoor/outdoor cables, this field designates the jacket color:
  - BK ..... Black
- For indoor cables, this field designates jacket color:
  - OR ..... Orange - multimode and composite cables
  - YL ..... Yellow - singlemode cables
  - AQ ..... Aqua - LaserCore® cables

*Note: Non-standard jacket colors are available. (minimum order required) Please contact your Customer Service Representative for additional information.*

*"ZZ" variable in catalog number*

**NOTES**

**When Positions 7 & 8 are CM (composite cables), positions 14-23 are required.**

**Positions 14 & 15** ..... Singlemode fiber type

**Positions 16 - 18** ..... Singlemode fiber count (aaa variable in the catalog number)

**Positions 19 & 20** ..... Multimode fiber type

**Positions 21 - 23** ..... Multimode fiber count (bbb variable in the catalog number)

When ordering Mini-Diameter Loose Tube cables, "MD" will be required in positions 14 - 15.

When position 1 is "S" (ADSS cables), positions 14 - 18 are required.

**Position 14** denotes NESC loading conditions. (L = Light, M - 18 (18 as needed) maximum span length (ft))

When ordering the non-armored drop cables, positions 13 - 15 will denote the tube size (Example: 30T - 3.0mm Tube)

*\*If tracking resistant cable is needed, please add "AT" to the end of the catalog number*

### Zero Water Peak: Dispersion-Unshifted, Matched-Clad Singlemode Fiber

#### Physical Characteristics

Cladding Diameter	125 ± 0.7 μm
Core/Clad Offset	≤ 0.5 μm
Coating Diameter (uncolored)	245 ± 10 μm
Coating Diameter (colored)	254 ± 7 μm
Coating/Cladding Concentricity Error, maximum	12 μm
Clad Non-Circularity	≤ 1%

#### Mechanical Characteristics

Proof Test	100 kpsi (.69 Gpa)
Coating Strip Force	0.3 - 2.0 lbf (1.3 - 8.9 N)
Fiber Curl	≥ 4 m
Dynamic Fatigue Parameter	≥ 18 nd
Macrobend 100 turns @ 50mm mandrel	
1310/1550 nm	0.05 dB maximum
Macrobend 100 turns @ 60mm mandrel	
1625nm	0.05 dB maximum
Macrobend 1 turn @ 32mm mandrel	
1550 nm	0.05 dB maximum

#### Optical Characteristics, Wavelength Specific

Attenuation, Loose Tube Cable	
1310 nm	0.35 dB/km
1385 nm	0.32 dB/km
1550 nm	0.24 dB/km
Attenuation, Tight Buffer Cable	
1310 nm	0.70 dB/km
1385 nm	0.70 dB/km
1550 nm	0.70 db/km
Mode Field Diameter	
1310 nm	9.2 ± 0.3 μm
1385 nm	9.6 ± 0.6 μm
1550 nm	10.4 ± 0.5 μm
Group Refractive Index	
1310 nm	1.466
1385 nm	1.466
1550 nm	1.467
Dispersion	
1310 nm	3.5 ps/(nm-km) from 1285 to 1330 nm
1550 nm	18 ps/(nm-km)

#### Optical Characteristics, General

Point Defects	0.10 dB
Cutoff Wavelength	≤ 1260 nm
Zero Dispersion Wavelength	1300 - 1322 nm
Zero Dispersion Slope	0.090 ps/(km-nm-nm)
Polarization Mode Dispersion Link Design Value	≤ 0.06 ps/sqrt(km)

#### Environmental Characteristics

Temperature Dependence -60°C to +85°C	≤ 0.05 dB
Temperature Humidity Cycling -10°C to 85°C up to 95% RH	≤ 0.05 dB
Water Immersion, 23 + 2°C	≤ 0.05 dB
Heat Aging, 85 + 2°C	≤ 0.05 dB

Specifications are subject to change without notice.

## Non-Zero Dispersion Shifted Singlemode Fiber

### Physical Characteristics

Cladding Diameter	125 ± 0.7 μm
Core/Clad Offset	≤ 0.5 μm
Coating Diameter (uncoated)	245 ± 5 μm
Coating Diameter (colored)	254 ± 7 μm
Coating/Cladding Concentricity Error, maximum	12 μm
Clad Non-Circularity	≤ 1%

### Mechanical Characteristics

Proofstress	100 kpsi (.69 Gpa)
Coating Strip Force	0.3 - 2.0 lbf (1.3 - 8.9 N)
Fiber Curl	≥ 4 m
Dynamic Fatigue Parameter	≥ 20 nd
Macrobend 100 turns @ 75mm mandrel	
1550 and 1625 nm	0.05 dB maximum
Macrobend 1 turn @ 32mm mandrel	
1550 and 1625nm	0.50 dB maximum

### Optical Characteristics, Wavelength Specific

Attenuation, Loose Tube Cable	
1310 nm	0.45 dB/km
1550 nm	0.25 dB/km
1625 nm	0.34 dB/km
Mode Field Diameter	
1550 nm	8.4 ± 0.6 μm
1625 nm	8.9 ± 0.6 μm
Group Refractive Index	
1310 nm	1.471
1550 nm	1.470
1625 nm	1.470
Dispersion	
1310 nm	-8 ps/(nm-km) (typical)
1550 nm	2.6 to 6 ps/(nm-km) from 1530 - 1565 nm
1625 nm	4.0 to 8.9 ps/(nm-km) from 1565 - 1625 nm

### Optical Characteristics, General

Attenuation at 1385 nm	1.0 dB/km
Point Defects	0.10 dB
Cutoff Wavelength	≤ 1260 nm
Dispersion Slope	< 0.05 ps/(km-nm-nm) at 1550 nm
Polarization Mode Dispersion Link Design Value	≤ 0.1 ps/sqrt(km)

### Environmental Characteristics

Temperature Dependence -60°C to +85°C	≤ 0.05 dB
Temperature Humidity Cycling -10°C to +85°C up to 95% RH	≤ 0.05 dB
Water Immersion, 23 + 2°C	≤ 0.05 dB
Heat Aging, 85 + 2°C	≤ 0.05 dB

Specifications are subject to change without notice.

# Type 6F Multimode Fiber Specifications

Available in All CommScope Cable Types



## 62.5 micron, FDDI Grade Multimode Fiber

### Physical Characteristics

Core Diameter	$62.5 \pm 2.5 \mu\text{m}$
Cladding Diameter	$125 \pm 1.0 \mu\text{m}$
Core/Clad Offset	$\leq 1.5 \mu\text{m}$
Coating Diameter (uncolored)	$245 \pm 10 \mu\text{m}$
Coating Diameter (colored)	$254 \pm 7 \mu\text{m}$
Coating/Cladding Concentricity Error, maximum	$6 \mu\text{m}$
Clad Non-Circularity	$\leq 1\%$

### Mechanical Characteristics

Proofstest	100 kpsi (.69 Gpa)
Coating Strip Force	0.3 - 2.0 lbf (1.3 - 8.9 N)
Dynamic Fatigue Parameter	$\geq 18 \text{ nd}$
Macrobend 100 turns @ 75mm mandrel 850 nm and 1300 nm	0.50 dB maximum

### Optical Characteristics, Wavelength Specific

Attenuation, Loose Tube Cable	
850 nm	3.0 dB/km
1300 nm	1.0 dB/km
Attenuation, Tight Buffer Cable	
850 nm	3.5 dB/km
1300 nm	1.5 db/km
Bandwidth, OFL (Over-Filled Launch)	
850 nm	200 MHz - km
1300 nm	500 MHz - km
Group Refractive Index	
850 nm	1.496
1300 nm	1.491
1 GB Ethernet Distance	
850 nm	300 m
1300 nm	550 m

### Optical Characteristics, General

Numerical Aperature	$0.275 \pm 0.015$
Point Defects, maximum	0.15 dB
Zero Dispersion Wavelength	1320 - 1365 nm
Zero Dispersion Slope	0.097 ps/(km-nm-nm)

### Environmental Characteristics

Temperature Dependence -60°C to +85°C	$\leq 0.20 \text{ dB}$
Temperature Humidity Cycling -10°C to 85°C up to 95% RH	$\leq 0.20 \text{ dB}$
Water Immersion, 23 + 2°C	$\leq 0.20 \text{ dB}$
Heat Aging, 85 + 2°C	$\leq 0.20 \text{ dB}$

Specifications are subject to change without notice.

### LaserCore 150, 50 micron Multimode Fiber

Physical Characteristics	
Core Diameter	50.0 ± 2.5 μm
Cladding Diameter	125 ± 1.0 μm
Core/Clad Offset	≤ 1.5 μm
Coating Diameter (uncolored)	245 ± 10 μm
Coating Diameter (colored)	255 ± 7 μm
Coating/Cladding Concentricity Error, maximum	6 μm
Clad Non-Circularity	≤ 1%

Mechanical Characteristics	
Proofstress	100 kpsi (.69 Gpa)
Coating Strip Force	0.3 - 2.0 lbf (1.3 - 8.9 N)
Dynamic Fatigue Parameter	≥ 18 nd
Macrobend 100 turns @ 75mm mandrel 850 nm and 1300 nm	0.50 dB maximum

Optical Characteristics, Wavelength Specific	
Attenuation, Loose Tube Cable	
850 nm	3.0 dB/km
1300 nm	1.0 dB/km
Attenuation, Tight Buffer Cable	
850 nm	3.0 dB/km
1300 nm	1.0 db/km
Bandwidth, OFL	
850 nm	700 MHz - km
1300 nm	500 MHz - km
Bandwidth, Laser	
850 nm	950 MHz - km
1300 nm	500 MHz - km
Differential Mode Delay	
850 nm	per TIA-492AAAC
1300 nm	0.88 ps/m
Group Refractive Index	
850 nm	1.483
1300 nm	1.479
1 GB Ethernet Distance	
850 nm	750 m
1300 nm	600 m
10 GB Ethernet Distance*	
850 nm	150 m

Optical Characteristics, General	
Numerical Aperature	0.200 ± 0.015
Point Defects, maximum	0.15 dB
Zero Dispersion Wavelength	1297 - 1316 nm
Zero Dispersion Slope	0.101 ps/(km-nm-nm)

Environmental Characteristics	
Temperature Dependence -60°C to +85°C	0.10 dB
Temperature Humidity Cycling -10°C to 85°C up to 95% RH	0.10 dB
Water Immersion, 23 + 2°C	0.20 dB
Heat Aging, 85 + 2°C	0.20 dB

\*Compliant with emerging IEEE 802.3ae standards for 10 GB Ethernet transmission at the 850 nm window.

Specifications are subject to change without notice.

### LaserCore 300, 50 micron Multimode Fiber

#### Physical Characteristics

Core Diameter	50.0 ± 2.5 μm
Cladding Diameter	125 ± 1.0 μm
Core/Clad Offset	≤ 1.5 μm
Coating Diameter (uncolored)	245 ± 10 μm
Coating Diameter (colored)	254 ± 7 μm
Coating/Cladding Concentricity Error, maximum	6 μm
Clad Non-Circularity	≤ 1%

#### Mechanical Characteristics

Proofstest	100 kpsi (.69 Gpa)
Coating Strip Force	0.3 - 2.0 lbf (1.3 - 8.9 N)
Dynamic Fatigue Parameter	≥ 18 nd
Macrobend 100 turns @ 75mm mandrel 850 nm and 1300 nm	0.50 dB maximum

#### Optical Characteristics, Wavelength Specific

Attenuation, Loose Tube Cable	
850 nm	3.0 dB/km
1300 nm	1.0 dB/km
Attenuation, Tight Buffer Cable	
850 nm	3.0 dB/km
1300 nm	1.0 db/km
Bandwidth, OFL (Over-Filled Launch)	
850 nm	1500 MHz - km
1300 nm	500 MHz - km
Bandwidth, Laser	
850 nm	2000 MHz - km
1300 nm	500 MHz - km
Differential Mode Delay	
850 nm	per TIA-492AAAC
1300 nm	0.88 ps/m
Group Refractive Index	
850 nm	1.483
1300 nm	1.479
1 GB Ethernet Distance	
850 nm	970 m
1300 nm	600 m
10 GB Ethernet Distance*	
850 nm	300 m

#### Optical Characteristics, General

Numerical Aperature	0.200 ± 0.015
Point Defects, maximum	0.15 dB
Zero Dispersion Wavelength	1297 - 1316 nm
Zero Dispersion Slope	0.101 ps/(km-nm-nm)

#### Environmental Characteristics

Temperature Dependence -60°C to +85°C	< 0.10 dB
Temperature Humidity Cycling -10°C to 85°C up to 95% RH	< 0.10 dB
Water Immersion, 23 ± 2°C	< 0.20 dB
Heat Aging, 85 ± 2°C	< 0.20 dB

\*Compliant with emerging IEEE 802.3ae standards for 10 GB Ethernet transmission at the 850 nm window. Specifications are subject to change without notice.

### LaserCore 500, 50 micron Multimode Fiber

Physical Characteristics	
Core Diameter	50.0 ± 2.5 μm
Cladding Diameter	125 ± 1.0 μm
Core/Clad Offset	≤ 1.5 μm
Coating Diameter (uncolored)	245 ± 10 μm
Coating Diameter (colored)	254 ± 7 μm
Coating/Cladding Concentricity Error, maximum	6 μm
Clad Non-Circularity	≤ 1%

Mechanical Characteristics	
Proofstress	100 kpsi (.69 Gpa)
Coating Strip Force	0.3 - 2.0 lbf (1.3 - 8.9 N)
Dynamic Fatigue Parameter	≥ 18
Macrobend 100 turns @ 75mm mandrel 850 nm and 1300 nm	0.50 dB maximum

Optical Characteristics, Wavelength Specific	
Attenuation, Loose Tube Cable	
850 nm	3.0 dB/km
1300 nm	1.0 dB/km
Attenuation, Tight Buffer Cable	
850 nm	3.0 dB/km
1300 nm	1.0 dB/km
Bandwidth, OFL (Over-Filled Launch)	
850 nm	3000 MHz - km
1300 nm	500 MHz - km
Bandwidth, Laser	
850 nm	4000 MHz - km
1300 nm	500 MHz - km
Differential Mode Delay	
850 nm	per TIA-492AAAC-A
1300 nm	0.88 ps/m
Group Refractive Index	
850 nm	1.483
1300 nm	1.479
1 GB Ethernet Distance	
850 nm	1040 m
1300 nm	600 m
10 GB Ethernet Distance*	
850 nm	500 m

Optical Characteristics, General	
Numerical Aperature	0.200 ± 0.015
Point Defects, maximum	0.15 dB
Zero Dispersion Wavelength	1297 - 1316 nm
Zero Dispersion Slope	0.101 ps/(km-nm-nm)

Environmental Characteristics	
Temperature Dependence -60°C to +85°C	≤ 0.10 dB
Temperature Humidity Cycling -10°C to 85°C up to 95% RH	≤ 0.10 dB
Water Immersion, 23 + 2°C	≤ 0.20 dB
Heat Aging, 85 + 2°C	≤ 0.20 dB

\*Compliant with emerging IEEE 802.3ae standards for 10 GB Ethernet transmission at the 850 nm window. Specifications are subject to change without notice.

## CommScope Outside Plant Cables

### Robust Dielectric and Armored Constructions



All CommScope Outside Plant (OSP) cables are designed and manufactured to provide outstanding mechanical and optical performance. This cable family uses a loose tube construction to provide multiple levels of protection for the fiber strands. We manufacture all loose tube cables with appropriate Excess Fiber Length (EFL) to ensure, that when properly installed, the fiber strands will remain strain-free, which is essential to good optical performance and longevity. Our heavy-duty products are engineered to withstand the rigors of environmental extremes.

There are many cable choices when considering applications that require environmental protection and provide for network diversity. CommScope cable surpasses requirements in the aerial, underground and conduit applications. We offer self-support cable for aerial environments and cable-in-conduit or armored cables for extra protection in burial applications.

CommScope manufactures cables that are lightweight, flexible and especially suited for aerial cable installations. Our loose tube cables are available in armored and all-dielectric versions.



#### OSP Fiber Optic Cable Design Options Include:

- Drop - a small, lightweight Central Tube cable designed for use when space is at a minimum; features a robust 3mm central tube and is available in fiber counts up to 12
- Central Tube - armored and dielectric construction for point-to-point installations in counts up to 96 arranged in easy-to-handle color-coded subunits of 12 fiber each
- Stranded Loose Tube - for direct buried, underground conduit and aerial installations; design variations range from all-dielectric to armored constructions with up to 288 fibers

#### Arid-Core® Moisture Barrier

CommScope defeats moisture with a unique multi-level approach. In addition to tough outer jacketing and gel filling within the buffer tube, we employ Arid-Core, a super-absorbent polymer technology. Arid-Core is applied between the jacket and the buffer tubes in stranded loose tube cables, and coats the central tubes of drop armored and central tube cables. When moisture meets Arid-Core, the polymer swells to prevent moisture migration - it acts as a mechanical block to prevent further water penetration.

#### Custom Hybrids

Broadband operators are increasingly requesting CommScope hybrid designs as a migration path to fiber to the home (FTTH) or fiber to the anything (FTTx). Unique needs in these applications often require optical, RF and power which are best met by a blend of CommScope cabling strengths and products. Low fiber counts combined with coax or twisted pair components yield flexibility and options for future growth in a single cost-effective cable run. When you can't find a cable that fits your application, ask the CommScope product management team to support your unique application. Together, we can combine available options to allow flexibility in creating the ultimate environment for advanced services.

*CommScope OSP fiber optic cables are designed to meet or exceed the requirements of Telcordia, EIA/TIA, REA/RUS, IEC and RUS industry standards.*

# Outside Plant Arid-Core® Stranded Loose Tube Cable

## Armored



### Jacket/Armor Combinations for Buried/Underground/Aerial Applications

- Corrugated steel tape armor is strong yet flexible providing additional crush and rodent protection
- Arid-Core water blocking technology helps protect fibers from moisture and reduces termination effort
- Standard color-coding on fibers and buffer tubes helps ease installation
- All buffer tubes are constructed to a nominal OD of 3mm reducing the number of tools required in the field
- Flexible buffer tubes improve kink-resistance, reduce bend sensitivity and facilitates route management in closures
- Medium density polyethylene jacket is rugged, durable and easy to strip
- Rural Utilities Service (RUS) listed

Product Type/ Fiber Count	Catalog Number	Subunits	Outer Diameter inch/mm	Minimum Bend Radius Loaded inch/cm	Minimum Bend Radius Unloaded inch/cm	Maximum Tensile Load Short Term lbs/newtons	Maximum Tensile Load Long Term lbs/newtons	Weight lbs/ kft	Weight kg/ km
<b>Single Jacket/ Single Armor 2 - 60 Fibers</b>	O- <b>XXX</b> -LA- <b>XY</b> -F12NS	5	0.51/13.1	10.3/26.2	5.1/13.1	607/2700	180/800	102	152
<b>62 - 72 Fibers</b>	O- <b>XXX</b> -LA- <b>XY</b> -F12NS	6	0.55/14.0	11.0/28.0	5.5/14.0	607/2700	180/800	119	177
<b>74 - 96 Fibers</b>	O- <b>XXX</b> -LA- <b>XY</b> -F12NS	8	0.63/16.1	12.6/32.2	6.3/16.1	607/2700	180/800	148	220
<b>98 - 120 Fibers</b>	O- <b>XXX</b> -LA- <b>XY</b> -F12NS	10	0.71/18.2	14.3/36.4	7.1/18.2	607/2700	180/800	178	266
<b>122 - 144 Fibers</b>	O- <b>XXX</b> -LA- <b>XY</b> -F12NS	12	0.80/20.3	15.9/40.6	8.0/20.3	607/2700	180/800	214	319
<b>146 - 216 Fibers</b>	O- <b>XXX</b> -LA- <b>XY</b> -F12NS	18	0.80/20.3	15.9/40.6	8.0/20.3	607/2700	180/800	211	315
<b>218 - 288 Fibers</b>	O- <b>XXX</b> -LA- <b>XY</b> -F12NS	24	0.91/23.3	18.3/46.6	9.1/23.3	607/2700	180/800	267	398
<b>Singlemode/Multimode Composite (4-288 Fibers)</b>	O- <b>XXX</b> -LA- <b>CM</b> -F12NS/ <b>AAaaa</b> / <b>BBbbb</b>	Refer to above specifications.							

### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5μm, FDDI Grade Multimode Fiber

**5M** LaserCore® 150, 50μm, Multimode Fiber

**5L** LaserCore® 300, 50μm, Multimode Fiber

**5K** LaserCore® 500, 50μm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count

**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count

**BB** is replaced by multimode type

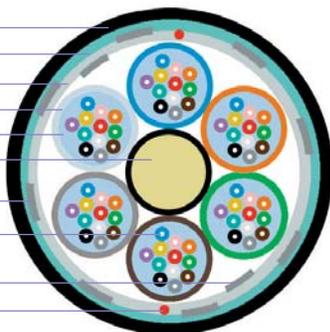
**Buffer Tubes/Fiber identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Buffer Tubes 13-18 repeat color sequence with tracer stripe**

### Arid-Core Stranded Loose Tube Armored Cable

(72 Fiber Version Shown)

- PE Outer Jacket
- Steel Tape Armoring
- Water Swellable Tape
- 3.0 mm Gel Filled Buffer Tubes
- Water Blocking Gel
- Dielectric Strength Member
- Strength Elements
- 250 Micron Fiber
- Binder
- Ripcord (2)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable

Specifications are subject to change without notice.

# Outside Plant Arid-Core® Stranded Loose Tube Cable

Non-Armored, All-Dielectric



## For Buried/Underground/Aerial Applications

- Arid-Core water blocking technology helps protect fibers from moisture and reduces termination effort
- Standard color-coding on fibers and buffer tubes helps ease installation
- All buffer tubes are constructed to a nominal OD of 3mm reducing the number of tools required in the field
- Flexible buffer tubes improve kink-resistance, reduce bend sensitivity and facilitates route management in closures
- Medium Density Polyethylene jacket is rugged, durable and easy to strip
- Rural Utilities Service (RUS) listed

Product Type/ Fiber Count	Catalog Number	Subunits	Outer Diameter inch/mm	Minimum Bend Radius Loaded inch/cm	Minimum Bend Radius Unloaded inch/cm	Maximum Tensile Load Short Term lbs/newtons	Maximum Tensile Load Long Term lbs/newtons	Weight lbs/ kft	Weight kg/ km
<b>Single Jacket/ 2 - 60 Fibers</b>	O-XXX-LN-XY-F12NS	5	0.46/11.6	9.1/23.2	4.6/11.6	607/2700	180/800	64	96
<b>62 - 72 Fibers</b>	O-XXX-LN-XY-F12NS	6	0.49/12.6	9.9/25.2	4.9/12.6	607/2700	180/800	78	116
<b>74 - 96 Fibers</b>	O-XXX-LN-XY-F12NS	8	0.57/14.6	11.5/29.2	5.7/14.6	607/2700	180/800	101	151
<b>98 - 120 Fibers</b>	O-XXX-LN-XY-F12NS	10	0.66/16.7	13.1/33.4	6.6/16.7	607/2700	180/800	125	187
<b>122 - 144 Fibers</b>	O-XXX-LN-XY-F12NS	12	0.74/18.8	14.8/37.6	7.4/18.8	607/2700	180/800	153	228
<b>146 - 216 Fibers</b>	O-XXX-LN-XY-F12NS	18	0.74/18.8	14.8/37.6	7.4/18.8	607/2700	180/800	150	224
<b>218 - 288 Fibers</b>	O-XXX-LN-XY-F12NS	24	0.86/21.8	17.1/43.6	8.6/21.8	607/2700	180/800	197	294
<b>Singlemode/Multimode Composite (4-288 Fibers)</b>	O-XXX-LN-CM-F12NS/AAaaa/BBbbb		Refer to above specifications.						



### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore® 150, 50µm, Multimode Fiber  
**5L** LaserCore® 300, 50µm, Multimode Fiber  
**5K** LaserCore® 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with multimode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua  
**Buffer Tubes 13-18 repeat color sequence with tracer stripe**

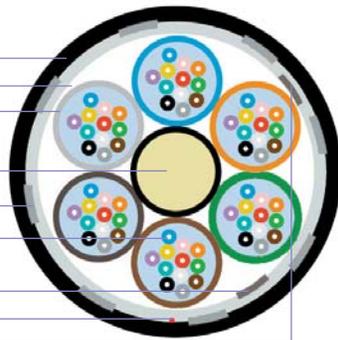
## Arid-Core Stranded Loose Tube Non-Armored, All-Dielectric Cable

(72 Fiber Version Shown)

PE Outer Jacket  
Water Swellable Tape  
3.0 mm Buffer Tubes

Dielectric Strength Member  
Strength Elements  
250 Micron Fibers

Binder  
Ripcord (1)  
Binder



## Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable

Specifications are subject to change without notice.

# Outside Plant Stranded Loose Tube Cable

## High Density Loose Tube



### For Buried/Underground/Aerial applications

- Dual-layer stranded core for ease of access
- Dry water-blocking technology for a more craft-friendly, jelly-free cable core
- ROL stranding and ripcords for fast mid-span entry

Product Type/ Fiber Count	Catalog Number	Subunits	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/newtons	Long Term lbs/newtons	lbs/ kft	kg/ km
<b>Armored 300-432 Fibers</b>	O- <b>XXX</b> -LA- <b>XY</b> -F24NS	18	0.90/23.0	18.1/46.0	9.0/23.0	607/2700	180/800	268	399
<b>All Dielectric 300-432 Fibers</b>	O- <b>XXX</b> -LN- <b>XY</b> -F24NS	18	0.84/21.5	16.9/43.0	8.4/21.5	607/2700	180/800	192	286

\*Depending on sag and loading conditions, fiber counts and clearance requirements

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore™ 150, 50µm, Multimode Fiber

**5L** LaserCore™ 300, 50µm, Multimode Fiber

**5K** LaserCore™ 500, 50µm, Multimode Fiber

#### For Composites Only:

**aaa** is replaced with singlemode fiber count

**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count

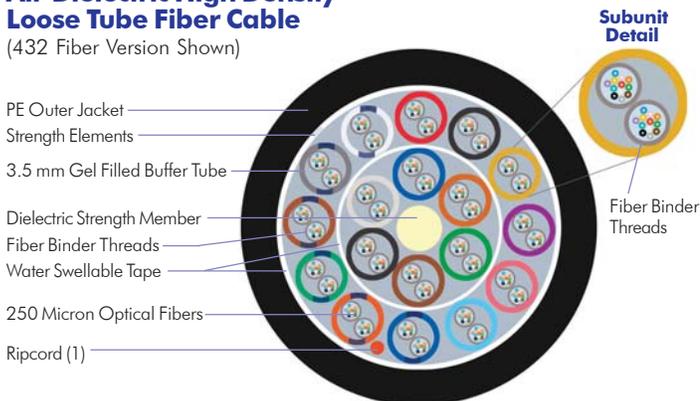
**BB** is replaced by multimode type

**Buffer Tubes/Fiber identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Buffer Tubes 13-18 repeat color sequence with tracer stripe**

### All-Dielectric High Density Loose Tube Fiber Cable

(432 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crust Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist/Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable

Specifications are subject to change without notice.

# Outside Plant Mini-Diameter Loose Tube Cable

## Non-Armored, All-Dielectric



### For Buried/Underground/Aerial Applications

- Optimized for air-blown, microduct installations
- Lower deployment costs with fast and easy installation
- Reduced diameter and high fiber density ratio maximize capacity in limited spaces
- Deferred build costs with fiber deployed only as needed
- Dry water-blocking technology for quicker, cleaner cable preparation for jointing

Product Type/ Fiber Count	Catalog Number	Subunits	Outer Diameter inch/mm	Minimum Bend Radius Loaded inch/cm	Minimum Bend Radius Unloaded inch/cm	Maximum Tensile Load Short Term lbs/newtons	Maximum Tensile Load Long Term lbs/newtons	Weight lbs/ kft	Weight kg/ km
<b>Single Jacket 2 - 72 Fibers</b>	O- <b>XXX</b> -LN- <b>XY</b> -F12NS/MD	6	0.30/7.5	12/300	6.0/15.0	300/1335	90/400	34	50



### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore® 150, 50µm, Multimode Fiber  
**5L** LaserCore® 300, 50µm, Multimode Fiber  
**5K** LaserCore® 500, 50µm, Multimode Fiber

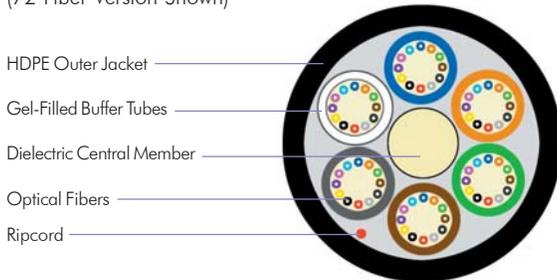
**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Outside Plant Mini-Diameter Loose Tube Non-Armored, All-Dielectric Cable

(72 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	5° to 140°F (-15° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	125lbf/in (220 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	Exceeds	FOTP-104
Twist/Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

Specifications are subject to change without notice.

# Multi-Jacketed Stranded Loose Tube Cable

## Double Jacketed, Single Armored



### Jacket/Armor Combinations for Buried/Underground/Aerial Applications

- Double armor cable provides additional crush and mechanical protection for areas with severe rodent and lightning problems
- Corrugated steel tape armor is strong yet flexible providing additional crush and rodent protection
- Arid-Core® water blocking technology helps protect fibers from moisture and reduces termination effort
- Standard color-coding on fibers and buffer tubes helps ease installation
- All buffer tubes are constructed to a nominal OD of 3mm reducing the number of tools required in the field
- Flexible buffer tubes improve kink-resistance, reduce bend sensitivity and facilitates route management in closures
- Medium Density Polyethylene jacket is rugged, durable and easy to strip
- Rural Utilities Service (RUS) listed

Product Type/ Fiber Count	Catalog Number	Sub Units	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/meters	Long Term	lbs/ kft	kg/ km
<b>Double Jacket/ Single Armor 2 - 60 Fibers</b>	O-XXX-L2-XY-F12NS	5	0.64/16.2	12.7/32.4	6.4/16.2	607/2700	180/800	152	226
<b>62 - 72 Fibers</b>	O-XXX-L2-XY-F12NS	6	0.67/17.1	13.4/34.2	6.7/17.1	607/2700	180/800	172	257
<b>74 - 96 Fibers</b>	O-XXX-L2-XY-F12NS	8	0.75/19.2	15.1/38.4	7.5/19.2	607/2700	180/800	207	309
<b>98 - 120 Fibers</b>	O-XXX-L2-XY-F12NS	10	0.84/21.3	16.7/42.6	8.4/21.3	607/2700	180/800	245	365
<b>122 - 144 Fibers</b>	O-XXX-L2-XY-F12NS	12	0.92/23.4	18.4/46.8	9.2/23.4	607/2700	180/800	284	424
<b>146 - 216 Fibers</b>	O-XXX-L2-XY-F12NS	18	0.92/23.4	18.4/46.8	9.2/23.4	607/2700	180/800	282	421
<b>218 - 288 Fibers</b>	O-XXX-L2-XY-F12NS	24	1.04/26.4	20.7/52.8	10.4/26.4	607/2700	180/800	345	515
<b>Singlemode/Multimode Composite (4-288 Fibers)</b>	O-XXX-L2-CM-F12NS/AAaaa/BBbbb	Refer to above specifications.							

### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

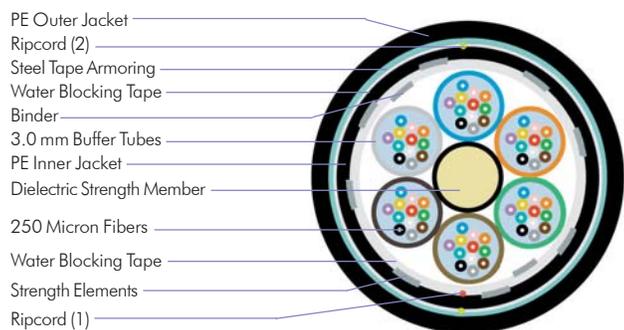
**For Composites Only:** aaa is replaced with singlemode fiber count  
AA is replaced with singlemode type

bbb is replaced by multimode fiber count  
BB is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Double Jacket/Single Armor Loose Tube Cable

(72 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable

Specifications are subject to change without notice.

# Multi-Jacketed Stranded Loose Tube Cable

## Triple Jacketed, Double Armored



### Jacket/Armor Combinations for Buried/Underground/Aerial Applications

- Double armor cable provides additional crush and mechanical protection for areas with severe rodent and lightning problems
- Corrugated steel tape armor is strong yet flexible providing additional crush and rodent protection
- Arid-Core® water blocking technology helps protect fibers from moisture and reduces termination effort
- Standard color-coding on fibers and buffer tubes helps ease installation
- All buffer tubes are constructed to a nominal OD of 3mm reducing the number of tools required in the field
- Flexible buffer tubes improve kink-resistance, reduce bend sensitivity and facilitates route management in closures
- Medium Density Polyethylene jacket is rugged, durable and easy to strip

Product Type/ Fiber Count	Catalog Number	Sub Units	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/meters	Long Term	lbs/ kft	kg/ km
<b>Triple Jacket/ Double-Armor 2 - 60 Fibers</b> 	O-XXX-L3-XY-F12NS	5	0.81/20.7	16.2/41.4	8.1/20.7	607/2700	180/800	271	404
<b>62 - 72 Fibers</b>	O-XXX-L3-XY-F12NS	6	0.85/21.7	17.0/43.4	8.5/21.7	607/2700	180/800	298	444
<b>74 - 96 Fibers</b>	O-XXX-L3-XY-F12NS	8	0.93/23.8	18.7/47.6	9.3/23.8	607/2700	180/800	345	514
<b>98 - 120 Fibers</b>	O-XXX-L3-XY-F12NS	10	1.02/25.9	20.3/51.8	10.2/25.9	607/2700	180/800	398	593
<b>122 - 144 Fibers</b>	O-XXX-L3-XY-F12NS	12	1.09/27.9	21.9/55.8	10.9/27.9	607/2700	180/800	450	671
<b>146 - 216 Fibers</b>	O-XXX-L3-XY-F12NS	18	1.09/27.9	21.9/55.8	10.9/27.9	607/2700	180/800	447	667
<b>218 - 288 Fibers</b>	O-XXX-L3-XY-F12NS	24	1.21/30.9	24.3/61.8	12.1/30.9	607/2700	180/800	529	789
<b>Singlemode/Multimode Composite (4-288 Fibers)</b>	O-XXX-L3-CM-F12NS/AAaaa/BBbbb		Refer to above specifications.						

### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore® 150, 50µm, Multimode Fiber  
**5L** LaserCore® 300, 50µm, Multimode Fiber  
**5K** LaserCore® 500, 50µm, Multimode Fiber

#### For Composites Only:

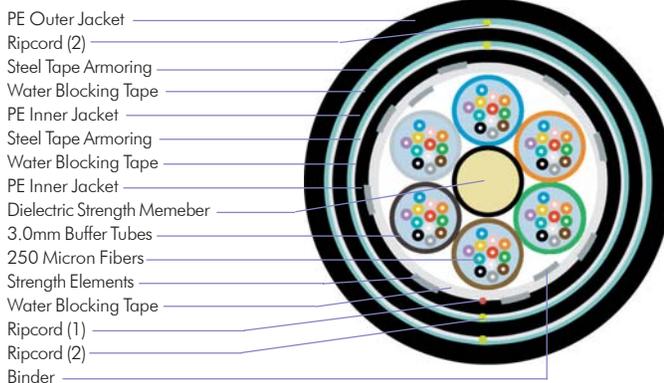
**aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Triple Jacket/Double Armor Loose Tube Cable

(72 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable

Specifications are subject to change without notice.

# Double Jacketed All-Dielectric Outdoor Cable



Double Jacketed

Product Type/ Fiber Count	Catalog Number	Sub Units	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/meters	Long Term	lbs/ kft	kg/ km
<b>Double Jacket/ All-Dielectric 2 - 60 Fibers</b> 	O- <b>XXX</b> -LD- <b>XY</b> -F12NS	5	0.55/13.9	10.9/27.8	5.5/13.9	607/2700	180/800	193	138
<b>62 - 72 Fibers</b>	O- <b>XXX</b> -LD- <b>XY</b> -F12NS	6	0.58/14.9	11.7/29.8	5.8/14.9	607/2700	180/800	108	161
<b>74 - 96 Fibers</b>	O- <b>XXX</b> -LD- <b>XY</b> -F12NS	8	0.66/16.9	13.3/33.8	6.6/16.9	607/2700	180/800	140	209
<b>98 - 120 Fibers</b>	O- <b>XXX</b> -LD- <b>XY</b> -F12NS	10	0.75/19.0	14.9/38.0	7.5/19.0	607/2700	180/800	170	253
<b>122 - 144 Fibers</b>	O- <b>XXX</b> -LD- <b>XY</b> -F12NS	12	0.83/21.1	16.6/42.2	8.3/21.1	607/2700	180/800	203	302
<b>146 - 216 Fibers</b>	O- <b>XXX</b> -LD- <b>XY</b> -F12NS	18	0.83/21.1	16.6/42.2	8.3/21.1	607/2700	180/800	195	291
<b>218 - 288 Fibers</b>	O- <b>XXX</b> -LD- <b>XY</b> -F12NS	24	0.95/24.1	18.9/48.2	9.5/24.1	607/2700	180/800	253	378
<b>Singlemode/Multimode Composite (4-288 Fibers)</b>	O- <b>XXX</b> -LD- <b>CM</b> -F12NS/ <b>AAaaa</b> / <b>BBbbb</b>	Refer to above specifications.							

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore™ 150, 50µm, Multimode Fiber

**5L** LaserCore™ 300, 50µm, Multimode Fiber

**5K** LaserCore™ 500, 50µm, Multimode Fiber

#### For Composites Only:

**aaa** is replaced with singlemode fiber count

**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count

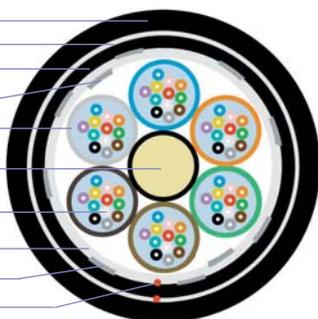
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

## Double Jacket All-Dielectric Loose Tube Cable

(72 Fiber Version Shown)

- PE Outer Jacket
- Water Blocking Tape
- PE Inner Jacket
- Binder
- 3.0 mm Gel Filled Buffer Tubes
- Dielectric Strength Member
- 250 Micron Fibers
- Water Blocking Tape
- Strength Elements
- RipCORDS (2)



## Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable

Telcordia GR-20-CORE, Issue 2.

Specifications are subject to change without notice.

# Outside Plant Self-Supporting Figure-8 Cable

## Messengered Stranded Loose Tube Armored



### For Aerial Applications

- Figure-8 cable design allows easy, one-step installation resulting in cost savings
- Arid-Core™ water blocking technology helps protect fibers from moisture and reduces termination effort
- Standard color-coding on fibers and buffer tubes helps ease installation
- All buffer tubes are constructed to a nominal OD of 3mm reducing the number of tools required in the field
- Uses standard figure-8 cable hardware and installation practices

Product Type/ Fiber Count	Catalog Number	Sub Units	Width inch/mm	Height inch/cm	Minimum Bend Radius Loaded inch/cm    Unloaded lbs/newtons		Maximum Tensile Load Short Term inch/cm/    Long Term lbs/newtons		Weight lbs/ kft    kg/ km	
<b>Figure-8 Armored 2 - 72 Fibers</b> 	M- <b>XXX</b> -LA- <b>XY</b> -F12NS	6	0.55/14.0	0.99/25.2	22.0/56.0	11.0/28.0	607/2700	180/800	257	383
<b>74 - 144 Fibers</b>	M- <b>XXX</b> -LA- <b>XY</b> -F12NS	12	0.80/20.3	1.24/31.5	31.9/81.2	15.9/40.6	607/2700	180/800	357	532
<b>146 - 216 Fibers</b>	M- <b>XXX</b> -LA- <b>XY</b> -F12NS	18	0.80/20.3	1.24/31.5	31.9/81.2	15.9/40.6	607/2700	180/800	341	508
<b>Singlemode/Multimode Composite (4-216 Fibers)</b>	M- <b>XXX</b> -LA- <b>CM</b> -F12NS/ <b>AAaaa</b> / <b>BBbbb</b>	Refer to above specifications.								

### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

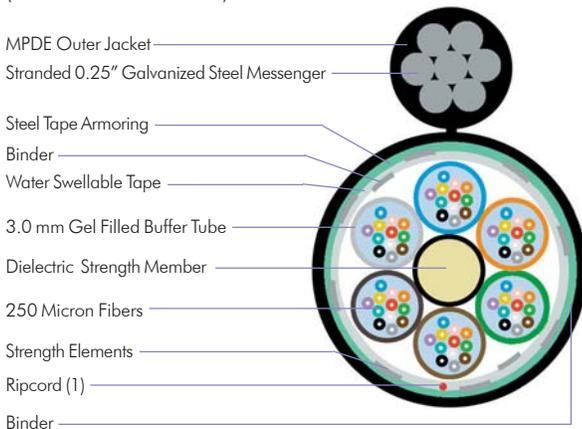
**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Loading Capabilities:** Meets the loading conditions of heavy, medium or light storm loading areas as defined in Rule 251 of the National Electric Safety Code (NESC) Sag and tension tables are available providing the recommended sag or tension. Please contact Technical Services for more information.

### Figure-8 Armored Cable

(72 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable

Specifications are subject to change without notice.

# Outside Plant Self-Supporting Figure-8 Cable

## Messengered Stranded Loose Tube All-Dielectric



### For Aerial Applications

- Figure-8 cable design allows easy, one-step installation resulting in cost savings
- Arid-Core® water blocking technology helps protect fibers from moisture and reduces termination effort
- Standard color-coding on fibers and buffer tubes helps ease installation
- All buffer tubes are constructed to a nominal OD of 3mm reducing the number of tools required in the field
- Uses standard figure-8 cable hardware and installation practices

Product Type/ Fiber Count	Catalog Number	Sub Units	Width inch/mm	Height inch/cm	Minimum Bend Radius Loaded Unloaded		Maximum Tensile Load Short Term Long Term		Weight lbs/ kft		kg/ km	
<b>Figure-8 Non-Armored 2 - 72 Fibers</b> 	M- <b>XXX</b> -LN- <b>XY</b> -F12NS	6	0.49/12.6	0.93/23.8	19.8/50.4	9.9/25.2	607/2700	180/800	213	317		
<b>74 - 144 Fibers</b>	M- <b>XXX</b> -LN- <b>XY</b> -F12NS	12	0.74/18.8	1.18/30.0	29.5/75.2	14.8/37.6	607/2700	180/800	290	433		
<b>146 - 216 Fibers</b>	M- <b>XXX</b> -LN- <b>XY</b> -F12NS	18	0.74/18.8	1.18/30.0	29.5/75.2	14.8/37.6	607/2700	180/800	275	410		
<b>Singlemode/Multimode Composite (4-216 Fibers)</b>	M- <b>XXX</b> -LN- <b>CM</b> -F12NS/ <b>AAaaa</b> / <b>BBbbb</b>				Refer to above specifications.							

### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP® Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore® 150, 50µm, Multimode Fiber  
**5L** LaserCore® 300, 50µm, Multimode Fiber  
**5K** LaserCore® 500, 50µm, Multimode Fiber

#### For Composites Only:

**aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

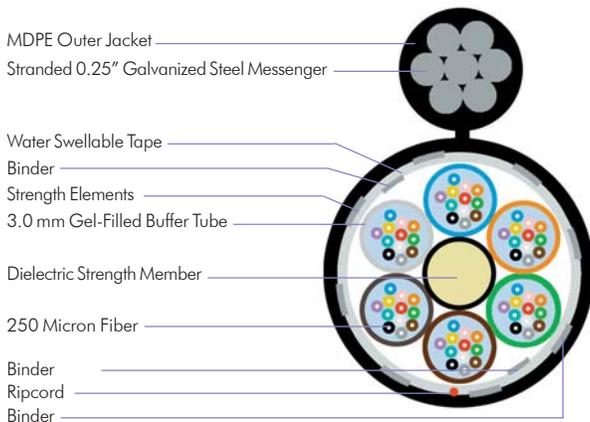
**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Loading Capabilities:** Meets the loading conditions of heavy, medium or light storm loading areas as defined in Rule 251 of the National Electric Safety Code (NESC). Sag and tension tables are available providing the recommended sag or tension. Please contact Technical Services for more information.

### Figure-8 Non-Armored Cable

(72 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable

Specifications are subject to change without notice.

# ADSS FTTH Loose Tube Cable

All-Dielectric, Self-Supporting (ADSS) Aerial Design



## For Conduit and Conduit-to-Lashed Aerial, Aerial Self-Supporting, Fiber to the Home, Ideal for Spans Up to 300' (91 m) Under NESC Medium Loading

- Small nominal diameter (9.01mm nominal)
- Light weight cable for ease of handling and installation
- All-dielectric construction with a maximum of four fibers per tube
- Single medium-density polyethylene (MDPE) jacket allows for fast, convenient cable preparation
- Outstanding, cost-effective alternative for short spans
- 600 lb. pulling tension for conduit installations

Product Type/ Fiber Count	Catalog Number	Fibers Per Tube	Outer Diameter inch/mm	Minimum Bend Radius Loaded inch/cm	Unloaded inch/cm	Installation Loading lbs/newtons	Weight lbs/ kft	kg/ km
<b>Single Jacket 2-20 Fibers</b>	S- <b>XXX</b> -LN- <b>XY</b> -F04NS/ <b>ZZZZ</b>	4	0.353/9.0	5.3/13.5	3.5/9.0	Variable Zero fiber strain at full in-service load	40	59



### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5μm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50μm, Multimode Fiber  
**5L** LaserCore™ 300, 50μm, Multimode Fiber  
**5K** LaserCore™ 500, 50μm, Multimode Fiber

**ZZZZ** = NESC Loading Conditions and maximum span length (feet)

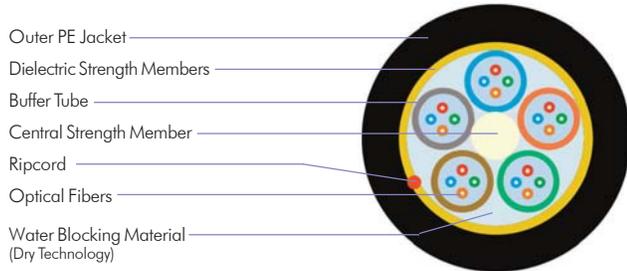
**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

## ADSS Double Jacket Loose Tube All-Dielectric Cable

(20 Fiber Version Shown)



## Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	125lb/f (22 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	Exceeds	FOTP-104
Twist/Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

## NESC Loading Conditions

Installation Sag	Light	Medium	Heavy
1.0%	387ft (118.0m)	250ft (76.2m)	149ft (45.4m)
1.5%	441ft (134.4m)	272ft (82.9m)	158ft (48.2m)
2.0%	479ft (146.0m)	290ft (88.4m)	167ft (50.9m)

Specifications are subject to change without notice.

# ADSS Short Span Loose Tube Cable

## All-Dielectric, Self-Supporting (ADSS) Aerial Design



### For Aerial Long Haul and Metro Applications

- Small cable diameter and bend radius for lightweight and ease of handling and installation
- Designed for zero fiber strain at full in-service tensile load
- Designed for short spans (up to 1150 feet/350 meters)\*
- Single medium-density polyethylene (MDPE) jacket for fast convenient cable preparation
- Fully qualified in accordance with Telcordia Technologies, EIA/TIA, IEEE and RUS Standards

Product Type/ Fiber Count	Catalog Number	Fibers Per Tube	Outer Diameter inch/mm	Minimum Bend Radius Loaded Unloaded		Installation Loading	Weight lbs/ kft kg/ km
				inch/cm	inch/cm		
<b>Single Jacket 2-30 Fibers</b>	S- <b>XXX</b> -LN- <b>XY</b> -F06NS/ <b>ZZZZ</b>	6	Variable	Variable	Variable	Variable	Variable
<b>32-60 Fibers</b>	S- <b>XXX</b> -LN- <b>XY</b> -F12NS/ <b>ZZZZ</b>	12	Variable	Variable	Variable	Variable	Variable
<b>62-72 Fibers</b>	S- <b>XXX</b> -LN- <b>XY</b> -F12NS/ <b>ZZZZ</b>	12	Variable	Variable	Variable	Variable	Variable

\*Depending on sag and loading conditions, fiber counts and clearance requirements

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5μm, FDDI Grade Multimode Fiber

**5M** LaserCore™ 150, 50μm, Multimode Fiber

**5L** LaserCore™ 300, 50μm, Multimode Fiber

**5K** LaserCore™ 500, 50μm, Multimode Fiber

**ZZZZ** = NESC Loading Conditions and maximum span length (feet)

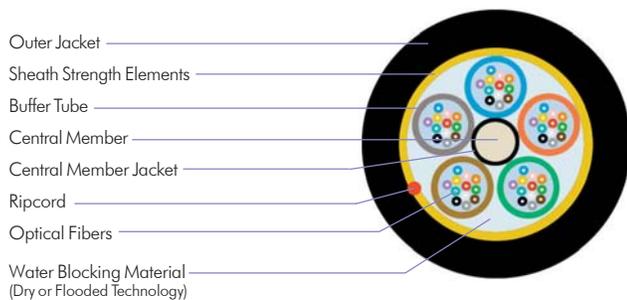
**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### ADSS Double Jacket Loose Tube All-Dielectric Cable

(60 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	125lbf/in (22 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	Exceeds	FOTP-104
Twist/Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

Specifications are subject to change without notice.

# ADSS Double Jacketed Loose Tube Cable

All-Dielectric, Self-Supporting (ADSS) Aerial Design



## For Aerial Long Haul and Metro Applications

- Custom engineered for each individual application
- Designed for zero fiber strain at full in-service tensile load
- Cable's round profile minimizes wind and ice loading to reduce cable sag and tensile forces on towers and support hardware
- Outstanding long span capability (up to 3,281 feet or 1,000 meters)\*
- Fully qualified in accordance with Telcordia Technologies, EIA/TIA, IEEE and RUS Standards
- Tracking resistant cable available for space potentials up to 25kV that resists tracking (dry banding)

Product Type/ Fiber Count	Catalog Number	Fibers Per Tube	Outer Diameter inch/mm	Minimum Bend Radius	Installation Loading	Weight
<b>Double Jacket 2-30 Fibers</b> 	S- <b>XXX</b> -LD- <b>XY</b> -F06NS/ <b>ZZZZ</b>	6	Variable	Variable 15 x cable outer diameter during installation	Variable  (custom designed per application)	Variable
<b>32-288 Fibers</b>	S- <b>XXX</b> -LD- <b>XY</b> -F12NS/ <b>ZZZZ</b>	12	Variable	Variable 10 x cable outer diameter post installation	Variable  (custom designed per application)	Variable

Also available in ribbon constructions with 300-864 fiber counts

\*Depending on loading conditions, fiber counts and clearance requirements

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore™ 150, 50µm, Multimode Fiber

**5L** LaserCore™ 300, 50µm, Multimode Fiber

**5K** LaserCore™ 500, 50µm, Multimode Fiber

**ZZZZ** = NESC Loading Conditions and maximum span length (feet)

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with multimode type

**bbb** is replaced by multimode fiber count

**BB** is replaced by multimode type

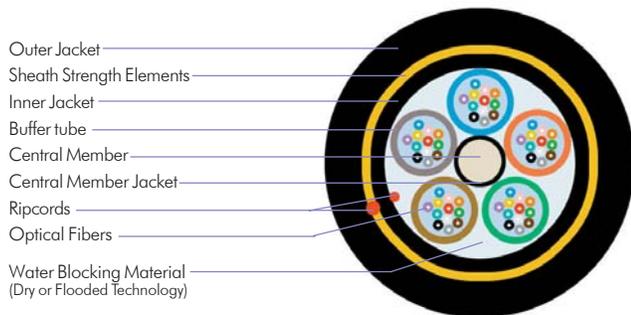
**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Buffer Tubes 13 - 18 repeat color sequence with tracer stripe**

**Note:** Add "AT" to the end of the catalog number if any anti-tracking (tracking resistant) cable is required.

## ADSS Double Jacketed Loose Tube All-Dielectric Cable

(60 Fiber Version Shown)



## Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	125lbf/in (22 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	Exceeds	FOTP-104
Twist/Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

Specifications are subject to change without notice.

# Outside Plant Central Tube Cable

## Armored and All-Dielectric Designs



### For Buried/Underground/Aerial Applications

- Robust constructions offer excellent protection of fibers
- Provides easy access to the fibers
- Arid-Core® water blocking technology helps protect fibers from moisture and reduces termination effort
- Compatible with standard industry hardware and procedures

Product Type/ Fiber Count	Catalog Number	Subunits	Outer Diameter inch/mm	Minimum Bend Radius Loaded inch/cm	Minimum Bend Radius Unloaded inch/cm	Maximum Tensile Load Short Term lbs/newtons	Maximum Tensile Load Long Term lbs/newtons	Weight lbs/ kft	Weight kg/ km
<b>Armored 2-24 Fibers, 4mm Tube</b>	O-XXX-CA-XY-F12NS	2	0.43/11.0	8.6/22.0	4.3/11.0	607/2700	180/800	93	138
<b>26-48 Fibers, 6mm Tube</b>	O-XXX-CA-XY-F12NS	4	0.51/13.0	10.2/26.0	5.1/13.0	607/2700	180/800	121	181
<b>50 - 96 Fibers, 8mm Tube</b>	O-XXX-CA-XY-F12NS	8	0.59/15.0	11.8/30.0	5.9/15.0	607/2700	180/800	152	226
<b>All-Dielectric 2-24 Fibers, 4mm Tube</b>	O-XXX-CN-XY-F12NS	2	0.40/10.1	7.9/20.2	4.0/10.1	607/2700	180/800	63	94
<b>26-48 Fibers, 6mm Tube</b>	O-XXX-CN-XY-F12NS	4	0.47/12.1	9.5/24.2	4.7/12.1	607/2700	180/800	86	128
<b>50-96 Fibers, 8mm Tube</b>	O-XXX-CN-XY-F12NS	8	0.55/14.1	11.1/28.2	5.5/14.1	607/2700	180/800	110	164
<b>Singlemode/Multimode Composite (4-96 Fibers)</b>	O-XXX-CA-CM-F12NS/AAAaa/BBbbb O-XXX-CN-CM-F12NS/AAaaa/BBbbb	Refer to above specifications. (Tube size will vary depending on fiber count/configuration.)							

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore® 150, 50µm, Multimode Fiber

**5L** LaserCore® 300, 50µm, Multimode Fiber

**5K** LaserCore® 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count

**AA** is replaced with singlemode type

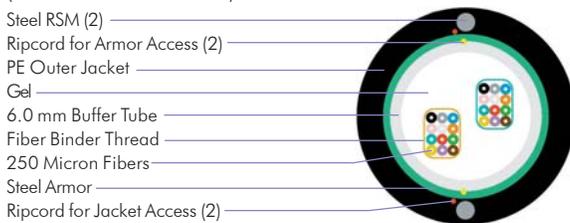
**bbb** is replaced by multimode fiber count

**BB** is replaced by multimode type

**Identification Threads/Fiber Colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

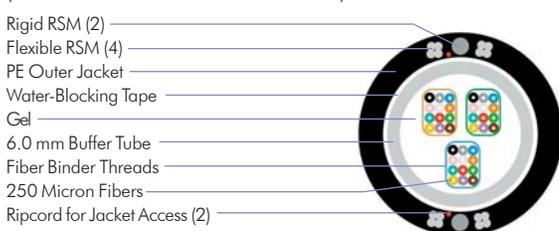
### Central Tube Armored Cable

(24 Fiber Version Shown)



### Central Tube Non-Armored All-Dielectric Cable

(36 Fiber All-Dielectric Version Shown)



Specifications are subject to change without notice.

### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable

# Outside Plant Pavement Cable

## Central Tube Design with a Copper Sheath



### For Buried Applications

- Smooth wall, welded copper armor
- Arid Core® water-blocking technology helps protect fibers from moisture and reduces termination effort
- Good tensile performance (100 lbs.), compatible with standard micro-trenching techniques
- Provides excellent crush resistance

Product Type/ Fiber Count	Catalog Number	Bundles	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/newtons	Long Term lbs/newtons	lbs/ kft	kg/ km
<b>Pavement Cable 2 - 72 Fibers</b>	O- <b>XXX</b> -CP- <b>XY</b> -F12NS	6	0.35/8.8	6.9/17.6	3.5/8.8	6-7/2700	180/800	78	116



### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore® 150, 50µm, Multimode Fiber  
**5L** LaserCore® 300, 50µm, Multimode Fiber  
**5K** LaserCore® 500, 50µm, Multimode Fiber

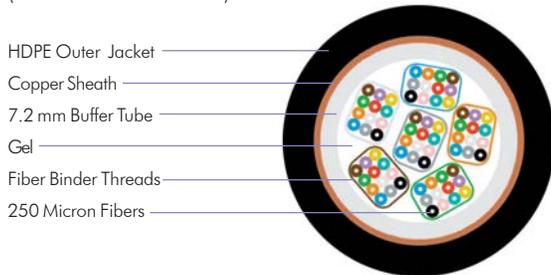
**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Identification Threads/Fiber Colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Outside Plant Pavement Cable

(72 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	2.17 lbf-ft (2.94 N·m)	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the ANSI/ICEA S-XXX-717-2002 Standard for Optical Drop Cable.

### 5/8" Backer Rod

Closed Cell Foamed Neoprene Rod

Product Type	Catalog Number	Outer Diameter inch/mm
<b>Backer Rod</b>	KIT-TOL-BKR-5/8N	0.625/15.93



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	N/A
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Compression Deflection, 25% (psi)	5-9	ASTM D 1056-98
Heat Resistance		
Oven-aged 7 days @70°C	-1	ASTM D 1056-98
Oven-aged 22 hrs. @ 100°C	0	ASTM D 1056-98
Water Absorption (%)	<5	ASTM D 1056-98
Compression Set (22 hrs. @ 23°C, 50% deflection, 24 hr. recovery, %)	11	ASTM D 1056-98 (suffix B2)
Fluid Resistance (22 hrs. @ 23°C in Reference Fuel B, Change in weight, %)	+123	ASTM D 1056-98
Flamability of Interior Mat.	PASS	FMVSS (suffix Z1)
Fluid Resistance (IRM 903 Oil, 22 hrs. @ 70°C Volume Change, %)	-0.26	ASTM D 471 (suffix Z2)

Specifications are subject to change without notice.

### For Buried/Underground/Aerial Applications

- Arid-Core® water blocking technology helps protect fibers from moisture and reduces termination effort
- Small, lightweight cable allowing for increased ease of installation, routing and termination
- Cost effective, low fiber count cable for outside plant applications
- An outstanding choice when space is at a premium
- Medium Density Polyethylene jacket is rugged, durable and easy to strip

Product Type/ Fiber Count	Catalog Number	Subunits	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/newtons	Long Term lbs/newtons	lbs/ kft	kg/ km
<b>Armored 1 - 12 Fibers</b>	O- <b>XXX</b> -DA- <b>XY</b> -F12NS	1	0.311/7.9	12.41/31.6	6.21/15.8	300/1335	90/400	52	78
<b>Singlemode/Multimode Composite (4-12 Fibers)</b>	O- <b>XXX</b> -DA-CM-F12NS/ <b>AA</b> <b>aaa</b> / <b>BB</b> <b>bbb</b>			Refer to above specifications.					



### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore® 150, 50µm, Multimode Fiber  
**5L** LaserCore® 300, 50µm, Multimode Fiber  
**5K** LaserCore® 500, 50µm, Multimode Fiber

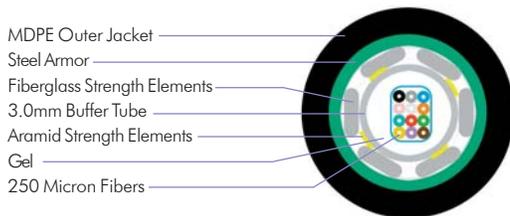
**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Fiber identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Drop Armored Cable

(12 fiber version shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	125 lbf/in (22 N/mm)	FOTP-41
Impact Resistance	2.17 lbf-ft (2.94 N·m)	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the ANSI/ICEA S-XXX-717-2002 Standard for Optical Fiber Drop Cable.

Specifications are subject to change without notice.

# Outside Plant Drop Cable

## All-Dielectric Design



### For Buried/Underground/Aerial Applications

- Arid-Core® water blocking technology helps protect fibers from moisture and reduces termination effort
- Small, lightweight cable allowing for increased ease of installation, routing and termination
- Cost effective, low fiber count cable for outside plant applications
- An outstanding choice when space is at a premium
- Medium Density Polyethylene jacket is rugged, durable and easy to strip
- Rigid dielectric strength members support placement in power utility easements

Product Type/ Fiber Count	Catalog Number	Subunits	Outer Diameter inch/mm	Minimum Bend Radius Loaded inch/cm	Minimum Bend Radius Unloaded inch/cm	Maximum Tensile Load Short Term lbs/newtons	Maximum Tensile Load Long Term lbs/newtons	Weight lbs/ kft	Weight kg/ km
<b>All-Dielectric 1 - 12 Fibers</b>	O- <b>XXX</b> -DN- <b>XY</b> -F12NS/30T	1	0.351/8.8	13.8/35.2	6.91/17.6	300/1335	90/400	47	70
<b>Singlemode/Multimode Composite (4-12 Fibers)</b>	O- <b>XXX</b> -DN-CM-F12NS/ <b>AAaaa</b> / <b>BBbbb</b>	Refer to above specifications..							



### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted,  
Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-  
Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

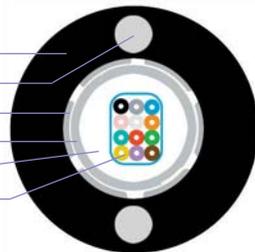
**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Fiber identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### All-Dielectric Drop Cable

(12 fiber version shown)

- PE Outer Jacket
- Rigid RSM (2)
- Strength Elements
- 3.0 mm Buffer Tube
- Gel
- 250 Micron Fibers



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	125 lbf/in (22 N/mm)	FOTP-41
Impact Resistance	2.17 lbf-ft (2.94 N·m)	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the ANSI/ICEA S-XXX-717-2002 Standard for Optical Fiber Drop Cable.

Specifications are subject to change without notice.

# Outside Plant Self-Supporting Figure 8 Drop Cable

## 1 - 12 Fiber Arid-Core Construction



### For Aerial Applications

- Arid-Core® water blocking technology helps protect fibers from moisture and reduces termination effort
- Small, lightweight cable allowing for increased ease of installation, routing and termination
- Cost effective, low fiber count cable for outside plant applications
- Medium Density Polyethylene jacket is rugged, durable and easy to strip
- Solid steel messenger member for simplified aerial applications
- Flexible design allows for ease of routing and placement

Product Type/ Fiber Count	Catalog Number	Diameter Over Messenger inch/mm	Diameter Over Fiber inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/newtons	Long Term lbs/newtons	lbs/ kft	kg/ km
<b>Figure 8 Drop 1 - 12 Fibers</b>	M- <b>XXX</b> -DN- <b>XY</b> -F12NS/ GSM/40T	0.13/3.4	0.20/5.1	8.0/20.4	4.0/10.2	300/1335	90/400	44	66



### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Fiber identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Figure 8 Drop Cable

(2 fiber version shown)

MDPE Outer Jacket

0.083" Messenger Wire

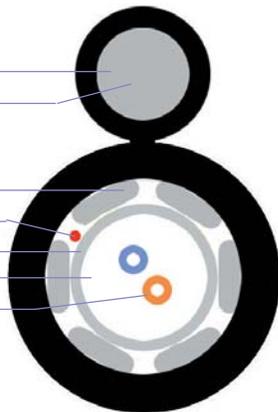
Strength Elements

Ripcord (1)

4.0 mm Buffer Tube

Gel

250 Micron Fibers



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	125 lbf/in (22 N/mm)	FOTP-41
Impact Resistance	2.17 lbf-ft (2.94 N·m)	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the ANSI/ICEA S-XXX-717-2002 Standard for Optical Fiber Drop Cable.

### Sag and Tension Examples

NESC Loading Conditions	1% Installation Sag		2% Installation Sag		3% Installation Sag	
	Max Span ft (m)	Sag at NESC Loading (%)	Max Span ft (m)	Sag at NESC Loading (%)	Max Span ft (m)	Sag at NESC Loading (%)
Heavy	377 (115)	4.13	427 (130)	4.68	482 (147)	5.26
Medium	623 (190)	3.84	728 (222)	4.52	820 (250)	5.12
Light	909 (277)	3.41	1132 (345)	4.27	1312 (400)	4.96

Values were calculated at 70° F (21° C)

Custom Sag and Tension Tables are available providing the recommended sag or tension. Please contact technical support.

Specifications are subject to change without notice.

# Outside Plant Self-Supporting Figure 8 Mini-Drop Cable

## 1 - 6 Fiber Arid-Core Construction Copper Clad Steel Messenger



### For Aerial Applications

- Arid-Core® water blocking technology helps protect fibers from moisture and reduces termination effort
- Small, lightweight cable allowing for increased ease of installation, routing and termination
- Cost effective, low fiber count cable for outside plant applications
- Medium Density Polyethylene jacket is rugged, durable and easy to strip
- Solid steel messenger member for simplified aerial applications
- Flexible design allows for ease of routing and placement

Product Type/ Fiber Count	Catalog Number	Diameter Over Messenger inch/mm	Diameter Over Fiber inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/newtons	Long Term lbs/newtons	lbs/ kft	kg/ km
<b>Figure 8 Mini-Drop 1 - 6 Fibers</b>	M- <b>XXX</b> -MN- <b>XY</b> -F12NS/ CCS	0.13/3.4	0.20/5.1	8.0/20.4	4.0/10.2	300/1335	90/400	44	66



### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted,  
Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-  
Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Fiber identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Figure 8 Mini-Drop Cable

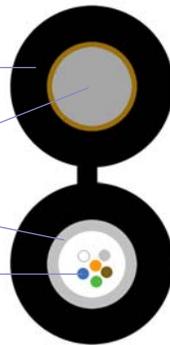
(6 fiber version shown)

Linear Low Density  
Polyethylene Outer Jacket

Solid Steel Messenger

2.5mm Gel Filled Buffer Tube

250 Micron Fibers



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	125 lbf/in (22 N/mm)	FOTP-41
Impact Resistance	2.17 lbf-ft (2.94 N·mm)	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the ANSI/ICEA S-110-717-2002 Standard for Optical Fiber Drop Cable.

### Sag and Tension Examples

NESC Loading Conditions	1% Installation Sag		2% Installation Sag		3% Installation Sag	
	Max Span ft (m)	Sag at NESC Loading (%)	Max Span ft (m)	Sag at NESC Loading (%)	Max Span ft (m)	Sag at NESC Loading (%)
Heavy	164 (50)	4.16	180 (55)	4.61	203 (62)	5.17
Medium	276 (84)	3.97	312 (95)	4.51	351 (107)	5.08
Light	426 (130)	3.67	508 (155)	4.35	590 (180)	5.00

Values were calculated at 70° F (21° C)

Custom Sag and Tension Tables are available providing the recommended sag or tension. Please contact technical support.

Specifications are subject to change without notice.

# Outside Plant Self-Supporting Figure 8 Mini-Drop Cable

## 1 - 6 Fiber Arid-Core Construction Stranded Steel Messenger



### For Aerial Applications

- Arid-Core® water blocking technology helps protect fibers from moisture and reduces termination effort
- Small, lightweight cable allowing for increased ease of installation, routing and termination
- Cost effective, low fiber count cable for outside plant applications
- Medium Density Polyethylene jacket is rugged, durable and easy to strip
- Solid steel messenger member for simplified aerial applications
- Flexible design allows for ease of routing and placement

Product Type/ Fiber Count	Catalog Number	Diameter Over Messenger inch/mm	Diameter Over Fiber inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/newtons	Long Term lbs/newtons	lbs/ kft	kg/ km
<b>Figure 8 Mini-Drop 1 - 6 Fibers</b>	M- <b>XXX</b> -MN- <b>XY</b> -F12NS/ BSS	0.16/4.0	0.15/3.8	6.0/15.2	3.0/7.6	300/1335	90/400	44	66



### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore® 150, 50µm, Multimode Fiber  
**5L** LaserCore® 300, 50µm, Multimode Fiber  
**5K** LaserCore® 500, 50µm, Multimode Fiber

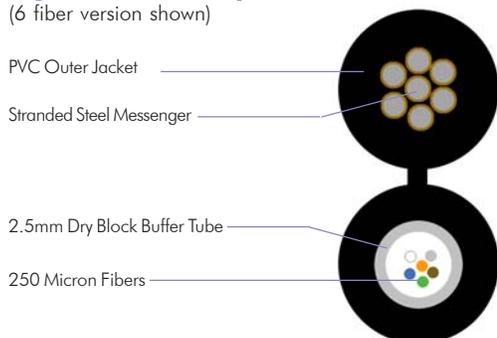
**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Fiber identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Figure 8 Mini-Drop Cable

(6 fiber version shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	125 lbf/in (22 N/mm)	FOTP-41
Impact Resistance	2.17 lbf-ft (2.94 N-m)	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the ANSI/ICEA S-XXX-717-2002 Standard for Optical Fiber Drop Cable.

### Sag and Tension Examples

NESC Loading Conditions	1% Installation Sag		2% Installation Sag		3% Installation Sag	
	Max Span ft (m)	Sag at NESC Loading (%)	Max Span ft (m)	Sag at NESC Loading (%)	Max Span ft (m)	Sag at NESC Loading (%)
Heavy	131 (40)	4.10	147 (45)	4.60	164 (50)	5.14
Medium	220 (67)	3.91	252 (77)	4.48	288 (88)	5.09
Light	344 (105)	3.59	410 (125)	4.30	475 (145)	4.96

Values were calculated at 70° F (21° C)

Custom Sag and Tension Tables are available providing the recommended sag or tension. Please contact technical support.

Specifications are subject to change without notice.

# Outside Plant All-Dielectric Flat Drop Cable



1 - 6 Fiber Arid-Core Construction Aerial Self-Support or Direct Burial

Product Type/ Fiber Count	Catalog Number	Diameter Over Messenger inch/mm	Diameter Over Fiber inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/newtons	Long Term lbs/newtons	lbs/ kft	kg/ km
<b>All-Dielectric Flat Drop 1 - 6 Fibers</b>	O- <b>XXX</b> -DF- <b>XY</b> -F12NS/ CCS	0.18/4.5	0.32/8.2	12.9/32.8	6.4/16.4	300/1335	90/400	36	54



### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore™ 150, 50µm, Multimode Fiber

**5L** LaserCore™ 300, 50µm, Multimode Fiber

**5K** LaserCore™ 500, 50µm, Multimode Fiber

#### For Composites Only:

**aaa** is replaced with singlemode fiber count

**AA** is replaced with singlemode type

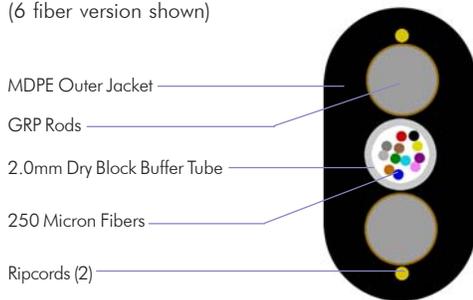
**bbb** is replaced by multimode fiber count

**BB** is replaced by multimode type

**Fiber identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Figure 8 Mini-Drop Cable

(6 fiber version shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	125 lbf/in (22 N/mm)	FOTP-41
Impact Resistance	2.17 lbf-ft (2.94 N·mm)	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the ANSI/ICEA S-110-717-2002 Standard for Optical Fiber Drop Cable.

### Sag and Tension Examples

NESC Loading Conditions	1% Installation Sag		2% Installation Sag		3% Installation Sag	
	Max Span ft (m)	Sag at NESC Loading (%)	Max Span ft (m)	Sag at NESC Loading (%)	Max Span ft (m)	Sag at NESC Loading (%)
Heavy	190 (58)	4.44	210 (64)	4.92	236 (72)	5.48
Medium	328 (100)	4.14	377 (115)	4.77	427 (130)	5.36
Light	656 (200)	3.28	853 (260)	4.26	1000 (305)	5.00

Values were calculated at 70° F (21° C)

Custom Sag and Tension Tables are available providing the recommended sag or tension. Please contact technical support.

Specifications are subject to change without notice.

**Fiber In ConQuest Toneable Conduit Cuts Installation Effort and Costs**

- High strength 18 gauge copper clad steel tone wire saves installation dollars
- Moisture resistant polymer coated tone wire accurately detectable over various depths and lengths
- Tone wire embedded in the wall of the HDPE conduit results in easy wire removal
- Internally reinforced HDPE wall works with standard conduit connections

Cable Type/ Fiber Count	Fiber Part Number & Conduit Description	Cable OD & Weight (kft)	Available Conduit OD	Available Wall Thicknesses	Weight (lb/kft)*		
					SDR 11	SDR 13.5	SCH 40
<b>Central Tube Dielectric</b> 2 - 24 Fibers  	O- <b>XXX</b> -CN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.40" 63 lbs.	1"	SDR 11 or 13.5	265	230	
			1 1/4"	SDR 11 or 13.5	381	326	
			1 1/2"	SDR 11 or 13.5	477	405	
			2"	SDR 13.5 or SCH 40		593	533
<b>Central Tube Dielectric</b> 26 - 48 Fibers	O- <b>XXX</b> -CN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.47" 86 lbs.	1"	SDR 11 or 13.5	273	238	
			1 1/4"	SDR 11 or 13.5	389	334	
			1 1/2"	SDR 11 or 13.5	485	413	
			2"	SDR 13.5 or SCH 40		601	541
<b>Central Tube Dielectric</b> 50 - 96 Fibers	O- <b>XXX</b> -CN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.55" 110 lbs.	1"	SDR 11 or 13.5	291	256	
			1 1/4"	SDR 11 or 13.5	407	352	
			1 1/2"	SDR 11 or 13.5	503	431	
			2"	SDR 13.5 or SCH 40		619	559

Other cables and wall sizes may be available upon request.  
For more information, please see the Conduit section of this catalog.

\* Weight does not include reel.

**Variables in the Catalog Number:**

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Typical Fiber-In-Conduit**

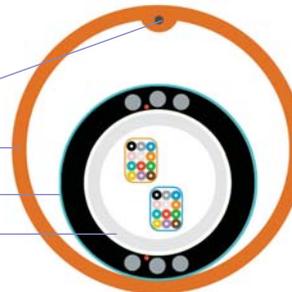
(24 Fiber Central Tube All-Dielectric Cable in Toneable Conduit Shown)

Copper Clad Steel  
Tone Wire

High-grade Polyethylene Conduit

Silicon-Based Lubricant

Cable



Specifications are subject to change without notice.

**Fiber In ConQuest Toneable Conduit Cuts Installation Effort and Costs**

- High strength 18 gauge copper clad steel tone wire saves installation dollars
- Moisture resistant polymer coated tone wire accurately detectable over various depths and lengths
- Tone wire embedded in the wall of the HDPE conduit results in easy wire removal
- Internally reinforced HDPE wall works with standard conduit connections

Cable Type/ Fiber Count	Fiber Part Number & Conduit Description	Cable OD & Weight (kft)	Available Conduit OD	Available Wall Thicknesses	Weight (lb/kft)*		
					SDR 11	SDR 13.5	SCH 40
<b>Single Jacket Loose Tube Dielectric</b> 2 - 60 Fibers	O- <del>XXX</del> -LN-XY-F12NS Specify Conduit OD, Wall Thickness and Color	0.46" 64 lbs.	1" 1 1/4" 1 1/2" 2"	SDR 11 or 13.5 SDR 11 or 13.5 SDR 11 or 13.5 SDR 13.5 or SCH 40	267 383 479 595	232 328 407 535	
<b>Single Jacket Loose Tube Dielectric</b> 62 - 72 Fibers	O- <del>XXX</del> -LN-XY-F12NS Specify Conduit OD, Wall Thickness and Color	0.49" 78 lbs.	1" 1 1/4" 1 1/2" 2"	SDR 11 or 13.5 SDR 11 or 13.5 SDR 11 or 13.5 SDR 13.5 or SCH 40	276 392 488 604	241 337 416 544	
<b>Single Jacket Loose Tube Dielectric</b> 74 - 96 Fibers	O- <del>XXX</del> -LN-XY-F12NS Specify Conduit OD, Wall Thickness and Color	0.57" 101 lbs.	1" 1 1/4" 1 1/2" 2"	SDR 11 or 13.5 SDR 11 or 13.5 SDR 11 or 13.5 SDR 13.5 or SCH 40	299 415 511 627	264 360 439 567	
<b>Single Jacket Loose Tube Dielectric</b> 98 - 120 Fibers	O- <del>XXX</del> -LN-XY-F12NS Specify Conduit OD, Wall Thickness and Color	0.66" 125 lbs.	1 1/4" 1 1/2" 2"	SDR 11 or 13.5 SDR 11 or 13.5 SDR 13.5 or SCH 40	438 534 650	383 462 590	
<b>Single Jacket Loose Tube Dielectric</b> 122 - 144 Fibers	O- <del>XXX</del> -LN-XY-F12NS Specify Conduit OD, Wall Thickness and Color	0.74" 153 lbs.	1 1/4" 1 1/2" 2"	SDR 11 or 13.5 SDR 11 or 13.5 SDR 13.5 or SCH 40	465 561 677	410 489 617	617
<b>Single Jacket Loose Tube Dielectric</b> 146 - 216 Fibers	O- <del>XXX</del> -LN-XY-F12NS Specify Conduit OD, Wall Thickness and Color	0.74" 150 lbs.	1 1/4" 1 1/2" 2"	SDR 11 or 13.5 SDR 11 or 13.5 SDR 13.5 or SCH 40	473 569 743	418 497 625	625
<b>Single Jacket Loose Tube Dielectric</b> 218 - 288 Fibers	O- <del>XXX</del> -LN-XY-F12NS Specify Conduit OD, Wall Thickness and Color	0.86" 197 lbs.	1 1/2" 2"	SDR 11 or 13.5 SDR 13.5 or SCH 40	415 743	545 683	683

Other cables and wall sizes may be available upon request.  
 For more information, please see the Conduit section of this catalog.

\* Weight does not include reel.

**Variables in the Catalog Number:**

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted,  
 Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-  
 Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Typical Fiber-In-Conduit**

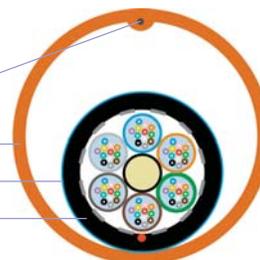
(72 Fiber Stranded Loose Tube All-Dielectric  
 Cable in Toneable Conduit Shown)

Copper Clad Steel  
 Tone Wire

High-Grade Polyethylene Conduit

Silicon-Based Lubricant

Cable



Specifications are subject to change without notice.

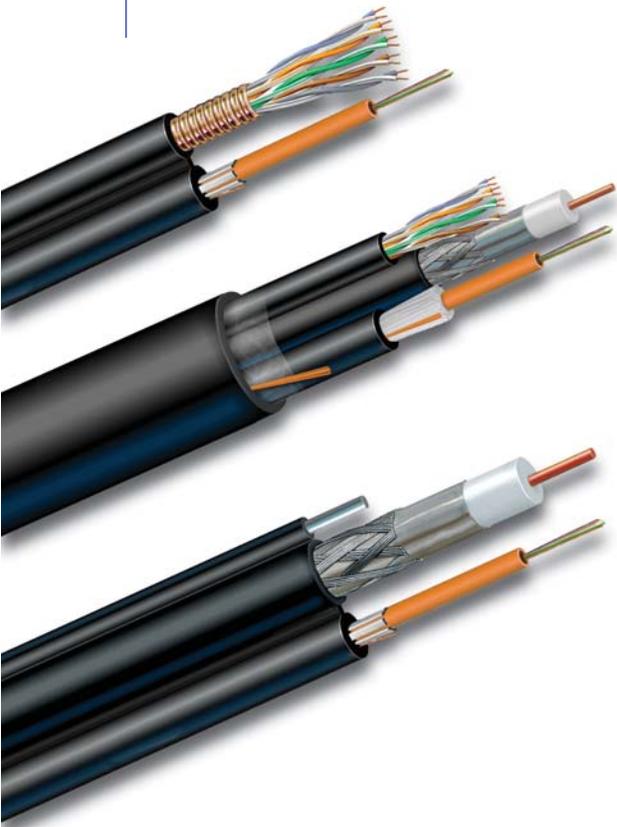
# CommScope Hybrid Cables

Featuring Combinations of Coax, Fiber and/or Unshielded Twisted Pair



Revenue generating units, or RGUs are central to the business model of every broadband service provider and more than any other cable construction, hybrid cable designs are becoming the choice to enable numerous outlets for cable television, HDTV, computer networking, multi-line telephone service, security, energy management systems, and more—all via a single cable run.

Using our unique position as the one cable supplier manufacturing coax, twisted pair and fiber optic cables under one roof, CommScope employs advanced engineering technologies by extruding and testing each component of a hybrid cable simultaneously.



(shown above, top to bottom)

- Fiber + UTP Hybrid Cable**
- Fiber + UTP + Coax Hybrid Cable**
- Fiber + Coax Hybrid Cable**



CommScope offers true hybrid/composite cables featuring subunits contained within a single jacket. Our constructions offer the additional protection of an outside jacket compared to designs offered by many vendors that are merely a bundle of subunits wrapped together with a special tape or binder thread – frequently called “speed pull”. CommScope hybrid cables are constructed from subunits carefully selected and performance-verified individually and as the sum of individual parts.

Special designs can be produced at your request, quickly and economically using our flexible manufacturing system. In fact, CommScope will help define the product that best meets your specific needs. Contact any CommScope sales representative at (800) 982-1708 to discuss your application.

Features	Benefits
<p><b>May contain copper UTP, coax and fiber optic subunits individually jacketed then cabled in a single bundle under one smooth surface.</b></p>	<ul style="list-style-type: none"> <li>• Great for multiple cable drops, phone/data lines, security systems and multi-media requirements</li> <li>• Saves time and installation dollars</li> <li>• Easier materials management</li> <li>• Components can be easily separated into individually jacketed points for easy termination</li> <li>• Capable of voice transmission, cable location and site powering</li> <li>• Avails future proofing for the demands of advanced data video and telecommunications for subscribers</li> <li>• Less prone to snags and violations of cable bend radius limits</li> <li>• Enhances the cable's ruggedness enabling each subunit to better withstand the rigors of cable installation and remote field applications</li> </ul>
<p><b>Coax cable subunits</b></p>	<ul style="list-style-type: none"> <li>• Robust drop cable components are available in a variety of braid options and treatments to provide protection against moisture, liquids and gases while boasting excellent mechanical strength and transmission qualities</li> </ul>
<p><b>Singlemode and/or multimode fiber optic cable subunits</b></p>	<ul style="list-style-type: none"> <li>• Excellent for transmission of critical audio and video signals with extraordinary reliability and clarity. No other medium today can challenge fiber optics in bandwidth, distance and noise immunity</li> <li>• Available in armored constructions for additional rodent and environmental protection</li> <li>• Tight buffered, loose tube or central tube designs offered in singlemode or multimode optical fiber types and a range of grades</li> </ul>
<p><b>Copper twisted pair subunits</b></p>	<ul style="list-style-type: none"> <li>• Often used in broadband networks for powering nodes and pedestals</li> <li>• Specify Category 5e rather than Cat 5. The cost differential is small compared with the quality and performance advantages gained – including the potential for significantly higher speeds and greater capacity</li> </ul>

### Features & Benefits

- The copper leg is designed to provide low voltage DC power for the optical components
- The optical leg is designed to carry voice, data and video
- Only a single installation is required
- Small, very flexible cable allowing for increased ease of installation, routing and termination
- The two legs can be easily separated as needed

Product Type/ Fiber Count/Pair Count	Catalog Number	Diameter Over Tw. Pair inch/mm	Diameter Over Fiber inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short term lbs./ Newtons	Long term lbs./Newtons	lbs/ kft	kg/ km
<b>1 - 12 Fibers</b> <b>1 - 6 22 AWG Pairs</b> 	O- <b>XXX</b> -DN-HY-F12NS/ <b>XYXXX</b> /NX22STP	0.34/8.60	0.30/7.60	11.9/30.4	6.0/15.2	300/1335	90/400	123	183.4

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted,  
Matched-Clad Singlemode Fiber

**6F** 62.5μm, FDDI Grade Multimode Fiber

**5M** LaserCore® 150, 50μm, Multimode Fiber

**5L** LaserCore® 300, 50μm, Multimode Fiber

**5K** LaserCore® 500, 50μm, Multimode Fiber

**N** = Number of Copper Pairs

**Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Jacket Color:** Black Medium Density Polyethylene

### Arid-Core Construction Hybrid Cable

(12 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	125 lbf/in (22 N/mm)	FOTP-41
Impact Resistance	2.17 lbf-ft (2.94 N·m)	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the ANSI/ICEA S-XXX-717-2002 Standard for Optical Fiber Drop Cable

Specifications are subject to change without notice.

# CommScope Hybrid Cable

## Fiber/6 Series Drop Cable (BrightWire®)



### Features & Benefits

- The BrightWire drop cable leg is designed to carry video
- The optical leg is designed to carry voice and data
- Only a single installation is required
- Small, very flexible cable allowing for increased ease of installation, routing and termination
- The legs can be easily separated as needed

Product Type/ Fiber Count	Catalog Number	Diameter Over Coax inch/mm	Diameter Over Fiber inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short term lbs./Newtons	Long term lbs./Newtons	lbs/ kft	kg/ km
<b>1 - 12 Fibers</b> 	O- <b>XXX</b> -DN-HY-F12NS/ <b>XYXXX</b> /F6SSBW/40T	0.30/7.62	0.26/6.60	10.4/26.4	5.2/13.2	300/1335	90/400	35	52.6

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore® 150, 50µm, Multimode Fiber

**5L** LaserCore® 300, 50µm, Multimode Fiber

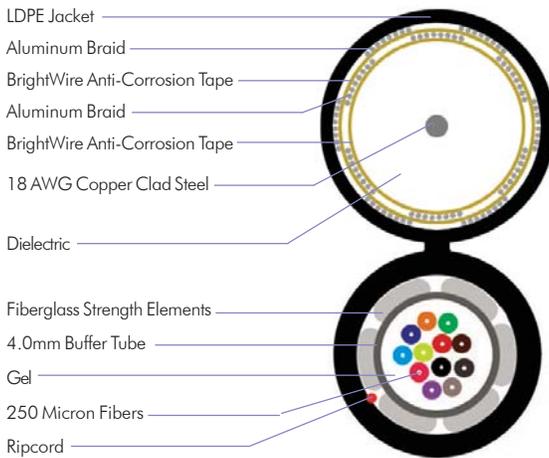
**5K** LaserCore® 500, 50µm, Multimode Fiber

**Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Jacket Color:** Black Medium Density Polyethylene

### Arid-Core Construction Fiber Coax Hybrid Cable

(12 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	125 lbf/in (22 N/mm)	FOTP-41
Impact Resistance	2.17 lbf-ft (2.94 N·m)	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the ANSI/ICEA S-XXX-717-2002 Standard for Optical Fiber Drop Cable

Specifications are subject to change without notice.

# CommScope Hybrid Cable

## Fiber/6 Series Drop Cable (BrightWire®)



### Features & Benefits

- The BrightWire drop cable leg is designed to carry video
- The optical leg is designed to carry voice and data
- Only a single installation is required
- Small, very flexible cable allowing for increased ease of installation, routing and termination
- The legs can be easily separated as needed

Product Type/ Fiber Count	Catalog Number	Diameter Over Coax inch/mm	Diameter Over Fiber inch/mm	Diameter Over Msg. inch/cm	Minimum Bend Radius		Maximum Tensile Load		Weight	
					Loaded inch/cm	Unloaded inch/cm	Short term lbs./Newtons	Long term lbs./Newtons	lbs/ kft	kg/ km
<b>1 - 12 Fibers</b>	O-XXX-DN-HY-F12NS/ XYXXX/F6SSBW/40T	0.30/7.62	0.26/6.60	0.13/3.4	10.4/26.4	5.2/13.2	300/1335	90/400	35	52.6



### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**6F** 62.5μm, FDDI Grade Multimode Fiber

**5M** LaserCore™ 150, 50μm, Multimode Fiber

**5L** LaserCore™ 300, 50μm, Multimode Fiber

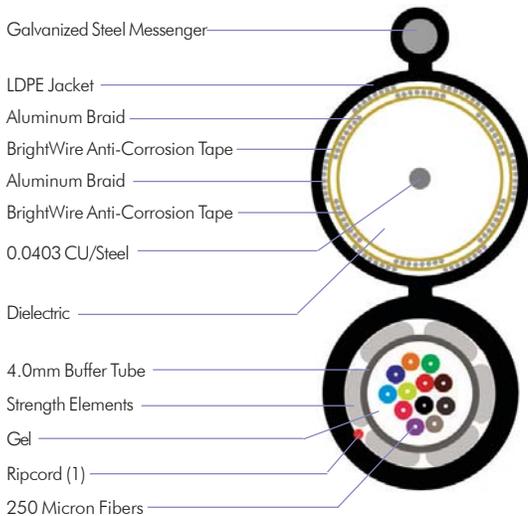
**5K** LaserCore™ 500, 50μm, Multimode Fiber

**Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Jacket Color:** Black Medium Density Polyethylene

### Arid-Core Construction Self-Supporting Hybrid Cable

(12 Fiber Version with Messenger Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	125 lbf/in (22 N/mm)	FOTP-41
Impact Resistance	2.17 lbf-ft (2.94 N·m)	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the ANSI/ICEA S-XXX-717-2002 Standard for Optical Fiber Drop Cable

### Sag and Tension Examples

NESC Loading Conditions	1% Installation Sag		2% Installation Sag		3% Installation Sag	
	Max Span ft (m)	Sag at NESC Loading (%)	Max Span ft (m)	Sag at NESC Loading (%)	Max Span ft (m)	Sag at NESC Loading (%)
Heavy	302 (92)	4.13	345 (105)	4.70	387 (118)	5.27
Medium	476 (145)	3.85	558 (170)	4.53	637 (194)	5.15
Light	532 (162)	3.73	640 (195)	4.47	728 (222)	5.10

Values were calculated at 70° F (21° C)

Custom Sag and Tension Tables are available providing the recommended sag or tension. Please contact technical support.

Specifications are subject to change without notice.

# CommScope Hybrid Cable

## Fiber/11 Series Drop Cable (BrightWire®)



### Features & Benefits

- The BrightWire drop cable leg is designed to carry video
- The optical leg is designed to carry voice and data
- Only a single installation is required
- Small, very flexible cable allowing for increased ease of installation, routing and termination
- The legs can be easily separated as needed

Product Type/ Fiber Count	Catalog Number	Diameter Over Coax inch/mm	Diameter Over Fiber inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short term lbs./Newtons	Long term lbs./Newtons	lbs/ kft	kg/ km
<b>1 - 12 Fibers</b> 	O- <b>XXX</b> -DN-HY-F12NS/ <b>XYXXX</b> /F11SSBW/40T	0.40/10.29	0.26/6.60	10.4/26.4	5.2/13.2	300/1335	90/400	80	119.0

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP® Dispersion-Unshifted,  
Matched-Clad Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore® 150, 50µm, Multimode Fiber

**5L** LaserCore® 300, 50µm, Multimode Fiber

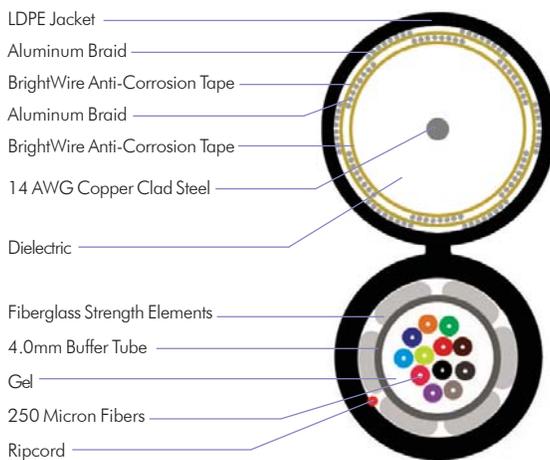
**5K** LaserCore® 500, 50µm, Multimode Fiber

**Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Jacket Color:** Black Linear Low Density Polyethylene

### Arid-Core Construction Fiber Coax Hybrid Cable

(12 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	125 lbf/in (22 N/mm)	FOTP-41
Impact Resistance	2.17 lbf-ft (2.94 N·m)	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the ANSI/ICEA S-XXX-717-2002 Standard for Optical Fiber Drop Cable

Specifications are subject to change without notice.

# Hybrid Single Jacket Outdoor Cable

## Armored



Product Type/ Fiber Count/Pair Count	Catalog Number	Sub Units	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/meters	Long Term	lbs/ kft	kg/ km
<b>2 - 48 Fibers</b> <b>1-2 Pairs</b>	○-XXX-LA-HY-FZZNS/ XYXXX/NX22UTP	5	0.51/13.1	10.3/26.2	5.1/13.1	607/2700	180/800	103	154
<b>2 - 60 Fibers</b> <b>1-2 Pairs</b>	○-XXX-LA-HY-FZZNS/ XYXXX/NX22UTP	6	0.55/14.0	11.0/28.0	5.5/14.0	607/2700	180/800	119	178
<b>14 - 84 Fibers</b> <b>1-4 Pairs</b>	○-XXX-LA-HY-FZZNS/ XYXXX/NX22UTP	8	0.63/16.1	12.6/32.2	6.3/16.1	607/2700	180/800	154	229
<b>38 - 108 Fibers</b> <b>1-5 Pairs</b>	○-XXX-LA-HY-FZZNS/ XYXXX/NX22UTP	10	0.71/18.2	14.3/36.4	7.1/18.2	607/2700	180/800	184	274
<b>62 - 132 Fibers</b> <b>1-5 Pairs</b>	○-XXX-LA-HY-FZZNS/ XYXXX/NX22UTP	12	0.80/20.3	15.9/40.6	8.0/20.3	607/2700	180/800	219	327
<b>86 - 204 Fibers</b> <b>1-5 Pairs</b>	○-XXX-LA-HY-FZZNS/ XYXXX/NX22UTP	18	0.80/20.3	15.9/40.6	8.0/20.3	607/2700	180/800	212	316
<b>158 - 276 Fibers</b> <b>1-5 Pairs</b>	○-XXX-LA-HY-FZZNS/ XYXXX/NX22UTP	24	0.91/23.3	18.3/46.6	9.1/23.3	607/2700	180/800	273	407

### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

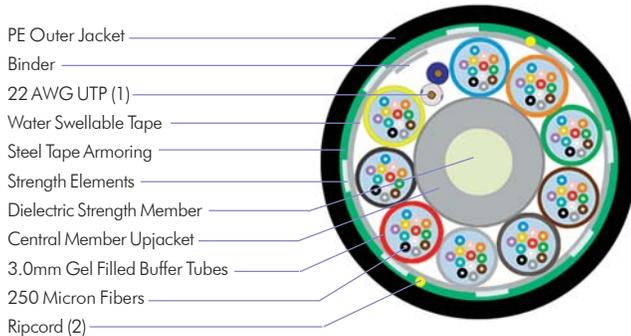
**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua  
Note: buffer tubes 13-24 repeat the color sequences with tracer stripe.

**Copper Twisted Pairs are identified with standard color coding:** 1/White/Blue, 2/White/Orange, 3/White/Green, 4/White/Brown, 5/White/Grey

### Hybrid Single Jacket Armored Cable

(108 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2

ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable

Specifications are subject to change without notice.

# Hybrid Single Jacket Outdoor Cable

## All-Dielectric



Product Type/ Fiber Count/Pair Count	Catalog Number	Sub Units	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	lbs/meters Short Term	Long Term	lbs/ kft	kg/ km
<b>2 - 48 Fibers</b> <b>1-2 Pairs</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/NX22</b> UTP	5	0.46/11.6	9.1/23.2	4.6/11.6	607/2700	180/800	62	93
<b>2 - 60 Fibers</b> <b>1-2 Pairs</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/NX22</b> UTP	6	0.49/12.6	9.9/25.2	4.9/12.6	607/2700	180/800	75	112
<b>14 - 84 Fibers</b> <b>1-4 Pairs</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/NX22</b> UTP	8	0.57/14.6	11.5/29.2	5.7/14.6	607/2700	180/800	102	152
<b>38 - 108 Fibers</b> <b>1-5 Pairs</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/NX22</b> UTP	10	0.66/16.7	13.1/33.4	6.6/16.7	607/2700	180/800	126	188
<b>62 - 132 Fibers</b> <b>1-5 Pairs</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/NX22</b> UTP	12	0.74/18.8	14.8/37.6	7.4/18.8	607/2700	180/800	154	229
<b>86 - 204 Fibers</b> <b>1-5 Pairs</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/NX22</b> UTP	18	0.74/18.8	14.8/37.6	7.4/18.8	607/2700	180/800	146	218
<b>158 - 276 Fibers</b> <b>1-5 Pairs</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/NX22</b> UTP	24	0.86/18.8	17.1/43.6	8.6/21.8	607/2700	180/800	197	294



### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

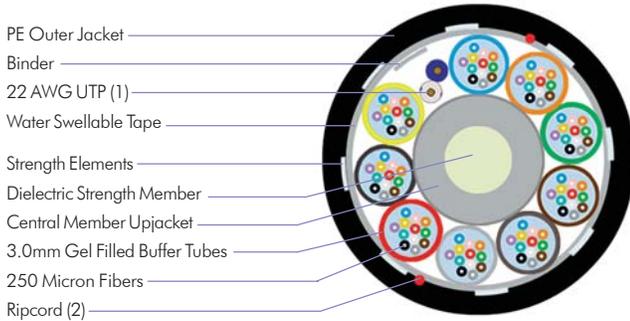
**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua  
Note: buffer tubes 13-24 repeat the color sequences with tracer stripe.

**Copper Twisted Pairs are identified with standard color coding:** 1/White/Blue, 2/White/Orange, 3/White/Green, 4/White/Brown, 5/White/Grey

### Hybrid Single Jacket All-Dielectric Cable

(108 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2

ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable

Specifications are subject to change without notice.

# Hybrid Single Jacket Outdoor Cable

## All-Dielectric



Product Type/ Fiber Count/Conductor Count	Catalog Number	Sub Units	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/meters	Long Term	lbs/ kft	kg/ km
<b>2 - 48 Fibers</b> <b>1-4 Conductors</b> 	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/N</b> X12AWG	5	0.46/11.6	9.1/23.2	4.6/11.6	607/2700	180/800	75	112
<b>50 - 60 Fibers</b> <b>1-4 Conductors</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/N</b> X12AWG	6	0.49/12.6	9.9/25.2	4.9/12.6	607/2700	180/800	89	132
<b>62 - 84 Fibers</b> <b>1-4 Conductors</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/N</b> X12AWG	8	0.57/14.6	11.5/29.2	5.7/14.6	607/2700	180/800	115	172
<b>86 - 108 Fibers</b> <b>1-4 Conductors</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/N</b> X12AWG	10	0.66/16.7	13.1/33.4	6.6/16.7	607/2700	180/800	139	208
<b>110 - 132 Fibers</b> <b>1-4 Conductors</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/N</b> X12AWG	12	0.74/18.8	14.8/37.6	7.4/18.8	607/2700	180/800	167	249
<b>134 - 204 Fibers</b> <b>1-4 Conductors</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/N</b> X12AWG	18	0.64/16.3	12.8/32.6	6.4/16.3	607/2700	180/800	119	178
<b>206 - 276 Fibers</b> <b>1-4 Conductors</b>	O- <b>XXX</b> -LN-HY-F <b>ZZ</b> NS/ <b>XYXXX/N</b> X12AWG	24	0.86/21.8	17.1/43.6	8.6/21.8	607/2700	180/800	211	314

### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

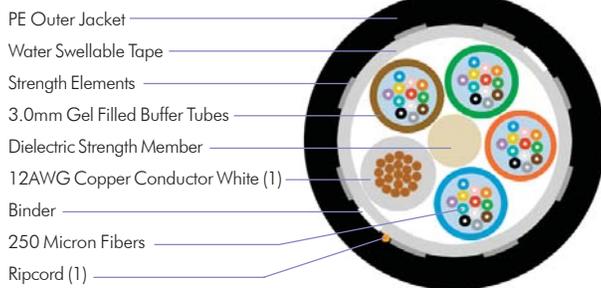
**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua  
Note: buffer tubes 13-23 repeat the color sequences with tracer stripe.

**Copper Conductors are identified with standard color coding:** 1/Red, 2/Black, 3/Green, 4/Brown.

### Hybrid Single Jacket All-Dielectric Cable

(108 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds	FOTP-25
Flexing	25 Cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of ANSI/ICEA S-87-640-1999 Standard for Optical Fiber Outside Plant Communications Cable  
Telcordia GR-20-CORE, Issue 2

Specifications are subject to change without notice.

## CommScope Indoor/Outdoor Cables

Riser-Rated and Plenum-Rated Designs are Rugged for Outdoor Yet Safe for Indoor



### Indoor/Outdoor Cables

These cables offer a unique blend of abilities. They are tough enough to withstand the rigors of the outside plant, yet are riser-rated (NEC 770 OFNR) or plenum-rated (NEC 770 OFNP) for indoor use. The advantage of an indoor/outdoor cable is that it can pass from the outside to the inside intact, with no need to transition from one cable type to another, thus saving the time and labor involved in creating an additional splice point. CommScope cables meet or exceed all Telcordia GR-409-CORE requirements as well as GR-20-CORE requirements for crush resistance, impact resistance, flexing and twist/bend.



Another technical achievement in CommScope's indoor/outdoor cables is the use of our Arid-Core® dry water-blocking technology. Instead of the traditional hard-to-clean flooding gel, Arid-Core remains dry inside the cable. Once exposed to moisture, Arid-Core rapidly swells to form a gel that stops water penetration. The result is a craft-friendly cable that reduces termination time, effort and cost.

### Among CommScope's Indoor/Outdoor Constructions for Broadband Applications Are:

#### Mechanical Properties

- Triathlon® Low Smoke/Zero Halogen (LSZH) Distribution cables of up to 24 tight buffered fibers
- Triathlon® Low Smoke/Zero Halogen (LSZH) Cordage cables in simplex, duplex, zipcord and interconnect designs
- Central Tube cables of up to 24 fibers in a robust all dielectric design
- Stranded Loose Tube cables available in counts up to 288 fibers

#### Plenum-Rated

- Stranded Loose Tube cables are available in counts up to 72 fibers

# Triathlon® Indoor/Outdoor LSZH Distribution Cable

Low Smoke-Zero Halogen, Riser-Rated



## LSZH Construction Permits Riser Applications as Well

- Black jackets are UV-stable for outdoor use yet meet critical NEC/CEC riser (OFNR and OFN-LS) safety standards
- Riser rating eliminates splice points at the building entrance
- Arid-Core® water blocking technology helps protect fibers from moisture
- Low-smoke zero-halogen gives added protection to building occupants and equipment
- Tight buffered construction reduces installation cost

Fiber Count	Catalog Number	Outer Diameter	Minimum Bend Radius		Maximum Tensile Load		Weight	
			Loaded	Unloaded	Short term	Long term	lbs/kft	kg/km
<b>2 Fibers</b> (no central member)	Z-ØØ2-DS-XY-FSUBK	0.15/3.8	3.0/7.7	1.5/3.8	225/1001	68/300	7.8	11.6
<b>4 Fibers</b> (no central member)	Z-ØØ4-DS-XY-FSUBK	0.20/5.1	4.0/10.1	2.0/5.1	300/1335	90/400	13.5	20.1
<b>6 Fibers</b>	Z-ØØ6-DS-XY-FSUBK	0.22/5.5	4.4/11.1	2.2/5.5	300/1335	90/400	17.6	26.3
<b>8 Fibers</b>	Z-ØØ8-DS-XY-FSUBK	0.25/6.3	5.0/12.6	2.5/6.3	300/1335	90/400	23.7	35.3
<b>12 Fibers</b> 	Z-Ø12-DS-XY-FSUBK	0.28/7.2	5.6/14.2	2.8/7.1	300/1335	90/400	32.6	48.6
<b>18 Fibers</b>	Z-Ø18-DS-XY-FSUBK	0.31/7.9	6.2/15.7	3.1/7.9	300/1335	90/400	37.0	55.0
<b>24 Fibers</b>	Z-Ø24-DS-XY-FSUBK	0.34/8.7	6.8/17.4	3.4/8.7	300/1335	90/400	45.2	67.3
<b>36 Fibers</b>	Z-Ø36-DS-XY-FMUBK	0.70/17.8	14.0/35.6	7.3/18.5	800/3560	240/1068	162.4	241.6
<b>48 Fibers</b>	Z-Ø48-DS-XY-FMUBK	0.80/20.2	16.0/40.6	7.9/20.0	800/3560	240/1068	206.6	307.4
<b>60 Fibers</b>	Z-Ø60-DS-XY-FMUBK	0.87/22.0	17.4/44.2	8.6/21.8	1000/4450	300/1335	260.7	387.9
<b>72 Fibers</b> 	Z-Ø72-DS-XY-FMUBK	0.95/24.1	19.0/48.2	4/23.9	1000/4450	300/1335	320.5	477.0
<b>Singlemode/Multimode Composite (4 - 72 Fibers)</b>	Z-ØØØ-DS-CM-FSUBK/AAaaa/BBbbb Z-ØØØ-DS-CM-FMUBK/AAaaa/BBbbb		Custom design - sizes/specs will vary depending on fiber count					

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore™ 150, 50µm, Multimode Fiber

**5L** LaserCore™ 300, 50µm, Multimode Fiber

**5K** LaserCore™ 500, 50µm, Multimode Fiber

**For Composites Only:**

**aaa** is replaced with singlemode fiber count

**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count

**BB** is replaced by multimode type

**Tight Buffer/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Jacket Color:** UV Stabilized Black

## Triathlon LSZH Indoor/Outdoor Riser-Rated Distribution Cable (Multi-Unit)

(72 Fiber Version Shown)

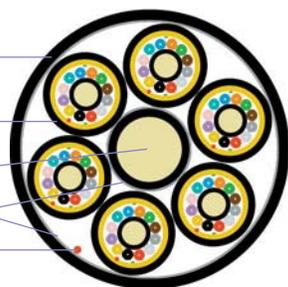
Low Smoke/Zero Halogen (LSZH) Outer Jacket

Triathlon® Subunit with Arid-Core®

Central Strength Member

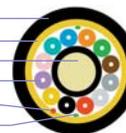
Water Blocking Tapes

Ripcord



## 12 Fiber Unit (Single Unit)

LSZH Jacket  
Aramid Yarn  
Central Strength Member  
900 Micron Tight-Buffered 250 Micron Fiber  
Ripcord  
Water Blocking Thread



## Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 158°F (-30° to 70°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	Exceeds 126 lbf/in (22 N/mm)	FOTP-41
Impact Resistance	Exceeds 4.34 lb-ft (5.88 N·m)	FOTP-25
Flexing	Exceeds 100 cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Fiber Optic Premises cables are qualified to the requirements of Telcordia GR-409-CORE, Issue 1. Water penetration performance meets the requirements of Telcordia GR-20-CORE, Issue 2.

Specifications are subject to change without notice.

# Triathlon® Indoor/Outdoor LSZH Cordage Cable

Low Smoke-Zero Halogen, Riser-Rated



## LSZH Construction Permits Riser Applications as Well

- Black jackets are UV-stable for outdoor use yet meet critical NEC/CEC riser (OFNR and OFN-LS) safety standards
- Riser rating eliminates splice points at the building entrance
- Arid-Core® water blocking technology helps protect fibers from moisture
- Low-smoke zero-halogen gives added protection to building occupants and equipment
- Simplex and zipcord cables are available in a variety of sizes
- Designed for ease of handling and termination

Cable Type/Unit Size	Catalog Number	Outer Diameter inch/mm	Minimum Bend Radius Loaded inch/cm	Unloaded inch/cm	Maximum Tensile Load Short term lbs./Newtons	Long term lbs./Newtons	Weight lbs/ kft	kg/ km
<b>Simplex/1.6mm</b> 	Z-ØØ1-SP-XY-F16BK	0.067/1.70	2.0/5.0	1.2/3.0	35/156	11/47	1.9	2.9
<b>Simplex/2.5mm</b>	Z-ØØ1-SP-XY-F25BK	0.098/2.50	2.0/5.0	1.2/3.0	60/267	18/80	4.5	6.7
<b>Simplex/2.9mm</b>	Z-ØØ1-SP-XY-F29BK	0.114/2.90	2.3/5.8	1.2/3.0	60/267	18/80	6.2	9.2
<b>Zipcord/1.6mm</b> 	Z-ØØ2-ZC-XY-F16BK	0.067 x 0.138/ 1.70 x 3.50	2.0/5.0	1.2/3.0	70/311	21/93	3.8	5.6
<b>Zipcord/2.5mm</b>	Z-ØØ2-ZC-XY-F25BK	0.098 x 0.201/ 2.50 x 5.10	2.0/5.0	1.2/3.0	90/400	27/120	9.0	13.4
<b>Zipcord/2.9mm</b>	Z-ØØ2-ZC-XY-F29BK	0.114 x 0.232/ 2.90 x 5.90	2.3/5.8	1.2/3.0	90/400	27/120	12.4	18.5
<b>Interconnect/2.9mm</b> 	Z-ØØ2-IC-XY-F29BK	0.114/2.90	2.3/5.8	1.2/3.0	70/311	21/93	5.0	7.4

### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

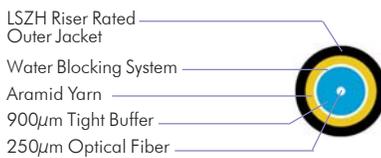
**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore® 150, 50µm, Multimode Fiber  
**5L** LaserCore® 300, 50µm, Multimode Fiber  
**5K** LaserCore® 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

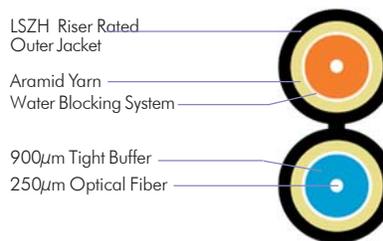
**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Fiber Identification colors:** 1/Blue, 2/Orange,  
**Jacket Color:** UV Stabilized Black

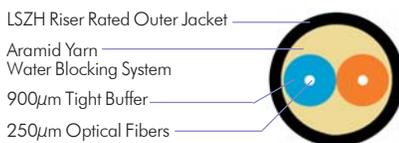
## Triathlon Indoor/Outdoor LSZH Simplex Cable



## Triathlon Indoor/Outdoor LSZH Zipcord Cable



## Triathlon Indoor/Outdoor LSZH 2-Fiber Interconnect Cable



## Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 158°F (-30° to 70°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	Exceeds 57 lbf/in (10 N/mm)	FOTP-41
Impact Resistance	Exceeds 0.54 lbf-ft (0.74 N·m)	FOTP-25
Flexing	Exceeds 300 cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Fiber Optic Premise cables are qualified to the requirements of Telcordia GR-409-CORE, Issue 1. Water penetration performance meets the requirements of Telcordia GR-20-CORE, Issue2.

Specifications are subject to change without notice.

# Indoor/Outdoor Stranded Loose Tube Cable

## Riser-Rated



- All meet critical NEC/CEC riser (OFNR) safety standards, eliminating the need for splice point at building entrance
- Arid-Core® water blocking technology helps protect fibers from moisture
- Standard color-coding on fibers and buffer tubes helps ease installation
- All buffer tubes are constructed to a nominal OD of 3mm

Product Type/ Fiber Count	Catalog Number	Sub Units	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/meters	Long Term lbs/meters	lbs/ kft	kg/ km
<b>Single Jacket 2 - 60 Fibers</b>	R- <b>XXX</b> -LN- <b>XY</b> -F12BK	5	0.49/12.6	9.9/25.2	4.9/12.6	607/2700	180/800	99	148
<b>62 - 72 Fibers</b>	R- <b>XXX</b> -LN- <b>XY</b> -F12BK	6	0.53/13.6	10.7/27.2	5.3/13.6	607/2700	180/800	116	173
<b>74 - 96 Fibers</b>	R- <b>XXX</b> -LN- <b>XY</b> -F12BK	8	0.62/15.7	12.3/31.4	6.2/15.7	607/2700	180/800	152	226
<b>98 - 120 Fibers</b>	R- <b>XXX</b> -LN- <b>XY</b> -F12BK	10	0.69/17.7	13.9/35.4	6.9/17.7	607/2700	180/800	192	287
<b>122 - 144 Fibers</b>	R- <b>XXX</b> -LN- <b>XY</b> -F12BK	12	0.78/19.8	15.5/39.6	7.8/19.8	607/2700	180/800	239	357
<b>146- 216 Fibers</b>	R- <b>XXX</b> -LN- <b>XY</b> -F12BK	18	0.80/20.5	16.1/41.0	8.0/20.5	607/2700	180/800	229	341
<b>218- 288 Fibers</b>	R- <b>XXX</b> -LN- <b>XY</b> -F12BK	24	0.92/23.4	18.4/46.8	9.2/23.4	607/2700	180/800	298	445
<b>Singlemode/Multimode Composite (4-288 Fibers)</b>	R- <b>XXX</b> -LN- <b>XY</b> -F12BK/ <b>AAaaa</b> / <b>BBbbb</b>	Refer to above specifications.							

Available in heavy duty dual jacket up to 96 count (minimum order required).

### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted,  
Matched-Clad Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore® 150, 50µm, Multimode Fiber  
**5L** LaserCore® 300, 50µm, Multimode Fiber  
**5K** LaserCore® 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

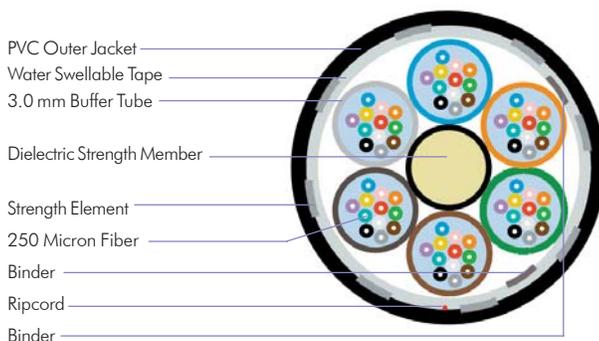
**Tight Buffer/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Buffer Tubes 13 - 18 repeat color sequence with tracer stripes**

**Jacket Color:** Black PVC with optional co-extruded color stripes

### Riser-Rated Indoor/Outdoor Stranded Loose Tube Cable

(72 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	4.34 lbf-ft (5.88 N·m)	FOTP-25
Flexing	25 cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Indoor/Outdoor Fiber Optic Cables are qualified to the requirements of ANSI/ICEA S-104-696-2001 Standard for Indoor-Outdoor Optical Fiber Cable Telcordia GR-409-CORE, Section 6.

Specifications are subject to change without notice.

# Indoor/Outdoor Stranded Loose Tube Cable

## Plenum-Rated



- All meet critical NEC/CEC plenum (OFNP) safety standards, eliminating the need for splice point at building entrance
- Arid-Core® water blocking technology helps protect fibers from moisture
- Standard color-coding on fibers and buffer tubes helps ease installation
- All buffer tubes are constructed to a nominal OD of 3mm

Product Type/ Fiber Count	Catalog Number	Sub Units	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term lbs/meters	Long Term lbs/meters	lbs/ kft	kg/ km
<b>Single Jacket 2 - 60 Fibers</b>	P- <b>XXX</b> -LN- <b>XY</b> -F12BK	5	0.44/11.1	8.8/22.2	4.4/11.1	600/2670	180/801	82	122
<b>61 - 72 Fibers</b>	P- <b>XXX</b> -LN- <b>XY</b> -F12BK	6	0.47/12.0	9.4/23.9	4.7/12.0	600/2670	180/801	95	142
<b>Singlemode/Multimode Composite (4-72 Fibers)</b>	P- <b>XXX</b> -LN-CM-F12BK/ <b>AAaaa</b> / <b>BBbbb</b> Refer to above specifications.								



### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP® Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore® 150, 50µm, Multimode Fiber

**5L** LaserCore® 300, 50µm, Multimode Fiber

**5K** LaserCore® 500, 50µm, Multimode Fiber

**For Composites Only:**

**aaa** is replaced with singlemode fiber count

**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count

**BB** is replaced by multimode type

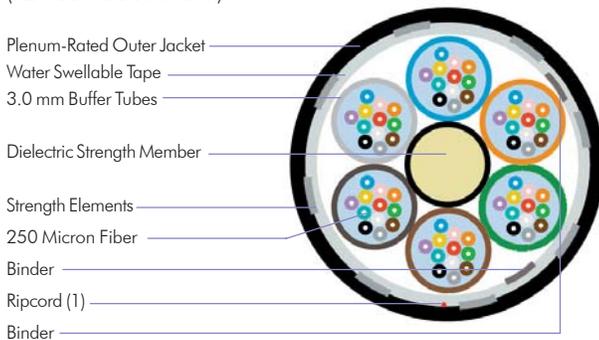
**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Buffer Tubes 13 - 18 repeat color sequence with tracer stripes**

**Jacket Color:** Black PVC with optional co-extruded color stripes

### Plenum-Rated Indoor/Outdoor Stranded Loose Tube Cable

(72 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	Exceeds 4.34 lb-ft (5.88 N-m)	FOTP-25
Flexing	Exceeds 25 cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Outside Plant Fiber Optic cables are qualified to the requirements of Telcordia GR-20-CORE, Issue 2.

Specifications are subject to change without notice.

### Multiple Constructions to Meet Your Specific Application

- All meet critical NEC/CEC riser (OFNR) safety standards eliminating the need for splice point at building entrance
- Arid-Core® water blocking technology helps protect fibers from moisture
- Standard color-coding on fibers helps ease installation

Product Type/ Fiber Count	Catalog Number	Sub Units	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load lbs/meters		Weight	
				Loaded inch/cm	Unloaded inch/cm	Short Term	Long Term	lbs/ kft	kg/ km
<b>Single Jacket</b> <b>2-24 Fibers, 4mm Tube</b> 	R- <b>XXX</b> -CN- <b>XY</b> -F12BK	2	0.40/10.3	8.1/20.6	4.0/10.3	607/2700	180/800	89	132
<b>Singlemode/Multimode Composite (4-24 Fibers)</b>	R- <b>XXX</b> -CN-CM-F12BK/ <b>AA</b> <b>aaa</b> / <b>BB</b> <b>bbb</b>	Refer to above specifications.							

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP® Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore® 150, 50µm, Multimode Fiber

**5L** LaserCore® 300, 50µm, Multimode Fiber

**5K** LaserCore® 500, 50µm, Multimode Fiber

#### For Composites Only:

**aaa** is replaced with singlemode fiber count

**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count

**BB** is replaced by multimode type

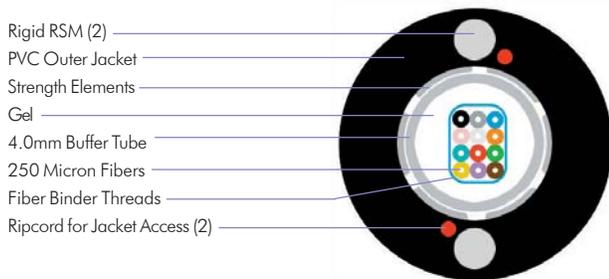
#### Identification Threads/ Fiber Colors:

1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

**Jacket Color:** Black PVC with optional co-extruded color stripes

### Indoor/Outdoor Central Tube Cable

(24 Fiber Version Shown)



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-40° to 158°F (-40° to 70°C)	FOTP-3
Installation Temperature	-22° to 140°F (-30° to 60°C)	N/A
Storage Temperature	-40° to 167°F (-40° to 75°C)	N/A
Crush Resistance	250 lbf/in (44 N/mm)	FOTP-41
Impact Resistance	4.34 lb-ft (5.88 N·m)	FOTP-25
Flexing	25 cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Indoor/Outdoor Fiber Optic Cables are qualified to the requirements of ANSI/ICEA S-104-696-2001 Standard for Indoor-Outdoor Optical Fiber Cables Telcordia GR-409-CORE, Section 6.

Specifications subject to change without notice.

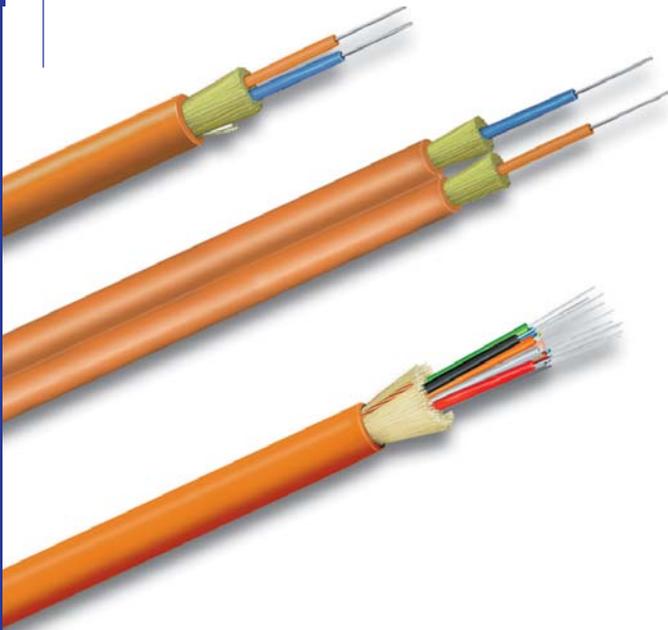
## CommScope Premise Cables

### Riser and Plenum-Rated Designs for Indoor Applications



CommScope offers a complete line of riser and plenum rated cables for use inside buildings and customer premises. As with Outside Plant cables, CommScope cables for premises are available with application-specific fibers such as LightScope ZWP™ and LaserCore™ fiber optic glass types (type 8W and 5L, respectively).

There are a number of standard singlemode and multimode fiber offerings that provide a diverse range of products that will suit all of your cabling needs. The LaserCore cordage and building cables can be used today with 10-Mbps applications and will carry you into the future for systems that will run 10-Gbps. The total system will carry you from the outside plant through the building entrance up the riser, across the horizontal, all the way to the work station. CommScope's complete system of cable and components will meet your current and future needs.



Engineered with two goals in mind - excellent mechanical/optical performance coupled with superior fire safety ratings, CommScope premises cables offer a family of cables that meet all critical NEC requirements for riser or plenum applications while offering unique resistance to installation and termination stresses.



Buffered subunits of 12 fibers are engineered into constructions that are up to 30% smaller in diameter and 50% lighter than comparable products. The result is a compact cable that easily installs and terminates.

#### Riser-Rated Premise Cables Include:

- Riser-Rated Distribution cable designed with up to 144 fibers
- Indoor/Outdoor Distribution cable containing up to 72 fibers
- Stranded Loose Tube design up to 288 fibers
- Riser-Rated Cordage

#### Plenum-Rated Premise Cables Include:

- Plenum-Rated Distribution cable designed with up to 144 fibers
- Plenum-Rated Cordage

Premises fiber optic cable meet or exceed performance standards as established by Bellcore Telcordia GR-409, TIA/EIA 568B, ICEA 83-596, ANSI X3.166-1990 & X3T9.5 PMD, FDDI, ATM, Fibre Channel and HIPPI.

Riser and Plenum Cables will follow Telcordia GR-409 jacket color code specs: singlemode is yellow, and multimode and composites are orange.

- Meets critical NEC/CEC riser (OFNR) safety standards
- Numbered subunits and color-coded fibers help ease installation

Fiber Count	Catalog Number	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight		
			Loaded inch/cm	Unloaded inch/cm	Short term lbs./ Newtons	Long term lbs./Newtons	lbs/ kft	kg/ km	
<b>2 Fibers</b>	R-ØØ2-DS- <b>XY</b> -FSU <b>ZZ</b>	0.16/4.1	3.2/8.1	1.6/4.1	225/1001	68/300	8.6	12.9	
<b>4 Fibers</b>	R-ØØ4-DS- <b>XY</b> -FSU <b>ZZ</b>	0.19/4.8	3.8/9.5	1.9/4.8	300/1335	90/400	13.1	19.4	
<b>6 Fibers</b>	R-ØØ6-DS- <b>XY</b> -FSU <b>ZZ</b>	0.20/5.1	4.1/10.3	2.0/5.1	300/1335	90/400	15.2	22.7	
<b>8 Fibers</b>	R-ØØ8-DS- <b>XY</b> -FSU <b>ZZ</b>	0.22/5.5	4.3/11.0	2.2/5.5	300/1335	90/400	17.2	25.7	
<b>12 Fibers</b> 	R-Ø12-DS- <b>XY</b> -FSU <b>ZZ</b>	0.24/6.0	4.7/12.1	2.4/6.0	300/1335	90/400	21.7	32.2	
<b>18 Fibers</b>	R-Ø18-DS- <b>XY</b> -FSU <b>ZZ</b>	0.30/7.7	6.0/15.4	3.0/7.7	300/1335	90/400	32.1	47.7	
<b>24 Fibers</b>	R-Ø24-DS- <b>XY</b> -FSU <b>ZZ</b>	0.33/8.4	6.6/16.7	3.3/8.4	300/1335	90/400	37.9	56.4	
<b>36 Fibers</b> (3 subunits)	R-Ø36-DS- <b>XY</b> -FMU <b>ZZ</b>	0.58/14.6	11.5/29.3	5.6/14.2	800/3560	240/1068	112.0	167.0	
<b>48 Fibers</b> (4 subunits)	R-Ø48-DS- <b>XY</b> -FMU <b>ZZ</b>	0.63/16.1	12.7/32.2	6.3/16.1	800/3560	240/1068	143.0	212.0	
<b>60 Fibers</b> (5 subunits)	R-Ø60-DS- <b>XY</b> -FMU <b>ZZ</b>	0.71/18.0	14.2/36.1	7.1/18.0	1000/4450	300/1335	188.0	279.0	
<b>72 Fibers</b> (6 subunits)	R-Ø72-DS- <b>XY</b> -FMU <b>ZZ</b>	0.79/20.0	15.8/40.1	7.9/20.0	1000/4450	300/1335	232.0	345.0	
<b>96 Fibers</b> (8 subunits)	R-Ø96-DS- <b>XY</b> -FMU <b>ZZ</b>	0.93/23.7	18.7/47.5	9.3/23.7	1000/4450	300/1335	337.0	502.0	
<b>144 Fibers</b> (12 subunits)	R-144-DS- <b>XY</b> -FMU <b>ZZ</b>	1.03/26.1	20.5/52.2	10.3/26.1	1000/4450	300/1335	350.0	522.0	
<b>Singlemode/Multimode Composite (4 - 144 Fibers)</b>	R- <b>XXX</b> -DS-CM-FSU <b>OR/AAaaaa/BBbbb</b> R- <b>XXX</b> -DS-CM-FMU <b>OR/AAaaaa/BBbbb</b>								Custom design - sizes/specs will vary depending on fiber count

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore™ 150, 50µm, Multimode Fiber

**5L** LaserCore™ 300, 50µm, Multimode Fiber

**5K** LaserCore™ 500, 50µm, Multimode Fiber

**ZZ** = Standard Jacket Color **YL** (Yellow - Singlemode Cable)

**OR** (Orange - Multimode or Composite Cable)

**AQ** (Aqua - LaserCore™ Cable)

**For Composites Only:** **aaa** is replaced with singlemode fiber count

**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count

**BB** is replaced by multimode type

**Tight Buffer/Fiber Colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua  
Subunits are numbered for easy identification

### Riser Distribution Cable (Multi-Unit)

(72 and 12 Fiber Versions Shown)

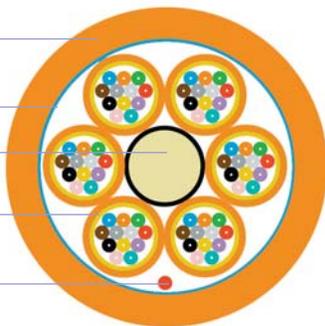
Riser Rated Outer Jacket

Core Wrap Tape

Central Strength Member

12 Fiber Subunit

Ripcord



### 12 Fiber Unit (Single Unit)

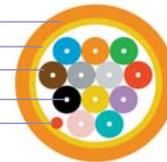
Riser Rated Outer Jacket

Aramid Yarn

900 µm Tight Buffer

250 µm Optical Fiber

Ripcord



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-4° to 158°F (-20° to 70°C)	FOTP-3
Installation Temperature	-4° to 158°F (-20° to 70°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	Exceeds 57 lbf/in (10N/mm)	FOTP-41
Impact Resistance	Exceeds 4.34 lb-ft (5.88 N·m)	FOTP-25
Flexing	Exceeds 100 cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Fiber Optic Premises Cables are qualified to the requirements of Telcordia GR-409-CORE, Issue 1

Specifications are subject to change without notice.

# Premise Plenum-Rated Distribution Cable



- Meets critical NEC/CEC plenum (OFNP) safety standards
- Numbered subunits and color-coded fibers help ease installation

Fiber Count	Catalog Number	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
			Loaded inch/cm	Unloaded inch/cm	Short term lbs./ Newtons	Long term lbs./Newtons	lbs/ kft	kg/ km
<b>2 Fibers</b>	P-Ø02-DS- <b>XY</b> -FSU <b>ZZ</b>	0.15/3.9	3.1/7.8	1.5/3.9	225/1001	68/300	8.8	13.1
<b>4 Fibers</b>	P-Ø04-DS- <b>XY</b> -FSU <b>ZZ</b>	0.17/4.4	3.4/8.7	1.7/4.4	300/1335	90/400	12.2	18.2
<b>6 Fibers</b>	P-Ø06-DS- <b>XY</b> -FSU <b>ZZ</b>	0.19/4.8	3.8/9.7	1.9/4.8	300/1335	90/400	15.1	22.5
<b>8 Fibers</b>	P-Ø08-DS- <b>XY</b> -FSU <b>ZZ</b>	0.20/5.1	4.0/10.2	2.0/5.1	300/1335	90/400	16.8	24.9
<b>12 Fibers</b>	P-Ø12-DS- <b>XY</b> -FSU <b>ZZ</b>	0.23/5.8	4.6/11.7	2.3/5.8	300/1335	90/400	20.8	30.9
<b>18 Fibers</b>	P-Ø18-DS- <b>XY</b> -FSU <b>ZZ</b>	0.31/7.9	6.2/15.8	3.1/7.9	300/1335	90/400	40.9	60.9
<b>24 Fibers</b>	P-Ø24-DS- <b>XY</b> -FSU <b>ZZ</b>	0.33/8.5	6.7/16.9	3.3/8.5	300/1335	90/400	47.3	70.4
<b>36 Fibers</b> (3 subunits)	P-Ø36-DS- <b>XY</b> -FMU <b>ZZ</b>	0.54/13.7	10.8/27.4	5.4/13.7	800/3560	240/1068	128.0	191.0
<b>48 Fibers</b> (4 subunits)	P-Ø48-DS- <b>XY</b> -FMU <b>ZZ</b>	0.59/15.1	11.9/30.2	5.9/15.1	800/3560	240/1068	138.0	205.0
<b>60 Fibers</b> (5 subunits)	P-Ø60-DS- <b>XY</b> -FMU <b>ZZ</b>	0.68/17.2	13.6/34.4	6.8/17.2	1000/4450	300/1335	190.0	282.0
<b>72 Fibers</b> (6 subunits)	P-Ø72-DS- <b>XY</b> -FMU <b>ZZ</b>	0.75/19.1	15.1/38.2	7.5/19.1	1000/4450	300/1335	237.0	353.0
<b>96 Fibers</b> (8 subunits)	P-Ø96-DS- <b>XY</b> -FMU <b>ZZ</b>	0.90/23.0	18.1/45.9	9.0/23.0	1000/4450	300/1335	361.0	537.0
<b>144 Fibers</b> (12 subunits)	P-144-DS- <b>XY</b> -FMU <b>ZZ</b>	0-.95/24.1	19.0/48.2	9.5/24.1	1000/4450	300/1335	331.0	492.0
<b>Singlemode/Multimode Composite (4 - 144 Fibers)</b>	P- <b>XXX</b> -DS-CM-FSUOR/ <b>AAaaa</b> / <b>BBbbb</b> P- <b>XXX</b> -DS-CM-FMUOR/ <b>AAaaa</b> / <b>BBbbb</b>	Custom design - sizes/specs will vary depending on fiber count						

**Variables in the Catalog Number:**

**XXX** = Total Fiber Count  
**XY** = Fiber Grade      **8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**ZZ** = Standard Jacket Color    **YL** (Yellow - Singlemode Cable)

**For Composites Only:**      **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

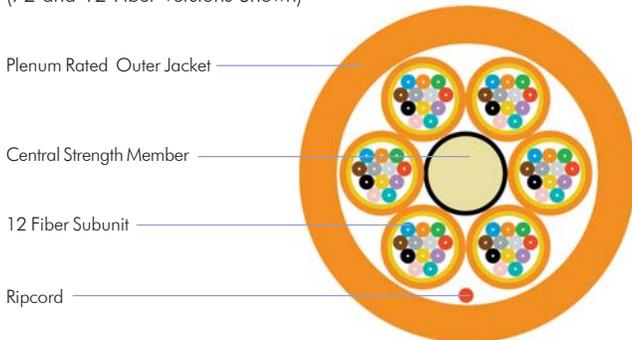
**Tight Buffer/Fiber Colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua  
 Subunits are numbered for easy identification

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

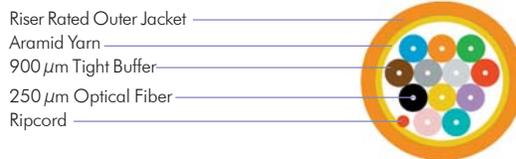
**OR** (Orange - Multimode or Composite Cable)  
**AQ** (Aqua - LaserCore™ Cable)  
**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

## Plenum Distribution Cable (Multi-Unit)

(72 and 12 Fiber Versions Shown)



## 12 Fiber Unit (Single Unit)



## Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-4° to 158°F (-20° to 70°C)	FOTP-3
Installation Temperature	32° to 158°F (0° to 70°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	Exceeds 57 lbf/in (10N/mm)	FOTP-41
Impact Resistance	Exceeds 4.34 lb-ft (5.88 N·m)	FOTP-25
Flexing	Exceeds 100 cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Fiber Optic Premises Cables are qualified to the requirements of Telcordia GR-409-CORE, Issue 1

Specifications are subject to change without notice.

# Premise Riser-Rated Cordage Cable

## Several Constructions Available for a Variety of Applications



- Meets critical NEC/CEC riser (OFNR) safety standards
- Simplex and zipcord cables are available in a variety of sizes
- Designed for ease of handling and termination

Cable Type/Unit Size	Catalog Number	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
			Loaded inch/cm	Unloaded inch/cm	Short term lbs./Newtons	Long term lbs./Newtons	lbs/ kft	kg/ km
 Simplex/1.6mm	R-ØØ1-SP-XY-F16ZZ	0.067/1.70	2.0/5.0	1.2/3.0	35/156	11/47	1.8	2.7
Simplex/2.0mm	R-ØØ1-SP-XY-F20ZZ	0.079/2.00	2.0/5.0	1.2/3.0	50/222	15/67	2.8	4.1
Simplex/2.5mm	R-ØØ1-SP-XY-F25ZZ	0.098/2.50	2.0/5.0	1.2/3.0	60/267	18/80	4.2	6.3
Simplex/2.9mm	R-ØØ1-SP-XY-F29ZZ	0.114/2.90	2.3/5.8	1.2/3.0	60/267	18/80	5.8	8.7
 Zipcord/1.6mm	R-ØØ2-ZC-XY-F16ZZ	0.067 x 0.138/ 1.70 x 3.50	2.0/5.0	1.2/3.0	70/311	21/93	3.7	5.5
Zipcord/2.0mm	R-ØØ2-ZC-XY-F20ZZ	0.079 x 0.161/ 2.00 x 4.10	2.0/5.0	1.2/3.0	80/356	24/107	5.4	8.0
Zipcord/2.5mm	R-ØØ2-ZC-XY-F25ZZ	0.098 x 0.201/ 2.50 x 5.10	2.0/5.0	1.2/3.0	90/400	27/120	8.5	12.6
Zipcord/2.9mm	R-ØØ2-ZC-XY-F29ZZ	0.114 x 0.232/ 2.90 x 5.90	2.3/5.8	1.2/3.0	90/400	27/120	11.7	17.4
 Interconnect /2.9mm	R-ØØ2-IC-XY-F29ZZ	0.114/2.90	2.3/5.8	1.2/3.0	70/311	21/93	4.7	7.0

### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

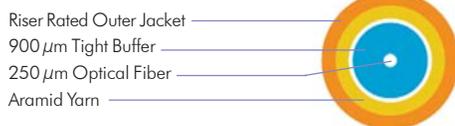
**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore® 150, 50µm, Multimode Fiber  
**5L** LaserCore® 300, 50µm, Multimode Fiber  
**5K** LaserCore® 500, 50µm, Multimode Fiber

**ZZ** = Standard Jacket Color **YL** (Yellow - Singlemode Cable)

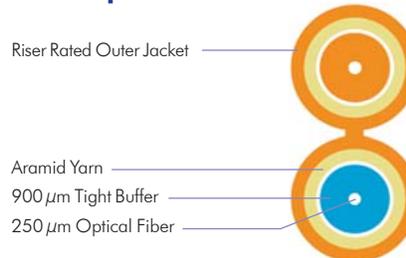
**OR** (Orange - Multimode or Composite Cable)  
**AQ** (Aqua - LaserCore® Cable)

**Fiber Identification Colors:** 1/Blue, 2/Orange

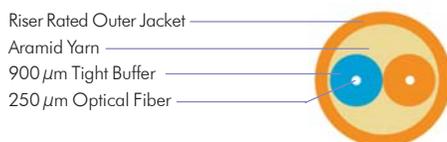
### Riser Simplex Cable



### Riser Zipcord Cable



### Riser 2-Fiber Interconnect Cable



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-4° to 158°F (-20° to 70°C)	FOTP-3
Installation Temperature	-4° to 158°F (-20° to 70°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	Exceeds 57 lbf/in (10N/mm)	FOTP-41
Impact Resistance	Exceeds 0.54 lb-ft (0.74 N·m)	FOTP-25
Flexing	Exceeds 300 cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

CommScope Fiber Optic Premises Cables are qualified to the requirements of Telcordia GR-409-CORE, Issue 1

Specifications are subject to change without notice.

# Premise Plenum-Rated Cordage Cable

Several Constructions Available for a Variety of Uses



- Meets critical NEC/CEC plenum (OFNP) safety standards
- Simplex and zipcord cables are available in a variety of sizes
- Designed for ease of handling and termination

Cable Type/Unit Size	Catalog Number	Outer Diameter inch/mm	Minimum Bend Radius		Maximum Tensile Load		Weight	
			Loaded inch/cm	Unloaded inch/cm	Short term lbs./ Newtons	Long term lbs./Newtons	lbs/ kft	kg/ km
<b>Simplex/1.6mm</b> 	P-ØØ1-SP-XY-F16ZZ	0.067/1.70	2.0/5.0	1.2/3.0	35/156	11/47	2.0	3.0
<b>Simplex/2.0mm</b>	P-ØØ1-SP-XY-F20ZZ	0.079/2.00	2.0/5.0	1.2/3.0	50/222	15/67	3.0	4.5
<b>Simplex/2.5mm</b>	P-ØØ1-SP-XY-F25ZZ	0.098/2.50	2.0/5.0	1.2/3.0	60/267	18/80	4.9	7.3
<b>Simplex/2.9mm</b>	P-ØØ1-SP-XY-F29ZZ	0.114/2.90	2.3/5.8	1.2/3.0	60/267	18/80	6.8	10.1
<b>Zipcord/1.6mm</b> 	P-ØØ2-ZC-XY-F16ZZ	0.067x0.138/ 1.70x3.50	2.0/5.0	1.2/3.0	70/311	21/93	4.0	6.0
<b>Zipcord/2.0mm</b>	P-ØØ2-ZC-XY-F20ZZ	0.079x0.161/ 2.00x4.10	2.0/5.0	1.2/3.0	80/356	24/107	5.9	8.8
<b>Zipcord/2.5mm</b>	P-ØØ2-ZC-XY-F25ZZ	0.098x0.201/ 2.50x5.10	2.0/5.0	1.2/3.0	90/400	27/120	9.8	14.6
<b>Zipcord/2.9mm</b>	P-ØØ2-ZC-XY-F29ZZ	0.114x0.232/ 2.90x5.90	2.3/5.8	1.2/3.0	90/400	27/120	13.6	20.2
<b>Interconnect/2.9mm</b> 	P-ØØ2-IC-XY-F29ZZ	0.114/2.90	2.3/5.8	1.2/3.0	70/311	21/93	5.8	8.6

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore® 150, 50µm, Multimode Fiber

**5L** LaserCore® 300, 50µm, Multimode Fiber

**5K** LaserCore® 500, 50µm, Multimode Fiber

**ZZ** = Standard Jacket Color **YL** (Yellow - Singlemode Cable)

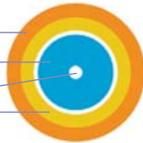
**OR** (Orange - Multimode or Composite Cable)

**AQ** (Aqua - LaserCore® Cable)

**Fiber Identification Colors:** 1/Blue, 2/Orange

### Plenum Simplex Cable

- Plenum Rated Outer Jacket
- 900 µm Tight Buffer
- 250 µm Optical Fiber
- Aramid Yarn



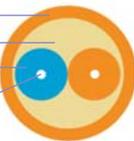
### Plenum Zipcord Cable

- Plenum Rated Outer Jacket
- Aramid Yarn
- 900 µm Tight Buffer
- 250 µm Optical Fiber



### Plenum 2-Fiber Interconnect Cable

- Plenum Rated Outer Jacket
- Aramid Yarn
- 900 µm Tight Buffer
- 250 µm Optical Fiber



### Mechanical Properties

Description	Specification	Test Method
Operating Temperature	-4° to 158°F (-20° to 70°C)	FOTP-3
Installation Temperature	32° to 158°F (0° to 70°C)	N/A
Storage Temperature	-40° to 158°F (-40° to 70°C)	N/A
Crush Resistance	Exceeds 57 lbf/in (10N/mm)	FOTP-41
Impact Resistance	Exceeds 0.54 lb-ft (0.74 N·m)	FOTP-25
Flexing	Exceeds 300 cycles	FOTP-104
Twist Bend	Exceeds	FOTP-85

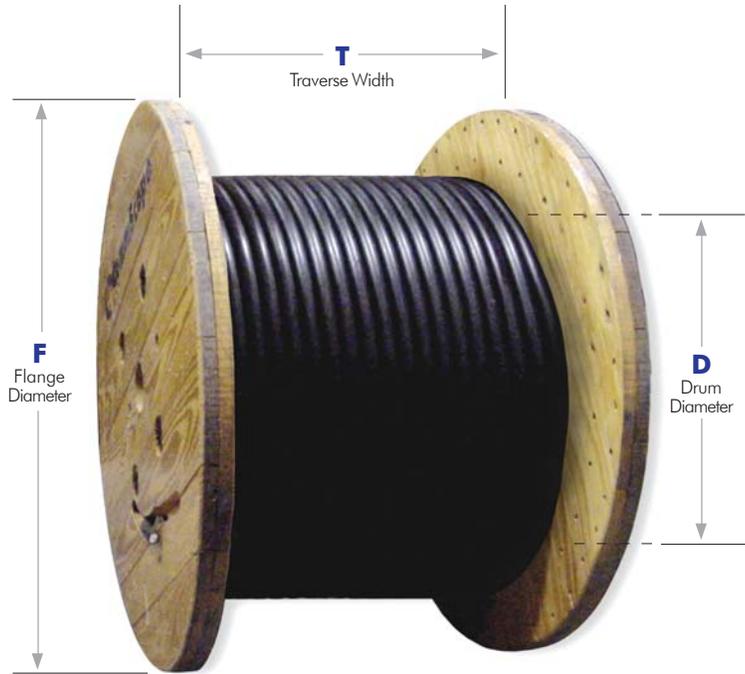
CommScope Fiber Optic Premises Cables are qualified to the requirements of Telcordia GR-409-CORE, Issue 1

Specifications are subject to change without notice.

### Packaging and Shipping

Fiber optic cable is packaged for shipment on wooden or composite reels. Each package contains only one continuous length of cable. The packaging is designed to prevent damage to the cable during shipping and handling. Fiber cable reels are protected with a “reel wrap”, the highest technology available today. This wrap is stronger, lighter and more environmentally friendly than other methods of lagging. In addition, reel wrap is simple to remove from the reel and readily disposable. All reel sizes between 35 and 78 inches will be blocked and palletized to help ensure safe arrival to the customer. Reels larger than 78 inches are placed on the rolling edge and securely fastened to the trailer during shipment.

Each reel is plainly marked to indicate the direction in which it should be rolled to prevent loosening of the cable on the reel.



### Method of Shipment

CommScope’s customary method of shipment of fiber optic cable from Claremont, North Carolina to the purchaser’s site will vary depending on factors such as the size and number of cable reels, and the destination location. Shipper options include Federal Express, UPS, BAX, LTL motor freight carriers and CommScope’s own fleet of trucks, “Cable Transport”. Some trucks within CommScope’s fleet are equipped with “Cargo Master” equipment for ease in unloading cable reels on location where no loading dock is available. CommScope has red arm Cargo Masters, which can lift anything 2,500 pounds or less. CommScope also has white arm Cargo Masters which will lift anything up to 8,000 pounds that is on an 84” reel or smaller. These specially equipped trucks are available by request.

### International Packaging

Products shipped outside the continental United States are protected with reel wrap, lagged with wood, and blocked and palletized (for reel sizes between 35 and 78 inches) or placed on the rolling edge and securely fastened to international shipping containers.

# Fiber Optic Cable

## Packaging and Shipping Information



### Outside Plant Stranded Loose Tube Armored (LA) Cables

Arid or Flooded Core

Flange x Drum x Traverse	Reel Weight (lbs)	2-60F 5@1	62-72F 6@1	74-96F 8@1	98-120F 10@1	122-144F 12@1	146-216F 12@6@1	218-288F 15@9@1
<b>36 x 22 x 29.75</b>	80	3,304	3,149	2,461	1,896	1,439	1,439	1,304
<b>42 x 22 x 29.75</b>	118	6,202	5,440	4,063	3,318	2,705	2,705	2,164
<b>48 x 22 x 32.5</b>	176	9,895	8,767	6,997	5,497	4,578	4,578	3,471
<b>54 x 24 x 28</b>	370	11,565	9,857	7,893	6,420	5,051	5,051	3,869
<b>60 x 30 x 32</b>	433	15,332	13,191	10,525	8,475	6,771	6,771	5,129
<b>66 x 30 x 32</b>	506	19,732	18,192	13,424	11,087	9,129	9,129	6,648
<b>72 x 36 x 36</b>	627	25,071	22,852	17,135	14,032	11,682	11,682	8,442
<b>78 x 36 x 36</b>	758	32,217	28,464	22,057	17,548	14,083	14,083	10,486
<b>84 x 40 x 40</b>	913	39,812	35,486	27,566	22,330	17,491	17,491	13,317
<b>84 x 40 x 42</b>	922	42,055	37,605	28,968	23,172	18,607	18,607	14,292
<b>88 x 40 x 40</b>	958	45,892	41,237	31,350	25,752	20,510	20,510	15,957
<b>96 x 44 x 46</b>	1,020	N/A	55,905	43,273	34,430	28,148	28,148	22,168

All Units in Feet

2" Flange Clearance

### Outside Plant Stranded Loose Tube Non-Armored (LN) Cables

Arid or Flooded Core

Flange x Drum x Traverse	Reel Weight (lbs)	2-60F 5@1	62-72F 6@1	74-96F 8@1	98-120F 10@1	122-144F 12@1	146-216F 12@6@1	218-288F 15@9@1
<b>36 x 22 x 29.75</b>	80	4,655	3,921	3,038	2,416	1,855	1,855	1,371
<b>42 x 22 x 29.75</b>	118	7,985	7,015	5,261	3,997	3,252	3,252	2,264
<b>48 x 22 x 32.5</b>	176	12,864	10,913	8,685	6,369	5,411	5,411	4,003
<b>54 x 24 x 28</b>	370	14,584	12,713	9,741	7,246	5,824	5,824	4,437
<b>60 x 30 x 32</b>	433	19,382	16,748	12,809	9,706	7,728	7,728	5,834
<b>66 x 30 x 32</b>	506	25,328	22,307	16,838	13,258	10,243	10,243	7,441
<b>72 x 36 x 36</b>	627	32,226	28,593	21,606	16,947	13,009	13,009	9,635
<b>78 x 36 x 36</b>	758	40,265	36,209	27,110	20,824	16,417	16,417	12,595
<b>84 x 40 x 40</b>	913	51,316	44,394	33,388	25,671	20,586	20,586	15,779
<b>84 x 40 x 42</b>	922	54,523	46,762	35,443	27,022	21,797	21,797	16,855
<b>88 x 40 x 40</b>	958	58,185	50,805	38,966	29,315	23,858	23,858	17,664
<b>96 x 44 x 46</b>	1,020	N/A	N/A	53,181	40,797	33,577	33,577	24,195

All Units in Feet

2" Flange Clearance

Reel Weights subject to change without notice.

### Outside Plant Drop (DA, DN, M-MN and M-DN) Cables

Flange x Drum x Traverse	Reel Weight (lbs)	DA 2-12F	DN 2-12F	M-MN 1-6F	M-DN 2-12F
<b>18 x 12 x 12</b>	8.5	N/A	N/A	1,403	630
<b>22 x 12 x 12</b>	12	N/A	N/A	3,067	1,446
<b>30 x 12 x 12</b>	21	N/A	N/A	7,477	3,639
<b>35 x 16.5 x 18</b> (Wood)	70	7,287	6,572	14,581	7,111
<b>36 x 22 x 29.75</b>	80	10,160	8,965	19,601	9,636
<b>42 x 20.5 x 21</b> (Narrow)	92	12,950	11,915	24,281	12,058
<b>42 x 24 x 25</b> (Wood)	109	13,361	12,247	25,126	12,377
<b>42 x 22 x 29.75</b>	118	17,624	16,012	N/A	15,712
<b>48 x 22 x 32.5</b>	176	28,691	25,522	N/A	25,743
<b>54 x 24 x 28</b>	370	32,433	29,319	N/A	N/A
<b>60 x 30 x 32</b>	433	40,000	39,209	N/A	N/A

All Units in Feet 2" Flange Clearance

### Outside Plant Central Tube (CA and CS) Cables

Flange x Drum x Traverse	Reel Weight (lbs)	CA 2-24F	CA 26-48F	CA 50-96F	CS 2-24F
<b>35 x 16.5 x 18</b> (Wood)	70	4,361	3,320	2,342	4,821
<b>36 x 22 x 29.75</b>	80	5,787	4,586	3,096	5,965
<b>42 x 20.5 x 21</b> (Narrow)	92	7,823	5,736	3,862	8,201
<b>42 x 24 x 25</b> (Wood)	109	7,959	6,084	3,944	8,397
<b>42 x 22 x 29.75</b>	118	10,189	7,873	5,357	10,990
<b>48 x 22 x 32.5</b>	176	16,903	12,907	8,657	17,835
<b>54 x 24 x 28</b>	370	19,418	14,636	9,708	20,765
<b>60 x 30 x 32</b>	433	25,710	19,441	13,017	27,465
<b>66 x 30 x 32</b>	506	33,716	25,417	17,103	35,643
<b>72 x 36 x 36</b>	627	43,287	32,326	21,541	45,805
<b>78 x 36 x 36</b>	758	54,218	40,404	27,018	56,945

All Units in Feet 2" Flange Clearance

### Outside Plant Central Tube Pavement (CP) Cables

Flange x Drum x Traverse	Reel Weight (lbs)	CP 2-72F
<b>30 x 12 x 12</b>	18	3,618
<b>35 x 16.5 x 18</b> (Composite)	70	7,352
<b>44 x 24 x 24</b> (Composite)	109	12,555
<b>42 x 22 x 29.75</b> (Composite)	118	16,301
<b>48 x 22 x 32.5</b>	176	26,986
<b>54 x 24 x 28</b>	370	30,911
<b>60 x 30 x 32</b>	433	37,500

All Units in Feet 2" Flange Clearance

Reel Weights subject to change without notice.

**Outside Plant and Indoor/Outdoor Central Tube Non-Armored (CN, RCN) Cables**

Flange x Drum x Traverse	Reel Weight (lbs)	R CN 2-24F	CN 2-24F	CN 26-48F	CN 50-96F
<b>35 x 16.5 x 18</b> (Wood)	70	4,278	4,842	3,245	2,404
<b>36 x 22 x 29.75</b>	80	5,720	6,667	4,035	3,145
<b>42 x 20.5 x 21</b> (Narrow)	92	7,700	8,674	5,629	3,947
<b>42 x 24 x 25</b> (Wood)	109	7,850	9,014	5,496	4,019
<b>42 x 22 x 29.75</b>	118	10,084	11,336	7,196	5,430
<b>48 x 22 x 32.5</b>	176	16,547	19,282	11,854	8,909
<b>54 x 24 x 28</b>	370	18,390	21,994	13,740	10,447
<b>60 x 30 x 32</b>	433	24,416	29,277	18,020	13,954
<b>66 x 30 x 32</b>	506	32,262	37,821	23,762	18,149
<b>72 x 36 x 36</b>	627	41,005	48,201	30,347	23,185
<b>78 x 36 x 36</b>	758	51,632	N/A	38,159	28,871

All Units in Feet 2" Flange Clearance

**Outside Plant Double Jacketed Single Armored (L2) Cables**

Flange x Drum x Traverse	Reel Weight (lbs)	5@1 2-60	6@1 62-72	8@1 74-96	10@1 98-120	12@1 122-144	12@6@1 146-216	15@9@1 218-288
<b>36 x 22 x 29.75</b>	80	2,551	2,460	1,894	1,440	1,337	1,337	959
<b>42 x 22 x 29.75</b>	118	4,647	4,060	3,313	2,709	2,214	2,214	1,717
<b>48 x 22 x 32.5</b>	176	7,747	6,990	5,488	4,585	3,532	3,532	2,892
<b>54 x 24 x 28</b>	370	8,700	7,885	6,408	5,059	4,345	4,345	3,228
<b>60 x 30 x 32</b>	433	11,765	10,516	8,461	6,781	5,725	5,725	4,337
<b>66 x 30 x 32</b>	506	15,656	13,410	11,067	9,145	7,313	7,313	5,730
<b>72 x 36 x 36</b>	627	19,821	17,120	14,307	11,427	9,491	9,491	7,349
<b>78 x 36 x 36</b>	758	23,997	22,035	17,888	13,778	11,664	11,664	9,254
<b>84 x 40 x 40</b>	913	31,082	27,539	22,291	17,518	14,691	14,691	11,890
<b>84 x 40 x 42</b>	925	32,586	28,939	23,553	18,636	15,375	15,375	12,516
<b>88 x 40 x 40</b>	958	35,086	31,317	25,704	20,545	16,524	16,524	13,535
<b>96 x 44 x 46</b>	1,020	47,805	43,228	35,836	27,682	24,005	24,005	18,777

All Units in Feet 2" Flange Clearance

**Outside Plant Triple Jacketed Double Armored (L3) Cables**

Flange x Drum x Traverse	Reel Weight (lbs)	5@1 2-60	6@1 62-72	8@1 74-96	10@1 98-120	12@1 122-144	12@6@1 146-216	15@9@1 218-288
<b>36 x 22 x 29.75</b>	80	1,772	1,443	1,298	990	932	932	843
<b>42 x 22 x 29.75</b>	118	2,761	2,717	2,150	1,770	1,676	1,676	1,287
<b>48 x 22 x 32.5</b>	176	4,769	4,164	3,443	2,875	2,748	2,748	2,239
<b>54 x 24 x 28</b>	370	5,593	4,926	3,968	3,330	2,827	2,827	2,391
<b>60 x 30 x 32</b>	433	7,457	6,626	5,245	4,457	3,826	3,826	3,152
<b>66 x 30 x 32</b>	506	9,269	8,337	7,340	5,882	5,154	5,154	4,358
<b>72 x 36 x 36</b>	627	11,839	10,717	9,278	7,521	6,643	6,643	5,498
<b>78 x 36 x 36</b>	758	15,103	13,834	11,407	9,464	8,480	8,480	6,578
<b>84 x 40 x 40</b>	913	19,063	17,586	14,743	12,126	10,676	10,676	8,718
<b>84 x 40 x 42</b>	925	19,841	18,334	15,429	12,747	11,269	11,269	8,982
<b>88 x 40 x 40</b>	958	22,223	19,595	16,586	12,796	12,232	12,232	10,141
<b>96 x 44 x 46</b>	1,020	29,684	27,797	22,430	19,074	17,192	17,192	13,329

All Units in Feet 2" Flange Clearance

Reel Weights subject to change without notice.

**Outside Plant Figure-8 Armored (M LA) and Non-Armored (M LN) Cables**

Flange x Drum x Traverse	Reel Weight (lbs)	Armored (M LA)			Non-Armored (M LN)		
		6@1 2-72	12@1 74-144	12@6@1 146-216	6@1 2-72	12@1 74-144	12@6@1 146-216
<b>36 x 22 x 29.75</b>	80	2,046	1,130	1,130	2,401	1,211	1,211
<b>42 x 22 x 29.75</b>	118	3,382	1,987	1,987	4,117	2,117	2,117
<b>48 x 22 x 32.5</b>	176	5,806	3,088	3,088	6,711	3,431	3,431
<b>54 x 24 x 28</b>	370	6,448	3,603	3,603	7,531	3,965	3,965
<b>60 x 30 x 32</b>	433	8,575	4,762	4,762	10,272	5,217	5,217
<b>66 x 30 x 32</b>	506	11,549	6,322	6,332	13,418	6,820	6,820
<b>72 x 36 x 36</b>	627	14,689	8,291	8,291	16,966	8,905	8,905
<b>78 x 36 x 36</b>	758	18,044	9,912	9,912	21,192	11,129	11,129
<b>84 x 40 x 40</b>	913	23,170	13,069	13,069	26,869	14,509	14,509
<b>84 x 40 x 42</b>	925	24,329	13,477	13,477	28,148	15,389	15,389
<b>88 x 40 x 40</b>	958	26,620	14,450	14,450	30,460	15,929	15,929
<b>96 x 44 x 46</b>	1,020	N/A	20,419	20,419	N/A	22,219	22,219

All Units in Feet     2" Flange Clearance

**Indoor/Outdoor Stranded Loose Tube Riser Non-Armored (R LN) Cables**

Flange x Drum x Traverse	Reel Weight (lbs)	5@1 2-60	6@1 62-72	8@1 74-96	10@1 98-120	12@1 122-144	12@6@1 146-216	15@9@1 218-288
<b>36 x 22 x 29.75</b>	80	3,859	3,200	2,508	1,938	1,776	1,439	1,303
<b>42 x 22 x 29.75</b>	118	6,910	5,519	4,579	3,385	2,768	2,704	2,164
<b>48 x 22 x 32.5</b>	176	10,773	9,031	7,094	5,462	4,667	4,576	3,470
<b>54 x 24 x 28</b>	370	12,522	10,618	8,027	6,375	5,168	5,049	3,868
<b>60 x 30 x 32</b>	433	16,804	14,154	10,682	8,625	6,908	6,769	5,127
<b>66 x 30 x 32</b>	506	22,395	18,398	14,386	11,273	9,304	9,126	6,646
<b>72 x 36 x 36</b>	627	28,270	23,466	18,305	14,243	11,609	11,677	8,439
<b>78 x 36 x 36</b>	758	34,513	29,208	22,313	17,798	14,816	14,077	10,482

All Units in Feet     2" Flange Clearance

**Indoor/Outdoor Stranded Loose Tube Non-Armored Plenum (P LN) Cables**

Flange x Drum x Traverse	Reel Weight (lbs)	5@1 2-60	6@1 62-72
<b>36 x 22 x 29.75</b>	80	4,970	4,646
<b>42 x 22 x 29.75</b>	118	9,108	7,964
<b>48 x 22 x 32.5</b>	176	15,298	13,018
<b>54 x 24 x 28</b>	370	17,015	14,792
<b>60 x 30 x 32</b>	433	22,714	19,625
<b>66 x 30 x 32</b>	506	30,298	25,634
<b>72 x 36 x 36</b>	627	38,661	32,573
<b>78 x 36 x 36</b>	758	47,476	40,682

All Units in Feet     2" Flange Clearance

Reel Weights subject to change without notice.

### Plenum-Rated Distribution (P DS) Cables

Fiber	Construction Type	18x12x12 FT	22x12x12 FT	30x12x12 FT	35x16.5x18 FT	36x22x29.75 FT	42x20.5x21 FT	42x24x25 FT	42x22x29.75 FT	48x22x32.5 FT	54x24x28 FT	60x30x32 FT	66x30x32 FT	72x36x36 FT	78x36x36 FT
2	SJ	3,591	8,238	20,143	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	SJ	2,975	6,490	16,276	28,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	SJ	2,451	5,332	13,411	25,571	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	SJ	2,102	4,827	12,144	23,066	28,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	SJ	1,695	3,894	9,428	18,695	25,490	28,000	28,000	28,000	N/A	N/A	N/A	N/A	N/A	N/A
18	SJ	944	1,995	5,037	9,339	12,704	15,879	16,990	21,625	N/A	N/A	N/A	N/A	N/A	N/A
24	SJ	N/A	1,685	4,249	8,417	11,279	13,942	14,426	18,795	28,000	28,000	28,000	28,000	N/A	N/A
36	MU	N/A	N/A	1,339	2,530	3,308	4,481	4,602	6,214	9,747	11,362	15,365	19,780	25,125	28,000
48	MU	N/A	N/A	1,123	2,124	3,048	3,780	3,872	4,807	7,970	9,589	12,631	15,787	20,322	25,687
60	MU	N/A	N/A	N/A	1,695	2,369	2,858	2,781	3,926	6,277	7,118	9,556	12,332	15,818	19,586
72	MU	N/A	N/A	N/A	1,356	1,810	2,378	2,211	3,178	5,307	5,690	7,571	10,041	12,781	16,138
96	MU	N/A	N/A	N/A	919	1,300	1,666	1,666	2,157	3,456	3,851	5,263	7,370	9,311	11,453
144	MU	N/A	N/A	N/A	N/A	1,269	1,405	1,618	2,113	3,303	3,780	5,023	6,522	8,298	10,321

### Riser-Rated Distribution (R DS) Cables

Fiber	Construction Type	18x12x12 FT	22x12x12 FT	30x12x12 FT	35x16.5x18 FT	36x22x29.75 FT	42x20.5x21 FT	42x24x25 FT	42x22x29.75 FT	48x22x32.5 FT	54x24x28 FT	60x30x32 FT	66x30x32 FT	72x36x36 FT	78x36x36 FT
2	SJ	3,467	7,603	19,099	28,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	SJ	2,485	5,399	13,547	25,717	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	SJ	2,069	4,755	11,562	22,130	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	SJ	1,978	4,292	10,439	19,885	27,471	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	SJ	1,667	3,840	9,326	17,685	24,075	28,000	28,000	28,000	N/A	N/A	N/A	N/A	N/A	N/A
18	SJ	966	2,035	5,115	9,906	13,882	16,918	17,303	22,148	N/A	N/A	N/A	N/A	N/A	N/A
24	SJ	N/A	1,729	4,354	8,546	11,382	13,890	14,584	18,950	28,000	28,000	28,000	28,000	N/A	N/A
36	MU	N/A	N/A	1,292	2,398	3,203	4,408	4,429	5,527	8,885	10,637	13,918	18,096	23,124	28,000
48	MU	N/A	N/A	954	2,072	2,552	3,382	3,415	4,648	7,751	8,704	11,535	14,555	18,833	24,010
60	MU	N/A	N/A	N/A	1,540	1,979	2,880	2,715	3,858	6,054	6,499	8,769	12,162	15,315	18,980
72	MU	N/A	N/A	N/A	1,366	1,818	2,135	2,221	2,829	4,752	5,571	7,432	9,234	11,800	15,046
96	MU	N/A	N/A	N/A	N/A	1,304	1,601	1,672	2,166	3,372	3,873	5,133	6,655	8,450	10,497
144	MU	N/A	N/A	N/A	N/A	958	1,357	1,329	1,715	2,889	3,348	4,332	5,723	7,340	9,242

### LSZH Distribution (Z DS) Cables

Fiber	Construction Type	18x12x12 FT	22x12x12 FT	30x12x12 FT	35x16.5x18 FT	36x22x29.75 FT	42x20.5x21 FT	42x24x25 FT	42x22x29.75 FT	48x22x32.5 FT	54x24x28 FT	60x30x32 FT	66x30x32 FT	72x36x36 FT	78x36x36 FT
2	SJ	3,632	8,320	20,865	28,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	SJ	2,101	4,821	12,121	23,293	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	SJ	1,979	4,297	10,457	19,915	27,498	28,000	28,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	SJ	1,356	3,110	7,813	15,087	20,451	25,520	26,143	28,000	N/A	N/A	N/A	N/A	N/A	N/A
12	SJ	1,231	2,637	6,371	11,709	16,763	20,194	21,123	26,866	N/A	N/A	N/A	N/A	N/A	N/A
18	SJ	943	1,993	5,031	9,329	12,833	15,863	16,976	21,840	N/A	N/A	N/A	N/A	N/A	N/A
24	SJ	N/A	1,695	4,042	7,882	11,077	12,977	13,571	17,611	28,000	28,000	28,000	28,000	28,000	N/A
36	MU	N/A	N/A	N/A	1,403	1,897	2,444	2,661	3,320	5,374	6,425	8,481	11,098	14,043	17,564
48	MU	N/A	N/A	N/A	1,141	1,776	2,066	2,160	2,769	4,669	5,170	6,910	9,308	11,613	14,822
60	MU	N/A	N/A	N/A	1,114	1,372	1,718	1,711	2,266	4,008	4,444	5,482	7,452	9,647	12,614
72	MU	N/A	N/A	N/A	N/A	1,268	1,402	1,616	2,109	3,398	3,770	5,013	6,506	8,280	10,296

### Reel Weights (lbs.)

18x12x12 FT	22x12x12 FT	30x12x12 FT	35x16.5x18 FT	36x22x29.75 FT	42x20.5x21 FT	42x24x25 FT	42x22x29.75 FT	48x22x32.5 FT	54x24x28 FT	60x30x32 FT	66x30x32 FT	72x36x36 FT	78x36x36 FT
8.5	12	21	70	80	92	109	118	176	370	433	506	627	758

Reel Weights subject to change without notice.

**Fiber Optic Cable**  
Packaging and Shipping Information

**Riser, Plenum and LSZH\* Simplex (SP) Cables**

Fiber	Size	18x12x12 FT	22x12x12 FT
1	1.6	18,124	N/A
1	1.8	16,623	N/A
1	2.0	13,347	28,000
1	2.5	8,539	19,577
1	2.9	6,188	14,177

\* LSZH is only for the 2.5 and 2.9 cables.

**Riser, Plenum and LSZH\* Zipcord (ZC) Cables**

Fiber	Size	18x12x12 FT	22x12x12 FT	30x12x12 FT
2	1.6	5,307	18,425	N/A
2	1.8	4,078	13,455	28,000
2	2.5	2,246	7,304	21,190
2	2.9	1,768	5,706	16,493

\* LSZH is only for the 2.5 and 2.9 cables.

**Riser, Plenum and LSZH\* Interconnect (IC) Cables**

Fiber	Size	18x12x12 FT	22x12x12 FT	30x12x12 FT
2	2.9	6,782	15,048	28,000

All reels calculated using 2" flange clearance

**Reel Weights (lbs.)**

	18x12x12 FT	22x12x12 FT	30x12x12 FT
	8.5	12	21

Reel Weights subject to change without notice.

Reel Weights subject to change without notice.

### Armored Distribution, Single and Multi-Unit Plenum (DX, DZ) Cables

Fiber	Construction Type	18x12x12 FT	22x12x12 FT	30x12x12 FT	35x16.5x18 FT	36x22x29.75 FT	42x20.5x21 FT	42x24x25 FT	42x22x29.75 FT	48x22x32.5 FT	54x24x28 FT	60x30x32 FT	66x30x32 FT	72x36x36 FT	78x36x36 FT
2-12	SJ	N/A	N/A	1,293	2,399	3,204	4,410	4,431	5,529	8,890	10,644	N/A	N/A	N/A	N/A
18-24	SJ	N/A	N/A	924	1,751	2,415	2,936	3,201	3,994	6,363	7,239	9,698	13,244	N/A	N/A
18	MU	N/A	N/A	N/A	1,361	1,814	2,387	2,216	3,189	4,737	5,715	7,599	10,085	N/A	N/A
24	MU	N/A	N/A	N/A	1,151	1,442	2,001	2,102	2,713	4,594	5,070	6,614	8,321	10,699	N/A
36	MU	N/A	N/A	N/A	1,116	1,373	1,721	1,713	2,269	4,016	4,452	5,851	7,466	9,663	12,638
48	MU	N/A	N/A	N/A	873	1,303	1,673	1,669	2,162	3,466	3,864	5,122	6,639	8,431	11,188
60	MU	N/A	N/A	N/A	N/A	961	1,296	1,278	1,723	2,812	3,244	4,356	5,759	7,381	9,300
72	MU	N/A	N/A	N/A	N/A	N/A	1,079	1,191	1,327	2,378	2,772	3,627	4,461	5,804	7,528
96	MU	N/A	N/A	N/A	N/A	N/A	N/A	3,872	1,206	1,840	1,972	2,630	3,742	4,761	5,773
144	MU	N/A	N/A	N/A	N/A	N/A	N/A	2,781	1,206	1,840	1,972	2,630	3,742	4,761	5,773

### Armored Distribution, Single and Multi-Unit Riser (DX, DZ) Cables

Fiber	Construction Type	18x12x12 FT	22x12x12 FT	30x12x12 FT	35x16.5x18 FT	36x22x29.75 FT	42x20.5x21 FT	42x24x25 FT	42x22x29.75 FT	48x22x32.5 FT	54x24x28 FT	60x30x32 FT	66x30x32 FT	72x36x36 FT	78x36x36 FT
2-12	SJ	N/A	N/A	1,293	2,399	3,204	4,410	4,431	5,529	8,890	10,644	N/A	N/A	N/A	N/A
18-24	SJ	N/A	N/A	924	1,751	2,415	2,936	3,201	3,994	6,363	7,239	9,698	13,244	N/A	N/A
18	MU	N/A	N/A	N/A	1,361	1,814	2,387	2,216	2,713	4,594	5,070	6,614	8,321	10,699	N/A
24	MU	N/A	N/A	N/A	1,151	1,442	2,001	2,102	2,162	3,466	3,864	5,122	6,639	8,431	11,188
36	MU	N/A	N/A	N/A	1,116	1,373	1,721	1,713	2,162	3,466	3,864	5,122	6,639	8,431	11,188
48	MU	N/A	N/A	N/A	873	1,303	1,673	1,669	1,763	2,952	3,311	4,435	5,849	7,484	9,411
60	MU	N/A	N/A	N/A	N/A	961	1,296	1,278	1,723	2,812	3,244	4,356	5,759	7,381	9,300
72	MU	N/A	N/A	N/A	N/A	N/A	1,079	1,191	1,327	2,378	2,772	3,627	4,461	5,804	7,528
96	MU	N/A	N/A	N/A	N/A	N/A	N/A	3,872	1,206	1,840	1,972	2,630	3,742	4,761	5,773
144	MU	N/A	N/A	N/A	N/A	N/A	N/A	2,781	952	1,786	1,902	2,549	3,257	4,171	5,128

Until further notice, the maximum length for any armored cable is 10,000 ft, unless constricted by reel size.

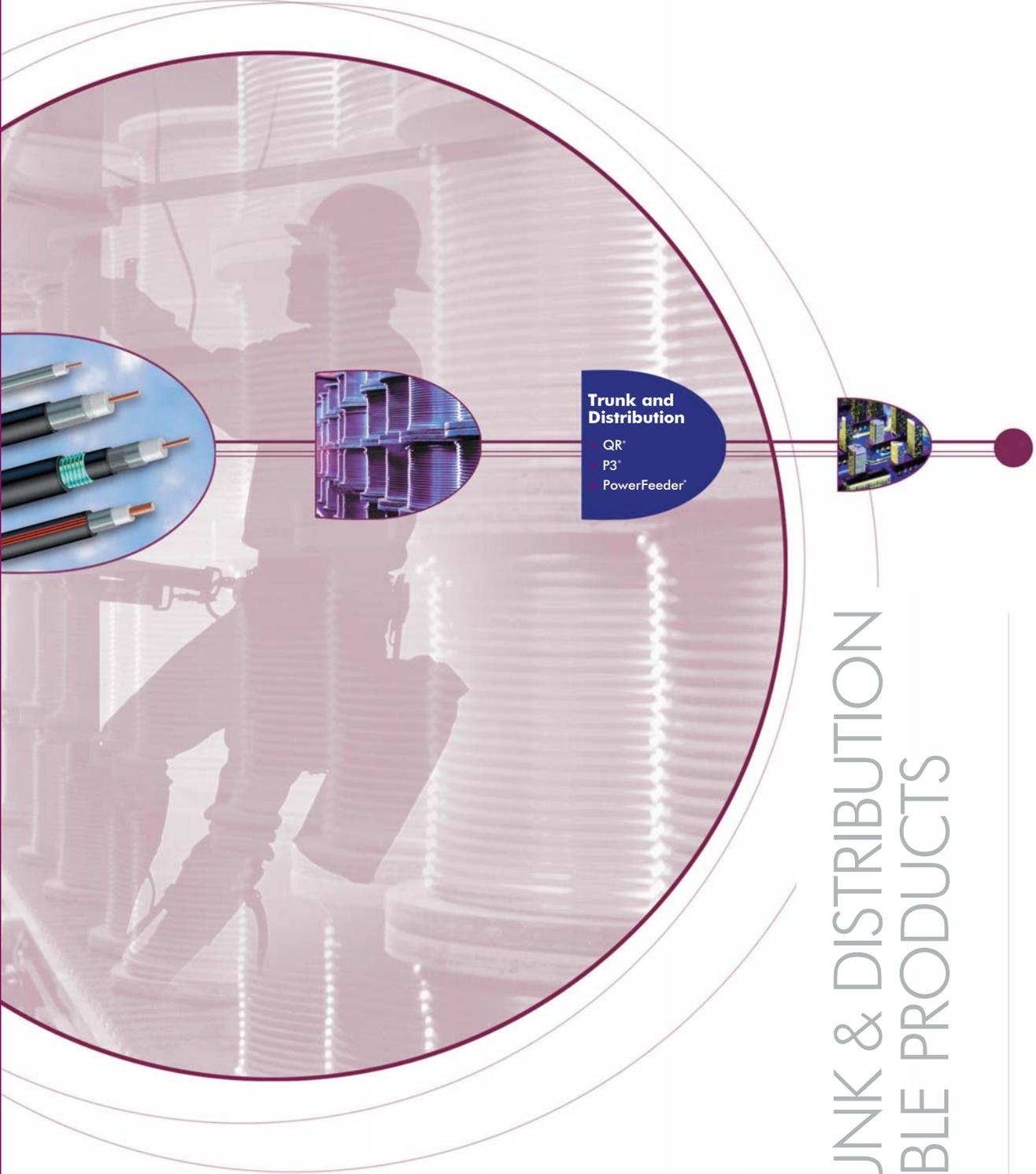
Reel Weights subject to change without notice.

**International Packaging - Weights and Dimensions**

Reel Dimensions	Reels per Layer	Layers	Cube Size (in.) (l x w x h)	Lagging Weight (lbs.)	Reel Weight (lbs.)	Pallet Weight (lbs.)	Total Weight (lbs.)
18 x 12 x 12	5	1	44 x 44 x 19	N/A	8.5	43	85.5
18 x 12 x 12	5	2	44 x 44 x 32	N/A	8.5	43	128
18 x 12 x 12	5	3	44 x 44 x 45	N/A	8.5	43	171
18 x 12 x 12	4	1	36 x 36 x 19	N/A	8.5	26	60
18 x 12 x 12	4	2	36 x 36 x 32	N/A	8.5	26	94
18 x 12 x 12	4	3	36 x 36 x 45	N/A	8.5	26	128
22 x 12 x 12	4	1	44 x 44 x 19.25	N/A	12	43	91
22 x 12 x 12	4	2	44 x 44 x 32.5	N/A	12	43	139
22 x 12 x 12	4	3	44 x 44 x 45.75	N/A	12	43	187
30 x 12 x 12	1	1	30 x 30 x 19.25	N/A	21	19	40
30 x 12 x 12	1	2	30 X 30 X 32.5	N/A	21	19	61
35 x 16.5 x 18	1	N/A	39 X 25 X 41	60	70	47	177
36 x 22 x 29.75	1	N/A	39 X 40 X 46	90	80	70	240
42 x 22 x 29.75	1	N/A	39 X 44 X 52	189	118	70	377
42.5 x 24 x 25	1	N/A	33 X 44 X 52	189	109	67	365
42x20.5x21	1	N/A	33 X 44 X 52	189	92	67	348
48 x 22 x 32.5	1	N/A	42 x 51 x 58	169	176	108	453
54 x 24 x 28	1	N/A	42 x 57 x 64	188	370	108	666
60 x 30 x 32	1	N/A	45 X 63 X 70	214.5	433	161	808.5
66 x 30 x 32	1	N/A	45 X 69 X 75	240.5	506	161	907.5
72 x 36 x 36	1	N/A	48 X 75 X 82	333	627	232	1192
78 x 36 x 36	1	N/A	48 x 81 x 88	360	758	232	1350
84 x 40 x 40	1	N/A	85 x 52 x 92	387	913	240	1540
88 x 40 x 40*	1	N/A	91 x 52 x 97	414	958	240	1612
96 x 44 x 40*	1	N/A	N/A	450	1020	0	1470

\*NOTE: These reels require special containers. Please consult Customer Service for availability at time of order.

Reel Weights subject to change without notice.



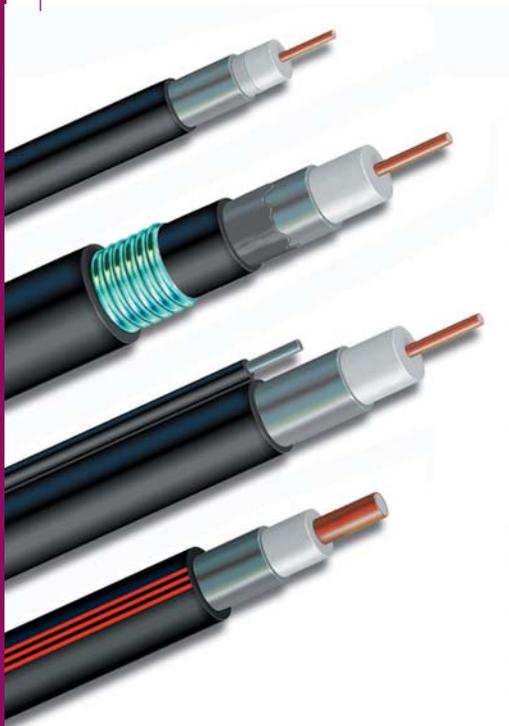
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## Why Deploy Anything But Advanced Cabling Technology to Transport High-Speed Services?

The primary distribution ring and trunk section of an HFC network mandates strong cable designed to withstand the rigors of environmental elements. CommScope meets these demands with cable renowned in the cable television industry - QR<sup>®</sup> and P3<sup>®</sup>. Constructions for underground installation feature Migra-Heal<sup>®</sup> floodant to isolate jacket damage and inhibit corrosion. Other available product options include armor, messengers, dual jackets and CableGuard<sup>®</sup>, a patented jacket featuring compartmentalized cells designed to offer excellent cut-through and crush resistance.



## Compelling Reasons to Build With QR<sup>®</sup>

Our patented QR cable is a time-tested design with superior reliability and flexibility. We are so certain of this claim that we offer an unprecedented 10-year warranty on QR. CommScope relies on proven technology and advanced design and development. The end result is a trunk and distribution cable that easily integrates with existing cable plant, but offers the latest advances in performance and reliability.

## QR<sup>®</sup> – More Miles for Your Money

Here's why leading broadband service providers around the world standardize on QR as the broadband coaxial transmission cable of choice:

- For less money, QR delivers better electrical and mechanical performance than more expensive traditional cables.
- QR benefits from an engineered connector system that creates a "Triple Grip" on the cable (center conductor, shield and jacket). This system provides the simplest, quickest and most consistent connector installation yielding extremely high reliability.
- Creatively deployed, QR can reduce the number of actives required in a system to save you even more money.



**P3® - The Cable Upon Which an Industry was Built**

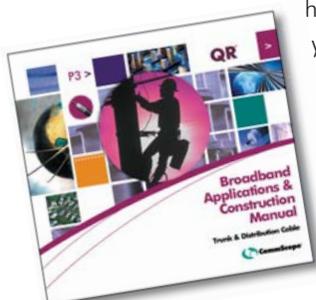
P3 has proven robust and reliable through years of successful coaxial installations. Low attenuation and inherent strength make it a good choice for distribution applications. P3 is available with flooding, integrated messengers, armor or a Cable Guard jacket.

**PowerFeeder® - Cable for the "Always On" Network**

PowerFeeder, a novel coaxial cable optimized for reliable power delivery, features extremely low resistance and minimizes voltage drops over long distances. The low resistance components of PowerFeeder cables play an essential role in the deployment of lifeline telephony and other critical data services. These products enable centralized power supplies and the delivery of power whenever and wherever needed.

**Request a FREE Broadband Applications & Construction Library**

CommScope's Broadband Applications & Construction Library includes a 4-piece set of valuable reference manuals plus a DVD containing essential training videos on topics such as connectorization, expansion loop formation and fiber optic splicing. These tools teach you how to protect the integrity of your broadband plant while lowering operating/ installation costs.



From construction and installation practices, to performance and testing of cable – CommScope Construction Manuals are simply a “must-have” for anyone upgrading or maintaining broadband networks. Download a PDF version at our website: <http://www.commscope.com> (in the literature center) or request a set by phone at 1-800-982-1708.



**CommScope's Digital Broadband Resource Center™**

This repository of experience, knowledge, services & tools is provided to CommScope customers to assist installers, technicians, engineers, designers or managers of broadband service providers. Tools in various media and formats include: SpanMaster® software for cable sag & tension calculations; center conductor sizing guides; attenuation slide rules; & call center spec assistance & review. Call us at 1-866-333-dBRC (3272) or e-mail [dbrc@commscope.com](mailto:dbrc@commscope.com) for answers to product questions or issues related to any CommScope broadband product.

## QR® Coaxial Cable

Learn the Technology and Advantages



### Introduction

Coaxial cable, the traditional choice for delivery of video services to the home, is today the choice for delivery of modern multimedia video and data services. Two distinct coaxial distribution technologies exist today - the traditional P3® style coaxial cable and the newer, precision engineered QR® coaxial cable. This paper will discuss the advantages of this newer technology in building networks for the next century.

### The History of QR

Until the development of CommScope's QR technology, traditional coaxial cable manufacturing had changed very little from its inception. A coaxial cable begins with a center conductor, typically of copper or copper clad aluminum, which is coated with an extruded plastic dielectric. This 'dielectric core' is extremely tough and flexible, and can literally be tied into knots without changing shape. Unfortunately much of the inherent flexibility of the product is lost when the dielectric core is placed inside a rigid aluminum tube, which makes the coaxial shield.

Rigid aluminum serves as a wonderful RF shield for the coax, and partially serves as a current return path. Unfortunately this shield also makes coaxial trunk and distribution cable stiff, and limits its bending radius.

CommScope engineers determined that if a coaxial cable could be manufactured with a more flexible shield, the strength and flexibility of the dielectric core would better exhibit itself in the performance of the finished coaxial cable. CommScope developed QR with that goal in mind.

QR is manufactured by rolling and forging a precision aluminum strip around the dielectric core in a continuous process. The aluminum strip is more flexible and less work hardened than an aluminum tube. The cable is simultaneously jacketed, providing even greater mechanical enhancement.

### Mechanical Benefits

The precision forged QR shield is less work hardened than a standard coaxial tube, and is much easier to bend and flex. This means a finished cable has a much smaller minimum bending radius, and a much longer flex life in an expansion loop.

Expansion loops are placed into coaxial cable to provide excess cable length required during seasonal cable expansion and contraction. These loops see repeated flexure, and are a primary failure point in coaxial plant. QR's greater flexibility has been shown to increase the life of the cable in an expansion loop by a factor of 2 to 3. QR precision shield requires less metal by volume than a traditional coaxial cable, which results in a lower cable weight. QR's lower weight, combined with tremendous cable flexibility, makes QR the easiest cable to install. QR requires proportionally less of its maximum pulling tension to install than a comparably sized rigid aluminum tube product. QR is also a 100% jacketed product, unlike traditional coaxial products, which may be purchased bare. This jacket provides environmental protection, and has also allowed the development of connectors which grip the cable jacket and form an additional environmental seal at the cable's most vulnerable point - the connector interface.



CommScope QR® JCA  
Coaxial Cable

### Electrical Performance

QR was developed with all these mechanical advantages in mind - and it was also designed with an eye toward electrical enhancement. The electrical advantages of QR include its attenuation and Structural Return Loss (SRL) performance.

### Attenuation

Coaxial attenuation is usually a function of cable size. Larger cables have lower attenuation. The DOD, or the distance from the center conductor to the shield, determines the cable attenuation.

QR was designed with a thinner shield, which allows larger DOD than comparably sized cable. This design allows the attenuation of QR to be lower than the attenuation of a comparable size traditional cable. This fact has caused QR to be referred to as a 'low loss' product for many years.

## SRL

Structural return loss (SRL) is the result of periodic impedance variations being induced into a coaxial cable. These impedance changes can be due to small fluctuations in diameter or material size. When impedance changes appear periodically in the cable, they will induce a loss at a frequency corresponding to their own frequency.

Great care is taken in coaxial manufacturing to prevent these impedance effects from occurring. The QR process was developed to minimize these impedance effects, and reliably produces cable with the lowest SRL.

## DC Loop Resistance

DC loop resistance is a function of the quantity of metal in a cable. Larger cables have more metal, and a lower DC loop resistance than smaller cables. DC loop resistance is specified in ohms/1000'.

QR cables have less metal in the shield than a comparably sized rigid aluminum cable, and have a higher DC loop resistance for that reason. This is a parameter that should be taken into consideration when a system is being designed, but the designer should also consider the following facts about DC loop resistance.

## Span Resistance

As broadband systems are upgraded, the electronics and corresponding frequencies of operation are changed. Newer systems operate at much higher frequencies than older systems. At these higher frequencies, coaxial cable attenuation is higher, and the distance between system components is reduced.

Span resistance is the product of the DC loop resistance (ohms/1000') and the span length, measured in feet. It can be shown that as span lengths shorten, the span resistance of a QR cable is equivalent to the old span resistance of a traditional cable, even though the DC loop resistance is higher. (See example below.)

## Multiple Return Paths and Effective DC Loop

An installed broadband plant completes one portion of a very complex electrical circuit. While DC loop resistance measured in the laboratory is a simple combination of the resistance of the center conductor and shield added together, the effective DC loop resistance seen in the field will be much lower. This is due to the additional current return paths that are added to the coaxial shield through grounding and bonding.

### Example:

Assume a budget of 22 dB between amplifiers.

In a P3 750 plant at 450 MHz, the span can be calculated using the attenuation value 1.12 dB/100' at 450.

$$(22 \text{ dB}) / (1.12 \text{ dB}/100') \times (100) = 1964 \text{ feet span length}$$

The span resistance can be calculated by multiplying the DC loop resistance by the span length  $(0.76 \text{ ohms}/1000') \times (1964 \text{ feet}) / (1000) = 1.49 \text{ ohms}$

Now, let's upgrade the plant to 750 MHz, and switch to QR 715, which has an attenuation of 1.49 dB/100' at 750 MHz, and a loop resistance of .997 ohms/1000'.

$$(22 \text{ dB}) / (1.49 \text{ dB}/100') \times (100) = 1477 \text{ feet span length}$$

The span is shorter to accommodate the higher frequency.

Now we can calculate the span resistance.

$$(.997 \text{ ohms}/1000') \times (1477 \text{ feet}) / (1000) = 1.47 \text{ ohms}$$

The QR 715 span, shortened for the higher frequency of operation in the upgrade, has a lower span resistance than the original traditional 750 span.

## QR® Coaxial Cable

Learn the Technology and Advantages



In the laboratory, DC loop resistance is measured by allowing current to flow down the center conductor, and back on the shield. The resistance measured, and published, is the resistance of the center conductor plus the resistance of the shield. Larger cables have larger center conductors and larger outer conductors, which have more metal content and lower DC resistance.

In an installed plant, the cable is grounded and bonded to the strand (aerial) or to the electronics and ground blocks (buried). These electrical connections allow current which traveled forward on the center conductor to return to ground through many low resistance paths in addition to the coaxial shield. CommScope's testing has shown that the effective DC loop resistance in an installed plant is much lower than published, and is roughly equivalent for QR and traditional coax (see the graph below).

### System Design and QR

The design of a system using QR is no different than when using traditional coax, with the notable exception of the advantages QR provides.

### Mechanical Considerations

QR has much lower pull tension requirements than traditional coax. This fact will be noticed in longer and easier pulls, either aerial or through conduit. QR blows into conduit readily, and is rugged enough for direct burial. All standard construction practices have been used with QR with great success.

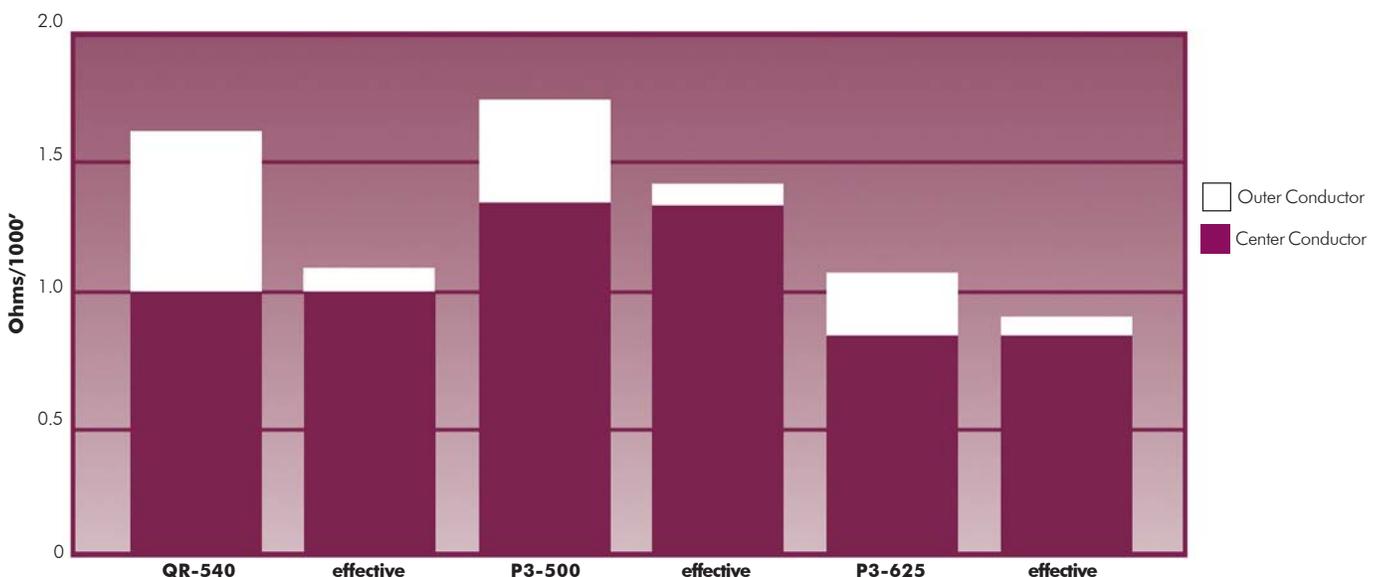
When forming expansion loops, QR's flexibility and ease of pulling require that forming boards or tools be left in place until the adjacent loop is formed, or the loops may pull out. This simple precaution should be a part of all construction manuals.

### Electrical Considerations

QR has lower attenuation than comparably sized traditional products. The published attenuation of QR products must be substituted during system design. In addition, the DC loop resistance of QR should be taken into account during system design, but is rarely an issue given the closer spacing of electronics in today's high bandwidth networks.

Overall, the electrical design of a system using QR is identical to that of any other cable type. QR has attenuation and resistance specifications that vary from traditional coax products, but they simply must be taken into account by the designer, and levels and spacing adjusted accordingly.

### Loop Resistance of Feeder Cable



Effective DC loop includes contribution of strand, neutral ground, etc.

## QR® Coaxial Cable

Learn the Technology and Advantages



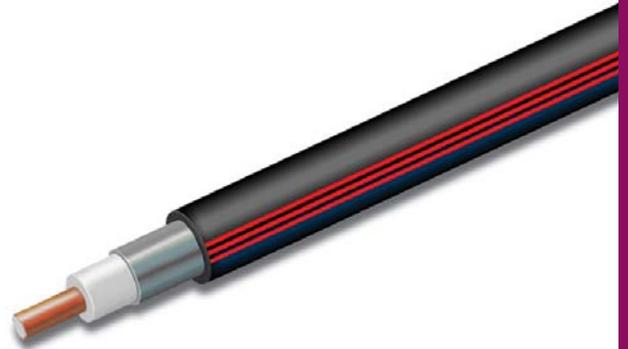
### ○ Telephony Considerations

QR has been successfully deployed in networks designed for broadband telephony as well as CATV. CommScope has customers in both the CATV and telephone industries, and both are using QR.

Telephony designs require additional attention be paid to powering of the system. Reliability of power supplies have raised an interest in centralized powering, a design where the power supplies are focused at the node, rather than spread throughout the system. These centralized power designs generally require that power be expressed out to remote network locations.

CommScope has developed a product for this express power feed, called PowerFeeder®. PowerFeeder has the lowest available DC loop resistance, in a convenient feeder cable size. It is ideal for any power only application where neither traditional coax nor QR is suitable.

Telephony builds can be designed for QR or traditional coax products with only minor differences in levels and spacing. QR is more than capable of carrying the higher currents required by telephony. QR products are qualified at voltages and currents far beyond those used, or even predicted.



CommScope PowerFeeder® Cable

### ○ Conclusion

QR is the cable of choice for cost, longevity, ease of use and performance. It has been selected by telephone and CATV companies alike for CATV and telephony builds, in the United States and internationally. No other product can match it's unique blend of performance and cost effectiveness.

**QR...In design and performance, already a century ahead.**

# Trunk and Distribution Cable Catalog Numbering Key



Steps to Building the Catalog Number for the Cable You Need

## Sample QR® Product Constructions

### Prefix

QR® = Quantum Reach®

**QR 540 JCASS-T**



### Size

(diameter over shield)

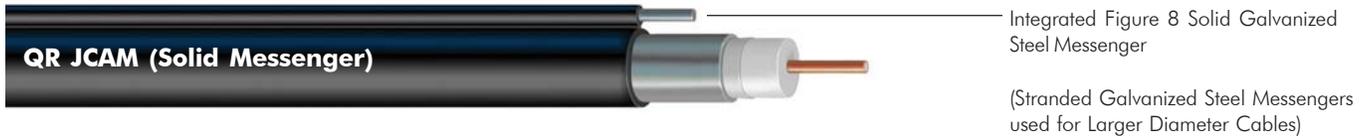
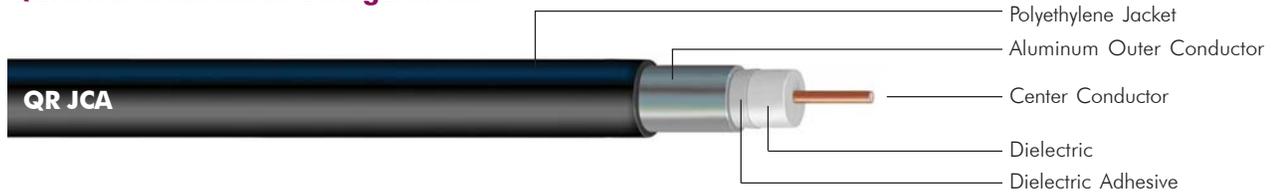
- 320
- 540
- 715
- 860
- 1125

### Suffix

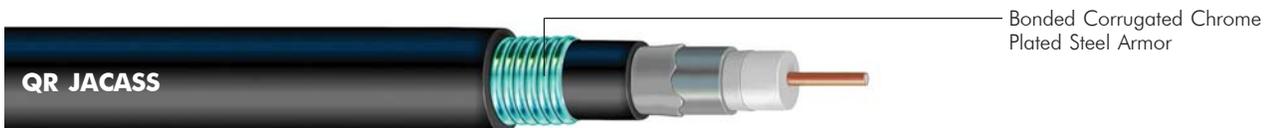
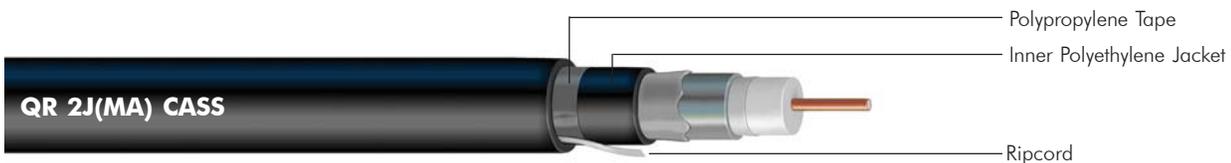
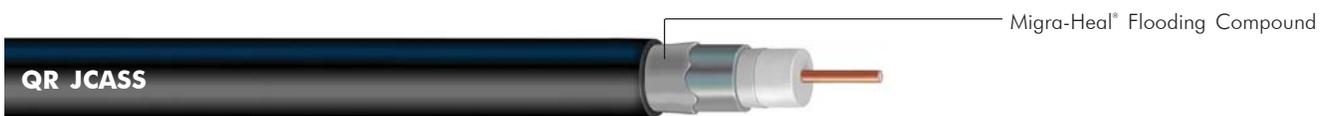
- J = Jacketed
- CA = Copper Aluminum
- SS = Migra-Heal® Flooding Compound
- SP = Aerial Floodant
- T = Tracer
- M = Messenger
- EHS = Extra High Strength

(This is a sample list, other options are available)

## QR Aerial Construction Configurations



## QR Underground Construction Configurations



# Trunk and Distribution Cable Catalog Numbering Key

## Steps to Building the Catalog Number for the Cable You Need

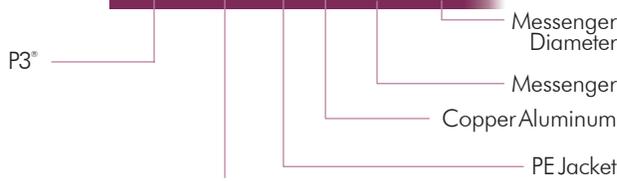


### Sample P3<sup>®</sup> Product Constructions

#### Prefix

- P3<sup>®</sup> = Parameter III<sup>®</sup>
- PF = PowerFeeder<sup>®</sup>

**P3 625 JCAM188**



#### Size

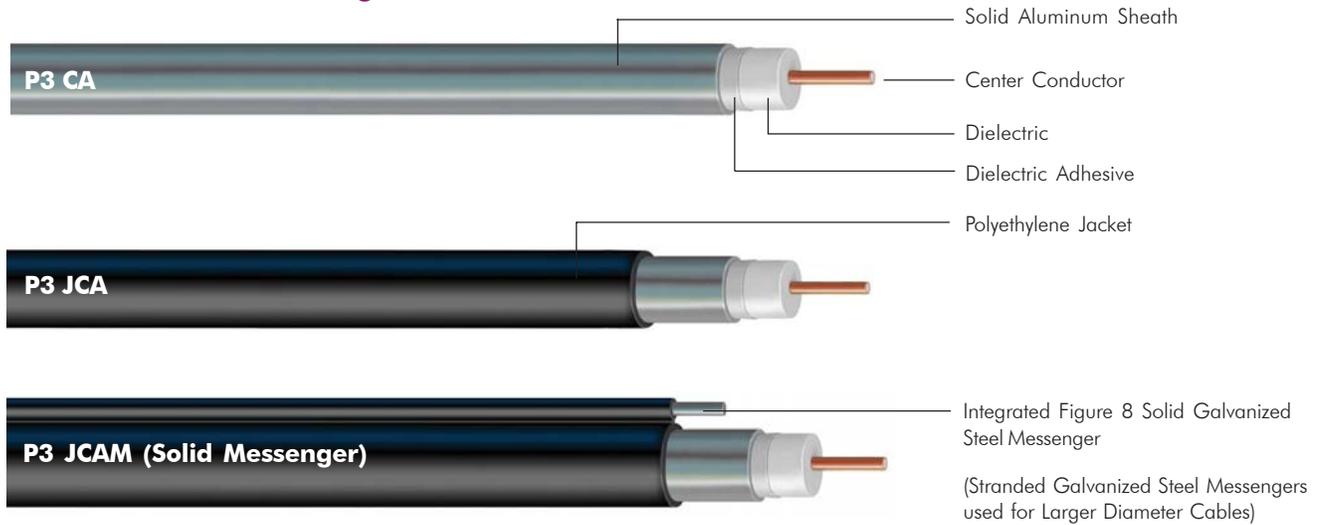
(diameter over shield)

412	750
500	840
565	875
625	1000
700	

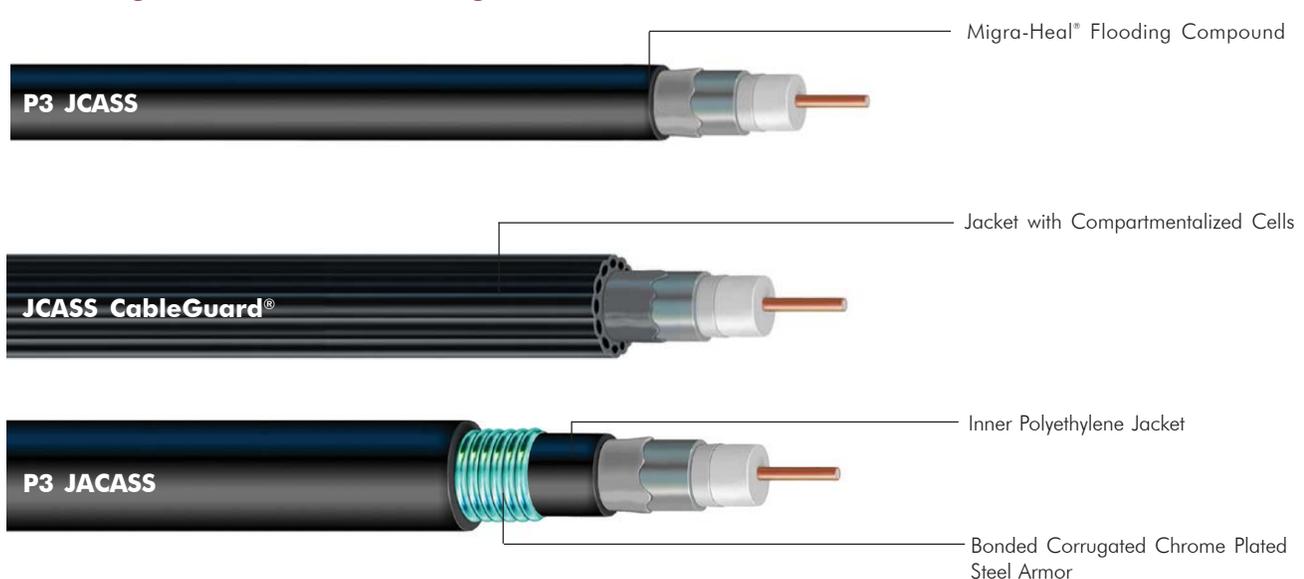
#### Suffix

- J = Jacketed
  - CA = Copper Aluminum
  - SS = Migra-Heal<sup>®</sup> Flooding Compound
  - SP = Aerial Floodant
  - T = Tracer
  - M = Messenger
  - CG = CableGuard<sup>®</sup>
  - EHS = Extra High Strength
- (This is a sample list, other options are available)*

### P3 Aerial Construction Configurations



### P3 Underground Construction Configurations



## QR® 320 Series Cables

### Product Descriptions



CommScope's patented QR® coaxial cable was developed to meet the increasing demands of tomorrow's broadband networks. QR has the highest reliability and flexibility of any Trunk and Distribution coaxial cable, low RF attenuation and an unprecedented 10 year warranty.

All QR cable products offer tough polyethylene jackets and a standardized, environmentally sealed connector interface engineered for reliability and craft friendliness.

QR 320 is optimized for use in multiple dwelling units (MDU) and feeder applications. QR 320 offers unmatched flexibility, reliability and cost effectiveness.

#### Standard QR Construction

A precision aluminum strip is formed and continuously RF welded around a high compression micro-cellular foam dielectric core, eliminating RF leakage, and the rigidity common in traditional coaxial products. The shield is fully bonded to the dielectric core, as is the copper clad aluminum center conductor. A tough polyethylene jacket is applied standard, which enhances cable reliability and allows QR's unique connector technology to form an environmental seal.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 320 JCA</b> 	offers all of QR's standard construction features	47 lbs/kft (70 kg/km)	61 lbs/kft (91 kg/km)	3700 ft (1128 m)
<b>QR 320 JCAM109</b> 	has an integrated figure 8 galvanized solid steel messenger for self-supporting applications	89 lbs/kft (133 kg/km)	103 lbs/kft (154 kg/km)	3700 ft (1128 m)
<b>QR 320 JCAM083 EHS</b> (Also Available)		74 lbs/kft (111 kg/km)	88 lbs/kft (131 kg/km)	3700 ft (1128 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 320 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	47 lbs/kft (70 kg/km)	61 lbs/kft (91 kg/km)	3700 ft (1128 m)

#### Indoor/Riser Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 320 JCAR</b> 	has a flame-retardant polyethylene jacket that meets NEC's CATVR rating	56 lbs/kft (83 kg/km)	72 lbs/kft (108 kg/km)	3700 ft (1128 m)

\*Longer (and shorter) lengths are available

**Physical Dimensions**

Component	Inches	mm
Nominal Center Conductor Diameter	0.071	1.80
Nominal Diameter Over Dielectric	0.294	7.47
Nominal Diameter Over Outer Conductor	0.320	8.13
Nominal Outer Conductor Thickness	0.013	0.34
Nominal Diameter Over Jacket	0.395	10.03
Nominal Jacket Wall Thickness	0.0375	0.89

**Messenger Version**

Diameter of Steel Messenger	0.109	2.77
	0.083	2.11

**Mechanical Characteristics**

Minimum Bending Radius	2.0 in.	50.8 mm
Maximum Pulling Tension	120 lbs.	54.5 kg <sub>f</sub>
Minimum Breaking Strength of Messenger	(109) 1,800 lbs. (.083) 1,000 lbs.	816 kg <sub>f</sub> 453 kg <sub>f</sub>

**Electrical Characteristics**

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 3 ohms	
Velocity of Propagation	87%	

**Maximum D.C. Resistance @ 68°F (20°C)**

**Copper Clad**

Inner Conductor	3.28 ohms/1000ft.	10.76 ohms/km
Outer Conductor	0.99 ohms/1000ft.	3.25 ohms/km
Loop	4.27 ohms/1000ft.	14.01 ohms/km

**Attenuation [@ 68° F. (20° C.)]**

Frequency (MHz)	(dB/100 ft) Maximum	(dB/100 m) Maximum
5	0.24	0.79
30	0.62	2.03
45	0.76	2.49
50	0.80	2.62
55	0.84	2.76
83	1.07	3.51
108	1.22	4.00
150	1.45	4.76
181	1.60	5.25
193	1.65	5.41
211	1.73	5.68
220	1.76	5.77
250	1.86	6.10
270	1.94	6.37
300	2.04	6.69
325	2.17	7.12
350	2.25	7.38
375	2.30	7.55
400	2.38	7.81
425	2.45	8.04
450	2.52	8.27
500	2.72	8.92
550	2.85	9.35
600	2.98	9.78
750	3.34	10.96
865	3.62	11.87
1000	3.89	12.76

Specifications are subject to change without notice.

## QR® 540 Series Cables

### Product Descriptions



CommScope's patented QR® coaxial cable was developed to meet the increasing demands of tomorrow's broadband networks. QR has the highest reliability and flexibility of any Trunk and Distribution coaxial cable, low RF attenuation and an unprecedented 10 year warranty.

All QR cable products offer tough polyethylene jackets and a standardized, environmentally sealed connector interface engineered for reliability and craft friendliness.

QR 540 is optimized for use in broadband feeder plants. QR 540 offers lower attenuation than larger traditional products, with unmatched flexibility, reliability and cost effectiveness.

### Standard QR Construction

A precision aluminum strip is formed and continuously RF welded around a high compression micro-cellular foam dielectric core, eliminating RF leakage, and the rigidity common in traditional coaxial products. The shield is fully bonded to the dielectric core, as is the copper clad aluminum center conductor. A tough polyethylene jacket is applied standard, which enhances cable reliability and allows QR's unique connector technology to form an environmental seal.

### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 540 JCA</b> 	offers all of QR's standard construction features	91 lbs/kft (135 kg/km)	120 lbs/kft (179 kg/km)	3700 ft (1128 m)
<b>QR 540 JCAM109</b> 	has an integrated figure 8 galvanized solid steel messenger for self-supporting applications	132 lbs/kft (196 kg/km)	170 lbs/kft (253 kg/km)	3700 ft (1128 m)

### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 540 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	92 lbs/kft (137 kg/km)	120 lbs/kft (179 kg/km)	3700 ft (1128 m)
<b>QR 540 2J(MA) CASS</b> 	offers twin polyethylene jackets separated with tough polypropylene tape for extra cut-through resistance	121 lbs/kft (180 kg/km)	170 lbs/kft (253 kg/km)	3700 ft (1128 m)
<b>QR 540 JACASS</b> 	features CommScope's Migra-Heal® floodant, a bonded, chrome-plated armor and twin polyethylene jackets for ultimate toughness	211 lbs/kft (314 kg/km)	260 lbs/kft (387 kg/km)	3700 ft (1128 m)

### Indoor/Riser Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 540 JCAR</b> 	has a flame-retardant polyethylene jacket that meets NEC's CATVR rating	91 lbs/kft (135 kg/km)	126 lbs/kft (188 kg/km)	3700 ft (1128 m)

\*Longer (and shorter) lengths are available

**Physical Dimensions**

Component	Inches	mm
Nominal Center Conductor Diameter	0.124	3.15
Nominal Diameter Over Dielectric	0.514	13.03
Nominal Diameter Over Outer Conductor	0.540	13.72
Nominal Outer Conductor Thickness	0.0135	0.343
Nominal Diameter Over Jacket	0.610	15.49
Nominal Jacket Wall Thickness	0.035	0.89

**Messenger Version**

Diameter of Steel Messenger	0.109	2.77
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**Dual Jacket Version**

Nominal Jacket Wall Thickness of Outer Jacket	0.043	1.09
Nominal Diameter Over Outer Jacket	0.700	17.78

**Armored Versions**

Nominal Diameter Over Corrugated Armor	0.680	17.27
Nominal Armor Thickness	0.010	0.25
Nominal Diameter Over Outer Jacket	0.760	19.30
Nominal Thickness of Outer Jacket	0.040	1.02

**Mechanical Characteristics**

Minimum Bending Radius:		
(Jacketed)	4.0 in.	10.2 cm
(Armored)	6.5 in.	16.5 cm
Maximum Pulling Tension	220 lbs.	100 kg <sub>f</sub>
Minimum Breaking Strength of Messenger	(109) 1,800 lbs.	816 kg <sub>f</sub>

**Electrical Characteristics**

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	88%	

**Maximum D.C. Resistance @ 68°F (20°C)**

Copper Clad		
Inner Conductor	1.02 ohms/1000 ft.	3.34 ohms/km
Outer Conductor	0.59 ohms/1000 ft.	1.94 ohms/km
Loop	1.61 ohms/1000 ft.	5.28 ohms/km

**Attenuation [ @ 68° F. (20° C.) ]**

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.13	0.14	0.43	0.46
30	0.34	0.34	1.12	1.12
45	0.41	0.41	1.35	1.35
50	0.43	0.44	1.41	1.44
55	0.45	0.47	1.48	1.54
83	0.55	0.58	1.80	1.90
108	0.63	0.66	2.07	2.17
150	0.74	0.79	2.43	2.59
181	0.84	0.88	2.76	2.89
193	0.87	0.90	2.85	2.95
211	0.91	0.95	2.99	3.12
220	0.93	0.98	3.05	3.22
250	0.99	1.03	3.25	3.38
270	1.03	1.07	3.38	3.51
300	1.08	1.13	3.54	3.71
325	1.13	1.18	3.71	3.87
350	1.17	1.23	3.84	4.03
375	1.22	1.27	4.00	4.17
400	1.26	1.32	4.13	4.33
425	1.30	1.37	4.27	4.49
450	1.35	1.40	4.44	4.59
500	1.41	1.49	4.63	4.89
550	1.51	1.56	4.95	5.12
600	1.59	1.64	5.23	5.38
750	1.80	1.85	5.92	6.07
865	1.90	2.00	6.23	6.56
1000	2.10	2.17	6.91	7.12

Specifications are subject to change without notice.

## QR® 715 Series Cables

### Product Descriptions



CommScope's patented QR® coaxial cable was developed to meet the increasing demands of tomorrow's broadband networks. QR has the highest reliability and flexibility of any Trunk and Distribution coaxial cable, low RF attenuation and an unprecedented 10 year warranty.

All QR cable products offer tough polyethylene jackets and a standardized, environmentally sealed connector interface engineered for reliability and craft friendliness.

QR 715 is optimized for use in broadband distribution plants. QR 715 offers lower attenuation than larger traditional products, with unmatched flexibility, reliability and cost effectiveness.

#### Standard QR Construction

A precision aluminum strip is formed and continuously RF welded around a high compression micro-cellular foam dielectric core, eliminating RF leakage, and the rigidity common in traditional coaxial products. The shield is fully bonded to the dielectric core, as is the copper clad aluminum center conductor. A tough polyethylene jacket is applied standard, which enhances cable reliability and allows QR's unique connector technology to form an environmental seal.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 715 JCA</b> 	offers all of QR's standard construction features	145 lbs/kft (216 kg/km)	205 lbs/kft (305 kg/km)	3000 ft (914 m)
<b>QR 715 JCAM188</b> 	has an integrated figure 8 stranded galvanized steel messenger for self-supporting applications	232 lbs/kft (342 kg/km)	301 lbs/kft (448 kg/km)	3000 ft (914 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 715 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	145 lbs/kft (216 kg/km)	205 lbs/kft (305 kg/km)	3000 ft (914 m)
<b>QR 715 2J(MA) CASS</b> 	offers twin polyethylene jackets separated with tough polypropylene tape for extra cut-through resistance	182 lbs/kft (271 kg/km)	232 lbs/kft (345 kg/km)	3000 ft (914 m)
<b>QR 715 JACASS</b> 	features CommScope's Migra-Heal® floodant, a bonded, chrome-plated armor and twin polyethylene jackets for ultimate toughness	313 lbs/kft (466 kg/km)	383 lbs/kft (570 kg/km)	3000 ft (914 m)

\*Longer (and shorter) lengths are available

**Physical Dimensions**

Component	Inches	mm
Nominal Center Conductor Diameter	0.166	4.22
Nominal Diameter Over Dielectric	0.686	17.42
Nominal Diameter Over Outer Conductor	0.715	18.16
Nominal Outer Conductor Thickness	0.0145	0.37
Nominal Diameter Over Jacket	0.785	19.94
Nominal Jacket Wall Thickness	0.035	0.89

**Messenger Version**

Diameter of Steel Messenger	0.188	4.78
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**Dual Jacket Version**

Nominal Jacket Wall Thickness of Outer Jacket	0.046	1.17
Nominal Diameter Over Outer Jacket	0.881	22.38

**Armored Versions**

Nominal Diameter Over Corrugated Armor	0.855	21.71
Nominal Armor Thickness	0.008	0.20
Nominal Diameter Over Outer Jacket	0.935	23.75
Nominal Thickness of Outer Jacket	0.040	1.02

**Mechanical Characteristics**

Minimum Bending Radius:		
(Jacketed)	5.0 in.	12.7 cm
(Armored)	7.5 in.	19.1 cm
Maximum Pulling Tension	340 lbs.	154 kgf
Minimum Breaking Strength(188) of Messenger	3,900 lbs.	1,769 kgf

**Electrical Characteristics**

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	88%	

**Maximum D.C. Resistance @ 68°F (20°C)**

**Copper Clad**

Inner Conductor	0.579 ohms/1000 ft.	1.90 ohms/km
Outer Conductor	0.418 ohms/1000 ft.	1.37 ohms/km
Loop	0.997 ohms/1000 ft.	3.27 ohms/km

**Attenuation [ @ 68° F. (20° C.) ]**

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.09	0.11	0.30	0.36
30	0.25	0.27	0.82	0.89
45	0.31	0.33	1.02	1.08
50	0.33	0.35	1.08	1.15
55	0.35	0.36	1.15	1.18
83	0.43	0.45	1.41	1.48
108	0.48	0.51	1.57	1.67
150	0.57	0.61	1.87	2.00
181	0.66	0.68	2.17	2.23
193	0.68	0.70	2.23	2.30
211	0.71	0.74	2.33	2.43
220	0.72	0.76	2.36	2.49
250	0.77	0.81	2.53	2.66
270	0.80	0.84	2.62	2.76
300	0.83	0.89	2.73	2.92
325	0.88	0.94	2.89	3.08
350	0.91	0.97	2.99	3.18
375	0.95	1.01	3.12	3.31
400	0.98	1.05	3.22	3.44
425	1.01	1.09	3.31	3.58
450	1.04	1.12	3.41	3.67
500	1.10	1.19	3.61	3.90
550	1.18	1.25	3.87	4.10
600	1.22	1.31	4.01	4.30
750	1.36	1.49	4.47	4.89
865	1.48	1.62	4.86	5.31
1000	1.59	1.75	5.23	5.74

Specifications are subject to change without notice.

## QR® 860 Series Cables

### Product Descriptions



CommScope's patented QR® coaxial cable was developed to meet the increasing demands of tomorrow's broadband networks. QR has the highest reliability and flexibility of any Trunk and Distribution coaxial cable, low RF attenuation and an unprecedented 10 year warranty.

All QR cable products offer tough polyethylene jackets and a standardized, environmentally sealed connector interface engineered for reliability and craft friendliness.

QR 860 is optimized for use in broadband trunk & distribution plants. QR 860 offers lower attenuation than larger traditional products, with unmatched flexibility, reliability and cost effectiveness.

#### Standard QR Construction

A precision aluminum strip is formed and continuously RF welded around a high compression micro-cellular foam dielectric core, eliminating RF leakage, and the rigidity common in traditional coaxial products. The shield is fully bonded to the dielectric core, as is the copper clad aluminum center conductor. A tough polyethylene jacket is applied standard, which enhances cable reliability and allows QR's unique connector technology to form an environmental seal.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 860 JCA</b> 	offers all of QR's standard construction features	213 lbs/kft (317 kg/km)	290 lbs/kft (432 kg/km)	2700 ft (823 m)
<b>QR 860 JCAM188</b> 	has an integrated figure 8 galvanized stranded steel messenger for self-supporting applications	308 lbs/kft (458 kg/km)	403 lbs/kft (600 kg/km)	2700 ft (823 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 860 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	214 lbs/kft (319 kg/km)	291 lbs/kft (433 kg/km)	2700 ft (823 m)
<b>QR 860 2J(MA) CASS</b> 	offers twin polyethylene jackets separated with tough polypropylene tape for extra cut-through resistance	245 lbs/kft (365 kg/km)	304 lbs/kft (452 kg/km)	2700 ft (823 m)
<b>QR 860 JACASS</b> 	features CommScope's Migra-Heal® floodant, a bonded, chrome-plated armor and twin polyethylene jackets for ultimate toughness	393 lbs/kft (585 kg/km)	488 lbs/kft (726 kg/km)	2700 ft (823 m)

\*Longer (and shorter) lengths are available

### Physical Dimensions

Component	Inches	mm
Nominal Center Conductor Diameter	0.203	5.16
Nominal Diameter Over Dielectric	0.828	21.03
Nominal Diameter Over Outer Conductor	0.860	21.84
Nominal Outer Conductor Thickness	0.016	0.41
Nominal Diameter Over Jacket	0.960	24.38
Nominal Jacket Wall Thickness	0.050	1.27

### Messenger Version

Diameter of Steel Messenger	0.188	4.78
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### Dual Jacket Version

Nominal Jacket Wall Thickness of Outer Jacket	0.031	0.79
Nominal Diameter Over Outer Jacket	1.026	26.06

### Armored Versions

Nominal Diameter Over Corrugated Armor	1.030	26.16
Nominal Armor Thickness	0.010	0.25
Nominal Diameter Over Outer Jacket	1.110	28.19
Nominal Thickness of Outer Jacket	0.040	1.02

### Mechanical Characteristics

Minimum Bending Radius:			
(Jacketed)	7.0 in.	17.8 cm	
(Armored)	9.5 in.	24.1 cm	
Maximum Pulling Tension	450 lbs.	204 kg <sub>f</sub>	
Minimum Breaking Strength of Messenger	(188) 3,900 lbs.	1,769 kg <sub>f</sub>	

### Electrical Characteristics

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	88%	

### Maximum D.C. Resistance @ 68°F (20°C)

Copper Clad		
Inner Conductor	0.406 ohms/1000 ft.	1.33 ohms/km
Outer Conductor	0.318 ohms/1000 ft.	1.04 ohms/km
Loop	0.724 ohms/1000 ft.	2.37 ohms/km

### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.08	0.09	0.26	0.30
30	0.21	0.23	0.69	0.75
45	0.26	0.29	0.88	0.95
50	0.27	0.30	0.89	0.98
55	0.29	0.32	0.95	1.05
83	0.35	0.40	1.15	1.31
108	0.40	0.45	1.31	1.48
150	0.48	0.54	1.57	1.77
181	0.55	0.59	1.80	1.94
193	0.57	0.60	1.87	1.97
211	0.59	0.64	1.94	2.10
220	0.60	0.65	1.97	2.13
250	0.64	0.70	2.10	2.30
270	0.67	0.72	2.20	2.36
300	0.71	0.76	2.33	2.49
325	0.73	0.80	2.39	2.62
350	0.76	0.83	2.49	2.72
375	0.80	0.86	2.62	2.82
400	0.83	0.88	2.72	2.89
425	0.86	0.92	2.82	3.02
450	0.88	0.95	2.89	3.12
500	0.93	1.00	3.05	3.28
550	0.99	1.06	3.25	3.48
600	1.04	1.10	3.41	3.61
750	1.17	1.24	3.85	4.07
865	1.25	1.33	4.10	4.36
1000	1.38	1.44	4.53	4.72

Specifications are subject to change without notice.

## QR® 1125 Series Cables

### Product Descriptions



CommScope's patented QR® coaxial cable was developed to meet the increasing demands of tomorrow's broadband networks. QR has the highest reliability and flexibility of any Trunk and Distribution coaxial cable, low RF attenuation and an unprecedented 10 year warranty.

All QR cable products offer tough polyethylene jackets and a standardized, environmentally sealed connector interface engineered for reliability and craft friendliness.

QR 1125 is optimized for use in broadband trunk plants. QR 1125 offers ultra low attenuation with unmatched flexibility, reliability and cost effectiveness.

#### Standard QR Construction

A precision aluminum strip is formed and continuously RF welded around a high compression micro-cellular foam dielectric core, eliminating RF leakage, and the rigidity common in traditional coaxial products. The shield is fully bonded to the dielectric core, as is the copper clad aluminum center conductor. A tough polyethylene jacket is applied standard, which enhances cable reliability and allows QR's unique connector technology to form an environmental seal.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 1125 JCA</b> 	offers all of QR's standard construction features	340 lbs/kft (506 kg/km)	426 lbs/kft (634 kg/km)	3000 ft (914 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 1125 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	340 lbs/kft (506 kg/km)	425 lbs/kft (632 kg/km)	3000 ft (914 m)
<b>QR 1125 JACASS</b> 	features CommScope's Migra-Heal® floodant, a bonded, chrome-plated armor and twin polyethylene jackets for ultimate toughness	570 lbs/kft (854 kg/km)	720 lbs/kft (1071 kg/km)	3000 ft (914 m)

\*Longer (and shorter) lengths are available

### Physical Dimensions

Component	Inches	mm
Nominal Center Conductor Diameter	0.263	6.68
Nominal Diameter Over Dielectric	1.081	27.46
Nominal Diameter Over Outer Conductor	1.125	28.58
Nominal Outer Conductor Thickness	0.022	0.56
Nominal Diameter Over Jacket	1.225	31.12
Nominal Jacket Wall Thickness	0.050	1.27

### Armored Versions

Nominal Diameter Over Corrugated Armor	1.300	33.02
Nominal Shield Thickness	0.010	0.25
Nominal Diameter Over Outer Jacket	1.380	35.05
Nominal Thickness of Outer Jacket	0.040	1.02

### Mechanical Characteristics

Minimum Bending Radius:		
(Jacketed)	10.0 in.	25.4 cm
(Armored)	18.0 in.	45.6 cm
Maximum Pulling Tension	750 lbs.	340 kgf

### Electrical Characteristics

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	88%	

### Maximum D.C. Resistance @ 68°F (20°C)

Copper Clad		
Inner Conductor	0.24 ohms/1000 ft.	0.79 ohms/km
Outer Conductor	0.18 ohms/1000 ft.	0.59 ohms/km
Loop	0.42 ohms/1000 ft.	1.38 ohms/km

### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.07	0.07	0.23	0.23
30	0.16	0.17	0.52	0.56
45	0.20	0.21	0.66	0.69
50	0.21	0.22	0.69	0.72
55	0.22	0.23	0.72	0.76
83	0.27	0.29	0.89	0.95
108	0.31	0.34	1.02	1.12
150	0.36	0.41	1.18	1.35
181	0.43	0.45	1.41	1.48
193	0.45	0.47	1.48	1.54
211	0.47	0.49	1.54	1.61
220	0.48	0.50	1.57	1.64
250	0.51	0.54	1.67	1.77
270	0.53	0.56	1.74	1.84
300	0.56	0.59	1.84	1.94
325	0.58	0.61	1.90	2.00
350	0.60	0.65	1.97	2.13
375	0.64	0.67	2.10	2.20
400	0.66	0.70	2.17	2.30
425	0.69	0.73	2.26	2.40
450	0.71	0.75	2.33	2.46
500	0.74	0.80	2.43	2.62
550	0.79	0.84	2.59	2.76
600	0.83	0.89	2.72	2.92
750	0.93	1.01	3.05	3.31
865	1.00	1.11	3.28	3.64
1000	1.12	1.20	3.67	3.94

Specifications are subject to change without notice.

## P3® 412 Series Cables

### Product Descriptions



CommScope's P3® product line is the industry standard by which all coaxial trunk and distribution cables are measured. P3 has been proven robust and reliable by years of successful installations.

P3 412 is optimized for use in multiple dwelling units (MDU) and feeder applications. Its small size, low attenuation and inherent strength has made it an industry standard.

#### Standard P3 Construction

A solid aluminum tube is precision swaged onto a high compression, micro-cellular foam dielectric core. The core contains a fully bonded copper clad center conductor.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 412 CA</b> 	offers all of P3's standard construction features (without a jacket)	55 lbs/kft (82 kg/km)	75 lbs/kft (112 kg/km)	3000 ft (914 m)
<b>P3 412 JCA</b> 	offers all of P3's standard construction features	71 lbs/kft (106 kg/km)	91 lbs/kft (135 kg/km)	3000 ft (914 m)
<b>P3 412 JCAM 109</b> 	has an integrated figure 8 galvanized solid steel messenger for self-supporting applications	111 lbs/kft (165 kg/km)	144 lbs/kft (214 kg/km)	3000 ft (914 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 412 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	77 lbs/kft (115 kg/km)	97 lbs/kft (144 kg/km)	3000 ft (914 m)
<b>P3 412 JACASS</b> 	features CommScope's Migra-Heal® floodant, a chrome-plated armor and twin polyethylene jackets for ultimate toughness	191 lbs/kft (284 kg/km)	226 lbs/kft (336 kg/km)	3000 ft (914 m)

### Physical Dimensions

Component	Inches	mm
Nominal Center Conductor Diameter	0.089	2.26
Nominal Diameter Over Dielectric	0.362	9.19
Nominal Diameter Over Outer Conductor	0.412	10.46
Nominal Outer Conductor Thickness	0.024	0.61
<b>Jacket Versions</b>		
Nominal Diameter Over Jacket	0.475	12.07
Nominal Jacket Wall Thickness	0.0315	0.80
Nominal Diameter Over Flooded Jacket (JCASS)	0.485	12.32
<b>Messenger Version</b>		
Diameter of Steel Messenger	0.109	2.77
<b>Armored Versions</b>		
Nominal Diameter Over Corrugated Armor	0.560	14.22
Nominal Shield Thickness	0.010	0.25
Nominal Diameter Over Outer Jacket	0.640	16.25
Nominal Thickness of Outer Jacket	0.040	1.02

### Mechanical Characteristics

Minimum Bending Radius:	Standard		Bonded	
(No Jacket)	6.5 in.	16.5 cm	4.0 in.	10.2 cm
(Jacketed)	6.0 in.	15.2 cm	3.5 in.	8.9 cm
(Armored)	8.5 in.	21.6 cm	6.0 in.	15.2 cm
Maximum Pulling Tension	150 lbs.		68 kg <sub>f</sub>	
Minimum Breaking Strength of Messenger	(109) 1,800 lbs.		816 kg <sub>f</sub>	

### Electrical Characteristics

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	87%	

### Maximum D.C. Resistance @ 68°F (20°C)

Copper Clad		
Inner Conductor	2.07 ohms/1000 ft.	6.79 ohms/km
Outer Conductor	0.50 ohms/1000 ft.	1.64 ohms/km
Loop	2.57 ohms/1000 ft.	8.43 ohms/km

### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.19	0.20	0.62	0.65
30	0.49	0.51	1.61	1.67
45	0.60	0.63	1.97	2.07
50	0.63	0.66	2.07	2.16
55	0.66	0.69	2.16	2.26
83	0.82	0.86	2.69	2.82
108	0.94	0.99	3.08	3.25
150	1.12	1.18	3.67	3.87
181	1.24	1.30	4.07	4.26
193	1.28	1.34	4.20	4.40
211	1.34	1.41	4.40	4.62
220	1.37	1.44	4.49	4.72
250	1.47	1.54	4.82	5.05
270	1.53	1.61	5.01	5.28
300	1.62	1.70	5.31	5.57
325	1.69	1.77	5.54	5.81
350	1.78	1.87	5.84	6.13
375	1.82	1.91	5.97	6.26
400	1.88	1.97	6.17	6.46
425	1.95	2.05	6.40	6.72
450	2.01	2.11	6.59	6.92
500	2.13	2.24	6.99	7.34
550	2.24	2.35	7.35	7.71
600	2.35	2.47	7.71	8.10
750	2.65	2.78	8.69	9.12
865	2.87	3.01	9.41	9.87
1000	3.11	3.27	10.20	10.73

Specifications are subject to change without notice.

## P3® 500 Series Cables

### Product Descriptions

CommScope's P3® product line is the industry standard by which all coaxial trunk and distribution cables are measured. P3 has been proven robust and reliable by years of successful installations.

P3 500 is optimized for use in broadband feeder plants. Its small size, low attenuation and inherent strength has made it an industry standard.

#### Standard P3 Construction

A solid aluminum tube is precision swaged onto a high compression, micro-cellular foam dielectric core. The core contains a fully bonded copper clad center conductor.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 500 CA</b> 	offers all of P3's standard construction features (without a jacket)	72 lbs/kft (107 kg/km)	97 lbs/kft (145 kg/km)	2400 ft (732 m)
<b>P3 500 JCA</b> 	offers all of P3's standard construction features	95 lbs/kft (141 kg/km)	120 lbs/kft (179 kg/km)	2400 ft (732 m)
<b>P3 500 JCAM 109</b> 	has an integrated figure 8 galvanized solid steel messenger for self-supporting applications	134 lbs/kft (199 kg/km)	176 lbs/kft (262 kg/km)	2400 ft (732 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 500 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	98 lbs/kft (146 kg/km)	123 lbs/kft (183 kg/km)	2400 ft (732 m)
<b>P3 500 CableGuard®</b> 	offers an outer jacket with compartmentalized cells, providing excellent cut-through and crush resistance	137 lbs/kft (204 kg/km)	181 lbs/kft (269 kg/km)	2400 ft (732 m)
<b>P3 500 JACASS</b> 	features CommScope's Migra-Heal® floodant, a chrome-plated armor and twin polyethylene jackets for ultimate toughness	210 lbs/kft (313 kg/km)	254 lbs/kft (378 kg/km)	2400 ft (732 m)

#### Indoor/Riser Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 500 JCAR</b> 	has a flame-retardant polyethylene jacket that meets NEC's CATVR rating	114 lbs/kft (170 kg/km)	138 lbs/kft (205 kg/km)	2400 ft (732 m)

**Physical Dimensions**

Component	Inches	mm
Nominal Center Conductor Diameter	0.109	2.77
Nominal Diameter Over Dielectric	0.450	11.43
Nominal Diameter Over Outer Conductor	0.500	12.70
Nominal Outer Conductor Thickness	0.024	0.61
<b>Jacket Versions</b>		
Nominal Diameter Over Jacket	0.560	14.22
Nominal Jacket Wall Thickness	0.030	0.76
Nominal Diameter Over Flooded Jacket (JCASS)	0.570	14.48
Nominal Diameter Over CableGuard Jacket	0.750	19.07
<b>Messenger Version</b>		
Diameter of Steel Messenger	0.109	2.77
<b>Armored Versions</b>		
Nominal Diameter Over Corrugated Armor	0.640	16.26
Nominal Shield Thickness	0.008	0.20
Nominal Diameter Over Outer Jacket	0.720	18.29
Nominal Thickness of Outer Jacket	0.040	1.02

<b>Mechanical Characteristics</b>				
Minimum Bending Radius:	Standard		Bonded	
(No Jacket)	6.5 in.	16.5 cm	4.0 in.	10.2 cm
(Jacketed)	6.0 in.	15.2 cm	3.5 in.	8.9 cm
(Armored)	8.5 in.	21.6 cm	6.0 in.	15.2 cm
Maximum Pulling Tension	300 lbs.		136 kg <sub>f</sub>	
Minimum Breaking Strength (109 of Messenger)	1,800 lbs.		816 kg <sub>f</sub>	

<b>Electrical Characteristics</b>		
Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	87%	

<b>Maximum D.C. Resistance @ 68°F (20°C)</b>		
<b>Copper Clad</b>		
Inner Conductor	1.35 ohms/1000 ft.	4.43 ohms/km
Outer Conductor	0.37 ohms/1000 ft.	1.21 ohms/km
Loop	1.72 ohms/1000 ft.	5.64 ohms/km

**Attenuation [ @ 68° F. (20° C.) ]**

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.16	0.16	0.52	0.52
30	0.38	0.40	1.25	1.31
45	0.47	0.49	1.54	1.61
50	0.50	0.52	1.64	1.71
55	0.52	0.54	1.71	1.77
83	0.64	0.66	2.10	2.17
108	0.73	0.75	2.39	2.46
150	0.86	0.90	2.82	2.95
181	0.98	1.00	3.22	3.28
193	1.01	1.03	3.31	3.38
211	1.06	1.09	3.48	3.58
220	1.08	1.11	3.54	3.64
250	1.15	1.20	3.77	3.94
270	1.19	1.24	3.90	4.07
300	1.26	1.31	4.13	4.30
325	1.31	1.37	4.30	4.49
350	1.36	1.43	4.46	4.69
375	1.42	1.47	4.66	4.82
400	1.47	1.53	4.82	5.02
425	1.52	1.57	4.99	5.15
450	1.56	1.63	5.12	5.35
500	1.65	1.73	5.41	5.67
550	1.75	1.82	5.74	5.97
600	1.83	1.91	6.00	6.27
750	2.04	2.16	6.69	7.09
865	2.20	2.34	7.22	7.68
1000	2.41	2.52	7.91	8.27

Specifications are subject to change without notice.

## P3® 565 Series Cables

### Product Descriptions



CommScope's P3® product line is the industry standard by which all coaxial trunk and distribution cables are measured. P3 has been proven robust and reliable by years of successful installations.

P3 565 is optimized for use in broadband feeder plants. A thinner aluminum shield contributes to lower cable weight, while a slightly larger diameter impacts cable attenuation.

#### Standard P3 Construction

A solid aluminum tube is precision swaged onto a high compression, micro-cellular foam dielectric core. The core contains a fully bonded copper clad center conductor.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 565 JCA</b> 	offers all of P3's standard construction features	112 lbs/kft (167 kg/km)	153 lbs/kft (228 kg/km)	2450 ft (747 m)
<b>P3 565 JCAM 109</b> 	has an integrated figure 8 galvanized solid steel messenger for self-supporting applications	144 lbs/kft (214 kg/km)	205 lbs/kft (305 kg/km)	2450 ft (747 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 565 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	116 lbs/kft (173 kg/km)	157 lbs/kft (234 kg/km)	2450 ft (747 m)

### Physical Dimensions

Component	Inches	mm
Nominal Center Conductor Diameter	0.129	3.28
Nominal Diameter Over Dielectric	0.519	13.20
Nominal Diameter Over Outer Conductor	0.565	14.35
Nominal Outer Conductor Thickness	0.023	0.58
Nominal Diameter Over Jacket	0.625	15.86
Nominal Jacket Wall Thickness	0.030	0.76
Nominal Diameter Over Flooded Jacket (JCASS)	0.635	16.13

### Messengered Versions

Diameter of Steel Messenger	0.109	2.77
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### Mechanical Characteristics

Minimum Bending Radius:	<b>Bonded</b>	
(Jacketed)	5.0 in.	12.7 cm
Maximum Pulling Tension	350 lbs.	159 kg <sub>f</sub>
Minimum Breaking Strength (109) of Messenger	1,800 lbs.	816 kg <sub>f</sub>

### Electrical Characteristics

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0nf/km
Impedance	75 ohms	
Velocity of Propagation	89%	

### Maximum D.C. Resistance @ 68°F (20°C)

Copper Clad		
Inner Conductor	0.96 ohms/1000 ft.	3.15 ohms/km
Outer Conductor	0.34 ohms/1000 ft.	1.12 ohms/km
Loop	1.30 ohms/1000 ft.	4.26 ohms/km

### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.13	0.14	0.43	0.46
30	0.33	0.34	1.08	1.12
45	0.40	0.41	1.31	1.35
50	0.43	0.45	1.41	1.48
55	0.46	0.47	1.51	1.54
83	0.56	0.58	1.84	1.90
108	0.64	0.66	2.10	2.17
150	0.76	0.79	2.49	2.59
181	0.84	0.88	2.76	2.89
193	0.87	0.90	2.85	2.95
211	0.91	0.95	2.98	3.12
220	0.93	0.98	3.05	3.22
250	0.99	1.03	3.25	3.38
270	1.03	1.07	3.38	3.51
300	1.09	1.13	3.58	3.71
325	1.13	1.18	3.71	3.87
350	1.18	1.23	3.87	4.04
375	1.22	1.27	4.00	4.17
400	1.27	1.32	4.17	4.33
425	1.31	1.37	4.30	4.49
450	1.35	1.40	4.43	4.59
500	1.43	1.49	4.69	4.89
550	1.50	1.56	4.92	5.12
600	1.58	1.64	5.18	5.38
750	1.78	1.85	5.84	6.07
865	1.93	2.00	6.33	6.56
1000	2.08	2.17	6.82	7.12

Specifications are subject to change without notice.

## P3® 625 Series Cables

### Product Descriptions

CommScope's P3® product line is the industry standard by which all coaxial trunk and distribution cables are measured. P3 has been proven robust and reliable by years of successful installations.

P3 625 is optimized for use in broadband feeder plants. Its small size, low attenuation and inherent strength has made it an industry standard.

#### Standard P3 Construction

A solid aluminum tube is precision swaged onto a high compression, micro-cellular foam dielectric core. The core contains a fully bonded copper clad center conductor.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 625 CA</b> 	offers all of P3's standard construction features (without a jacket)	116 lbs/kft (173 kg/km)	158 lbs/kft (243 kg/km)	2400 ft (732 m)
<b>P3 625 JCA</b> 	offers all of P3's standard construction features	141 lbs/kft (210 kg/km)	183 lbs/kft (272 kg/km)	2400 ft (732 m)
<b>P3 625 JCAM 109</b> 	has an integrated figure 8 galvanized solid steel messenger for self-supporting applications	180 lbs/kft (268 kg/km)	256 lbs/ft (381 kg/km)	2400 ft (732 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 625 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	145 lbs/kft (216 kg/km)	187 lbs/kft (278 kg/km)	2400 ft (732 m)
<b>P3 625 CableGuard®</b> 	offers an outer jacket with compartmentalized cells, providing excellent cut-through and crush resistance	190 lbs/kft (283 kg/km)	265 lbs/kft (394 kg/km)	2400 ft (732 m)
<b>P3 625 JACASS</b> 	features CommScope's Migra-Heal® floodant, a chrome-plated armor and twin polyethylene jackets for ultimate toughness	281 lbs/kft (408 kg/km)	357 lbs/kft (531 kg/km)	2400 ft (732 m)

**Physical Dimensions**

Component	Inches	mm
Nominal Center Conductor Diameter	0.137	3.48
Nominal Diameter Over Dielectric	0.565	14.35
Nominal Diameter Over Outer Conductor	0.625	15.88
Nominal Outer Conductor Thickness	0.030	0.76
<b>Jacket Versions</b>		
Nominal Diameter Over Jacket	0.685	17.40
Nominal Jacket Wall Thickness	0.030	0.76
Nominal Diameter Over Flooded Jacket (JCASS)	0.695	17.65
Nominal Diameter Over CableGuard Jacket	0.875	22.24
<b>Messenger Version</b>		
Diameter of Steel Messenger	0.109	2.77
<b>Armored Versions</b>		
Nominal Diameter Over Corrugated Armor	0.770	19.56
Nominal Shield Thickness	0.008	0.20
Nominal Diameter Over Outer Jacket	0.850	21.59
Nominal Thickness of Outer Jacket	0.040	1.02

<b>Mechanical Characteristics</b>				
Minimum Bending Radius:	<b>Standard</b>		<b>Bonded</b>	
(No Jacket)	7.5 in.	19.1 cm	5.0 in.	12.7 cm
(Jacketed)	7.0 in.	17.8 cm	4.5 in.	11.4 cm
(Armored)	9.5 in.	24.1 cm	7.0 in.	17.8 cm
Maximum Pulling Tension	475 lbs.		216 kg <sub>f</sub>	
Minimum Breaking Strength of Messenger	(109)	1,800 lbs.	816 kg <sub>f</sub>	

<b>Electrical Characteristics</b>		
Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	87%	

<b>Maximum D.C. Resistance @ 68°F (20°C)</b>		
<b>Copper Clad</b>		
Inner Conductor	0.84 ohms/1000 ft.	2.76 ohms/km
Outer Conductor	0.26 ohms/1000 ft.	0.85 ohms/km
Loop	1.10 ohms/1000 ft.	3.61 ohms/km

**Attenuation [ @ 68° F. (20° C.) ]**

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.12	0.13	0.39	0.43
30	0.31	0.32	1.02	1.05
45	0.38	0.41	1.25	1.34
50	0.40	0.42	1.31	1.38
55	0.42	0.46	1.38	1.51
83	0.51	0.57	1.67	1.87
108	0.58	0.63	1.90	2.07
150	0.69	0.77	2.26	2.53
181	0.79	0.85	2.59	2.79
193	0.81	0.88	2.66	2.89
211	0.85	0.92	2.79	3.02
220	0.87	0.94	2.85	3.08
250	0.92	1.00	3.02	3.28
270	0.96	1.02	3.15	3.35
300	1.02	1.08	3.36	3.54
325	1.05	1.13	3.44	3.71
350	1.09	1.18	3.58	3.87
375	1.14	1.22	3.74	4.00
400	1.18	1.27	3.87	4.17
425	1.22	1.32	4.00	4.33
450	1.26	1.35	4.13	4.43
500	1.32	1.43	4.33	4.69
550	1.41	1.50	4.63	4.92
600	1.48	1.58	4.87	5.18
750	1.66	1.78	5.46	5.84
865	1.77	1.93	5.81	6.33
1000	1.95	2.07	6.40	6.79

Specifications are subject to change without notice.

## P3® 700 Series Cables

### Product Descriptions



CommScope's P3® product line is the industry standard by which all coaxial trunk and distribution cables are measured. P3 has been proven robust and reliable by years of successful installations.

P3 700 is optimized for use in broadband distribution plants. A thinner aluminum shield contributes to lower cable weight, while a slightly larger diameter impacts cable attenuation.

#### Standard P3 Construction

A solid aluminum tube is precision swaged onto a high compression, micro-cellular foam dielectric core. The core contains a fully bonded copper clad center conductor.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 700 JCA</b> 	offers all of P3's standard construction features	160 lbs/kft (238 kg/km)	201 lbs/kft (299 kg/km)	2500 ft (762 m)
<b>P3 700 JCAM 188</b> 	has an integrated figure 8 galvanized stranded steel messenger for self-supporting applications	275 lbs/kft (409 kg/km)	327 lbs/kft (487 kg/km)	2500 ft (762 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 700 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	165 lbs/kft (246 kg/km)	206 lbs/kft (307 kg/km)	2500 ft (762 m)
<b>P3 700 CableGuard®</b> 	offers an outer jacket with compartmentalized cells, providing excellent cut-through and crush resistance	205 lbs/kft (305 kg/km)	270 lbs/kft (402 kg/km)	2500 ft (762 m)

### Physical Dimensions

Component	Inches	mm
Nominal Center Conductor Diameter	0.163	4.14
Nominal Diameter Over Dielectric	0.653	16.59
Nominal Diameter Over Outer Conductor	0.703	17.86
Nominal Outer Conductor Thickness	0.025	0.63
Nominal Diameter Over Jacket	0.765	19.43
Nominal Jacket Wall Thickness	0.031	0.79
Nominal Diameter Over Flooded Jacket (JCASS)	0.775	19.69
Nominal Diameter Over CableGuard	0.985	25.02

### Messenger Version

Diameter of Steel Messenger	0.188 (stranded)	4.78 (stranded)
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### Mechanical Characteristics

Minimum Bending Radius:	Bonded	
	(Jacketed)	
	6.5 in.	16.5 cm
Maximum Pulling Tension	500 lbs.	227 kg <sub>f</sub>
Minimum Breaking Strength (188) of Messenger	3,900 lbs.	1,769 kg <sub>f</sub>

### Electrical Characteristics

Capacitance	15.3±1.0 pf/ft	50±3.0 nf/km
Impedance	75±2 ohms	
Velocity of Propagation	89%	

### Maximum D.C. Resistance @ 68°F (20°C)

Copper Clad		
Inner Conductor	0.59 ohms/1000 ft.	1.93 ohms/km
Outer Conductor	0.25 ohms/1000 ft.	0.82 ohms/km
Loop	0.84 ohms/1000 ft.	2.75 ohms/km

### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.11	0.11	0.36	0.36
30	0.26	0.27	0.85	0.89
45	0.32	0.33	1.05	1.08
50	0.34	0.35	1.12	1.15
55	0.35	0.36	1.15	1.18
83	0.44	0.45	1.44	1.48
108	0.51	0.52	1.67	1.71
150	0.60	0.61	1.97	2.00
181	0.67	0.68	2.20	2.23
193	0.69	0.70	2.26	2.30
211	0.72	0.73	2.36	2.40
220	0.74	0.76	2.43	2.49
250	0.79	0.81	2.59	2.66
270	0.82	0.85	2.69	2.79
300	0.87	0.90	2.85	2.95
325	0.91	0.94	2.99	3.08
350	0.95	0.98	3.12	3.22
375	0.98	1.02	3.22	3.35
400	1.02	1.05	3.35	3.45
425	1.05	1.09	3.54	3.58
450	1.08	1.12	3.54	3.67
500	1.15	1.19	3.77	3.90
550	1.21	1.25	3.97	4.10
600	1.27	1.31	4.17	4.30
750	1.44	1.49	4.72	4.89
865	1.57	1.62	5.15	5.32
1000	1.69	1.75	5.54	5.74

Specifications are subject to change without notice.

## P3® 750 Series Cables

### Product Descriptions

CommScope's P3® product line is the industry standard by which all coaxial trunk and distribution cables are measured. P3 has been proven robust and reliable by years of successful installations.

P3 750 is optimized for use in broadband distribution plants. Its low attenuation and inherent strength has made it an industry standard.

#### Standard P3 Construction

A solid aluminum tube is precision swaged onto a high compression, micro-cellular foam dielectric core. The core contains a fully bonded copper clad center conductor.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 750 CA</b> 	offers all of P3's standard construction features (without a jacket)	164 lbs/kft (244 kg/km)	224 lbs/kft (333 kg/km)	2500 ft (762 m)
<b>P3 750 JCA</b> 	offers all of P3's standard construction features	199 lbs/kft (296 kg/km)	260 lbs/kft (387 kg/km)	2500 ft (762 m)
<b>P3 750 JCAM 188</b> 	has an integrated figure 8 galvanized stranded steel messenger for self-supporting applications	292 lbs/kft (435 kg/km)	375 lbs/kft (558 kg/km)	2500 ft (762 m)
<b>P3 750 JCAM 250</b> (also available)		345 lbs/kft (513 kg/km)	429 lbs/kft (638 kg/km)	2500 ft (762 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 750 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	204 lbs/kft (304 kg/km)	264 lbs/kft (393 kg/km)	2500 ft (762 m)
<b>P3 750 CableGuard®</b> 	offers an outer jacket with compartmentalized cells, providing excellent cut-through and crush resistance	256 lbs/kft (381 kg/km)	339 lbs/kft (504 kg/km)	2500 ft (762 m)
<b>P3 750 JACASS</b> 	features CommScope's Migra-Heal® floodant, a chrome-plated armor and twin polyethylene jackets for ultimate toughness	362 lbs/kft (539 kg/km)	445 lbs/kft (662 kg/km)	2500 ft (762 m)

**Physical Dimensions**

Component	Inches	mm
Nominal Center Conductor Diameter	0.167	4.24
Nominal Diameter Over Dielectric	0.680	17.27
Nominal Diameter Over Outer Conductor	0.750	19.05
Nominal Outer Conductor Thickness	0.035	0.89

**Jacket Versions**

Nominal Diameter Over Jacket	0.820	20.83
Nominal Jacket Wall Thickness	0.035	0.89
Nominal Diameter Over Flooded Jacket (JCASS)	0.830	21.08
Nominal Diameter Over CableGuard Jacket	1.055	26.80

**Messenger Version**

Diameter of Steel Messenger	0.188 0.250 (stranded)	4.78 6.35 (stranded)
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**Armored Versions**

Nominal Diameter Over Corrugated Armor	0.900	22.86
Nominal Shield Thickness	0.010	0.25
Nominal Diameter Over Outer Jacket	0.980	24.89
Nominal Thickness of Outer Jacket	0.040	1.02

**Mechanical Characteristics**

Minimum Bending Radius:	Standard		Bonded	
(No Jacket)	9.0 in.	22.9 cm	7.0 in.	17.8 cm
(Jacketed)	8.0 in.	20.3 cm	6.0 in.	15.2 cm
(Armored)	10.5 in.	26.7 cm	9.0 in.	22.9 cm
Maximum Pulling Tension	675 lbs.		306 kg <sub>f</sub>	
Minimum Breaking Strength (188) of Messenger (250)	3,900 lbs. 6,650 lbs.		1,769 kg <sub>f</sub> 3,016 kg <sub>f</sub>	

**Electrical Characteristics**

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	87%	

**Maximum D.C. Resistance @ 68°F (20°C)**

**Copper Clad**

Inner Conductor	0.57 ohms/1000 ft.	1.87 ohms/km
Outer Conductor	0.19 ohms/1000 ft.	0.62 ohms/km
Loop	0.76 ohms/1000 ft.	2.49 ohms/km

**Attenuation [ @ 68° F. (20° C.) ]**

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.10	0.11	0.33	0.36
30	0.25	0.26	0.82	0.85
45	0.31	0.33	1.02	1.08
50	0.33	0.35	1.08	1.15
55	0.35	0.37	1.15	1.21
83	0.42	0.46	1.38	1.51
108	0.48	0.52	1.57	1.71
150	0.57	0.62	1.87	2.03
181	0.66	0.68	2.17	2.23
193	0.68	0.71	2.23	2.33
211	0.71	0.74	2.33	2.43
220	0.72	0.76	2.36	2.49
250	0.77	0.81	2.53	2.66
270	0.80	0.84	2.62	2.76
300	0.85	0.89	2.79	2.92
325	0.88	0.93	2.89	3.05
350	0.91	0.97	2.99	3.18
375	0.96	1.01	3.15	3.31
400	0.99	1.05	3.25	3.45
425	1.02	1.08	3.35	3.54
450	1.06	1.12	3.48	3.67
500	1.11	1.18	3.64	3.87
550	1.19	1.24	3.90	4.07
600	1.23	1.31	4.04	4.30
750	1.38	1.48	4.53	4.86
865	1.49	1.61	4.89	5.28
1000	1.62	1.74	5.32	5.71

Specifications are subject to change without notice.

## P3® 840 Series Cables

### Product Descriptions

CommScope's P3® product line is the industry standard by which all coaxial trunk and distribution cables are measured. P3 has been proven robust and reliable by years of successful installations.

P3 840 has been designed for use in broadband trunk & distribution plants. A thinner aluminum shield contributes to lower cable weight, while a slightly larger diameter impacts cable attenuation.

#### Standard P3 Construction

A solid aluminum tube is precision swaged onto a high compression, micro-cellular foam dielectric core. The core contains a fully bonded copper clad center conductor.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 840 JCA</b> 	offers all of P3's standard construction features	225 lbs/kft (335 kg/km)	306 lbs/kft (455 kg/km)	2450 ft (747 m)
<b>P3 840 JCAM 188</b> 	has an integrated figure 8 galvanized stranded steel messenger for self-supporting applications	301 lbs/kft (448 kg/km)	408 lbs/kft (607 kg/km)	2450 ft (747 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 840 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	233 lbs/kft (347 kg/km)	314 lbs/kft (467 kg/km)	2450 ft (747 m)

### Physical Dimensions

Component	Inches	mm
Nominal Center Conductor Diameter	0.194	4.93
Nominal Diameter Over Dielectric	0.780	19.81
Nominal Diameter Over Outer Conductor	0.840	21.34
Nominal Outer Conductor Thickness	0.030	0.76
Nominal Diameter Over Jacket	0.910	23.11
Nominal Jacket Wall Thickness	0.035	0.89
Nominal Diameter Over Flooded Jacket (JCASS)	0.920	23.37

### Messenger Version

Diameter of Steel Messenger	0.188 (stranded)	4.78 (stranded)
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### Mechanical Characteristics

Minimum Bending Radius:	<b>Bonded</b>	
(Jacketed)	7.5 in.	19.0 cm
Maximum Pulling Tension	700 lbs.	318 kg <sub>f</sub>
Minimum Breaking Strength (188) of Messenger	3,900 lbs.	1,769 kg <sub>f</sub>

### Electrical Characteristics

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	89%	

### Maximum D.C. Resistance @ 68°F (20°C)

Copper Clad		
Inner Conductor	0.43 ohms/1000 ft.	1.41 ohms/km
Outer Conductor	0.17 ohms/1000 ft.	0.56 ohms/km
Loop	0.60 ohms/1000 ft.	1.97 ohms/km

### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.09	0.09	0.30	0.30
30	0.22	0.23	0.72	0.75
45	0.27	0.28	0.89	0.92
50	0.29	0.30	0.95	0.98
55	0.31	0.32	1.02	1.05
83	0.38	0.40	1.25	1.31
108	0.43	0.45	1.41	1.48
150	0.53	0.54	1.74	1.77
181	0.58	0.60	1.90	1.97
193	0.60	0.62	1.97	2.03
211	0.63	0.65	2.07	2.13
220	0.64	0.66	2.10	2.17
250	0.68	0.70	2.23	2.30
270	0.71	0.73	2.33	2.40
300	0.75	0.77	2.46	2.53
325	0.79	0.81	2.59	2.66
350	0.82	0.84	2.69	2.76
375	0.85	0.88	2.79	2.89
400	0.88	0.91	2.89	2.99
425	0.91	0.94	2.99	3.08
450	0.94	0.97	3.08	3.18
500	1.00	1.03	3.28	3.38
550	1.05	1.09	3.45	3.58
600	1.11	1.14	3.64	3.74
750	1.26	1.30	4.13	4.27
865	1.39	1.42	4.56	4.66
1000	1.49	1.53	4.89	5.02

Specifications are subject to change without notice.

## P3® 875 Series Cables

### Product Descriptions



CommScope's P3® product line is the industry standard by which all coaxial trunk and distribution cables are measured. P3 has been proven robust and reliable by years of successful installations.

P3 875 is optimized for use in broadband trunk & distribution plants. Its ultra low attenuation and inherent strength has made it an industry standard.

#### Standard P3 Construction

A solid aluminum tube is precision swaged onto a high compression, micro-cellular foam dielectric core. The core contains a fully bonded copper clad center conductor.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 875 CA</b> 	offers all of P3's standard construction features (without a jacket)	216 lbs/kft (321 kg/km)	295 lbs/kft (439 kg/km)	2500 ft (762 m)
<b>P3 875 JCA</b> 	offers all of P3's standard construction features	257 lbs/kft (382 kg/km)	336 lbs/kft (500 kg/km)	2500 ft (762 m)
<b>P3 875 JCAM 250</b> 	has a integrated figure 8 galvanized stranded steel messenger for self-supporting applications	369 lbs/kft (549 kg/km)	482 lbs/kft (717 kg/km)	2500 ft (762 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 875 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	263 lbs/kft (391 kg/km)	342 lbs/kft (509 kg/km)	2500 ft (762 m)
<b>P3 875 CableGuard®</b> 	offers an outer jacket with compartmentalized cells, providing excellent cut-through and crush resistance	308 lbs/kft (458 kg/km)	421 lbs/kft (627 kg/km)	2500 ft (762 m)
<b>P3 875 JACASS</b> 	features CommScope's Migra-Heal® floodant, a chrome-plated armor and twin polyethylene jackets for ultimate toughness	432 lbs/kft (643 kg/km)	534 lbs/kft (795 kg/km)	2500 ft (762 m)

**Physical Dimensions**

Component	Inches	mm
Nominal Center Conductor Diameter	0.194	4.93
Nominal Diameter Over Dielectric	0.797	20.24
Nominal Diameter Over Outer Conductor	0.875	22.23
Nominal Outer Conductor Thickness	0.039	0.99
<b>Jacket Versions</b>		
Nominal Diameter Over Jacket	0.945	24.00
Nominal Jacket Wall Thickness	0.035	0.89
Nominal Diameter Over Flooded Jacket (JCASS)	0.955	24.26
Nominal Diameter Over CableGuard Jacket	1.200	30.48
<b>Messenger Version</b>		
Diameter of Steel Messenger	0.250 (stranded)	6.35 (stranded)
<b>Armored Versions</b>		
Nominal Diameter Over Corrugated Armor	1.030	26.16
Nominal Shield Thickness	0.010	0.25
Nominal Diameter Over Outer Jacket	1.110	28.19
Nominal Thickness of Outer Jacket	0.040	1.02

<b>Mechanical Characteristics</b>				
Minimum Bending Radius:	Standard		Bonded	
(No Jacket)	10.0 in.	25.4 cm	8.5 in.	21.6 cm
(Jacketed)	9.0 in.	22.9 cm	7.0 in.	17.8 cm
(Armored)	11.5 in.	29.2 cm	10.0 in.	25.4 cm
Maximum Pulling Tension		875 lbs.		397 kg <sub>f</sub>
Minimum Breaking Strength of Messenger	(250)	6,650 lbs.		3,016 kg <sub>f</sub>

<b>Electrical Characteristics</b>		
Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	87%	

<b>Maximum D.C. Resistance @ 68°F (20°C)</b>		
<b>Copper Clad</b>		
Inner Conductor	0.42 ohms/1000 ft.	1.38 ohms/km
Outer Conductor	0.13 ohms/1000 ft.	0.43 ohms/km
Loop	0.55 ohms/1000 ft.	1.80 ohms/km

**Attenuation [ @ 68° F. (20° C.) ]**

Frequency (MHz)	(dB/100 ft)		(dB/100 m)	
	Nominal	Maximum	Nominal	Maximum
5	0.09	0.09	0.30	0.30
30	0.22	0.23	0.72	0.75
45	0.27	0.28	0.89	0.92
50	0.28	0.30	0.92	0.98
55	0.29	0.33	0.95	1.08
83	0.36	0.41	1.18	1.35
108	0.41	0.45	1.35	1.48
150	0.48	0.55	1.57	1.80
181	0.57	0.60	1.87	1.97
193	0.58	0.62	1.90	2.03
211	0.61	0.66	2.00	2.17
220	0.62	0.67	2.03	2.20
250	0.67	0.72	2.20	2.36
270	0.69	0.73	2.26	2.40
300	0.73	0.78	2.40	2.56
325	0.76	0.81	2.49	2.66
350	0.79	0.84	2.59	2.76
375	0.83	0.88	2.72	2.89
400	0.86	0.91	2.82	2.99
425	0.88	0.95	2.89	3.12
450	0.91	0.97	2.99	3.18
500	0.96	1.03	3.15	3.38
550	1.03	1.08	3.38	3.54
600	1.08	1.14	3.54	3.74
750	1.21	1.29	3.97	4.23
865	1.30	1.41	4.27	4.63
1000	1.42	1.53	4.67	5.02

Specifications are subject to change without notice.

## P3® 1000 Series Cables

### Product Descriptions

CommScope's P3® product line is the industry standard by which all coaxial trunk and distribution cables are measured. P3 has been proven robust and reliable by years of successful installations.

P3 1000 is optimized for use in broadband trunk plants. Its ultra low attenuation and inherent strength has made it an industry standard.

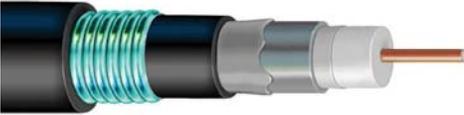
#### Standard P3 Construction

A solid aluminum tube is precision swaged onto a high compression, micro-cellular foam dielectric core. The core contains a fully bonded copper clad center conductor.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 1000 CA</b> 	offers all of P3's standard construction features (without a jacket)	311 lbs/kft (463 kg/km)	441 lbs/kft (656 kg/km)	2400 ft (762 m)
<b>P3 1000 JCA</b> 	offers all of P3's standard construction features	367 lbs/kft (546 kg/km)	498 lbs/kft (741 kg/km)	2400 ft (762 m)
<b>P3 1000 JCAM 250</b> 	has an integrated figure 8 galvanized stranded steel messenger for self-supporting applications	477 lbs/kft (710 kg/km)	615 lbs/kft (915 kg/km)	2400 ft (762 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length
<b>P3 1000 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	371 lbs/kft (552 kg/km)	502 lbs/kft (747 kg/km)	2400 ft (762 m)
<b>P3 1000 JACASS</b> 	features CommScope's Migra-Heal® floodant, a chrome-plated armor and twin polyethylene jackets for ultimate toughness	566 lbs/kft (842 kg/km)	699 lbs/kft (1040 kg/km)	2400 ft (762 m)

### Physical Dimensions

Component	Inches	mm
Nominal Center Conductor Diameter	0.220	5.59
Nominal Diameter Over Dielectric	0.890	22.61
Nominal Diameter Over Outer Conductor	1.000	25.40
Nominal Outer Conductor Thickness	0.055	1.40
<b>Jacket Versions</b>		
Nominal Diameter Over Jacket	1.080	27.43
Nominal Jacket Wall Thickness	0.040	1.02
Nominal Diameter Over Flooded Jacket (JCASS)	1.09	27.69
<b>Messenger Version</b>		
Diameter of Steel Messenger	0.250 (stranded)	6.35 (stranded)
<b>Armored Versions</b>		
Nominal Diameter Over Corrugated Armor	1.160	29.46
Nominal Shield Thickness	0.010	0.25
Nominal Diameter Over Outer Jacket	1.240	31.50
Nominal Thickness of Outer Jacket	0.040	1.02

### Mechanical Characteristics

Minimum Bending Radius:	Standard		Bonded	
(No Jacket)	11.0 in.	27.9 cm	9.5 in.	24.1 cm
(Jacketed)	10.0 in.	25.4 cm	8.0 in.	20.3 cm
(Armored)	12.5 in.	31.8 cm	10.5 in.	26.7 cm
Maximum Pulling Tension		1,300 lbs.		590 kg <sub>f</sub>
Minimum Breaking Strength of Messenger	(250)	6,650 lbs.		3,016 kg <sub>f</sub>

### Electrical Characteristics

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	87%	

### Maximum D.C. Resistance @ 68°F (20°C)

Copper Clad		
Inner Conductor	0.32 ohms/1000 ft.	1.05 ohms/km
Outer Conductor	0.08 ohms/1000 ft.	0.26 ohms/km
Loop	0.40 ohms/1000 ft.	1.31 ohms/km

### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	(dB/100 ft) Maximum	(dB/100 m) Maximum
5	0.08	0.26
30	0.21	0.69
45	0.25	0.82
50	0.27	0.89
55	0.31	1.02
83	0.39	1.28
108	0.41	1.35
150	0.52	1.71
181	0.57	1.87
193	0.58	1.90
211	0.59	1.94
220	0.62	2.03
250	0.65	2.13
270	0.67	2.20
300	0.72	2.36
325	0.75	2.46
350	0.78	2.56
375	0.81	2.66
400	0.84	2.76
425	0.87	2.85
450	0.90	2.95
500	0.96	3.15
550	1.01	3.31
600	1.06	3.48
750	1.21	3.97
865	1.34	4.40
1000	1.44	4.72

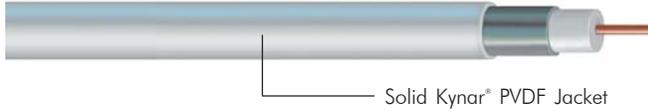
Specifications are subject to change without notice.

## Specialty Application Cables

### P3 500 JCAP Product Specifications



#### P3 500 JCAP (2312)



Copper clad aluminum center conductor dielectric of foamed Teflon® fluorinated ethylene propylene; solid aluminum sheath; solid Kynar® PVDF jacket.

#### Physical Dimensions

Component	Inches	mm
Nominal Center Conductor Diameter	0.109	2.77
Nominal Diameter Over Dielectric	0.450	11.43
Nominal Diameter Over Outer Conductor	0.500	12.70
Nominal Outer Conductor Thickness	0.025	0.64
Nominal Diameter Over Jacket	0.524	13.31
Nominal Jacket Wall Thickness	0.012	0.30

#### Mechanical Characteristics

Minimum Bending Radius	5.0 in.	12.7 cm
Maximum Pulling Tension	300 lbs.	136.08 kg <sub>f</sub>

#### Electrical Characteristics

Capacitance	16.4 ± 1.0 pf/ft	54 ± 3.0 nf/km
Impedance	75 ± 2 ohms	
Velocity of Propagation	86%	

#### Maximum D.C. Resistance @ 68°F (20°C)

##### Copper Clad

Inner Conductor	1.32 ohms/1000 ft.	4.33 ohms/km
Outer Conductor	0.40 ohms/1000 ft.	1.31 ohms/km
Loop	1.72 ohms/1000 ft.	5.64 ohms/km

#### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	(dB/100 ft) Maximum	(dB/100 m) Maximum
5	0.19	0.62
30	0.47	1.54
45	0.58	1.90
50	0.61	2.00
55	0.65	2.13
83	0.81	2.66
108	0.96	3.15
150	1.15	3.77
181	1.29	4.23
193	1.34	4.40
211	1.43	4.69
220	1.44	4.72
250	1.57	5.15
270	1.65	5.41
300	1.78	5.84
325	1.87	6.14
350	1.98	6.50
375	2.08	6.82
400	2.17	7.12
425	2.25	7.38
450	2.35	7.71
500	2.54	8.33
550	2.73	8.96
600	2.88	9.45
700	3.21	10.53
750	3.34	10.96
865	3.76	12.34
900	3.82	12.53
1000	4.16	13.65

Specifications are subject to change without notice.

Kynar® is a registered trade name of Atofina®  
Teflon® is a registered trade name of du Pont de Nemours and Company®

**PF 625 JCA (Power Feeder®)**



Power Feeder® cable is used for delivery of centralized power in today's networks. Coaxial familiarity and the lowest DC Loop Resistance available in a convenient feeder cable size makes Power Feeder the choice for power delivery.

Copper clad aluminum center conductor; expanded polyethylene dielectric; continuous aluminum outer conductor; polyethylene (PE) jacket, tracers (3 red stripes).

**Physical Dimensions**

Component	Inches	mm
Nominal Center Conductor Diameter	0.325	8.26
Nominal Diameter Over Dielectric	0.515	13.08
Nominal Diameter Over Outer Conductor	0.625	15.88
Nominal Diameter Over Jacket	0.685	17.40
Nominal Diameter Over Flooded Jacket (JCASS)	0.695	17.65
Nominal Jacket Wall Thickness	0.030	0.76

**Maximum D.C. Resistance @ 68°F (20°C)**

**Copper Clad**

Inner Conductor	0.155 ohms/1000 ft.	0.509 ohms/km
Outer Conductor	0.135 ohms/1000 ft.	0.443 ohms/km
Loop	0.290 ohms/1000 ft.	0.951 ohms/km

**Weight**

284 lbs. per 1000 feet

**Mechanical Characteristics**

Minimum Bending Radius		
(Jacketed)	9.0 in.	22.9 cm
Maximum Pulling Tension	800 lbs.	362.8 kgf

**Electrical Characteristics**

Impedance	23 ohms
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Specifications are subject to change without notice.

# Trunk and Distribution

## Packaging and Shipping Information



### Standard Cable Lengths

P3®, CableGuard®, Riser and Plenum Cable					
.412 in. (10.46 mm)	–	3,000 ft. (914.4 meters)	.750 in. (19.1 mm)	–	2,500 ft. (762.0 meters)
.500 in. (12.7 mm)	–	2,400 ft. (731.5 meters)	.840 in. (21.34 mm)	–	2,450 ft. (747.0 meters)
.565 in. (14.40 mm)	–	2,450 ft. (747.0 meters)	.875 in. (22.2 mm)	–	2,500 ft. (762.0 meters)
.625 in. (15.8 mm)	–	2,400 ft. (731.5 meters)	1.000 in. (24.4 mm)	–	2,400 ft. (731.5 meters)
.700 in. (17.86 mm)	–	2,500 ft. (762.0 meters)			

QR® Cable					
.320 in. (8.13 mm)	–	3,700 ft. (1128.0 meters)	.860 in. (21.84 mm)	–	2,700 ft. (833.3 meters)
.540 in. (13.72 mm)	–	3,700 ft. (1128.0 meters)	1.125 in. (25.58 mm)	–	3,000 ft. (914.6 meters)
.715 in. (15.8 mm)	–	3,000 ft. (914.6 meters)			

### Freight Policy

- Shipments of \$5,000 or more are f.o.b. factory, freight allowed if destination is within the continental United States.
- Shipments of less than \$5,000 are f.o.b. factory.
- Each shipment shall be standard lengths, plus or minus 10%.
- Not more than 10% of shipment shall be other than standard lengths.

### Method of Shipment

Method of shipment at discretion of shipper, unless specified in order.

### Inspection

Inspection and final acceptance shall be made at factory prior to shipment.

**Reel Size Example**

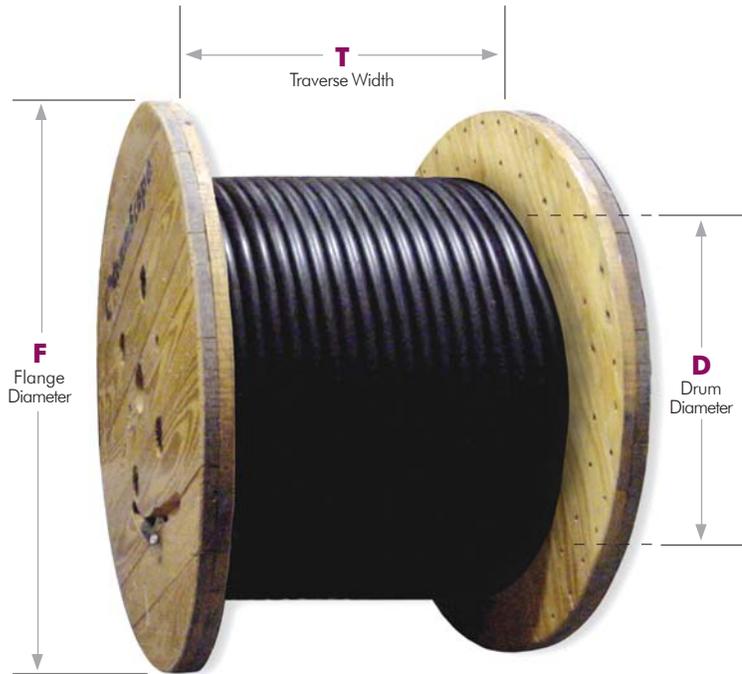


**F** = Flange Diameter (in inches)

**D** = Drum Diameter (in inches)

**T** = Traverse inside distance between flanges (in inches)

Note: *T* is inside dimension, not overall width



**Notes:**

1. An additional 4.0 inches should be added to the traverse width to obtain the total width of the trunk and distribution reel size.

Example: **50" x 24" X 24"**  
total width will be 28" (50 x 24 x 28).

2. All T&D reels have an arbor hole diameter of 3<sup>1</sup>/<sub>8</sub>".

**Formulas for Calculating Shipping Weights**

$((\text{Standard Reel Length}/1000) \times \text{Cable Weight}) + \text{Reel Weight} = \text{Shipping Weight (In Imperial Units)}$

$(\text{Standard Reel Length} \times \text{Cable Weight}) + \text{Reel Weight} = \text{Shipping Weight (In Metric Units)}$

**QR Cable Weights**

Catalog Number	Cable Weight		Standard Reel Length		Reel Size inches	Reel Weight		Shipping	
	lbs/kft	kg/km	ft	km		lbs	kg	lbs	kg
<b>QR 320 JCA</b>	47	70	3,700	1.128	35 x 16 x 18	60	27	234	106
<b>QR 320 JCAR</b>	56	84	3,700	1.128	35 x 16 x 18	60	27	269	122
<b>QR 540 JCA</b>	91	136	3,700	1.128	42 x 24 x 24	105	48	443	201
<b>QR 540 JCASS</b>	92	136	3,700	1.128	42 x 24 x 24	105	48	444	201
<b>QR 540 JACASS</b>	211	314	3,700	1.128	50 x 24 x 24	182	83	962	436
<b>QR 540 JCAM-109</b>	132	197	3,700	1.128	45 x 18 x 24	142	64	632	287
<b>QR 715 JCA</b>	145	215	3,000	0.914	50 x 24 x 20	182	83	616	279
<b>QR 715 JCASS</b>	145	215	3,000	0.914	50 x 24 x 20	182	83	616	279
<b>QR 715 JACASS</b>	313	465	3,000	0.914	54 x 30 x 30	211	96	1,149	521
<b>QR 715 JCAM-188</b>	232	346	3,000	0.914	54 x 24 x 24	208	94	905	410
<b>QR 860 JCA</b>	213	316	2,700	0.823	54 x 24 x 24	208	94	782	355
<b>QR 860 JCASS</b>	214	318	2,700	0.823	54 x 24 x 24	208	94	785	356
<b>QR 860 JACASS</b>	393	585	2,700	0.823	61 x 30 x 24	256	116	1,318	598
<b>QR 860 JCAM-188</b>	308	459	2,700	0.823	61 x 30 x 30	256	116	1,088	494
<b>QR 1125 JCA</b>	340	506	3,000	0.914	61 x 30 x 30	256	116	1,277	579
<b>QR 1125 JCASS</b>	340	505	3,000	0.914	61 x 30 x 30	256	116	1,275	578

See next page for P3 Cable Weights

# Trunk and Distribution

## Packaging and Shipping Information



### Formulas for Calculating Shipping Weights

$([\text{Standard Reel Length}/1000] \times \text{Cable Weight}) + \text{Reel Weight} = \text{Shipping Weight (In Imperial Units)}$

$(\text{Standard Reel Length} \times \text{Cable Weight}) + \text{Reel Weight} = \text{Shipping Weight (In Metric Units)}$

### P3 Cable Weights

Catalog Number	Cable Weight		Standard Reel Length		Reel Size inches	Reel Weight		Shipping	
	lbs/1000 ft	kg/km	ft	km		lbs	kg	lbs	kg
<b>P3 412 CA</b>	55	82	3,000	0.914	35 x 16 x 18	60	27	225	102
<b>P3 412 JCA</b>	71	106	3,000	0.914	35 x 16 x 18	60	27	274	124
<b>P3 412 JCASS</b>	77	115	3,000	0.914	35 x 16 x 18	60	27	291	132
<b>P3 412 JACASS</b>	191	284	3,000	0.914	42 x 24 x 24	105	48	678	307
<b>P3 412 JCAM 109</b>	111	165	3,000	0.914	42 x 18 x 17.5	101	46	433	197
<b>P3 500 CA</b>	72	108	2,400	0.732	35 x 16 x 18	60	27	234	106
<b>P3 500 JCA</b>	95	141	2,400	0.732	35 x 16 x 18	60	27	287	130
<b>P3 500 JCASS</b>	98	146	2,400	0.732	35 x 16 x 18	60	27	295	134
<b>P3 500 JACASS</b>	210	313	2,400	0.732	42 x 24 x 24	105	48	609	276
<b>P3 500 JCAM 109</b>	134	199	2,400	0.732	42 x 18 x 17.5	101	46	423	192
<b>P3 500 JCASS CG</b>	137	205	2,400	0.732	42 x 24 x 24	105	48	435	197
<b>P3 565 CA</b>	88	131	2,450	0.747	42 x 18 x 17.5	101	46	317	144
<b>P3 565 JCA</b>	112	166	2,450	0.747	42 x 18 x 17.5	101	46	375	170
<b>P3 565 JCASS</b>	116	173	2,450	0.747	42 x 18 x 17.5	101	46	385	175
<b>P3 625 CA</b>	116	173	2,400	0.732	42 x 18 x 17.5	101	46	380	172
<b>P3 625 JCA</b>	141	209	2,400	0.732	42 x 18 x 17.5	101	46	438	199
<b>P3 625 JCASS</b>	145	216	2,400	0.732	42 x 18 x 17.5	101	46	449	203
<b>P3 625 JACASS</b>	281	418	2,400	0.732	50 x 24 x 24	182	83	856	388
<b>P3 625 JCAM 109</b>	180	268	2,400	0.732	50 x 24 x 24	182	83	614	279
<b>P3 625 JCASS CG</b>	190	282	2,400	0.732	50 x 24 x 24	182	83	637	289
<b>P3 700 CA</b>	129	192	2,500	0.762	42 x 18 x 24	103	47	425	193
<b>P3 700 JCA</b>	160	238	2,500	0.762	42 x 18 x 24	103	47	503	228
<b>P3 700 JCASS</b>	165	246	2,500	0.762	42 x 18 x 24	103	47	516	234
<b>P3 750 CA</b>	164	244	2,500	0.762	45 x 20 x 24	150	68	560	268
<b>P3 750 JCA</b>	199	296	2,500	0.762	45 x 20 x 24	150	68	650	308
<b>P3 750 JCASS</b>	204	304	2,500	0.762	45 x 20 x 24	150	68	660	314
<b>P3 750 JACASS</b>	362	538	2,500	0.762	54 x 24 x 24	208	94	1,113	505
<b>P3 750 JCAM 188</b>	292	434	2,500	0.762	54 x 24 x 24	208	94	938	425
<b>P3 750 JCAM 250</b>	345	513	2,500	0.762	54 x 30 x 30	211	96	1,073	487
<b>P3 750 JCASS CG</b>	256	381	2,500	0.762	54 x 24 x 24	208	94	848	385
<b>P3 840 CA</b>	184	273	2,400	0.732	55 x 30 x 24	198	90	638	290
<b>P3 840 JCA</b>	225	334	2,450	0.747	55 x 30 x 24	198	90	749	340
<b>P3 840 JCASS</b>	233	347	2,450	0.747	55 x 30 x 24	198	90	769	349
<b>P3 875 CA</b>	216	321	2,500	0.762	55 x 30 x 24	198	90	737	334
<b>P3 875 JCA</b>	257	382	2,500	0.762	55 x 30 x 24	198	90	840	381
<b>P3 875 JCASS</b>	263	391	2,500	0.762	55 x 30 x 24	198	90	855	388
<b>P3 875 JACASS</b>	432	643	2,500	0.762	61 x 30 x 24	256	116	1,335	606
<b>P3 1000 CA</b>	311	463	2,400	0.732	63 x 40 x 26	313	142	1,059	480
<b>P3 1000 JCA</b>	367	547	2,400	0.732	63 x 40 x 26	313	142	1,195	542
<b>P3 1000 JCASS</b>	371	553	2,400	0.732	63 x 40 x 26	313	142	1,205	546
<b>P3 1000 JACASS</b>	566	842	2,400	0.732	65 x 42 x 30	320	145	1,678	761

**Introduction**

Coaxial cable is a composite assembly of various metals and plastics arranged in a manner that creates an efficient wave guide for RF transmission. Coaxial cable manufacturers like CommScope are challenged with the tasks of selecting the appropriate materials for this construction and fitting them together in such a way that the cable will provide optimum electrical and mechanical performance. Electrical performance is evaluated in terms of industry standard measures like attenuation, impedance, capacitance, resistance and structural return loss. Mechanical performance is evaluated in terms of bending radii, ease of handling and compatibility with connectors, which also have industry standard criteria. This report will discuss the application of coaxial bonding, one of the techniques used to achieve certain mechanical performance properties.

Coaxial cable's composite construction has several interface areas between metal and plastic. Each of these interfaces offers a unique set of issues to the user and the manufacturer, and has a unique and industry standard test method to define its effectiveness. These industry standard test methods have been defined and accepted by the SCTE Interface Practices subcommittee, and are recognized as the defining criteria for coaxial cable system performance.

**Single Bonding**

A coaxial trunk and distribution cable will typically have a copper clad aluminum center conductor. This conductor interfaces with a foamed polyethylene dielectric material. In years past, differential expansion between the metal and plastic caused pull outs, so an aggressive adhesive precoat is employed today to prevent any differential movement of the center conductor. (See Figure 1.) This precoat also prevents moisture from migrating along the center conductor.

**Single Bonding**

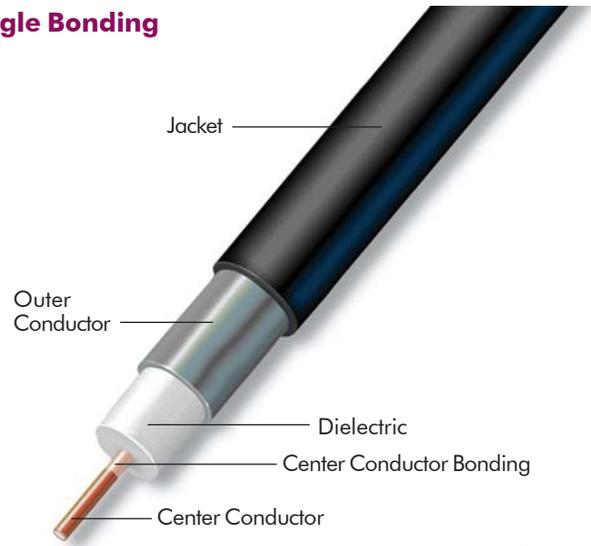


Figure 1

A coaxial cable with this interface bonded may be referred to as single bonded. CommScope catalogs refer to this construction as standard.

The tests utilized to ensure this single bonded precoat is effective measure the force required to remove the center conductor from the dielectric material, as well as the leakage of pressurized air. These test procedures are listed in Table 1.

**Double Bonding**

A double bonded cable utilizes an adhesive at the second plastic/metal interface where the dielectric joins the shield. (See Figure 2.) Again, this interface offers a unique set of issues. Differential movement at the dielectric/shield interface is not a concern due to the compression used in cable construction and the large surface area shared. It has been shown, however, that cable bending performance can be improved through the utilization of double bonding, particularly when thinner aluminum shields are employed.

**Center Conductor/Single Bond Standard Tests**

<b>SCTE IPS TP 103</b>	Air Leakage Test Method For Trunk, Feeder and Distribution Cable
<b>SCTE IPS TP 005</b>	Test Method for Center Conductor Bond to Dielectric

Table 1

One challenge in double bonding is that adhesives must be selected to adhere when the user and manufacturer want them to, and yet to release at appropriate times. A bonding adhesive must provide adhesion and augment bending while assembled, but must core out appropriately to provide good connector interfacing. In the case of P3 cable, an adhesive has been selected which provides added bending enhancements as required yet releases and cores out very cleanly.

The tests utilized to prove the effectiveness of a double bonded construction are simply minimum bend radius and coring. An appropriately selected and applied adhesive will allow a cable to meet and/or exceed its published minimum bend radius specification, yet it will core out cleanly. These standard, industry accepted and relevant tests clearly show that an adhesive is operating in the proper performance “window”, adhering when it should and releasing when it should. The standard test for minimum bend radius is listed in Table 2. These tests include a -40° C verification of bending performance.

Other “tests” are occasionally demonstrated to show performance differences between cable types. These differences are often an artifact of the particular “test” method, and as such often irrelevant to cable performance in the field. CommScope recommends all performance comparisons be made utilizing the industry standard and relevant tests in Table 2.

### Double Bonding

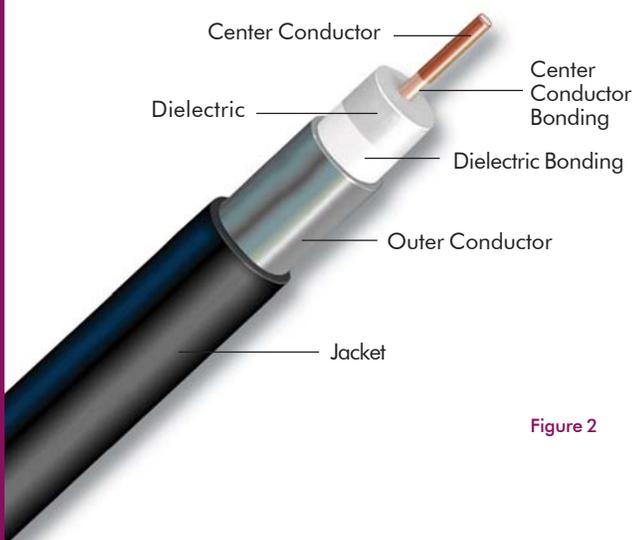


Figure 2

### Triple Bonding

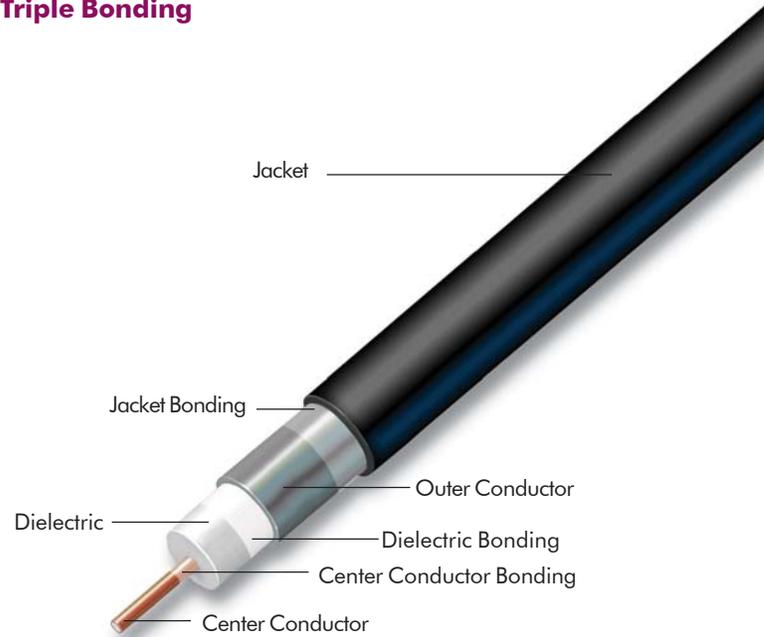


Figure 3

### Triple Bonding

Triple bonding refers to the additional application of adhesive to the coaxial shield/jacket interface. (See Figure 3) This bond eliminates jacket shrinkage. Advanced connector designs can also eliminate jacket shrink, as in the QR family of cable and connectors. Cable geometry can also force a requirement for triple bonding, as is the case with thin shield P3 type designs. These cables are unable by design to bend tightly, and rely on triple bonding to achieve reasonable bends.

Triple bonding is also limited in its application. Flooded products cannot be triple bonded, since the presence of flooding compounds will defeat adhesives. This fact can lead to bending issues with underground cables which, by design, depend on flooding.

There are no industry standard tests to verify the effectiveness or presence of triple bonding. CommScope catalogs refer to both double and triple bonded products as “bonded”, since bending specifications are identical.

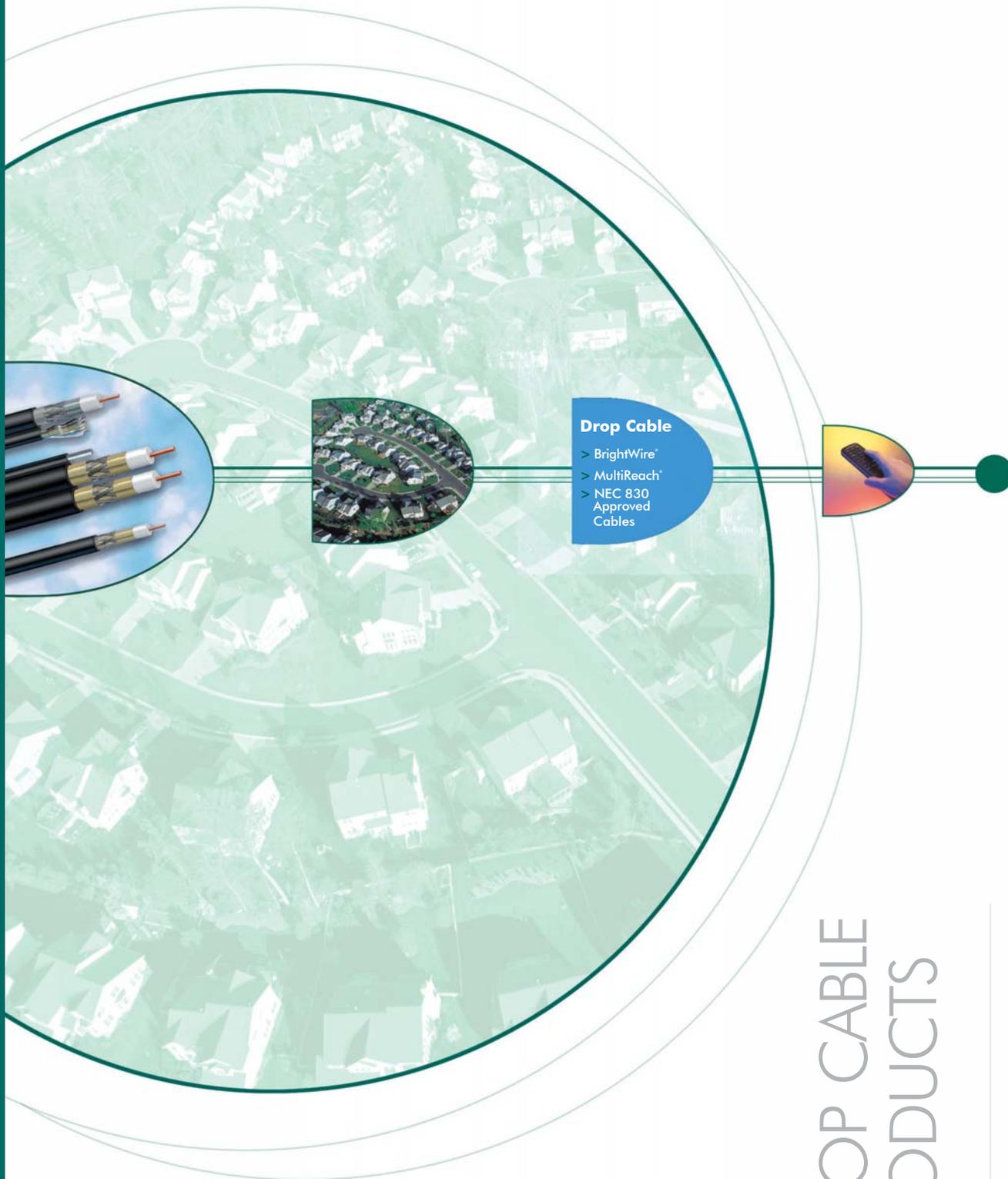
**Shield/Double Bond Standard Tests**

<b>SCTE IPS TP 108</b>	Test Method for Static Minimum Bending Radius for Coaxial Trunk, Feeder and Distributions Cables
<b>Telcordia TR-NWT-001399</b>	Generic Requirements for Coaxial Distribution Cable 5.1 Cable Bend Test
<b>ASTM D 4565</b>	34. Cable Bend Test

Table 2

**Summary**

Bonding adhesives are applied at different levels with different constructions, and for unique purposes. The center conductor bond is aggressive to prevent movement and water migration. The dielectric/shield or “double bond” adhesive is optimized to provide bending enhancement while releasing cleanly for connector application. The optional triple bond or jacket bond is only required when a cable’s design restricts bending. All of these bonding techniques are best evaluated by industry standard performance criteria, which have been developed to ensure relevant and useful product comparisons and performance.



**Drop Cable**

- > BrightWire®
- > MultiReach®
- > NEC 830 Approved Cables

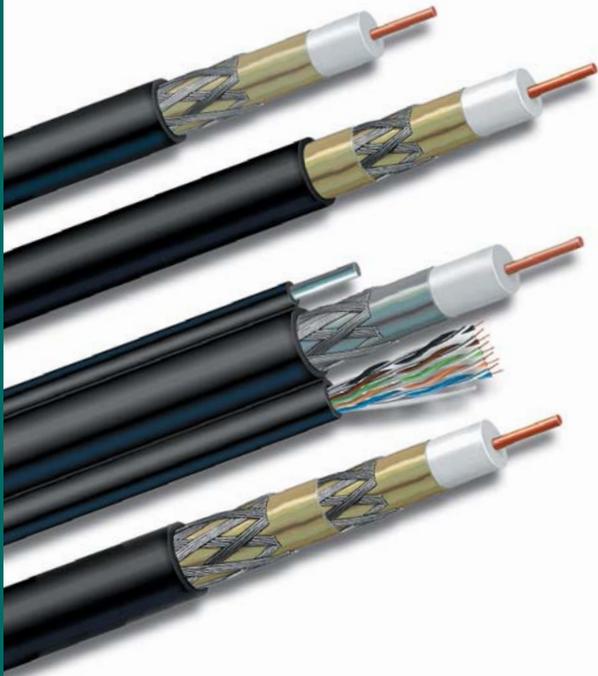
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### Never Underestimate the Importance of the Last Hundred Feet

Drop cables carry video, voice and data signals within the last hundred feet to end users. Keenly aware of the critical aspects inherent to this section of the network, CommScope engineers asked probing questions and took your concerns to the lab. They emerged with BrightWire®, an innovative treatment designed to protect the integrity of the drop plant while lowering operating and installation costs. BrightWire anti-corrosive treatment is available in several shielding types (standard, Tri-Shield, Super-Shield) and drop cable sizes including the most popular 6 and 11 series. All CommScope drop cable features a standard bonded tape and rugged jackets that withstand exposure to sunlight, atmosphere temperature, and ground chemicals.




Specify the **GOLD** Standard.

CommScope's last mile infrastructure products have been proven over years of use to be reliable for the delivery of bi-directional high bandwidth information services. This long record of demonstrated success will continue as new services are deployed. Additionally, more than any other brand, CommScope drop cable is installed worldwide and tested in virtually every geographic location. This unequivocally validates CommScope's reliability and performance.

In addition to offering a full spectrum of high performance braided coax, we offer National Electrical Code (NEC) 830 compliant products as well as MultiReach®, and other hybrids which can be custom-engineered as needed. Our drop cable products are engineered to be flexible and durable while possessing and maintaining the electrical performance you require.



### Take a "Hardline" On Your Drop Plant with QR® 320 Drop Cable

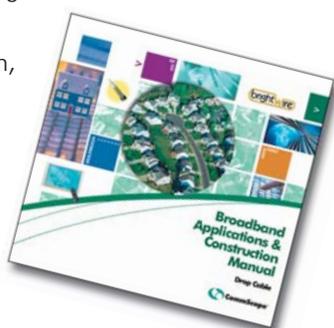
CommScope knows the importance of offering a high performance, highly shielded digital feeder cable that performs more effectively than a traditional drop cable design. Our QR 320 cable is engineered for tight bends and severe turns typical in demanding drop settings. Combining the superior benefits of QR reliability with superb flexibility, low DC loop resistance, and high shielding effectiveness, QR 320 will exceed your expectations for drop cable.

### Twisted Copper Pairs and Coax Are Self-Contained In MultiReach®

This multi-leg cable is comprised of coax and twisted copper pairs to provide one physically-contained cable through which video, data, telephony and power can be locally distributed. This eliminates multiple installation runs, thereby reducing labor costs and easing installation planning.

### Request a FREE Broadband Applications & Construction Library

CommScope's Broadband Applications & Construction Library includes a 4-piece set of valuable reference manuals plus a DVD containing essential training videos on topics such as connectorization, expansion loop formation and fiber optic splicing. These tools teach you how to protect the integrity of your broadband plant while lowering operating/ installation costs. From construction and installation practices, to performance and testing of cable – CommScope Construction Manuals are simply a "must-have" for anyone upgrading or maintaining broadband networks. Download a PDF version at our website: <http://www.commscope.com> (in the literature center) or request a set by phone at 1-800-982-1708.



### CommScope's Digital Broadband Resource Center™

This repository of experience, knowledge, services & tools is provided to CommScope customers to assist installers, technicians, engineers, designers or managers of broadband service providers. Tools in various media and formats include: SpanMaster® software for cable sag & tension calculations; center conductor sizing guides; attenuation slide rules; & call center spec assistance & review. Call us at 1-866-333-dBRC (3272) or e-mail [dbrc@commscope.com](mailto:dbrc@commscope.com) for answers to product questions or issues related to any CommScope broadband product.



# Ordering Basic CommScope Drop Cable



- It is a complete family of products serving a variety of applications, such as INDOOR, AERIAL, UNDERGROUND, and MULTI-PURPOSE.
- The BASIC products are available in four shielding types to meet your specific needs.
- All sizes of drop cable are available with standard PVC, PE or NEC 830 Approved jacket types.
- You will benefit by receiving CommScope quality products and unmatched customer service at low prices.
- Orders for BASIC products can be made in small quantity (as little as 4Kft for F11 and 9Kft for F6).
- Limiting your purchases to the BASIC products will also simplify your purchasing and inventory control.
- In case you have a unique application that requires special cable, we will continue to offer the industry's broadest product line.

## Aerial Cable

- PVC jacket with integrated messenger.

### Order

Size	Shielding	Jacket	Color	Pkg.
F6	60, 77TS, TS (60%), SS	BVM	Black	Reel
F11		BVVM 830*		

\*Meets NEC Article 830 requirements.

### Integrated Messenger Specs

Size	Messenger Diameter	Minimum Breaking Strength of Messenger
F6	0.051 in.	180 lbs. / 82Kg
F11	0.072 in.	365 lbs. / 166 Kg

## Indoor Cable

- Flame retardant PVC jacket. Meets NEC Article 820 V Rating (UL listed).
- Available in two packaging options: Reel or CommPak™ box (F6 only)
- Available in two jacket colors: Black or Neutral.

### Order

Size	Shielding	Jacket	Color	Pkg.
F6	60, 77TS, TS (60%), SS	BVV	Black	Reel
F11			Neutral	Box (F6 only)

## Multipurpose Cable

- PVC jacket for use as a temporary drop or in various applications.

### Order

Size	Shielding	Jacket	Color	Pkg.
F6	60, 77TS, TS (60%), SS	BV	Black	Reel
F11				

## Underground Cable

- Rugged PE jacket with floodant to prevent corrosion and moisture ingress if the jacket is damaged.
- Cable is printed with symbol to identify as telecommunications cable.

### Order

Size	Shielding	Jacket	Color	Pkg.
F6	60, 77TS, TS (60%), SS	BEF	Black	Reel
F11		BEF 830*		

\*Meets NEC Article 830 requirements.

## Size

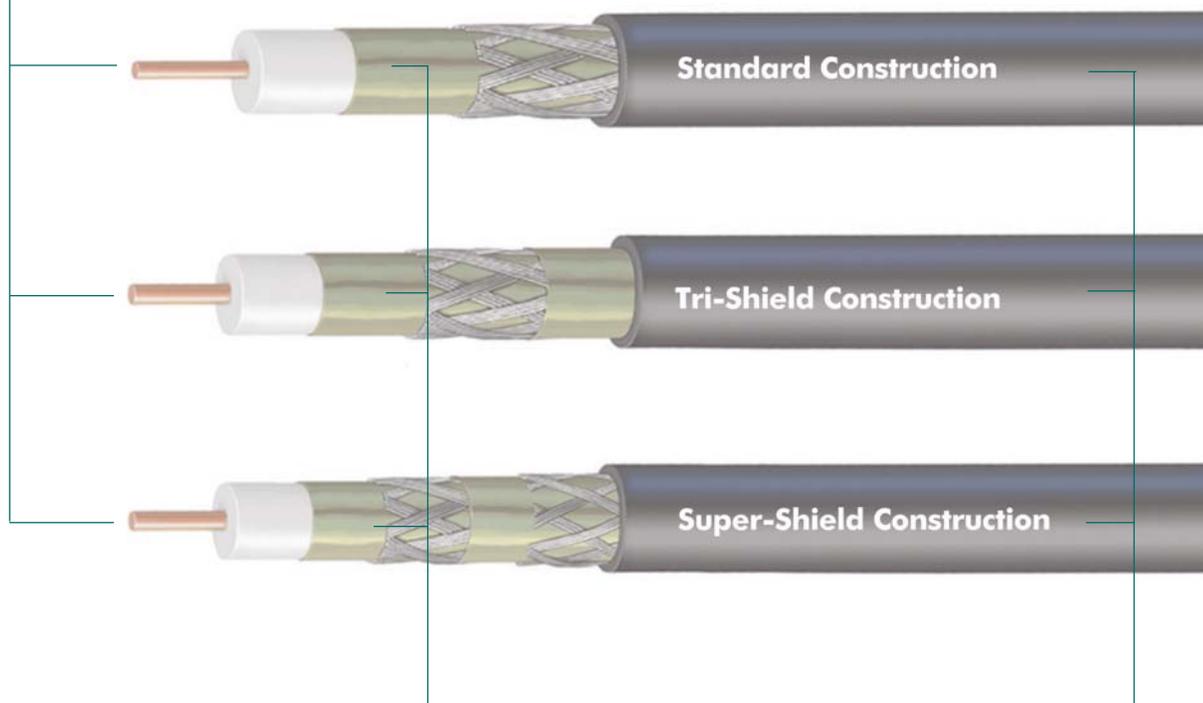
Attenuation is primarily a function of cable size. Basic products are available in the two most widely used sizes, 6 and 11. 6 series cable will meet most of your needs. For longer drops, choose 11 due to the lower attenuation values. Basic products feature copper clad steel center conductor and foam polyethylene dielectric.

### Attenuation (@ 68° F [20 C])

Frequency (MHz)	6 Series		11 Series	
	dB/100 ft	dB/100 m	dB/100 ft	dB/100 m
55	1.6	5.25	.96	3.15
450	4.4	14.44	2.75	9.02
750	5.65	18.54	3.65	11.98
1000	6.55	21.49	4.35	14.27

### Other Electrical and Mechanical Characteristics

Impedance: 75 ohms • Velocity of Propagation: 85%



## Shielding

The minimum recommended shielding for drop cable is an inner shield of aluminum-polypropylene-aluminum laminated tape bonded to the dielectric and a 60 percent braid of 34 AWG bare aluminum braid wire. This level of shielding is adequate for most of your applications and meets SCTE requirements.

Additional shielding is available to provide greater protection against signal ingress and egress.

### All Basic Products are available in 4 shielding options:

**GOOD** Bonded tape + 60 percent braid

**BETTER** Bonded tape + 77 percent braid + non-bonded tape (Tri-Shield) + 60 percent braid

**BEST** Bonded tape + 60 percent braid + non-bonded tape + 40 percent braid (Super-Shield)

## Jacket

- High quality PVC with flame retardant jacket for indoor applications.
- PVC jacket for outdoor aerial applications.
- PE jacket for underground applications to resist abrasion and cuts.

# Drop Cable Catalog Number Key

Steps to Build the Catalog Number for the Cable You Need



## Sample Product Constructions

### Prefix

**For 59, 6, 7 and 11 Series**

- F = Gas Expanded Polyethylene Dielectric Foam

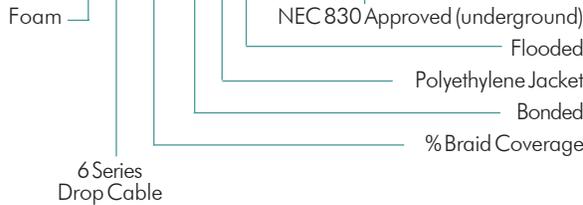
2 = Dual Cable

59, 6 = Drop Cable Series 7, 11

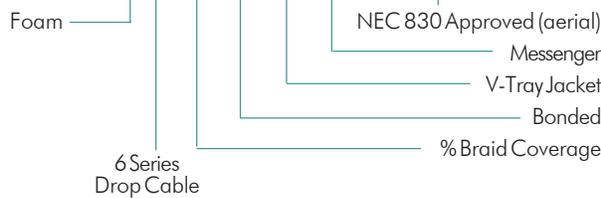
**For QR 320 Drop Only**

QR = Quantum Reach Cable Series

### F660BEF (830BMU)



### F660BVVM (830BM)



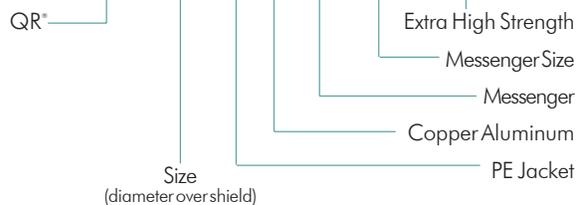
### F7SSVR



### F2-6TSVV BW



### QR 320 JCAM 083 EHS



### Suffix

**For 59, 6, 7 and 11 Series**

First 2 digits = Percentage of Braid Coverage (e.g. 53, 60, 67, 90, 95)

- B = Bonded Foil
- E = Polyethylene Jacket
- V = Polyvinylchloride Jacket
- M = Messenger
- F = Flooded
- SS = Super-Shield
- TS = Tri-Shield

BW = BrightWire®  
APD = Amorphous Polypropylene Drop

VV = NEC CATV (V-Tray Jacket)  
R = NEC CATVR

CMH = CSA Flame Test FT-1

CMG = CSA Flame Test FT-4

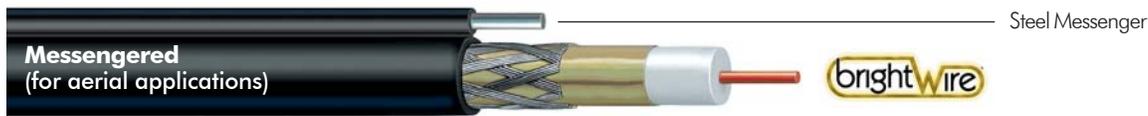
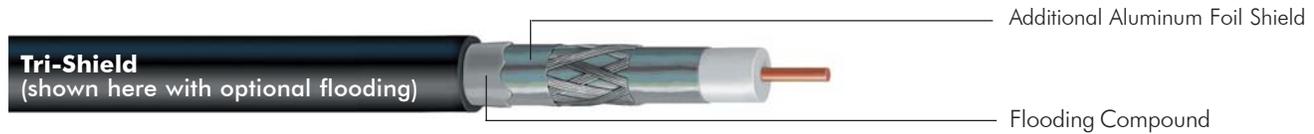
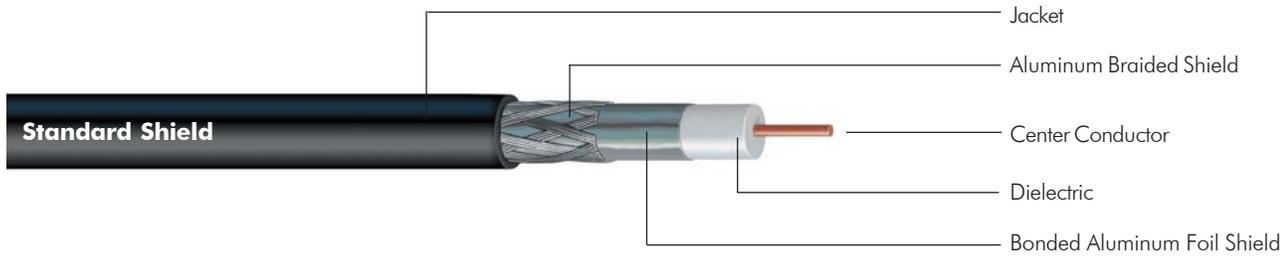
830BM = Meets NEC Article 830 Aerial Requirements

830BMU = Meets NEC Article 830 Underground Requirements

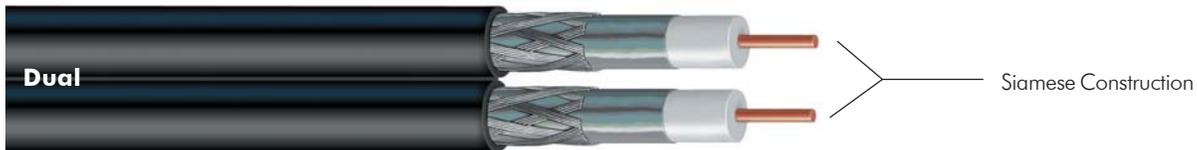
**For QR 320 Drop Only**

- J = Jacketed
- CA = Copper Aluminum
- M = Messenger
- 083 = Size of Messenger (also available in 109)
- EHS = Extra High Strength

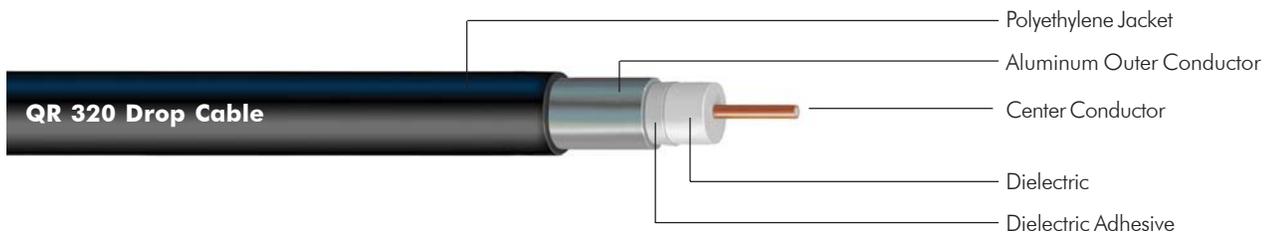
(This is a sample list. Other options are available.)



(shown here with BrightWire® treatment)



(shown here with BrightWire® treatment)



## 59 Series Drop Cable

### Product Descriptions



#### Bonded Foil Standard Construction - 67% Braid (95% Braid also Available)

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs/kft (kg/km)
<b>F5967BV</b> 	Bonded tape, 67% braid, PVC jacket	22 (33)	25 (38)
<b>F5967BVV</b>	Bonded tape, 67% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	22 (33)	25 (38)
<b>F5967BVM</b> 	Bonded tape, 67% braid, PVC jacket, .051 inch messenger	34 (51)	38 (57)
<b>F5967BEF</b>	Bonded tape, 67% braid, flooded for underground, PE jacket	18 (27)	21 (32)
<b>F2-5967BVV</b> 	Dual cable, bonded tape, 67% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	45 (67)	50 (75)
<b>F2-5967BEF</b>	Dual cable, bonded tape, 67% braid, flooded for underground, PE jacket	36 (54)	41 (62)
<b>F2-5967BVM</b> 	Dual cable, bonded tape, 67% braid, PVC jacket, .072 inch messenger	63 (94)	69 (103)

#### Bonded Foil Tri-Shield Construction - 67% Braid

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs/kft (kg/km)
<b>F59TSV</b> 	Bonded tape, 67% braid, non-bonded tape, PVC jacket	21 (32)	24 (36)
<b>F59TSVV</b>	Bonded tape, 67% braid, non-bonded tape, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	22 (33)	25 (38)
<b>F59TSVM</b> 	Bonded tape, 67% braid, non-bonded tape, PVC jacket, .051 inch messenger	32 (48)	36 (54)
<b>F59TSEF</b>	Bonded tape, 67% braid, non-bonded tape, flooded for underground, PE jacket	19 (29)	22 (33)
<b>F2-59TSVV</b> 	Dual cable, bonded tape, 67% braid, non-bonded tape, flame retardant PVC jacket, (ETL listed)	44 (66)	49 (73)
<b>F2-59TSEF</b>	Dual cable, bonded tape, 67% braid, non-bonded tape, flooded for underground, PE jacket	38 (57)	43 (64)
<b>F2-59TSVM</b> 	Dual cable, bonded tape, 67% braid, non-bonded tape, PVC jacket, .072 inch messenger	62 (93)	68 (102)

#### Bonded Foil Super-Shield Construction - 53% + 35% Braid

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs/kft (kg/km)
<b>F59SSV</b> 	Bonded tape, 53% braid, non-bonded tape, 35% braid, PVC jacket	27 (41)	30 (45)
<b>F59SSVV</b>	Bonded tape, 53% braid, non-bonded tape, 35% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	28 (42)	31 (47)
<b>F59SSVM</b> 	Bonded tape, 53% braid, non-bonded tape, 35% braid, PVC jacket, .051 messenger	38 (57)	42 (63)
<b>F59SSEF</b>	Bonded tape, 53% braid, non-bonded tape, 35% braid, flooded for underground, PE jacket	23 (35)	26 (39)
<b>F2-59SSVV</b> 	Dual cable, bonded tape, 53% braid, non-bonded tape, 35% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	55 (82)	61 (91)
<b>F2-59SSEF</b>	Dual cable, bonded tape, 53% braid, non-bonded tape, flooded for underground, PE jacket	45 (67)	51 (76)
<b>F2-59SSVM</b> 	Dual cable, bonded tape, 53% braid, non-bonded tape, 35% braid, PVC jacket, .072 inch messenger	73 (109)	82 (123)

NOTE: NEC Article 830 products are available to meet the requirements of Network Powered Broadband Communications Systems.

# 59 Series Drop Cable

## Product Specifications

### Standard Construction

20 gauge [0.032 in. (0.81 mm)] copper covered steel center conductor; gas expanded polyethylene dielectric; inner shield aluminum-polypropylene-aluminum laminated tape with overlap bonded to dielectric; outer shield of 34 AWG bare aluminum braid wire; jacket of black polyvinylchloride or polyethylene (flooded). Nominal O.D. 0.240 in. (6.10 mm).

### Physical Dimensions

Component	Standard Shield		Tri-Shield		Super-Shield	
	Inches	mm	Inches	mm	Inches	mm
Nominal Center Conductor Diameter	0.032	0.81	0.032	0.81	0.032	0.81
Nominal Diameter Over Dielectric	0.144	3.66	0.144	3.66	0.144	3.66
Nominal Diameter Over First Shield (Tape)	0.151	3.84	0.151	3.84	0.151	3.84
Nominal Diameter Over Jacket	0.240	6.10	0.240	6.10	0.265	6.73
Nominal Jacket Wall Thickness	0.032	0.81	0.032	0.81	0.034	0.86
Nominal Diameter of Steel Messenger	0.051	(single) 1.30	0.051	(single) 1.30	0.051	(single) 1.30
	0.072	(dual) 1.83	0.072	(dual) 1.83	0.072	(dual) 1.83

### Mechanical Characteristics

Minimum Breaking	0.051	180 lbs.	82kg <sub>f</sub>
Strength of Messenger	0.072	365 lbs.	166kg <sub>f</sub>

### Electrical Characteristics

Nominal Impedance	75 Ohms
Nominal Velocity of Propagation	85%

### Corrosion Resistance

Many products are available with a choice of two corrosion resistant treatments. Contact our Customer Service Department for specific information.



- **BrightWire**® is a dry, anti-corrosive treatment that chemically combines with metal components to form a protective shield against water and subsequent corrosion. (Exceeds the SCTE requirement for corrosion resistant cable.) BrightWire treatment is available on all PVC jacket products and can be recognized by its gold colored tape.
- **APD**® is a non-flowing, amorphous polypropylene flooding compound.

Specify BrightWire or APD when ordering product:

- F5967BV-BW** (BrightWire® anti-corrosive treatment)
- F5967BV-APD** (APD anti-corrosive treatment)

Specifications are subject to change without notice.

### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	Maximum (dB/100 ft)	Maximum (dB/100 m)
5	0.86	2.82
55	2.05	6.73
83	2.45	8.04
187	3.60	11.81
211	3.80	12.47
250	4.10	13.45
300	4.45	14.60
350	4.80	15.75
400	5.10	16.73
450	5.40	17.72
500	5.70	18.70
550	5.95	19.52
600	6.20	20.34
750	6.97	22.87
865	7.52	24.67
1000	8.12	26.64

## 6 Series Drop Cable

### Product Descriptions



#### Bonded Foil Standard Construction - 60% Braid (90% Braid also Available)

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs/kft (kg/km)
<b>F660BV</b> 	Bonded tape, 60% braid, PVC jacket	26 (39)	29 (44)
<b>F660BVV</b>	Bonded tape, 60% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	27 (41)	30 (45)
<b>F660BVM</b> 	Bonded tape, 60% braid, PVC jacket, .051 inch messenger	38 (57)	42 (63)
<b>F660BEF</b>	Bonded tape, 60% braid, flooded for underground, PE jacket	23 (35)	26 (39)
<b>F2-660BVV</b> 	Dual cable, bonded tape, 60% braid, flame retardant PVC jacket, meets NEC Article 820V Rating (ETL listed)	54 (81)	60 (90)
<b>F2-660BEF</b>	Dual cable, bonded tape, 60% braid, flooded for underground, PE jacket	45 (67)	51 (76)
<b>F2-660BVM</b> 	Dual cable, bonded tape, 60% braid, PVC jacket, .072 inch messenger	72 (108)	81 (121)

#### Bonded Foil Tri-Shield Construction - 60% Braid (77% Braid also Available; Example: F677TSW)

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs/kft (kg/km)
<b>F6TSV</b> 	Bonded tape, 60% braid, non-bonded tape, PVC jacket	27 (41)	30 (45)
<b>F6TSVV</b>	Bonded tape, 60% braid, non-bonded tape, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	28 (42)	31 (47)
<b>F6TSVM</b> 	Bonded tape, 60% braid, non-bonded tape, PVC jacket, .051 inch messenger	39 (58)	43 (64)
<b>F6TSEF</b>	Bonded tape, 60% braid, non-bonded tape, flooded for underground, PE jacket	25 (38)	28 (42)
<b>F2-6TSVV</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape, flame retardant PVC jacket Meets Article 820 V rating (ETL listed)	55 (82)	61 (91)
<b>F2-6TSEF</b>	Dual cable, bonded tape, 60% braid, non-bonded tape, flooded for underground, PE jacket	49 (73)	55 (82)
<b>F2-6TSVM</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape, PVC jacket, .072 inch messenger	74 (111)	83 (124)

#### Bonded Foil Super-Shield Construction - 60% + 40% Braid

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs/kft (kg/km)
<b>F6SSV</b> 	Bonded tape, 60% braid, non-bonded tape, 40% braid, PVC jacket	32 (48)	36 (54)
<b>F6SSVV</b>	Bonded tape, 60% braid, non-bonded tape, 40% braid, flame retardant PVC jacket Meets NEC Article 820 V Rating (ETL listed)	33 (50)	37 (56)
<b>F6SSVM</b> 	Bonded tape, 60% braid, non-bonded tape, 40% braid, PVC jacket, .051 inch messenger	44 (66)	48 (72)
<b>F6SSEF</b>	Bonded tape, 60% braid, non-bonded tape, 40% braid, flooded for underground, PE jacket	28 (42)	31 (47)
<b>F2-6SSVV</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape, 40% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	66 (99)	75 (112)
<b>F2-6SSEF</b>	Dual cable, bonded tape, 60% braid, non-bonded tape, 40% braid, flooded for underground, PE jacket	56 (84)	65 (97)
<b>F2-6SSVM</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape, 40% braid, PVC jacket, .072 inch messenger	84 (125)	93 (139)

NOTE: NEC Article 830 products are available to meet the requirements of Network Powered Broadband Communications Systems.

# 6 Series Drop Cable

## Product Specifications

### Standard Construction

18 gauge [0.040 in. (1.02 mm)] copper covered steel center conductor; gas expanded polyethylene dielectric; inner shield aluminum-polypropylene-aluminum laminated tape with overlap bonded to dielectric; outer shield of 34 AWG bare aluminum braid wire; jacket of black polyvinylchloride or polyethylene (flooded). Nominal O.D. 0.272 in. (6.91 mm).

### Physical Dimensions

Component	Standard Shield		Tri-Shield		Super-Shield	
	Inches	mm	Inches	mm	Inches	mm
Nominal Center Conductor Diameter	0.040	1.02	0.040	1.02	0.040	1.02
Nominal Diameter Over Dielectric	0.180	4.57	0.180	4.57	0.180	4.57
Nominal Diameter Over First Shield (Tape)	0.187	4.75	0.187	4.75	0.187	4.75
Nominal Diameter Over Jacket	0.272	6.91	0.278	7.06	0.297	7.54
Nominal Jacket Wall Thickness	0.030	0.76	0.030	0.76	0.033	0.84
Nominal Diameter of Steel Messenger	0.051	(single) 1.30	0.051	(single) 1.30	0.051	(single) 1.30
	0.072	(dual) 1.83	0.072	(dual) 1.83	0.072	(dual) 1.83

### Mechanical Characteristics

Minimum Breaking	0.051	180 lbs.	82kg <sub>f</sub>
Strength of Messenger	0.072	365 lbs.	166kg <sub>f</sub>

### Electrical Characteristics

Nominal Impedance	75 Ohms
Nominal Velocity of Propagation	85%

### Corrosion Resistance

Many products are available with a choice of two corrosion resistant treatments. Contact our Customer Service Department for specific information.



- **BrightWire**® is a dry, anti-corrosive treatment that chemically combines with metal components to form a protective shield against water and subsequent corrosion. (Exceeds the SCTE requirement for corrosion resistant cable.) BrightWire treatment is available on all PVC jacket products and can be recognized by its gold colored tape.
- **APD**® is a non-flowing, amorphous polypropylene flooding compound.

Specify BrightWire or APD when ordering product:

- **F660BV-BW** (BrightWire® anti-corrosive treatment)
- **F660BV-APD** (APD anti-corrosive treatment)

Specifications are subject to change without notice.

### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	Maximum (dB/100 ft)	Maximum (dB/100 m)
5	0.58	1.90
55	1.60	5.25
83	1.95	6.40
187	2.85	9.35
211	3.05	10.00
250	3.30	10.82
300	3.55	11.64
350	3.85	12.63
400	4.15	13.61
450	4.40	14.43
500	4.66	15.29
550	4.90	16.08
600	5.10	16.73
750	5.65	18.54
865	6.10	20.01
1000	6.55	21.49

## 7 Series Drop Cable

### Product Descriptions



#### Bonded Foil Standard Construction - 60% Braid (90% Braid also Available)

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs/kft (kg/km)
<b>F760BV</b> 	Bonded tape, 60% braid, PVC jacket	36 (54)	40 (60)
<b>F760BVV</b>	Bonded tape, 60% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating ETL listed	36 (54)	40 (60)
<b>F760BVM</b> 	Bonded tape, 60% braid, PVC jacket, .072 inch messenger	56 (84)	60 (90)
<b>F760BEF</b>	Bonded tape, 60% braid, flooded for underground, PE jacket	31 (47)	35 (53)
<b>F2-760BVV</b> 	Dual cable, bonded tape, 60% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	73 (109)	82 (123)
<b>F2-760BEF</b>	Dual cable, bonded tape, 60% braid, flooded for underground, PE jacket	61 (91)	70 (105)
<b>F2-760BVM</b> 	Dual cable, bonded tape, 60% braid, PVC jacket, .109 inch messenger	111 (166)	129 (192)

#### Bonded Foil Tri-Shield Construction - 60% Braid

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs./1000'
<b>F7TSV</b> 	Bonded tape, 60% braid, non-bonded tape, PVC jacket	35 (53)	39 (59)
<b>F7TSVV</b>	Bonded tape, 60% braid, non-bonded tape, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	36 (54)	40 (60)
<b>F7TSVM</b> 	Bonded tape, 60% braid, non-bonded tape, PVC jacket, .072 inch messenger NEC Article 830 available	56 (84)	62 (93)
<b>F7TSEF</b>	Bonded tape, 60% braid, non-bonded tape, flooded for underground, PE jacket	33 (50)	36 (54)
<b>F2-7TSVV</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape, flame retardant PVC jacket, meets Article 820 V Rating (ETL listed)	72 (108)	81 (121)
<b>F2-7TSEF</b>	Dual cable, bonded tape, 60% braid, non-bonded tape, flooded for underground, PE jacket	66 (99)	75 (112)
<b>F2-7TSVM</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape, PVC jacket, .109 inch messenger	111 (166)	129 (192)

#### Bonded Foil Super-Shield Construction - 60% + 40% Braid

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs/kft (kg/km)
<b>F7SSV</b> 	Bonded tape, 60% braid, non-bonded tape, 40% braid, PVC jacket	42 (63)	47 (70)
<b>F7SSVV</b>	Bonded tape, 60% braid, non-bonded tape, 40% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	43 (64)	48 (72)
<b>F7SSVM</b> 	Bonded tape, 60% braid, non-bonded tape, 40% braid, PVC jacket, .072 inch messenger	63 (94)	72 (108)
<b>F7SSEF</b>	Bonded tape, 60% braid, non-bonded tape, 40% braid, flooded for underground, PE jacket	36 (54)	39 (59)
<b>F2-7SSVV</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape, 40% braid, flame retardant PVC jacket, meets NEC article 820 V Rating (ETL listed)	86 (128)	95 (142)
<b>F2-7SSEF</b>	Dual cable, bonded tape, 60% braid, non-bonded tape, 40% braid, flooded for underground, PE jacket	72 (108)	81 (121)
<b>F2-7SSVM</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape 40% braid, PVC jacket, .109 inch messenger	125 (186)	143 (213)

NOTE: NEC Article 830 products are available to meet the requirements of Network Powered Broadband Communications Systems.

# 7 Series Drop Cable

## Product Specifications

### Standard Construction

16 gauge [0.051 in. (1.29 mm)] copper covered steel center conductor; gas expanded polyethylene dielectric; inner shield aluminum-polypropylene-aluminum laminated tape with overlap bonded to dielectric; outer shield of 34 AWG bare aluminum braid wire; jacket of black polyvinylchloride or polyethylene (flooded). Nominal O.D. 0.319 in. (8.10 mm).

### Physical Dimensions

Component	Standard Shield		Tri-Shield		Super-Shield	
	Inches	mm	Inches	mm	Inches	mm
Nominal Center Conductor Diameter	0.051	1.29	0.051	1.29	0.051	1.29
Nominal Diameter Over Dielectric	0.225	5.72	0.225	5.72	0.225	5.72
Nominal Diameter Over First Shield (Tape)	0.232	5.89	0.232	5.89	0.232	5.89
Nominal Diameter Over Jacket	0.320	8.13	0.323	8.20	0.340	8.64
Nominal Jacket Wall Thickness	0.030	0.76	0.032	0.81	0.034	0.86
Nominal Diameter of Steel Messenger	0.072	(single) 1.83	0.072	(single) 1.83	0.072	(single) 1.83
	0.109	(dual) 2.72	0.109	(dual) 2.72	0.109	(dual) 2.72

### Mechanical Characteristics

Minimum Breaking Strength of Messenger	0.072	365 lbs.	166kg <sub>f</sub>
	0.109	1800 lbs.	818kg <sub>f</sub>

### Electrical Characteristics

Nominal Impedance	75 Ohms
Nominal Velocity of Propagation	85%

### Corrosion Resistance

Many products are available with a choice of two corrosion resistant treatments. Contact our Customer Service Department for specific information.



- **BrightWire**® is a dry, anti-corrosive treatment that chemically combines with metal components to form a protective shield against water and subsequent corrosion. (Exceeds the SCTE requirement for corrosion resistant cable.) BrightWire treatment is available on all PVC jacket products and can be recognized by its gold colored tape.
- **APD**® is a non-flowing, amorphous polypropylene flooding compound.

Specify BrightWire or APD when ordering product:

**F760BV-BW** (BrightWire® anti-corrosive treatment)

**F760BV-APD** (APD anti-corrosive treatment)

### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	Maximum (dB/100 ft)	Maximum (dB/100 m)
5	0.47	1.54
55	1.25	4.10
83	1.50	4.92
187	2.22	7.28
211	2.36	7.74
250	2.56	8.40
300	2.82	9.25
350	3.05	10.01
400	3.27	10.73
450	3.46	11.35
500	3.67	12.04
550	3.85	12.63
600	4.05	13.28
750	4.57	14.99
865	4.93	16.17
1000	5.32	17.45

Specifications are subject to change without notice.

# 11 Series Drop Cable

## Product Descriptions

### Bonded Foil Standard Construction - 60% Braid (90% Braid also Available)

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs/kft (kg/km)
<b>F1160BV</b> 	Bonded tape, 60% braid, PVC jacket	54 (81)	60 (90)
<b>F1160BVV</b>	Bonded tape, 60% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL Listed)	55 (82)	61 (91)
<b>F1160BVM</b> 	Bonded tape, 60% braid, PVC jacket, .072 inch messenger	77 (115)	86 (128)
<b>F1160BEF</b>	Bonded tape, 60% braid, flooded for underground, PE jacket	47 (70)	53 (79)
<b>F2-1160BVV</b> 	Dual cable, bonded tape, 60% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	112 (167)	130 (194)
<b>F2-1160BEF</b>	Dual cable, bonded tape, 60% braid, flooded for underground, PE jacket	93 (139)	111 (166)
<b>F2-1160BVM</b> 	Dual cable, bonded tape, 60% braid, PVC jacket, .109 inch messenger	153 (228)	171 (255)

### Bonded Foil Tri-Shield Construction - 60% Braid

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs./1000'
<b>F11TSV</b> 	Bonded tape, 60% braid, non-bonded tape, PVC jacket	53 (79)	59 (88)
<b>F11TSVV</b>	Bonded tape, 60% braid, non-bonded tape, flame retardant PVC jacket Meets NEC Article 820 V Rating (ETL listed)	54 (81)	60 (90)
<b>F11TSVM</b> 	Bonded tape, 60% braid, non-bonded tape, PVC jacket, .072 inch messenger	76 (114)	85 (127)
<b>F11TSEF</b>	Bonded tape, 60% braid, non-bonded tape, flooded for underground, PE jacket	48 (72)	54 (81)
<b>F2-11TSVV</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape, flame retardant PVC jacket, (ETL listed)	109 (163)	127 (190)
<b>F2-11TSEF</b>	Dual cable, bonded tape, 60% braid, non-bonded tape, flooded for underground, PE jacket	96 (143)	114 (170)
<b>F2-11TSVM</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape, PVC jacket, .109 inch messenger	148 (221)	166 (248)

### Bonded Foil Super-Shield Construction - 60% + 40% Braid

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Wt. lbs/kft (kg/km)
<b>F11SSV</b> 	Bonded tape, 60% braid, non-bonded tape, 40% braid, PVC jacket	57 (85)	63 (94)
<b>F11SSVV</b>	Bonded tape, 60% braid, non-bonded tape, 40% braid, flame retardant PVC jacket, meets NEC Article 820 V Rating (ETL listed)	59 (88)	65 (97)
<b>F11SSVM</b> 	Bonded tape, 60% braid, non-bonded tape, 40% braid, PVC jacket, .072 inch messenger	80 (120)	89 (133)
<b>F11SSEF</b>	Bonded tape, 60% braid, non-bonded tape, 40% braid, flooded for underground, PE jacket	50 (75)	56 (84)
<b>F2-11SSVV</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape, flame retardant PVC jacket (ETL listed)	117 (175)	135 (201)
<b>F2-11SSEF</b>	Dual cable, bonded tape, 60% braid, non-bonded tape, 40% braid, flooded for underground, PE jacket	101 (151)	119 (178)
<b>F2-11SSVM</b> 	Dual cable, bonded tape, 60% braid, non-bonded tape, 40% braid, PVC jacket, .109 messenger	149 (222)	167 (249)

NOTE: NEC Article 830 products are available to meet the requirements of Network Powered Broadband Communications Systems.

# 11 Series Drop Cable

## Product Specifications

### Standard Construction

14 gauge [0.064 in. (1.63 mm)] copper covered steel center conductor; gas expanded polyethylene dielectric; inner shield aluminum-polypropylene-aluminum laminated tape with overlap bonded to dielectric; outer shield of 34 AWG bare aluminum braid wire; jacket of black polyvinylchloride or polyethylene (flooded). Nominal O.D. 0.400 in. (10.16 mm).

### Physical Dimensions

Component	Standard Shield		Tri-Shield		Super-Shield	
	Inches	mm	Inches	mm	Inches	mm
Nominal Center Conductor Diameter	0.064	1.63	0.064	1.63	0.064	1.63
Nominal Diameter Over Dielectric	0.280	7.11	0.280	7.11	0.280	7.11
Nominal Diameter Over First Shield (Tape)	0.287	7.29	0.287	7.29	0.287	7.29
Nominal Diameter Over Jacket	0.400	10.16	0.400	10.16	0.407	10.34
Nominal Jacket Wall Thickness	0.042	1.07	0.039	0.99	0.037	0.94
Nominal Diameter of Steel Messenger	0.072	(single) 1.83	0.072	(single) 1.83	0.072	(single) 1.83
	0.109	(dual) 2.77	0.109	(dual) 2.77	0.109	(dual) 2.77

### Mechanical Characteristics

Minimum Breaking	0.072	365 lbs.	166kg <sub>f</sub>
Strength of Messenger	0.109	1800 lbs.	818kg <sub>f</sub>

### Electrical Characteristics

Nominal Impedance	75 Ohms
Nominal Velocity of Propagation	85%

### Corrosion Resistance

Many products are available with a choice of two corrosion resistant treatments. Contact our Customer Service Department for specific information.



- **BrightWire**® is a dry, anti-corrosive treatment that chemically combines with metal components to form a protective shield against water and subsequent corrosion. (Exceeds the SCTE requirement for corrosion resistant cable.) BrightWire treatment is available on all PVC jacket products and can be recognized by its gold colored tape.
- **APD**® is a non-flowing, amorphous polypropylene flooding compound.

Specify BrightWire or APD when ordering product:

**F1160BV-BW** (BrightWire® anti-corrosive treatment)

**F1160BV-APD** (APD anti-corrosive treatment)

### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	Maximum (dB/100 ft)	Maximum (dB/100 m)
5	0.38	1.25
55	0.96	3.15
83	1.18	3.87
187	1.75	5.74
211	1.90	6.23
250	2.05	6.72
300	2.25	7.38
350	2.42	7.94
400	2.60	8.53
450	2.75	9.02
500	2.90	9.51
550	3.04	9.97
600	3.18	10.43
750	3.65	11.97
865	3.98	13.05
1000	4.35	14.27

Specifications are subject to change without notice.

## QR® 320 Series Drop Cable

### Product Descriptions



CommScope's patented QR® coaxial cable was developed to meet the increasing demands of tomorrow's broadband networks. QR has the highest reliability and flexibility of any coaxial cable and low RF attenuation.

All QR cable products offer tough polyethylene jackets and a standardized, environmentally sealed connector interface engineered for reliability and craft friendliness.

QR 320 Drop Cable is optimized for use in long drop applications. QR 320 Drop Cable offers unmatched flexibility, reliability and cost effectiveness, as well as superior shielding effectiveness.

#### Standard Construction

A precision aluminum strip is formed and continuously RF welded around a high compression micro-cellular foam dielectric core, eliminating RF leakage, and the rigidity common in traditional coaxial products. The shield is fully bonded to the dielectric core, as is the copper clad aluminum center conductor. A tough polyethylene jacket is applied standard, which enhances cable reliability and allows QR's unique connector technology to form an environmental seal.

#### Aerial Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 320 JCA</b> 	offers all of QR's standard construction features	47 lbs/kft (70 kg/km)	61 lbs/kft (91 kg/km)	1000 ft (305 m)
<b>QR 320 JCAM 083 EHS</b> 	has a co-extruded galvanized steel messenger for self-supporting applications	74 lbs/kft (111 kg/km)	88 lbs/kft (131 kg/km)	1000 ft (305 m)
<b>QR 320 JCAM 109</b> (Also Available)		89 lbs/kft (133 kg/km)	103 lbs/kft (154 kg/km)	1000 ft (305 m)

#### Underground Installation

Catalog Number	Description	Cable Weight	Shipping Weight	Standard Length*
<b>QR 320 JCASS</b> 	features CommScope's Migra-Heal® floodant that seals jacket damage to inhibit corrosion	47 lbs/kft (70 kg/km)	61 lbs/kft (91 kg/km)	1000 ft (305 m)

\*Longer (or shorter) lengths are available.

# QR® 320 Series Drop Cable

## Product Specifications



### Physical Dimensions

Component	Inches	mm
Nominal Center Conductor Diameter	0.071	1.80
Nominal Diameter Over Dielectric	0.294	7.47
Nominal Diameter Over Outer Conductor	0.320	8.13
Nominal Outer Conductor Thickness	0.013	0.34
Nominal Diameter Over Jacket	0.395	10.03
Nominal Jacket Wall Thickness	0.0375	0.89

### Messenger Version

Diameter of Steel Messenger	0.083	2.11
	0.109	2.77

### Mechanical Characteristics

Minimum Bending Radius	3.0 in.	76.2 mm
Maximum Pulling Tension	120 lbs.	54.5 kg <sub>f</sub>
Minimum Breaking Strength of Messenger	(.083) 1,000 lbs.	453 kg <sub>f</sub>
	(109) 1,800 lbs.	816 kg <sub>f</sub>

### Electrical Characteristics

Capacitance	15.3 ± 1.0 pf/ft	50 ± 3.0 nf/km
Impedance	75 ± 3 ohms	
Velocity of Propagation	87%	

### Maximum D.C. Resistance @ 68°F (20°C)

Copper Clad		
Inner Conductor	3.28 ohms/1000 ft.	10.76 ohms/km
Outer Conductor	0.99 ohms/1000 ft.	3.25 ohms/km
Loop	4.27 ohms/1000 ft.	14.01 ohms/km

### Attenuation [@ 68° F. (20° C.)]

Frequency (MHz)	(dB/100 ft) Maximum	(dB/100 m) Maximum
5	0.24	0.79
30	0.62	2.03
45	0.76	2.49
50	0.80	2.62
55	0.84	2.76
83	1.07	3.51
108	1.22	4.00
150	1.45	4.76
181	1.60	5.25
193	1.65	5.41
211	1.73	5.68
220	1.76	5.77
250	1.86	6.10
270	1.94	6.37
300	2.04	6.69
325	2.17	7.12
350	2.25	7.38
375	2.30	7.55
400	2.38	7.81
425	2.45	8.04
450	2.52	8.27
500	2.72	8.92
550	2.85	9.35
600	2.98	9.78
750	3.34	10.96
865	3.62	11.87
1000	3.89	12.76

Specifications are subject to change without notice.

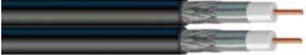
## NEC Riser 59 Series Drop Cable

### Product Descriptions



#### 59 Riser Series - CATVR

20 gauge [0.032 in. (0.81 mm)] copper covered steel center conductor; gas expanded polyethylene dielectric; inner shield aluminum-polypropylene-aluminum laminated tape with overlap bonded to dielectric; outer shield of bare aluminum braid wire; jacket of flame retardant black polyvinylchloride. Nom. O.D. 0.240 in. (6.10 mm).

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Weight lbs/kft (kg/km)
<b>F5967BVR</b> 	Bonded tape, 67% braid, flame retardant PVC jacket	23 (35)	26 (39)
<b>F2-5967BVR</b> 	Dual cable, bonded tape, 67% braid, flame retardant PVC jacket	46 (69)	51 (76)
<b>F5995BVR</b> 	Bonded tape, 95% braid, flame retardant PVC jacket	25 (38)	28 (42)
<b>F59TSVR</b> 	Bonded tape, 67% braid, flame retardant PVC jacket	23 (35)	26 (39)
<b>F59SSVR</b> 	Bonded tape, 53% braid, non-bonded tape, 35% braid, flame retardant PVC jacket	28 (42)	31 (47)

Meets NEC Article 820 Riser Rating (ETL listed).

# NEC Riser 59 Series Drop Cable

## Product Specifications

### 59 Series Riser

#### Physical Dimensions

Component	Standard Shield		Super-Shield	
	Inches	mm	Inches	mm
Nominal Center Conductor Diameter	0.032	0.81	0.032	0.81
Nominal Diameter Over Dielectric	0.144	3.66	0.144	3.66
Nominal Diameter Over First Shield (Tape)	0.151	3.84	0.151	3.84
Nominal Diameter Over Jacket	0.240	6.10	0.265	6.73
Nominal Jacket Wall Thickness	0.032	0.81	0.034	0.86

#### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	Maximum (dB/100 ft)	Maximum (dB/100 m)
5	0.86	2.86
55	2.05	6.73
83	2.45	8.04
187	3.60	11.81
211	3.80	12.47
250	4.10	13.45
300	4.45	14.60
350	4.80	15.75
400	5.10	16.73
450	5.40	17.72
500	5.70	18.70
550	5.95	19.52
600	6.20	20.34
750	6.97	22.87
865	7.52	24.67
1000	8.12	26.64

#### Electrical Characteristics

Nominal Impedance	75 Ohms
Nominal Velocity of Propagation	85%

Specifications are subject to change without notice.

## NEC Riser 6 and 11 Series Drop Cable

### Product Descriptions



#### 6 Riser Series - CATVR

18 gauge [0.0359 in. (0.91 mm)] copper covered steel center conductor; gas expanded polyethylene dielectric; inner shield aluminum-polypropylene-aluminum laminated tape with overlap bonded to dielectric; outer shield of bare aluminum braid wire; jacket of flame retardant black polyvinylchloride. Nom. O.D. 0.272 in. (6.91 mm).

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Weight lbs/kft (kg/km)
<b>F660BVR</b> 	Bonded tape, 60% braid, flame retardant PVC jacket	28 (42)	31 (47)
<b>F2-660BVR</b> 	Dual cable, bonded tape, 60% braid, flame retardant PVC jacket	55 (82)	61 (91)
<b>F6T5VR</b> 	Bonded tape, 60% braid, non-bonded tape, flame retardant PVC jacket	28 (42)	31 (47)
<b>F6SSVR</b> 	Bonded tape, 60% braid, non-bonded tape, 40% braid, flame retardant PVC jacket	34 (51)	38 (57)

#### 11 Riser Series - CATVR

14 gauge [0.064 in. (1.63 mm)] copper covered steel center conductor; gas expanded polyethylene dielectric; inner shield aluminum-polypropylene-aluminum laminated tape with overlap bonded to dielectric; outer shield of bare aluminum braid wire; jacket of flame retardant black polyvinylchloride. Nom. O.D. 0.395 in. (10.03 mm).

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Weight lbs/kft (kg/km)
<b>F1160BVR</b> 	Bonded tape, 60% braid, flame retardant PVC jacket	57 (85)	63 (94)
<b>F11SSVR</b> 	Bonded tape, 60% braid, non-bonded tape, 40% braid, flame retardant PVC jacket	60 (90)	66 (99)

Meets NEC Article 820 Riser Rating (ETL listed).

# NEC Riser 6 and 11 Series Drop Cable

## Product Specifications



### 6 Series Riser

#### Physical Dimensions

Component	Standard Inches	Shield mm	Super-Shield Inches	mm
Nominal Center Conductor Diameter	0.040	1.02	0.040	1.02
Nominal Diameter Over Dielectric	0.180	4.57	0.180	4.57
Nominal Diameter Over First Shield (Tape)	0.187	4.75	0.187	4.75
Nominal Diameter Over Jacket	0.272	6.91	0.297	7.54
Nominal Jacket Wall Thickness	0.030	0.76	0.033	0.84

#### Electrical Characteristics

Nominal Impedance	75 Ohms
Nominal Velocity of Propagation	85%

#### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	Maximum (dB/100 ft)	Maximum (dB/100 m)
5	0.58	1.90
55	1.60	5.25
83	1.95	6.40
187	2.85	9.35
211	3.05	10.00
250	3.30	10.82
300	3.55	11.64
350	3.85	12.63
400	4.15	13.61
450	4.40	14.43
500	4.66	15.29
550	4.90	16.08
600	5.10	16.73
750	5.65	18.54
865	6.10	20.01
1000	6.55	21.49

### 11 Series Riser

#### Physical Dimensions

Component	Standard Inches	Shield mm	Super-Shield Inches	mm
Nominal Center Conductor Diameter	0.064	1.63	0.064	1.63
Nominal Diameter Over Dielectric	0.280	7.11	0.280	7.11
Nominal Diameter Over First Shield (Tape)	0.287	7.29	0.287	7.29
Nominal Diameter Over Jacket	0.395	10.03	0.405	10.29
Nominal Jacket Wall Thickness	0.042	1.07	0.037	0.94

#### Electrical Characteristics

Nominal Impedance	75 Ohms
Nominal Velocity of Propagation	85%

#### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	Maximum (dB/100 ft)	Maximum (dB/100 m)
5	0.38	1.25
55	0.96	3.15
83	1.18	3.87
187	1.75	5.74
211	1.90	6.23
250	2.05	6.76
300	2.25	7.38
350	2.42	7.94
400	2.60	8.53
450	2.75	9.02
500	2.90	9.51
550	3.04	9.97
600	3.18	10.43
750	3.65	11.97
865	3.98	13.05
1000	4.35	14.27

Specifications are subject to change without notice.

# NEC Plenum Series Drop Cable

## Product Descriptions



### 59 Series Plenum - CATVP (Plenumax®)

20 gauge [0.032 in. (0.81 mm)] copper covered steel center conductor; gas expanded Teflon® dielectric (FEP); inner shield aluminum laminated tape with overlap bonded to dielectric; outer shield of 34 AWG bare aluminum braid wire; jacket of plenum rated material. Nom. O.D. 0.202 in. (5.26 mm).

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Weight lbs/kft (kg/km)
<b>2020V</b> (Vinyl Jacket Version) 	Foam FEP dielectric, bonded tape, 65% braid, plenum rated jacket	21 (31)	24 (36)
<b>2020K</b> (Kynar® Jacket Version) 			
<b>2022V</b> (Vinyl Jacket Version) 	Foam FEP dielectric, bonded tape, 60% braid, non-bonded tape, 40% braid, plenum rated jacket	25 (37)	28 (42)
<b>2022K</b> (Kynar Jacket Version) 			

### 6 Series Plenum - CATVP (Plenumax®)

18 gauge [0.040 in. (1.02 mm)] copper covered steel center conductor; gas expanded Teflon dielectric (FEP); inner shield aluminum laminated tape with overlap bonded to dielectric; outer shield of 34 AWG bare aluminum braid wire; jacket of plenum rated material. Nom. O.D. 0.237 in. (6.20 mm).

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Weight lbs/kft (kg/km)
<b>2275V</b> (Vinyl Jacket Version) 	Foam FEP dielectric, bonded tape, 60% braid, plenum rated jacket	29 (43)	33 (49)
<b>2276V</b> (Vinyl Jacket Version) 	Foam FEP dielectric, bonded tape, 90% braid, plenum rated jacket	30 (45)	33 (49)
<b>2227V</b> (Vinyl Jacket Version) 	Foam FEP dielectric, bonded tape, 60% braid, non-bonded tape, 40% braid, plenum rated jacket	32 (48)	35 (52)
<b>2227K</b> (Kynar Jacket Version) 			

### 11 Series Plenum - CATVP (Plenumax®)

14 gauge [0.064 in. (1.45 mm)] copper covered steel center conductor; gas expanded Teflon dielectric (FEP); inner shield aluminum laminated tape with overlap bonded to dielectric; outer shield of 34 AWG bare aluminum braid wire; jacket of plenum rated material. Nom. O.D. of 0.351 in. (8.92 mm).

Catalog Number	Description	Cable Weight lbs/kft (kg/km)	Shipping Weight lbs/kft (kg/km)
<b>2285K</b> (Kynar Jacket Version) 	Foam FEP dielectric, bonded tape, 60% braid, plenum rated jacket	57 (85)	64 (95)
<b>2287K</b> (Kynar Jacket Version) 	Foam FEB dielectric, bonded tape, 60% braid, non-bonded tape, 40% braid, plenum rated jacket	66 (98)	73 (109)

Meets NEC Article 820 Plenum Rating (UL listed).

NOTE: Must use connectors designed for use with plenum cable.

Kynar® is a registered trade name of Atofina®

Teflon® is a registered trade name of du Pont de Nemours and Company®

### 59 Series Plenum

#### Physical Dimensions

Component	Standard Shield		Super-Shield	
	Inches	mm	Inches	mm
Nominal Center Conductor Diameter	0.032	0.81	0.032	0.81
Nominal Diameter Over Dielectric	0.135	3.63	0.135	3.43
Nominal Diameter Over First Shield (Tape)	0.141	3.84	0.141	3.58
Nominal Diameter Over Jacket	0.202	5.26	0.228	5.79
Nominal Jacket Wall Thickness	0.015	0.41	0.016	0.41

#### Electrical Characteristics

Nominal Impedance	75 Ohms
Nominal Velocity of Propagation	84%

#### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	Typical (dB/100 ft)	Typical (dB/100 m)
1	0.48	1.56
10	0.88	2.87
50	1.85	6.07
100	2.51	8.24
200	3.58	11.73
400	5.50	18.04
700	7.45	24.44
900	8.70	28.54
1000	9.31	30.55

### 6 Series Plenum

#### Physical Dimensions

Component	Standard Shield		Super-Shield	
	Inches	mm	Inches	mm
Nominal Center Conductor Diameter	0.040	1.02	0.040	1.02
Nominal Diameter Over Dielectric	0.170	4.57	0.180	4.57
Nominal Diameter Over First Shield (Tape)	0.176	4.75	0.187	4.75
Nominal Diameter Over Jacket	0.237	6.20	0.284	7.21
Nominal Jacket Wall Thickness	0.016	0.41	0.020	0.51

#### Electrical Characteristics

Nominal Impedance	75 Ohms
Nominal Velocity of Propagation	84%

#### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	Typical (dB/100 ft)	Typical (dB/100 m)
1	0.38	1.25
10	0.70	2.30
50	1.48	4.85
100	2.01	6.59
200	2.86	9.38
400	4.23	13.87
700	5.96	19.55
900	6.96	22.83
1000	7.45	24.44

### 11 Series Plenum

#### Physical Dimensions

Component	Standard Shield		Super-Shield	
	Inches	mm	Inches	mm
Nominal Center Conductor Diameter	0.064	1.63	0.064	1.63
Nominal Diameter Over Dielectric	0.280	7.11	0.280	7.11
Nominal Diameter Over First Shield (Tape)	0.286	7.26	0.287	7.29
Nominal Diameter Over Jacket	0.351	8.92	0.372	9.45
Nominal Jacket Wall Thickness	0.020	0.51	0.020	0.51

#### Electrical Characteristics

Nominal Impedance	75 Ohms
Nominal Velocity of Propagation	82%

#### Attenuation [ @ 68° F. (20° C.) ]

Frequency (MHz)	Typical (dB/100 ft)	Typical (dB/100 m)
1	0.20	0.66
10	0.45	1.48
50	0.90	2.95
100	1.28	4.20
200	1.85	6.07
400	2.75	9.02
700	3.92	12.86
900	4.72	15.48
1000	5.04	16.53

Specifications are subject to change without notice.

# MultiReach® Drop Cable Catalog Numbering Key

For Underground and Indoor/Outdoor Cables

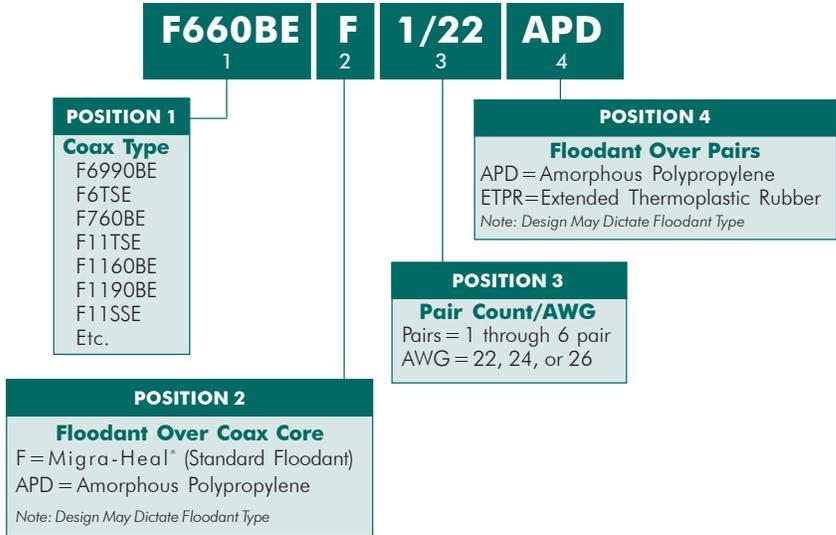


F Series 6, 7, or 11 coax with one (1) thru six (6) 22, 24, or 26 AWG solid copper twisted pair conductors. MultiReach® products are available in underground, indoor/outdoor, and aerial designs.

## Underground MultiReach®

(flooded, 1 pair version shown)

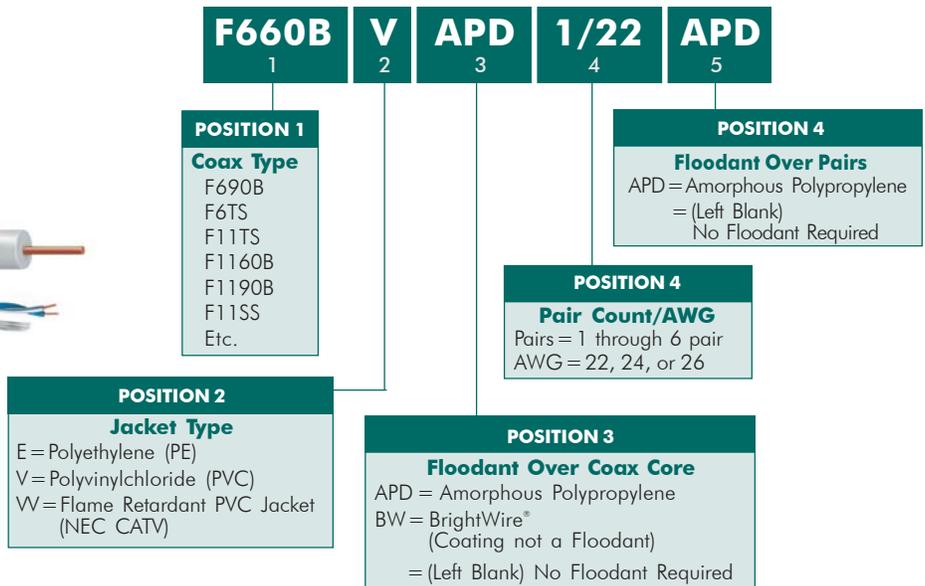
The Underground MultiReach® design includes a flooded polyethylene jacketed product with coax and twisted pair members.



## Indoor/Outdoor MultiReach®

(non-flooded, one pair version shown)

The Indoor/Outdoor MultiReach® design includes a flooded or non-flooded polyvinylchloride (PVC) jacketed product with coax and twisted pair members.



**Notes:**

BE = Bonded Tape with Polyethylene (PE) Jacket  
BV = Bonded Tape with Polyvinylchloride (PVC) Jacket  
PVC Jacketed cables are designed to be flooded or non-flooded

# MultiReach® Drop Cable Catalog Numbering Key

## For Aerial Cables



### Aerial MultiReach®

(messengered, five pair version shown)

The aerial MultiReach® design includes a flooded or non-flooded polyvinylchloride (PVC) jacketed product with twisted pair, coax, and messenger members.



**POSITION 1**  
**Coax Type**  
F690B  
F6TS  
F11TS  
F1160B  
F1190B  
F11SS  
Etc.

**POSITION 6**  
**Floodant Over Pairs**  
APD = Amorphous Polypropylene  
= (Left Blank)  
No Floodant Required

**POSITION 5**  
**Pair Count/AWG**  
Pairs = 1 through 6 pair  
AWG = 22, 24, or 26

**POSITION 2**  
**Jacket Type**  
V = Polyvinylchloride (PVC)  
VV = Flame Retardant PVC Jacket (NEC CATV)

**POSITION 4**  
**Floodant Over Coax Core**  
APD = Amorphous Polypropylene  
BW = BrightWire® (Coating not a Floodant)  
= (Left Blank) No Floodant Required

**POSITION 3**  
M = Standard Messenger  
Engineer Determines Size

### Nominal Diameter over Outer Jacket

Pairs			Web Width	Coaxial Cable	Messengers for Aerial Products
<b>22 AWG</b>	<b>24 AWG</b>	<b>26 AWG</b>	0.045 for Underground	F6 ..... 0.272	.051 Steel ..... 0.111 Dia.
1 - 0.152	1 - 0.144	1 - 0.159		F7 ..... 0.320	.072 Steel ..... 0.132 Dia.
2 - 0.190	2 - 0.195	2 - 0.177	0.035 for Indoor/Outdoor and Aerial	F11 ..... 0.395	.083 Steel ..... 0.163 Dia.
3 - 0.210	3 - 0.209	3 - 0.194		F6TS ..... 0.278	.109 Steel ..... 0.189 Dia.
4 - 0.235	4 - 0.209	4 - 0.205		F7TS ..... 0.323	
5 - 0.260	5 - 0.266	5 - 0.229		F11TS ..... 0.395	
6 - 0.310	6 - 0.295	6 - 0.235		F6SS ..... 0.297	
				F7SS ..... 0.340	
			F11SS ..... 0.405		

Note: Two (2) Webs are used when Messenger is used

### Pairs

**Description**  
Solid copper conductor, polyethylene (PE) insulation, unshielded twisted pair with a rip cord.

Solid Conductor	
22 AWG	0.0253 inches (.643 mm)
24 AWG	0.0201 inches (.511 mm)
26 AWG	0.0159 inches (.404 mm)

**Number of Pairs Available**  
1 - 6

**Standard Length**  
1000 ft/Reel

Pair Number	Color Combination
1	Blue + White/Blue Stripe
2	Orange + White/Orange Stripe
3	Green + White/Green Stripe
4	Brown + White/Brown Stripe
5	Slate + White/Slate Stripe
6	Blue + Red/Blue Stripe

### Calculating Overall Cable Width

**Non-Messenger MultiReach®**  
Add: Coax and pair jacket diameters plus one (1) web.

Specifications are subject to change without notice.

# Drop Cable

## Packaging and Shipping Information



### Reel Size Example



- F** = Flange Diameter (in inches)
- D** = Drum Diameter (in inches)
- T** = Traverse inside distance between flanges (in inches)

Note: T is inside dimension, not overall width



### Minimum Purchase Quantity

#### Basic Products

Size	Round and Messenger	
	Reels	Boxes
F6	9 <sup>a</sup>	16
F11	4	N/A

Basic Products available in SMALL Quantity Purchases.

<sup>a</sup>Exception: Minimum reel quantity for F6SSVM is 8.

Size	Reels	
	Round	Messenger
QR 320 Drop	8 (4)	8 (4)

#### Other Products

CommScope offers a wide variety of products for your unique applications. Options available include custom print, jacket color, sequential marking, etc. Additional charges may apply for these features and a higher minimum quantity is required.

Size	Round and Messenger			Dual	Multi-Reach
	Reels	Boxes	Coils <sup>b</sup>	Reels Only	Reels Only
F59	27 (9)	32 (16)	32 (8)	48 (12)	48 (12)
F6	27 (9) <sup>c</sup>	32 (16)	32 (8)	48 (12)	48 (12)
F11	24 (4)	N/A	N/A	48 (12)	48 (12)

**Example:** The minimum order quantity for F6 is 27 reels (or 27,000 ft). For a quantity greater than 27, increments of 9 should be used (36, 45, 54, etc.).

<sup>b</sup> Indicates the minimum number of coils per order. Actual footage per coil varies by product.

<sup>c</sup> Exception: Minimum reel quantity for F6SSVM is 24 (8).

### Freight Policy

- Shipments of \$5,000 or more are f.o.b. factory, freight allowed if destination is within the continental United States.
- Shipments of less than \$5,000 are f.o.b. factory.
- Standard lengths are 1,000 feet (304.8 meters) plus or minus 10% for reels and CommPak™ boxes. Standard length per coil varies by product.
- Not more than 5% of each shipment shall be other than standard lengths, with no lengths shorter than 500 feet (152 meters) on 1,000 foot (304.8 meters) reels. Orders for custom print may receive lengths down to 300 feet.
- Method of shipment at discretion of shipper.
- Inspection and final acceptance shall be made at factory prior to shipment.

### 59 Series

Product Type	Reel Dimensions (F x D x T)		Reels/Pkg	Package Dimensions (L x W x H)	
	Inches	cm		Inches	cm
Single	12 x 4 x 9	30 x 10 x 23	27	36 x 36 x 35	91 x 91 x 89
Single Messenger	14½ x 4 x 11	37 x 10 x 28	27	44 x 44 x 41	112 x 112 x 104
Single Tri-Shield	12 x 4 x 9	30 x 10 x 23	27	36 x 36 x 35	91 x 91 x 89
Single Super-Shield	12 x 4 x 12	37 x 10 x 30	27	36 x 36 x 44	91 x 91 x 112
Dual	16 x 6 x 11	41 x 15 x 28	24	48 x 44 x 41	122 x 112 x 104
Dual Messenger	18 x 6 x 11	46 x 15 x 28	12	36 x 36 x 41	91 x 91 x 104
Dual Tri-Shield	16 x 6 x 11	41 x 15 x 28	24	48 x 44 x 41	122 x 112 x 104
Dual Super-Shield	18 x 6 x 11	46 x 15 x 28	12	36 x 36 x 41	91 x 91 x 104

### 6 Series

Product Type	Reel Dimensions (F x D x T)		Reels/Pkg	Package Dimensions (L x W x H)	
	Inches	cm		Inches	cm
Single	12 x 4 x 12	30 x 10 x 30	27	36 x 36 x 44	91 x 91 x 112
Single Messenger	14½ x 4 x 11	37 x 10 x 28	27	44 x 44 x 41	112 x 112 x 104
Single Tri-Shield	12 x 4 x 12	30 x 10 x 30	27	36 x 36 x 44	91 x 91 x 112
Single Super-Shield	14½ x 4 x 11	37 x 10 x 28	27	44 x 44 x 41	112 x 112 x 104
Super-Shield Messenger	14½ x 4 x 11	37 x 10 x 28	27	44 x 44 x 41	112 x 112 x 104

### 7 Series

Product Type	Reel Dimensions (F x D x T)		Reels/Pkg	Package Dimensions (L x W x H)	
	Inches	cm		Inches	cm
Single	14½ x 4 x 11	37 x 10 x 28	27	44 x 44 x 41	112 x 112 x 104
Single Messenger	18 x 6 x 11	46 x 15 x 28	12	36 x 36 x 41	91 x 91 x 104
Single Tri-Shield	14½ x 4 x 11	37 x 10 x 28	27	44 x 44 x 41	112 x 112 x 104
Single Super-Shield	16 x 6 x 11	41 x 15 x 28	24	48 x 44 x 41	122 x 112 x 104
Dual	30 x 12 x 12	76 x 30 x 30	3	30 x 30 x 41	76 x 76 x 104

### 11 Series

Product Type	Reel Dimensions (F x D x T)		Reels/Pkg	Package Dimensions (L x W x H)	
	Inches	cm		Inches	cm
Single	18 x 6 x 11	46 x 15 x 28	12	36 x 36 x 41	91 x 91 x 104
Single Messenger	22 x 6 x 11	56 x 15 x 28	12	44 x 44 x 41	112 x 112 x 104
Single Tri-Shield	18 x 6 x 11	46 x 15 x 28	12	36 x 36 x 41	91 x 91 x 104
Single Super-Shield	18 x 6 x 11	46 x 15 x 28	12	36 x 36 x 41	91 x 91 x 104
Super-Shield Messenger	22 x 6 x 11	56 x 15 x 28	12	44 x 44 x 41	112 x 112 x 104

### QR 320 Series

Product Type	Reel Dimensions (F x D x T)		Reels/Pkg	Package Dimensions (L x W x H)	
	Inches	cm		Inches	cm
Round	24 x 12 x 13	61 x 31 x 33	8	48 x 48 x 33	122 x 122 x 84
Messenger	24 x 12 x 13	61 x 31 x 33	8	48 x 48 x 33	122 x 122 x 84

### Introduction

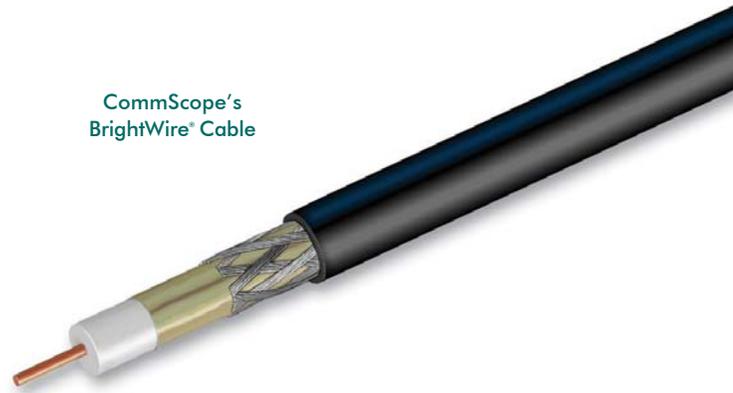
Drop cables are deployed in a wide variety of climates, but just three installation environments - aerial, underground and indoor. While each environment offers unique challenges and conditions, they all share a common concern – corrosion. Fortunately, modern subscriber access cables offer a variety of treatment methods to combat corrosion, each with its own unique features. The performance and features of these treatments will assist the installer in determining which treatment is appropriate for their environment.

### Standards for Corrosion Resistance

Any discussion of corrosion resistance must begin with a review of applicable performance standards. The SCTE Engineering Committee IPS (Interface Practices Subcommittee) has written and adopted the “Test Method for Moisture Inhibitor Corrosion Resistance”, IPS-TP-017. This test method requires that a cable sample with slots cut in the jacket be exposed to a salt fog environment for 144 hours. Once complete, the shielding surrounding the slot must not show any visible signs of corrosion.

All CommScope corrosion resistant treatments meet and exceed the requirements as defined in this standard.

CommScope's  
BrightWire® Cable



### Available Treatments

CommScope Drop Cables are available with the following corrosion resisting treatments. Treatments are available for all shielding configurations (as shown below in Table 1).

The common applications listed are recommended and typical for the industry, although any treatment may be substituted as a matter of customer preference, and all treatments have proven reliable in all conditions.

BrightWire® is a dry chemical treatment that is applied to the metals prior to cable assembly. BrightWire resists oxidation in the presence of water, and is the cleanest and least obtrusive treatment available today. BrightWire is best utilized in aerial and indoor applications where corrosion resistance is desired without the mess flooding compounds can create during cable preparation.

### Available Corrosion Resistant Treatments

Trade Name	Description	IPS-TP-017	Associated Jacket Material	Preferential Application
<b>BrightWire®</b>	F6TSVV- <b>BW</b> F677TSVV- <b>BW</b>	Exceed	PVC or PE	Indoor or Aerial
<b>Migra-Heal®</b>	F6TSEF F677TSEF	Exceed	PE only	Underground
<b>APD®</b>	F6TSE- <b>APD</b> F677TSE- <b>APD</b>	Exceed	PVC or PE	General purpose
<b>ETPR</b>	F6TSE- <b>ETPR</b> (1/22- <b>ETPR</b> ) F677TSE- <b>ETPR</b> (1/22- <b>ETPR</b> )	Exceed	PE only	Underground with hybrid twisted pairs

Table 1

Migra-Heal® is a viscous flooding compound which coats the aluminum shield elements where applied. Migra-Heal forms a moisture barrier, preventing water from contacting and corroding shield elements. Migra-Heal is only available with a PE jacket material. Migra-Heal's viscous nature provides superior moisture and corrosion resistance, and is often preferred in underground plant where standing water is common.

APD™ is a waxy filling compound which coats the aluminum shield elements where applied. APD, like Migra-Heal, forms a moisture barrier, preventing water from contacting and corroding shield elements. APD is easily cleaned off, is available with all jacket materials, and is often preferred in aerial plant. APD is often chosen as an excellent general purpose flooding compound.

ETPR is a traditional flooding compound from the telephony industry. It is chosen where twisted pair hybrid cables are utilized, primarily because it wipes clean easily. ETPR, like all CommScope flooding compounds, meets and exceeds the requirements of IPS-TP-017.

### Conclusion

CommScope offers a variety of corrosion resistant treatments for our drop cables. Each treatment is proven and effective for the prevention of corrosion, exceeding the requirements defined in the SCTE "Test Method for Moisture Inhibitor Corrosion Resistance", IPS-TP-017. The treatments offer unique features and performance attributes that have caused them to be preferentially deployed in specific environments over the years.

For more information about specific deployment or treatment options, please refer to the following documents or contact the Digital Broadband Resource Center at 866-333-dBRC (866-333-3272).

### Introduction

The convergence of voice, video and data technologies into the broadband network has raised the standards of performance for the components of these exciting new networks. Signal integrity has become a focal point for service providers in ensuring that customer satisfaction can be guaranteed. A drop cable's performance is a function of its design and is a major part of that signal integrity.

### The Cable Evolution

Historically, the predominant drop cable is the RG6 size, 60% braided drop cable, commonly known as the F660. The F660 drop cable, whether it is flooded, fire resistant, direct burial, or messengered is the workhorse in the 75-ohm world of drop cable. It is a great compromise between cost and performance. More than adequate for many applications, the F660 design falls short in performance compared to cables like "Tri-shield" and "Quad-shield" variations. However, these high-performance cables come with added cost. From these facts comes two questions, how much better are these designs, and how much do they cost? The following discussion will answer these questions by comparing the list price to the average shielding effectiveness of the three cable designs.

### Aging of Cable

Like everything else, cables experience degradation throughout their life. While handling and installation of a cable creates stress on the cable's components, most degradation is attributed to constant exposure to the environment. To that point, shielding performance after handling and flexure is of greater importance than shielding performance before installation or flexure.

It is not practical to rely on the actual aging of cable for research and development of products, and engineering case studies. Obtaining accurate test results in the shortest period of time requires the use of simulated aging techniques.

Cable aging is accelerated at CommScope by placing a section of drop cable into a piece of conduit bent in a parabolic shape, then rotating the sample. The resulting flexure has been shown to simulate 10 years in the plant after 10,000 rotations.

### The Laminated Shielding Tape (LST)

Laminated shielding tapes are a crucial element of the drop cable shield. The tape is made up of two separate layers of aluminum tape that are bonded to either side of a substrate material. The relatively thin layers of aluminum provide the necessary electrical characteristics to allow signal propagation and reduce signal ingress and egress while still maintaining a high degree of flexibility. Laminated shielding tapes provide high frequency shielding, but must be supported to last through the rigors of installations. Without support, the tape will develop microcracks or "gaps", increasing DC resistance, resistivity and attenuation.

### The Braid

The braid in drop cables provides both electrical and mechanical benefits critical to the cables performance.

Electrically, the aluminum braid provides low frequency signal shielding, improved DC loop resistance and better long term shielding.

Mechanically, the braid greatly enhances the tensile strength the cable requires. It also provides the mechanical base for connectors to grip.

A cumulative effect of the electrical and mechanical characteristics of drop cable braid can be most clearly seen in long-term conductivity. Without a braid, the laminated shielding tape cannot withstand the effects of physical stress produced by the environment and installation. That stress results in substantially increased DC resistance for cables without braid.

***CommScope has many years of testing experience that demonstrates the critical relationship between the braid and the laminated shielding tape.***

### Shielding Effectiveness

Drop cable shielding is a function of the condition of, as well as the amount of shielding material present. The majority of the high frequency shielding in a drop cable comes from aluminum composite tapes, so their integrity must be maintained. Braid wire in a drop cable, rather than damaging the tape will support and extend the life of the tape when correctly applied.

The measure of drop cable shielding is shielding effectiveness. Shielding effectiveness may be directly measured utilizing a broadband device like CommScope's GTEM, or calculated with a transfer impedance measurement. Either measurement can reveal both the shielding effectiveness of a new piece of cable, and perhaps more important, a piece of aged cable.

Cable Design	dB Shielding Effectiveness Before Flexure	dB Shielding Effectiveness After 10,000 Cycle Flexure
F6 Quad-shield	110 - 120	95 - 105
F6 Tri-shield	105 - 115	85 - 95
F6 90% shield	85 - 95	75 - 85
F6 60% shield	80 - 90	65-75

Figure 1

The data in Figure 1 compares the shielding effectiveness of four shielding styles of drop cable before and after accelerated aging. The rotary flex fatigue test was employed to obtain the results of aged cable. Clearly the braid is performing its intended function bridging the gaps and physically reducing the effects of flexure on the laminated shielding tapes. Test results indicate shielding effectiveness degrades to a certain point with no further degradation with flexure. The data in Figure 1 also shows that the shielding effectiveness of the various cables is maintained in a relative close approximation to one another even after flexure.

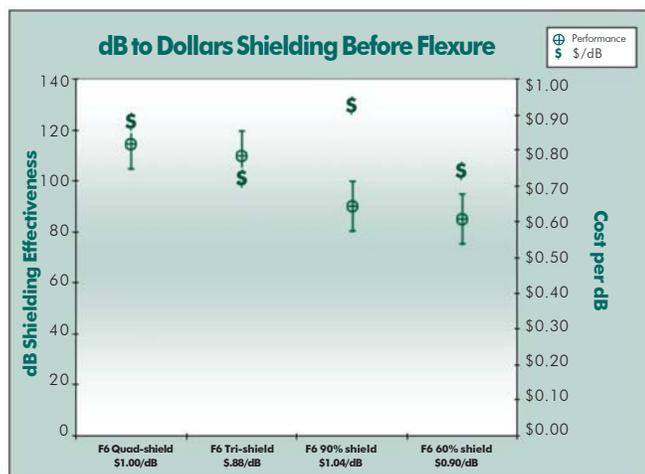


Figure 2

### Dollar for dB

Just how much bang for the buck do the various shielding levels provide? Using the standard list price for these CommScope products, we divided the list price by the dB shielding effectiveness of each cable before and after flexure. We can now compare the "Dollar for the dB" of these four cable designs on a linear scale (Figure2).

As the graph (Figure3) clearly indicates, Tri-shield cable offers the most shielding performance for the dollar. As stated before, the F660 design is more than adequate in many applications but the Tri-shield cable design is clearly superior in performance versus price at ~\$0.88 per dB after flexure. In some applications, Quad shield cables are more appropriate than other designs, such as extreme noisy environments, which are typically more commonplace indoors.

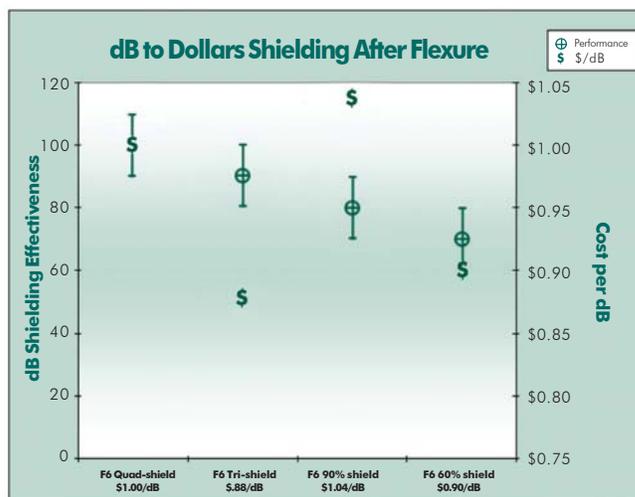


Figure 3

### Summary

Shielding is an important consideration when selecting a cable to deploy into a broadband network. The most important measurement of shielding is shielding effectiveness and the most critical measurement of that is after flexure. For most applications in today's broadband networks, Tri-shield cable provides the best performance/price based cabling solution.

### Introduction

#### What is NEC Article 830?

Article 830 is a new addition to the National Electric Code for 1999. NEC 830 is a re-classification of cables used in network-powered broadband communications systems. While the cables covered under Article 830 are similar to the cables covered in NEC Article 820, there are important differences.

Prior to the explosion of communication and entertainment options now being offered, the telephone company delivered phone service over a low-voltage circuit (providing equipment power), while the cable company piped in milliwatt RF signals that provided programming for the TV. Because drop coax was basically a pipeline for broadcast signals, it carried limited voltage.

Changes in deregulation and the arrival of the internet led to the telephone and cable companies' competition to be the customer's multimedia link to the information age.

The key to all of this is powered broadband cable. CATV, HDTV, telephone, internet and other services can be transmitted and received over a single coaxial cable. The cable runs from the tap to a device called the Network Interface Unit (NIU) which resides in the customer premises and is the distribution point for all these services. The NIU can be powered by the drop, which potentially carries as much as 150 volts of power. Article 830 was written to cover drop cables operating at these higher voltages.

### What are the Changes?

Article 820 covers indoor cables that carry only RF signals, limited voltage <90V. However, Article 830 defines cables that run from the tap to the NIU. Because these cables may carry higher voltage, the level of power is a very important factor in the classification.

Article 830 cables are divided into low and medium power rated cables, with low being from 0 to 100 volts and medium being from 0 to 150 volts.

The second consideration in the creation of Article 830 is the installed location of the cable. Article 830 creates classifications depending on where and how the cable is to be installed. Six classifications for Article 830 medium powered cables were created. (See chart below.)

#### BMU

Broadband Medium-voltage Underground cables for buried installation.

#### BM

Broadband Medium-voltage cables for general use (except for risers and plenums) determined to be flame retardant through the UL-1581 flame test.

#### BMR

Broadband Medium-voltage Riser for vertical runs in shafts from floor to floor.

#### BLU

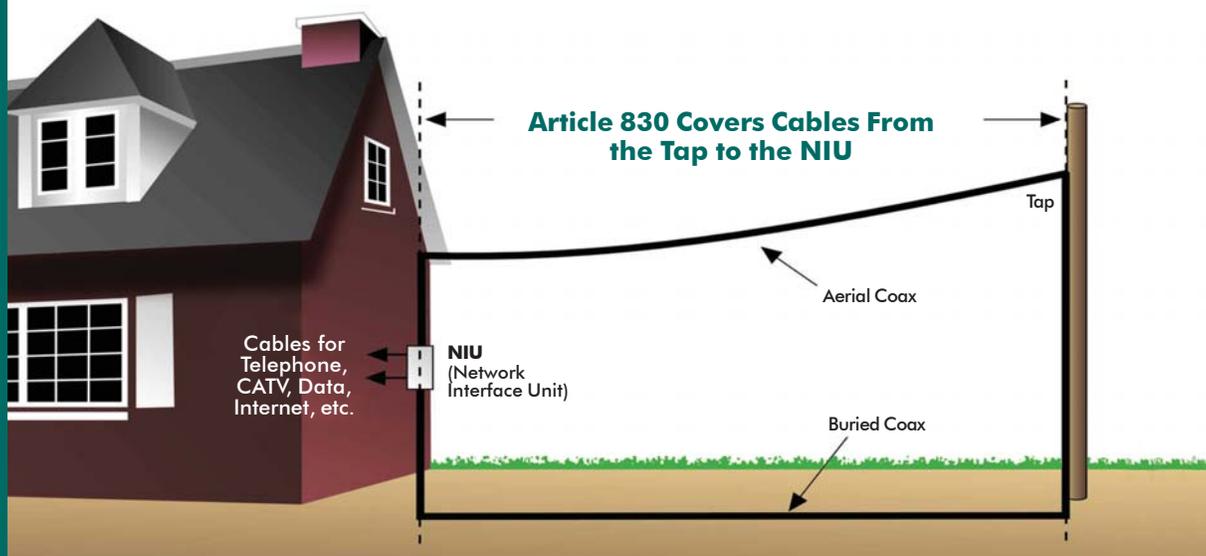
Broadband Low-voltage Underground cables for buried installation.

#### BLX

Broadband Low-voltage cables for residential outdoor and raceway usage determined to be flame retardant through the VW-1 flame test.

#### BLP

Broadband Low-voltage Plenum cables with low smoke properties for use in plenum/duct spaces.



There are specific classifications for buried cables under Article 830. The power-carrying nature of Article 830 cables adds complexity to underground installation. The depth of burial has been revised for direct buried cable, conduit or other raceways. They must be installed to meet the minimum cover requirements as shown in the charts below.

Other than meeting the new depth requirements in Article 830, provisions to utilize a form of surge protection device is an acceptable option (burial depth of 12 inches). This protection device is to be placed between the NIU and the system tap-off device. In the event of a short of the center conductor to ground/sheath or opening in the center conductor, the powering voltage is automatically disconnected from the cable.

Direct buried cables emerging from the ground must be encased in either metal or flame-retardant nonmetallic conduit from their minimum buried depth to a height of 8 feet (2.44 meters) above the ground. Generally, direct buried cables must be kept at least 12 inches (305 millimeters) from power and light circuits unless armored, and cannot be placed within 5 feet (1.52 meters) from a swimming pool.

The low-powered cables (BLU rated) do not have to meet these minimum depth requirements if a listed fault protection device is installed on the network side of the connection to the tap. Any short or interruption should immediately trip the breaker.

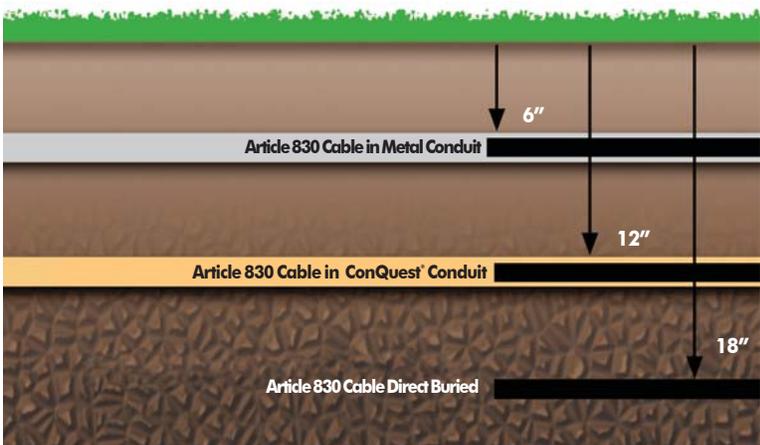
**Grandfathering**

Existing cables that were installed prior to January 1, 2000 will be grandfathered if:

- Cable carries less than 100 volts
- Cable has been properly installed in accordance with Article 820.

**NEC Article 830 Compliant Products From CommScope**

CommScope, the world leader in manufacturing high speed, high bandwidth cables, will offer Article 830-compliant cables pre-installed in conduit ready for burial. ConQuest® Cable-In-Conduit permits Article 830 drop cable to be installed at a more shallow depth than direct buried cables. Our ConQuest line features high density polyethylene material, saving installation time and costs. For more information on NEC Article 830, consult a complete copy of the 1999 National Electrical Code or contact the NEC directly at 800-344-3555

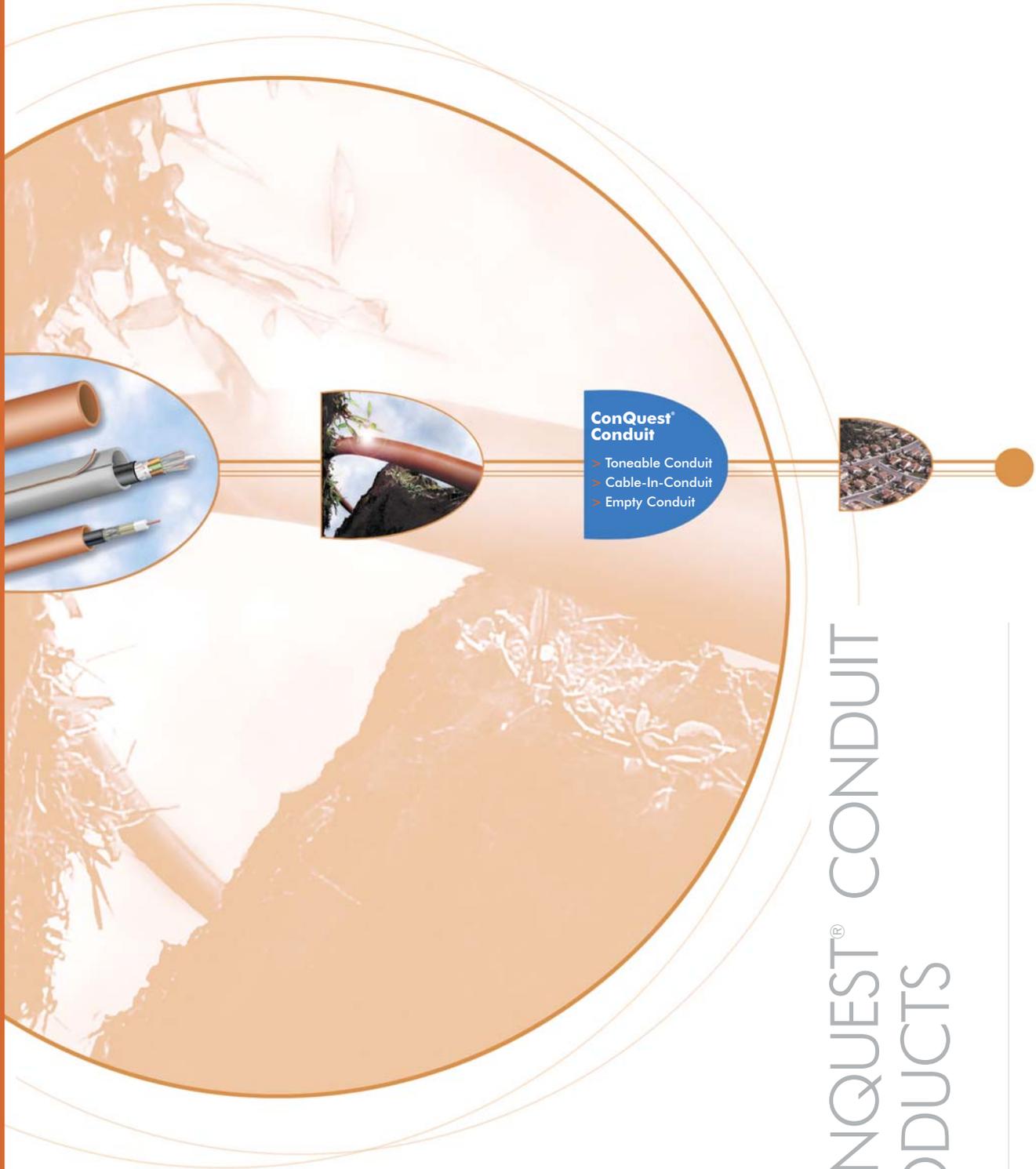


Burial Location	Direct Burial	ConQuest® Cable-In-Conduit	Metal* Conduit
All locations not specified below	18"	12"	6"
Trench below 2" of concrete (or equivalent)	12"	6"	6"
Under a Building (raceway ONLY)	0"	0"	0"
Under a 4" min. concrete slab/no vehicular traffic	12"	4"	4"
One/two family dwellings, driveways, outdoor parking areas	12"	12"	12"

\*rigid and intermediate metal



CommScope Drop Cable-In-Conduit



**ConQuest®  
Conduit**

- Toneable Conduit
- Cable-In-Conduit
- Empty Conduit

CONQUEST® CONDUIT  
PRODUCTS

**Conduit Products**

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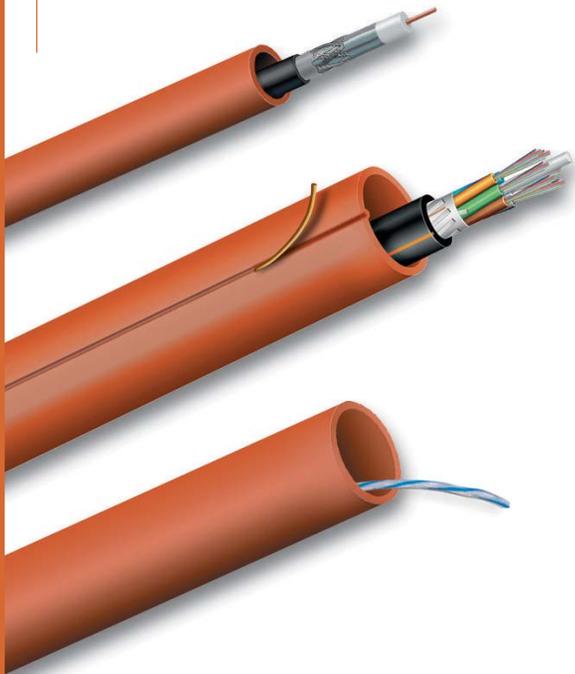
## ConQuest® – Providing Damage Prevention & Access to Underground Facilities

Interest in underground damage prevention is surging. Federal legislation and an array of state laws have heightened concern on protecting vital underground delivery systems. Companies like yours spend billions to ensure continuity of service. These efforts are even more critical as competition heats up because reliability of service largely decides winners and losers in any industry.



## Toneable Conduit™ – Protection & Location in One Tough Package!

CommScope recognizes the challenge of confidently locating underground facilities. Toneable Conduit, the newest member of the ConQuest product family, is a CommScope technological achievement and winner of *Communications Technology*® Magazine 2002 Readers' Choice Award for Best New Transmission & Distribution Line Product. Patent-pending Toneable Conduit features an embedded tone wire that expedites routine maintenance or emergency restoration services and saves installation labor dollars.



## Eliminate Pulling Cable After Conduit Has Been Placed – Specify Cable-In-Conduit

Utility companies and contractors are always digging on public easements. To best protect buried cable from service interruptions, request it pre-installed in a CommScope ConQuest product. These products provide a tough high-density polyethylene conduit factory pre-installed with any CommScope cable. Cable in conduit is becoming standard procedure for broadband operators with an eye on scalability. Today, these operators are building plants which protect today's investment and make future access to cable easy.

## Install Empty ConQuest Conduit for Future Cable Placements

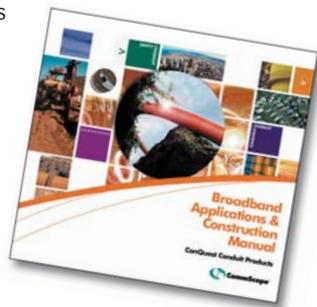
Sometimes conduit needs to be installed ahead of cable; such as for developing neighborhoods and for some long fiber optic cable placements. ConQuest offers an entire package of products that provide a variety of sizes, wall thicknesses, colors and pre-installed pull lines.

### ConQuest Drop in Conduit Facilitates Future Access to Infrastructure

The buried service wire, the final leg of the outside plant, is often the most vulnerable. Home owners like to dig, landscape, repair sprinklers, etc. That's why we offer ConQuest, our own brand of conduit products, factory preinstalled with the cable of your choice.

### Request a FREE Broadband Applications & Construction Library

CommScope's Broadband Applications & Construction Library includes a 4-piece set of valuable reference manuals plus a DVD containing essential training videos on topics such as connectorization, expansion loop formation and fiber optic splicing. These tools teach you how to protect the integrity of your broadband plant while lowering operating/installation costs.



From construction and installation practices, to performance and testing of cable – CommScope Construction Manuals are simply a “must-have” for anyone upgrading or maintaining

broadband networks.

Download a PDF version at our website: <http://www.commscope.com>

(in the literature center) or request a set by phone at 1-800-982-1708.



### CommScope's Digital Broadband Resource Center™

This repository of experience, knowledge, services & tools is provided to CommScope customers to assist installers, technicians, engineers, designers or managers of broadband service providers. Tools in various media and formats include: SpanMaster® software for cable sag & tension calculations; center conductor sizing guides; attenuation slide rules; & call center spec assistance & review. Call us at 1-866-333-dBRC (3272) or e-mail [dbrc@commscope.com](mailto:dbrc@commscope.com) for answers to product questions or issues related to any CommScope broadband product.

### Optimize Construction Efficiencies With ConQuest® PullMaster®

This software package helps system engineering and construction groups model and optimize conduit cable pulls before construction begins. This software provides a user-friendly technique for predicting expected tensions and fill ratios for a specific cable pull. The construction process can then be optimized and “best pull” locations identified, thus helping to reduce frustration and cost for crews in the field.



# Con ♦ Quest®

# ConQuest® Conduit

## Features and Benefits



**Feature High density polyethylene material**

**Benefits** Superior resistance to cracking or shattering, providing long term stability (even at low temperatures)  
 Provides heavy protection in rocky soil conditions; Excellent chemical resistance  
 Lower coefficient of friction and moisture migration rate than traditional PVC stick pipe

**Feature UV protection**

**Benefit** Superior protection from cracking during storage or when used as a ground riser

**Feature Continuous length conduit**

**Benefits** Installs faster than PVC stick pipe; easy to plow; no couplings or glue required

**Feature Conduit - internal lubricant**

**Benefit** Provides excellent cable removal and replacement capabilities

**Feature Pre-installed CommScope cable - the cable of choice**

**Benefits** No field installation of cable into conduit required; cable is better protected from improper field handling;  
 saves installation time and costs

**Feature CommScope has received RUS acceptance for ConQuest conduit products**

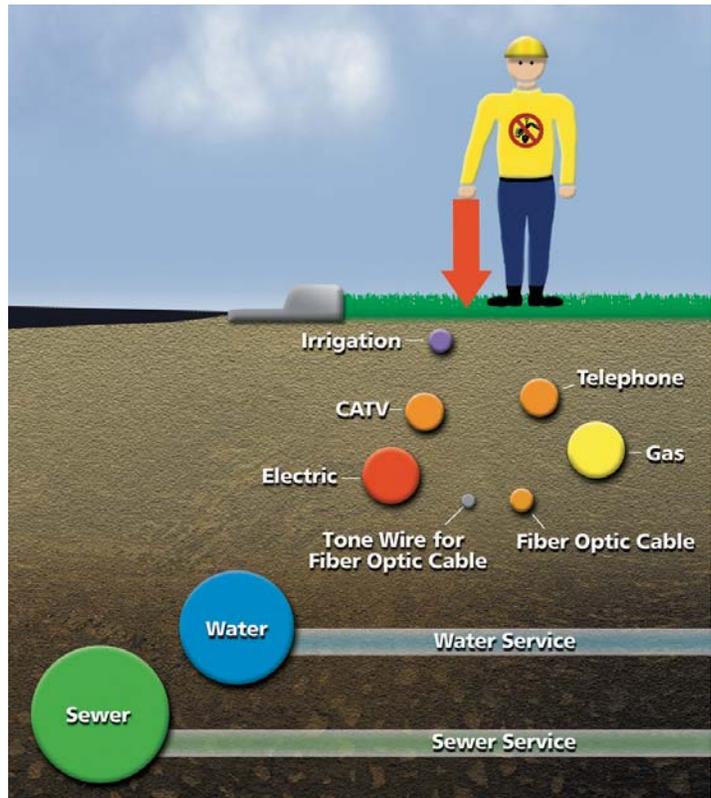
### Conduit and Tracer Colors

CommScope manufactures conduit and tracers in a variety of colors to meet your specific requirements. However, please note that the most common colors are black, orange or terra cotta. Orange/terra cotta conduit is recommended for telecommunication conduit in buried applications. Black is recommend for applications where the conduit is exposed to direct sunlight. For other colors see the chart at right.

**Note:** Colors other than black do not tolerate direct sunlight for extended periods of time and are not recommended for aerial or above ground installations.

For more information on custom colors and tracers, please contact our Broadband Customer Service Center at 800-982-1708.

### Typical Colors Used In Underground Applications



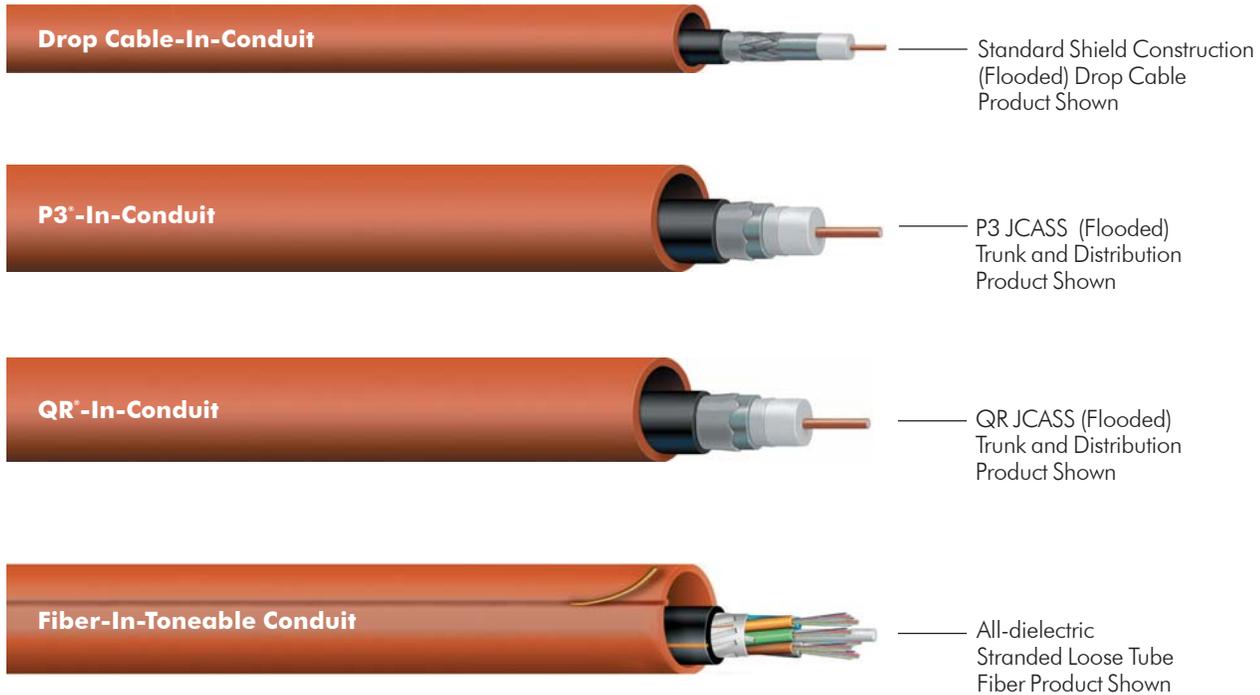
# ConQuest® Conduit

## Available Configurations

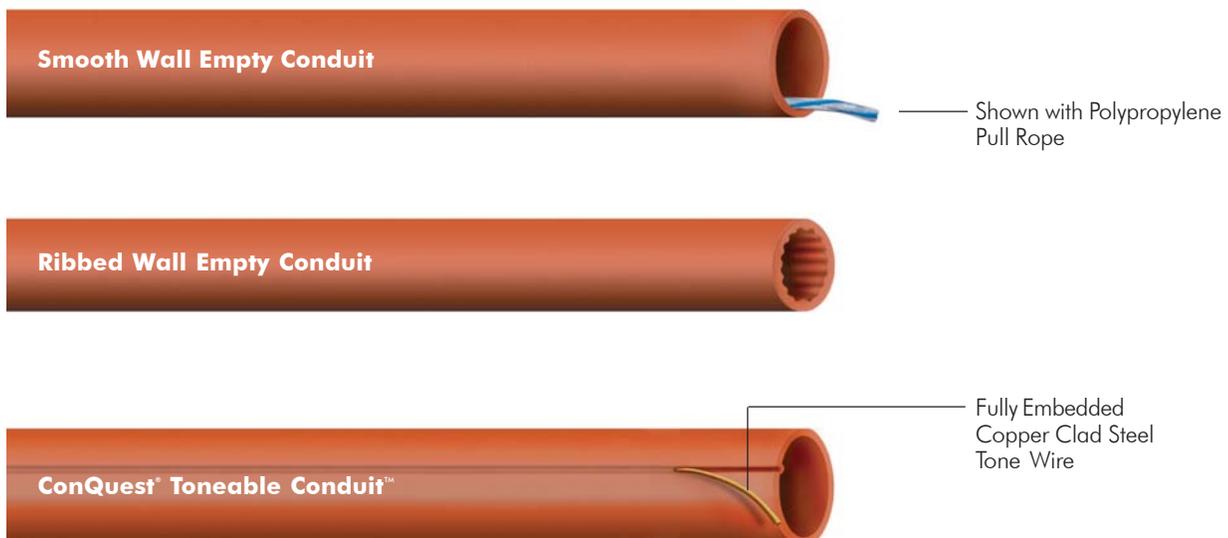


CommScope manufactures conduit in a variety of sizes and configurations (empty or with pre-installed cable or pull lines). Below is just a small sampling of the configurations available. For more information, please contact your CommScope sales representative.

### ConQuest® Cable-In-Conduit (CIC) Products



### ConQuest® Empty Conduit Products



# ConQuest® Conduit

## High Quality Product and Material Specifications



The HDPE resin shall meet the standards for Type III, Category 5, Class E (colors with UV stabilizers) or Class C (black), high density polyethylene specified in ASTM D 3350 (American Society for Testing Materials).

### Material Specifications

Property	Test Method (ASTM)	Value
Density (g/cm <sup>3</sup> )	D792A or D1505	0.941 - 0.955
Melt Index (g/10 min)	D1238	0.39 max.
Flexural Modulus (psi)	D790	80,000 min.
Tensile Strength @ yield (psi)	D638	3,000 min.
ESCR, Condition B	D1693	F 10 > 96 hrs.
Hydrostatic Design Basis (psi)	D2837	NPR*
Brittleness Temperature (°C)	D746	< -76

\*NPR - Not Pressure Rated

#### ○ Ultraviolet Protection

Non-Black conduit shall contain sufficient protection against UV radiation. The carbon black UV stabilization package shall be blended into the HDPE resin to achieve 2.35% - 2.85% carbon black.

#### ○ Lubrication

There will be no adhesion of the cable jacket to the conduit wall. In addition, a permanent silicone based lubricant is applied to the cable jacket to aid in cable removal, and excess lubricant is wiped off of the cable to insure that no buildup occurs inside the conduit.

#### ○ Cosmetics

Each reel or length shall be virtually free from voids, welds, or surface defects (inside or outside).

#### ○ Printing

The standard print height is 1/4" (±1/16") and unless otherwise specified shall conform to the following CommScope example "**(Current Year) COMMSCOPE INC. (Size) (SDR or SCH Size) CONQUEST CABLE IN CONDUIT (Footage) FEET**". The print will be clearly legible and sequentially marked every two feet ±1% unless otherwise specified.

#### ○ Ovality

Ovality off the drum will be no more than 7% when calculated by the following formula: Maximum OD - Minimum OD divided by Average OD multiplied by 100.

### SDR 11 Dimensional Requirements

Nominal Size	Outside Diameter (inches)	Wall Thickness (inches)	Nominal Inner Diameter (inches)	Min. Bend Radius Unsupported (inches)	Max. Pulling Tension (lbs.)	Weight* (lb/kft)
13mm	0.625 ± 0.012	0.055 + 0.014	0.500	8	210	46
1/2"	0.840 ± 0.004	0.076 + 0.020	0.668	10	390	85
3/4"	1.050 ± 0.005	0.095 + 0.020	0.840	12	605	130
1"	1.315 ± 0.007	0.120 + 0.020	1.055	14	950	204
1 1/4"	1.660 ± 0.008	0.151 + 0.020	1.338	18	1,520	320
1 1/2"	1.900 ± 0.010	0.173 + 0.021	1.533	20	1,760	416
2"	2.375 ± 0.012	0.216 + 0.026	1.917	26	3,105	640
3"	3.500 ± 0.018	0.318 + 0.038	2.826	48	6,740	1,386
4"	4.500 ± 0.023	0.409 + 0.049	3.633	60	11,145	2,295

### SDR 13.5 Dimensional Requirements

Nominal Size	Outside Diameter (inches)	Wall Thickness (inches)	Nominal Inner Diameter (inches)	Min. Bend Radius Unsupported (inches)	Max. Pulling Tension (lbs.)	Weight* (lb/kft)
1/2"	0.840 ± 0.004	0.062 + 0.020	0.696	10	320	71
3/4"	1.050 ± 0.005	0.078 + 0.020	0.874	12	505	111
1"	1.315 ± 0.007	0.097 + 0.020	1.101	14	790	169
1 1/4"	1.660 ± 0.008	0.123 + 0.020	1.394	18	1,260	265
1 1/2"	1.900 ± 0.010	0.141 + 0.020	1.598	20	1,455	344
2"	2.375 ± 0.012	0.176 + 0.021	2.002	26	2,580	532
3"	3.500 ± 0.018	0.259 + 0.031	2.951	48	5,590	1,154
4"	4.500 ± 0.023	0.333 + 0.040	3.794	60	9,250	1,905

### SCH 40 Dimensional Requirements

Nominal Size	Outside Diameter (inches)	Wall Thickness (inches)	Nominal Inner Diameter (inches)	Min. Bend Radius Unsupported (inches)	Max. Pulling Tension (lbs.)	Weight* (lb/kft)
1/2"	0.840 ± 0.004	0.109 + 0.020	0.602	10	530	112
3/4"	1.050 ± 0.005	0.113 + 0.020	0.804	12	705	149
1"	1.315 ± 0.007	0.133 + 0.020	1.029	14	1,050	219
1 1/4"	1.660 ± 0.008	0.140 + 0.020	1.360	18	1,420	295
1 1/2"	1.900 ± 0.010	0.145 + 0.020	1.590	20	1,700	353
2"	2.375 ± 0.012	0.154 + 0.020	2.047	26	2,300	472

### SCH 80 Dimensional Requirements

Nominal Size	Outside Diameter (inches)	Wall Thickness (inches)	Nominal Inner Diameter (inches)	Min. Bend Radius Unsupported (inches)	Max. Pulling Tension (lbs.)	Weight* (lb/kft)
1/2"	0.840 ± 0.004	0.147 + 0.020	0.526	10	680	139
3/4"	1.050 ± 0.005	0.154 + 0.020	0.722	12	920	189
1"	1.315 ± 0.007	0.179 + 0.021	0.936	14	1,360	276
1 1/4"	1.660 ± 0.008	0.191 + 0.023	1.255	18	1,875	383
1 1/2"	1.900 ± 0.010	0.200 + 0.024	1.476	20	2,270	465
2"	2.375 ± 0.012	0.218 + 0.026	1.913	26	3,140	645
3"	3.500 ± 0.018	0.300 + 0.036	2.864	48	6,395	975
4"	4.500 ± 0.023	0.337 + 0.040	3.786	60	9,345	1,950

#### NOTES

Standard Dimension Ratio (SDR) is the ratio between the wall thickness and the outside diameter of a specific conduit.

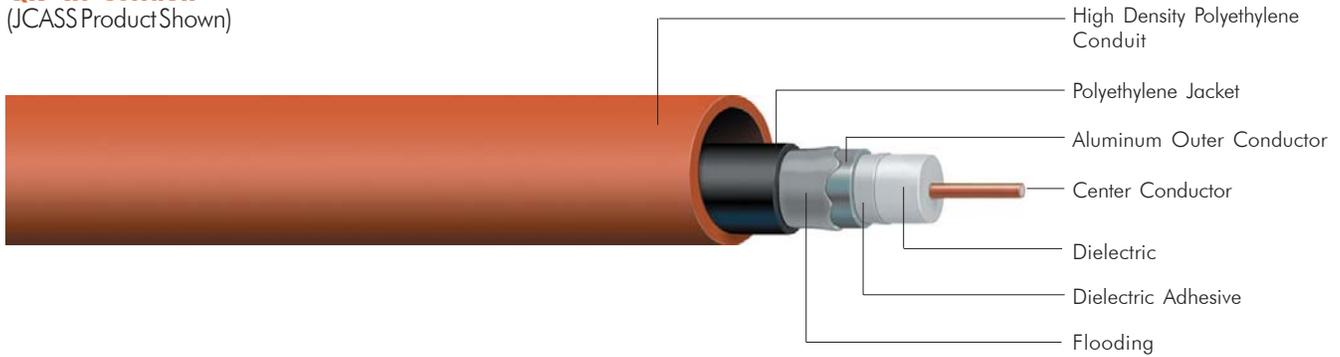
Schedule 40 & Schedule 80 dimensions are outlined under ASTM D 2447. These products are not restricted to maintaining a specific wall to OD ratio, but rather a specific wall thickness to each conduit diameter.

Other wall thicknesses are available upon request.

Specifications are subject to change without notice.

\*Weight does not include the reel.  
Reel weights listed on page 24.

### QR®-In-Conduit (JCASS Product Shown)



CommScope’s patented QR® coaxial cable was developed to meet the increasing demands of tomorrow’s broadband networks. QR has the highest reliability and flexibility of any coaxial cable, low RF attenuation and an unprecedented 10 year warranty.

QR coaxial cable offers lower attenuation than larger traditional products, with unmatched flexibility, reliability and cost effectiveness. CommScope offers four standard sizes (540, 715, 860 and 1125) of QR Cable-In-Conduit, each optimized for a specific use. For more information or specifications on QR products, please visit our website at [www.commscope.com](http://www.commscope.com).

Size	Wall Thickness	Wall Rating	QR 320 JCASS			QR 540 JCASS			QR 715 JCASS			
			Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lbs/kft	Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lbs/kft	Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lbs/kft	
3/4"	SDR 13.5	Medium	1,000	42 x 24 x 24	156	NA	NA	NA	NA	NA	NA	
	SDR 11	Heavy	1,000	42 x 24 x 24	177	NA	NA	NA	NA	NA	NA	
	SCH 40	Extra-Heavy	1,000	42 x 24 x 24	196	NA	NA	NA	NA	NA	NA	
1"	SDR 13.5	Medium	NA	NA	NA	3,700	68 x 28 x 43	261	NA	NA	NA	
	SDR 11	Heavy	NA	NA	NA	3,700	68 x 28 x 43	296	NA	NA	NA	
	SCH 40	Extra-Heavy	NA	NA	NA	3,700	68 x 28 x 43	311	NA	NA	NA	
1 1/4"	SDR 13.5	Medium	NA	NA	NA	3,700	80 x 43 x 43	357	3,000	68 x 28 x 43	409	
	SCH 40	Heavy	NA	NA	NA	3,700	80 x 43 x 43	387	3,000	68 x 28 x 43	439	
	SDR 11	Extra-Heavy	NA	NA	NA	3,700	80 x 43 x 43	412	3,000	68 x 28 x 43	464	
1 1/2"	SDR 13.5	Medium	NA	NA	NA	3,700	90 x 43 x 43	436	3,000	80 x 43 x 43	488	
	SCH 40	Heavy	NA	NA	NA	3,700	90 x 43 x 43	445	3,000	80 x 43 x 43	497	
	SDR 11	Extra-Heavy	NA	NA	NA	3,700	90 x 43 x 43	508	3,000	80 x 43 x 43	560	
2"	SCH 40	Medium	NA	NA	NA	3,700	90 x 48 x 43	564	3,000	102 x 48 x 43	616	
	SDR 13.5	Heavy	NA	NA	NA	3,700	90 x 43 x 43	624	3,000	102 x 43 x 43	676	
	SDR 11	Extra-Heavy	NA	NA	NA	3,700	90 x 43 x 43	732	3,000	102 x 43 x 43	784	

Other cables and wall sizes may be available upon request.

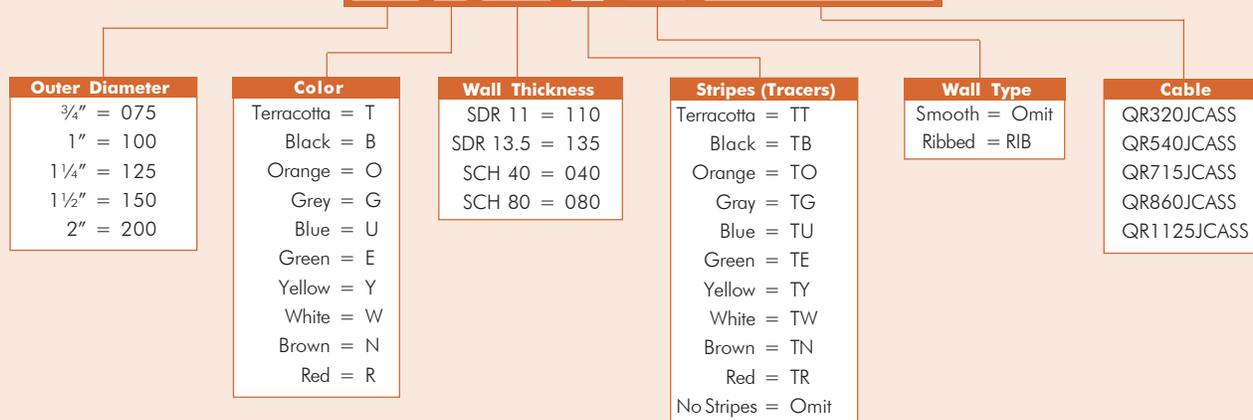
# ConQuest® Conduit Catalog Numbering Key

## Pre-Installed with QR® Trunk & Distribution Cable



**Sample:** 1½" Orange SCH 40 Ribbed with Black Stripe & QR 860 JCASS

**150 O 040 TB RIB QR860JCASS**



Please contact Customer Service if you need assistance in building part numbers.

	QR 860 JCASS			QR 1125 JCASS			Wall Thickness	Wall Rating	Size
	Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lbs/kft	Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lbs/kft			
	NA	NA	NA	NA	NA	NA	SDR 13.5	Medium	3/4"
	NA	NA	NA	NA	NA	NA	SDR 11	Heavy	
	NA	NA	NA	NA	NA	NA	SCH 40	Extra-Heavy	
	NA	NA	NA	NA	NA	NA	SDR 13.5	Medium	1"
	NA	NA	NA	NA	NA	NA	SDR 11	Heavy	
	NA	NA	NA	NA	NA	NA	SCH 40	Extra-Heavy	
	NA	NA	NA	NA	NA	NA	SDR 13.5	Medium	1 1/4"
	NA	NA	NA	NA	NA	NA	SCH 40	Heavy	
	NA	NA	NA	NA	NA	NA	SDR 11	Extra-Heavy	
	2,700	80 x 43 x 43	558	NA	NA	NA	SDR 13.5	Medium	1 1/2"
	2,700	80 x 43 x 43	567	NA	NA	NA	SCH 40	Heavy	
	2,700	80 x 43 x 43	630	NA	NA	NA	SDR 11	Extra-Heavy	
	2,700	102 x 48 x 43	686	3,000	102 x 48 x 43	815	SCH 40	Medium	2"
	2,700	102 x 43 x 43	746	3,000	102 x 43 x 43	875	SDR 13.5	Heavy	
	2,700	102 x 43 x 43	854	3,000	102 x 43 x 43	983	SDR 11	Extra-Heavy	

Specifications are subject to change without notice.

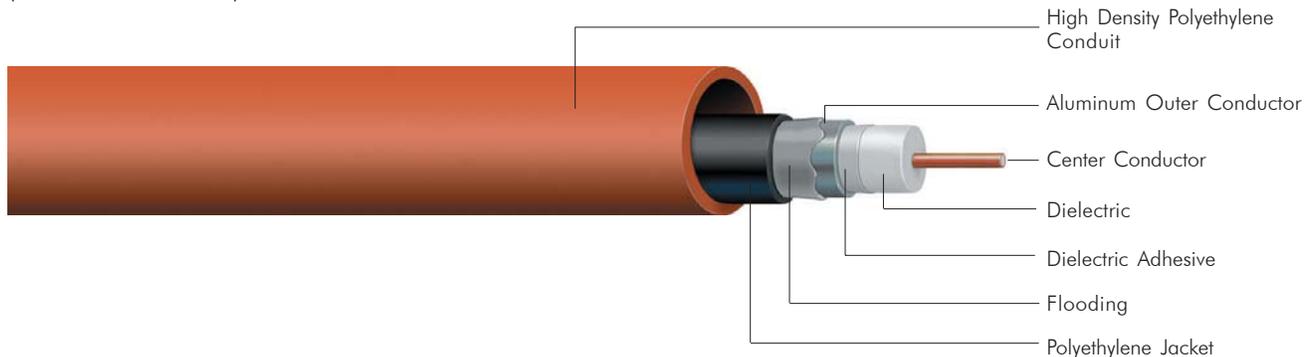
\*Weight does not include the reel.  
Reel weights listed on page 24.

# ConQuest® Conduit

## Pre-Installed with P3® Trunk & Distribution Cable



### P3®-In-Conduit (JCASS Product Shown)



CommScope's P3® product line is the industry standard by which all coaxial trunk and distribution cables are measured. P3 has been proven robust and reliable by years of successful installations.

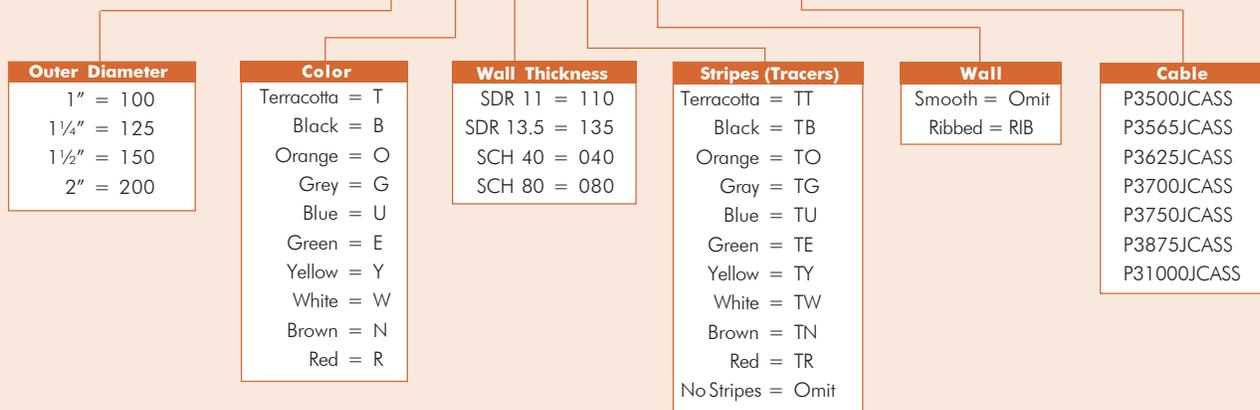
CommScope P3 offers low attenuation and inherent strength making it an industry standard. CommScope offers several different sizes of P3 Cable-In-Conduit (500, 565, 625, 700, 750, 875 and 1000), each optimized for a specific use. For more information or specifications on our P3 cables, please visit our website at [www.commscope.com](http://www.commscope.com).

Size	Wall Thickness	Wall Rating	P3 500 JCASS			P3 565 JCASS			P3 625 JCASS			
			Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lbs/kft	Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lb/kft	Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lb/kft	
1"	SDR 13.5	Medium	2,400	54 x 28 x 43	266	2,400	54 x 28 x 43	285	NA	NA	NA	
	SDR 11	Heavy	2,400	54 x 28 x 43	301	2,400	54 x 28 x 43	320	NA	NA	NA	
	SCH 40	Extra-Heavy	2,400	54 x 28 x 43	316	2,400	54 x 28 x 43	335	NA	NA	NA	
1 1/4"	SDR 13.5	Medium	2,400	63 x 28 x 43	362	2,400	63 x 28 x 43	381	2,400	63 x 28 x 43	410	
	SCH 40	Heavy	2,400	63 x 28 x 43	392	2,400	63 x 28 x 43	411	2,400	63 x 28 x 43	440	
	SDR 11	Extra-Heavy	2,400	63 x 28 x 43	417	2,400	63 x 28 x 43	436	2,400	63 x 28 x 43	465	
1 1/2"	SDR 13.5	Medium	2,400	80 x 43 x 43	441	2,400	80 x 43 x 43	460	2,400	80 x 43 x 43	489	
	SCH 40	Heavy	2,400	80 x 43 x 43	450	2,400	80 x 43 x 43	469	2,400	80 x 43 x 43	498	
	SDR 11	Extra-Heavy	2,400	80 x 43 x 43	513	2,400	80 x 43 x 43	532	2,400	80 x 43 x 43	561	
2"	SCH 40	Medium	2,400	90 x 48 x 43	569	2,400	90 x 48 x 43	588	2,400	90 x 48 x 43	617	
	SDR 13.5	Heavy	2,400	90 x 43 x 43	629	2,400	90 x 43 x 43	648	2,400	90 x 43 x 43	677	
	SDR 11	Extra-Heavy	2,400	90 x 43 x 43	737	2,400	90 x 43 x 43	756	2,400	90 x 43 x 43	785	

Other cables and wall sizes may be available upon request.

**Sample:** 1 1/4" Blue SDR 13.5 Ribbed with Yellow Stripe & P3 625 JCASS

**125 U 135 TY RIB P3625JCASS**



Please contact Customer Service if you need assistance in building part numbers.

	P3 700 JCASS			P3 750 JCASS			P3 875 JCASS			P3 1000 JCASS			Size
	Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lb/kft	Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lb/kft	Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lbs/kft	Nominal Length (ft)	Reel Size (FDT) (in)	Weight* lb/kft	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1"
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	2,500	63 x 28 x 43	430	2,500	68 x 28 x 43	467	NA	NA	NA	NA	NA	NA	1 1/4"
	2,500	63 x 28 x 43	460	2,500	68 x 28 x 43	497	NA	NA	NA	NA	NA	NA	
	2,500	63 x 28 x 43	485	2,500	68 x 28 x 43	522	NA	NA	NA	NA	NA	NA	
	2,500	80 x 43 x 43	509	2,500	80 x 43 x 43	546	2,500	80 x 43 x 43	606	NA	NA	NA	1 1/2"
	2,500	80 x 43 x 43	518	2,500	80 x 43 x 43	555	2,500	80 x 43 x 43	615	NA	NA	NA	
	2,500	80 x 43 x 43	581	2,500	80 x 43 x 43	618	2,500	80 x 43 x 43	678	NA	NA	NA	
	2,500	90 x 48 x 43	637	2,500	90 x 48 x 43	674	2,500	90 x 48 x 43	734	2,400	90 x 48 x 43	843	2"
	2,500	90 x 43 x 43	697	2,500	90 x 43 x 43	734	2,500	90 x 43 x 43	794	2,400	90 x 43 x 43	903	
	2,500	90 x 43 x 43	805	2,500	90 x 43 x 43	842	2,500	90 x 43 x 43	902	2,400	90 x 43 x 43	1,011	

Specifications are subject to change without notice.

\*Weight does not include the reel.  
Reel weights listed on page 24.

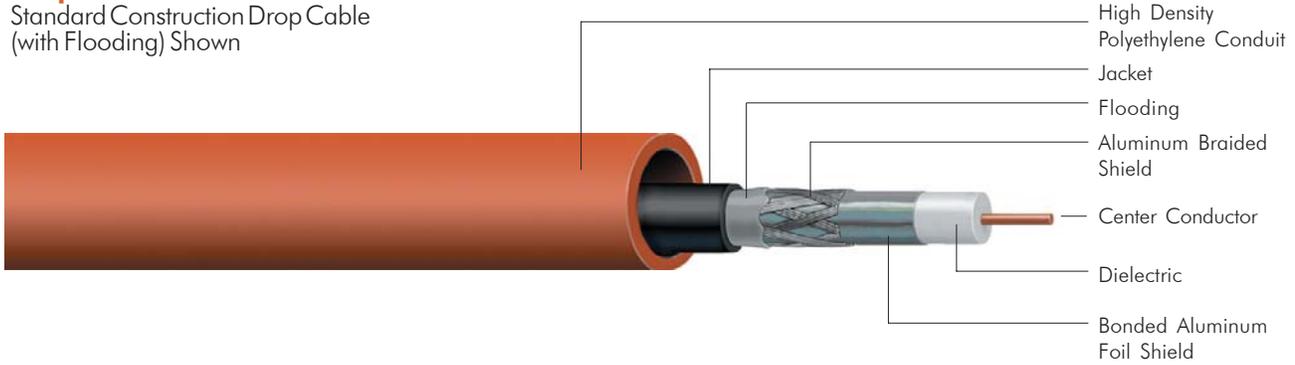
# ConQuest® Conduit

Pre-Installed with CommScope Drop Cable



## Drop Cable-In-Conduit

Standard Construction Drop Cable  
(with Flooding) Shown



CommScope Drop-In-Conduit is a complete family of products serving a number of applications. All drop cable products are available in a variety of sizes (59, 6, 7 and 11) and configurations (standard, tri-shield and super-shield). For more information or specifications on drop cables, please visit our website at [www.commscope.com](http://www.commscope.com).

Size	Wall Thickness	Wall Rating	Maximum Number of Cables				Standard Length (ft)	Reel Size (FDT) (in)
			F59 Series	F6 Series	F7 Series	F11 Series		
<b>13mm</b>	SDR 11	Heavy	1	1	0	0	1,000	24 x 12 x 18
<b>1/2"</b>	SDR 13.5	Medium	1	1	1	0	1,000	35 x 16½ x 18
	SDR 11	Heavy	1	1	1	0	1,000	35 x 16½ x 18
<b>3/4"</b>	SDR 13.5	Medium	2	2	1	1	1,000	42 x 24 x 24
	SDR 11	Heavy	2	2	1	1	1,000	42 x 24 x 24
	SCH 40	Extra Heavy	2	2	1	1	1,000	42 x 24 x 24
<b>1"</b>	SDR 13.5	Medium	3	3	2	2	1,000	50 x 24 x 24
	SDR 11	Heavy	3	3	2	2	1,000	50 x 24 x 24
	SCH 40	Extra Heavy	3	3	2	2	1,000	50 x 24 x 24

Other cables and wall sizes may be available upon request.

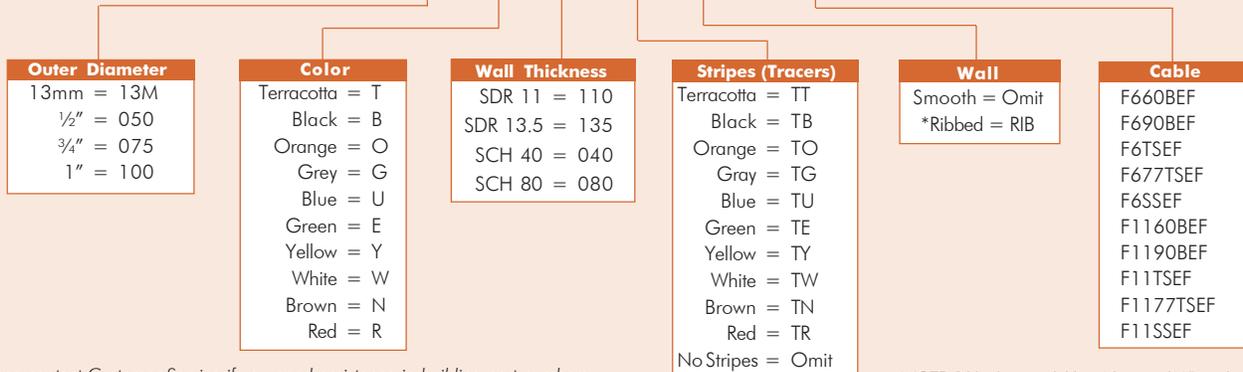
Specifications are subject to change without notice.

## ConQuest® Conduit Catalog Numbering Key

Pre-Installed with CommScope Drop Cable

Sample: ¾" White SDR 11 Ribbed with Brown Stripe & F6 Quad Shield

**075 W 110 TN RIB F6SSEF**



Please contact Customer Service if you need assistance in building part numbers.

\*NOTE: Ribbed not available in 13mm and ½" conduit.



————— Ribbed Wall Empty Conduit

CommScope manufactures smooth wall or ribbed (internal surface finish) conduit in a variety of wall thicknesses, and with a selection of pull lines available. ConQuest Empty Conduit (CEC) provides superior protection and easy low friction placement of your valuable communications cable. CEC products are the same high quality as CommScope's Cable-In-Conduit (CIC) products.

Conduit Size	Internal Surface		Wall Sizes			Pull Ropes				Pull Tapes		
	Smooth	Ribbed	SDR 11	SDR 13.5	SCH 40	200lb.	1100lb.	1200lb.	1800lb.	1100lb.	1250lb.	1800lb.
13mm	•		H			•						
1/2"	•		H	M		•						
3/4"	•	•	H	M	X	•	•					
1"	•	•	H	M	X	•	•	•	•	•	•	•
1 1/4"	•	•	X	M	H	•	•	•	•	•	•	•
1 1/2"	•	•	X	M	H	•	•	•	•	•	•	•
2"	•	•	X	H	M	•	•	•	•	•	•	•
3"	•	•	X	H			•	•	•	•	•	•
4"	•	•	X	H			•	•	•	•	•	•

• = Available    M = Medium    H = Heavy    X = Extra Heavy     = Standard Product Offering

Specifications are subject to change without notice.

Other wall sizes may be available upon request.

### Available Pull Ropes and Pull Tapes



**Polypropylene Pull Rope** (200 lb. shown)



**Polyester Pull Tape** (Available in 1100, 1250 and 1800 lb.)



**Polypropylene Pull Rope** (1100 lb. shown)



**Polyester Core Polyethylene Braid Pull Rope**  
(Available in 1200 and 1800 lb.)

## ConQuest® Conduit Catalog Numbering Key

For Empty Conduit (CEC) Products

**Sample: 2" Terracotta SCH 40 Ribbed with Green Stripe & 1800 lb. Tape**

**200 T 040 TE RIB WP1800TAPE**

Outer Diameter
13mm = 13M
1/2" = 050
3/4" = 075
1" = 100
1 1/4" = 125
1 1/2" = 150
2" = 200
3" = 300
4" = 400

Color
Terracotta = T
Black = B
Orange = O
Grey = G
Blue = U
Green = E
Yellow = Y
White = W
Brown = N
Red = R

Wall Thickness
SDR 11 = 110
SDR 13.5 = 135
SCH 40 = 040
SCH 80 = 080

Stripes (Tracers)
Terracotta = TT
Black = TB
Orange = TO
Gray = TG
Blue = TU
Green = TE
Yellow = TY
White = TW
Brown = TN
Red = TR
No Stripes = Omit

Wall
Smooth = Omit
*Ribbed = RIB

Pull Line
EMPTY DUCT
PP200ROPE
PP1100ROPE
PE1200ROPE
PE1800ROPE
WP1100TAPE
WP1250TAPE
WP1800TAPE

Please contact Customer Service if you need assistance in building part numbers.

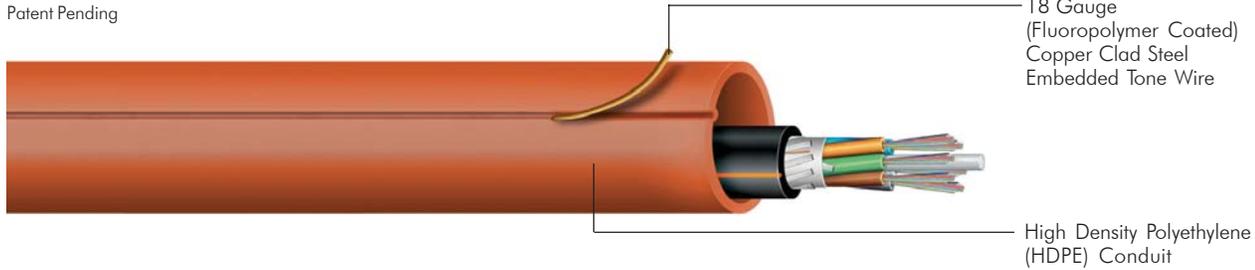
\*NOTE: Ribbed not available in 13mm and 1/2" conduit.

# ConQuest® Toneable Conduit™

## For Locating and Protecting Underground Infrastructure



Shown with All-dielectric  
Stranded Loose Tube Fiber Cable



### What's Most Important In Broadband Real Estate?

## LOCATION...LOCATION...LOCATION!

Buried cable assets need to be found by broadband network owners and not by backhoe operators. CommScope rises to the challenge with ConQuest Toneable Conduit—a select grade high density polyethylene conduit with an integrated 18 gauge copper clad steel (CCS) tone wire.

This unique, patent-pending conduit, offers a large gauge fluoropolymer-coated tone wire fully embedded within a reinforced conduit wall. This design provides easy access to the tone wire at termination points by means of simply "ripping out" the wire with common hand tools.

Even better news—ConQuest Toneable Conduit **SAVES LABOR DOLLARS!** Install conduit, cable and tone wire all in one motion, with one product ConQuest Toneable Cable-In-Conduit.

Features	Benefits
<ul style="list-style-type: none"> <li>Fully embedded tone wire</li> </ul>	<ul style="list-style-type: none"> <li>Precision locating of the conduit, with no special coupling requirements, and no field worries of wire and conduit separation</li> </ul>
<ul style="list-style-type: none"> <li>High strength 18 gauge copper clad steel tone wire</li> </ul>	<ul style="list-style-type: none"> <li>Easily extracted from the conduit wall without damaging the wire</li> <li>Able to transmit a toneable signal over extended distances and depths</li> </ul>
<ul style="list-style-type: none"> <li>Fluoropolymer coating on the tone wire</li> </ul>	<ul style="list-style-type: none"> <li>Facilitates extraction from the wall and acts as moisture barrier where exposed</li> </ul>

**Spliced ConQuest Toneable Conduit**  
(Shown at right with a T-Loc coupling). See the accessories on page 22-23 for alternative couplers.



#### Insulation Data

Type	Fluoropolymer
Thickness	0.008 inches nominal
Dielectric Strength	3200 volts/mil
Tensile Strength	3000 psi
Elongation	250%

#### Conductor Data

AWG	18 gauge copper clad steel
Diameter	0.0403 inches
Resistivity	26.7 Ohms/1000 ft
Tensile Strength	120,000 psi
Max. Elongation	1%

**SDR 11 Dimensional Requirements**

Nominal Size	Outside Diameter (in.)	Wall Thickness (in.)	Nominal Inner Diameter (in.)	Min. Bend Radius Unsupported (in.)	Max Pulling* Tension (lbs.)	Weight** (lb/kft)
3/4"	1.050 ± 0.005	0.095 + 0.020	0.840	12	485	130
1"	1.315 ± 0.007	0.120 + 0.020	1.055	14	760	210
1 1/4"	1.660 ± 0.008	0.151 + 0.020	1.338	18	1,215	326
1 1/2"	1.900 ± 0.010	0.173 + 0.021	1.533	20	1,410	422
2"	2.375 ± 0.012	0.216 + 0.026	1.917	26	2,485	646

**SDR 13.5 Dimensional Requirements**

Nominal Size	Outside Diameter (in.)	Wall Thickness (in.)	Nominal Inner Diameter (in.)	Min. Bend Radius Unsupported (in.)	Max Pulling* Tension (lbs.)	Weight** (lb/kft)
3/4"	1.050 ± 0.005	0.078 + 0.020	0.874	12	405	111
1"	1.315 ± 0.007	0.097 + 0.020	1.101	14	630	175
1 1/4"	1.660 ± 0.008	0.123 + 0.020	1.394	18	1,010	281
1 1/2"	1.900 ± 0.010	0.141 + 0.020	1.598	20	1,165	350
2"	2.375 ± 0.012	0.176 + 0.021	2.002	26	2,065	538

**SCH 40 Dimensional Requirements**

Nominal Size	Outside Diameter (in.)	Wall Thickness (in.)	Nominal Inner Diameter (in.)	Min. Bend Radius Unsupported (in.)	Max Pulling* Tension (lbs.)	Weight** (lb/kft)
3/4"	1.050 ± 0.005	0.113 + 0.020	0.804	12	565	149
1"	1.315 ± 0.007	0.133 + 0.020	1.029	14	840	225
1 1/4"	1.660 ± 0.008	0.140 + 0.020	1.360	18	1,135	301
1 1/2"	1.900 ± 0.010	0.145 + 0.020	1.590	20	1,360	359
2"	2.375 ± 0.012	0.154 + 0.020	2.047	26	1,840	478

Other wall thicknesses may be available upon request. Specifications are subject to change without notice.

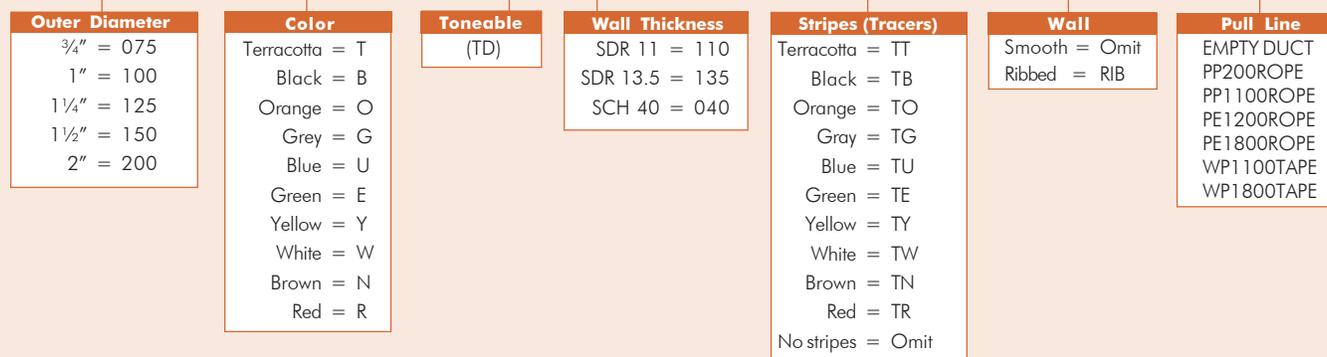
\*\*Weight does not include the reel.  
Reel weights listed on page 24.

**\*Attention:** Pulling tensions can be influenced by temperature and soil conditions. Please refer to the ConQuest Installation Manual for proper installation techniques.

**ConQuest® Toneable Conduit Catalog Numbering Key**

**Sample:** Toneable 1 1/4" Black SDR 13.5 Ribbed with Orange Stripe & 1100 lb. Rope

**125 B (TD) 135 TO RIB PP1100ROPE**



Please contact Customer Service if you need assistance in building part numbers.

# ConQuest® Conduit

Pre-Installed with CommScope Dry Loose Tube Fiber Optic Cable



## Fiber-In-Conduit

All of CommScope's fiber cables can be pre-installed in conduit, including the gel free, Dry Loose Tube cable. Available in five different diameters - 3/4", 1", 1 1/4", 1 1/2" and 2" and three different wall thicknesses - SDR 11, SDR 13.5 and SCH 40. For more information or specifications on Fiber Optic cables, please visit our website at [www.commscope.com](http://www.commscope.com).

Cable Type/ Fiber Count	Fiber Part Number & Conduit Description	Cable OD & Weight (kft)	Available Conduit OD	Available Wall Thicknesses	Weight (lb/kft)*		
					SDR 11	SDR 13.5	SCH 40
<b>Dry (gel free) Loose Tube Dielectric</b> 2 - 60 Fibers	D- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.41" 47 lbs.	3/4"	SDR 11 or 13.5	177	158	
			1"	SDR 11 or 13.5	251	216	
			1 1/4"	SDR 11 or 13.5	357	266	
			1 1/2"	SDR 11 or 13.5	463	391	
			2"	SDR 13.5 or SCH 40		579	519
<b>Dry (gel free) Loose Tube Dielectric</b> 62 - 72 Fibers	D- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.43" 52 lbs.	3/4"	SDR 11 or 13.5	182	163	
			1"	SDR 11 or 13.5	256	221	
			1 1/4"	SDR 11 or 13.5	372	317	
			1 1/2"	SDR 11 or 13.5	468	396	
			2"	SDR 13.5 or SCH 40		584	524
<b>Dry (gel free) Loose Tube Dielectric</b> 74 - 96 Fibers	D- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.49" 69 lbs.	3/4"	SDR 11 or 13.5	199	180	
			1"	SDR 11 or 13.5	273	238	
			1 1/4"	SDR 11 or 13.5	389	334	
			1 1/2"	SDR 11 or 13.5	485	413	
			2"	SDR 13.5 or SCH 40		601	541
<b>Dry (gel free) Loose Tube Dielectric</b> 98 - 120 Fibers	D- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.55" 87 lbs.	1"	SDR 11 or 13.5	291	256	
			1 1/4"	SDR 11 or 13.5	407	352	
			1 1/2"	SDR 11 or 13.5	503	431	
			2"	SDR 13.5 or SCH 40		619	559
			<b>Dry (gel free) Loose Tube Dielectric</b> 122 - 144 Fibers	D- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.62" 104 lbs.	1"	SDR 11 or 13.5
1 1/4"	SDR 11 or 13.5	424				369	
1 1/2"	SDR 11 or 13.5	520				448	
2"	SDR 13.5 or SCH 40					636	576
<b>Dry (gel free) Loose Tube Dielectric</b> 146 - 216 Fibers	D- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.63" 93 lbs.				1"	SDR 11 or 13.5
			1 1/4"	SDR 11 or 13.5	413	358	
			1 1/2"	SDR 11 or 13.5	509	437	
			2"	SDR 13.5 or SCH 40		625	565
			<b>Dry (gel free) Loose Tube Dielectric</b> 218 - 288 Fibers	D- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.73" 127 lbs.	1 1/4"	SDR 11 or 13.5
1 1/2"	SDR 11 or 13.5	543				471	
2"	SDR 13.5 or SCH 40					659	599

Other cables and wall sizes may be available upon request.

\* Weight does not include reel.

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted,  
Matched-Clad Singlemode Fiber

**8T** LightScope NZD™ Non-Zero Dispersion-  
Shifted Singlemode Fiber

**For Composites Only:**

**aaa** is replaced with singlemode fiber count

**AA** is replaced with singlemode type

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore™ 150, 50µm, Multimode Fiber

**5L** LaserCore™ 300, 50µm, Multimode Fiber

**5K** LaserCore™ 500, 50µm, Multimode Fiber

**bbb** is replaced by multimode fiber count

**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Dry Loose Tube Fiber-In-Conduit

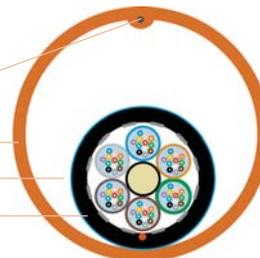
(72 Fiber Construction in  
Toneable Conduit Shown)

Copper Clad Steel Tone Wire

High-Grade Polyethylene Conduit

Silicon-Based Lubricant

Dry Loose Tube Cable



Specifications are subject to change without notice.

\* Weight does not include reel.

Other cables and wall sizes may be available upon request.

### Fiber-In-Conduit

All of CommScope's fiber cables can be pre-installed in conduit, including the Arid-Core Loose Tube cable. Available in five different diameters - 3/4", 1", 1 1/4", 1 1/2" and 2" and three different wall thicknesses - SDR 11, SDR 13.5 and SCH 40. For more information or specifications on Fiber Optic cables, please visit our website at [www.commscope.com](http://www.commscope.com).

Cable Type/ Fiber Count	Fiber Part Number & Conduit Description	Cable OD & Weight (kft)	Available Conduit OD	Available Wall Thicknesses	Weight (lb/kft)*					
					SDR 11	SDR 13.5	SCH 40			
<b>Arid-Core Loose Tube Dielectric</b> 2 - 60 Fibers	O- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.46" 64 lbs.	3/4"	SDR 11 or 13.5	194	175				
			1"	SDR 11 or 13.5	268	233				
			1 1/4"	SDR 11 or 13.5	384	329				
			1 1/2"	SDR 11 or 13.5	480	408				
			2"	SDR 13.5 or SCH 40	596	536				
<b>Arid-Core Loose Tube Dielectric</b> 62 - 72 Fibers	O- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.49" 78 lbs.	3/4"	SDR 11 or 13.5	208	189				
			1"	SDR 11 or 13.5	282	247				
			1 1/4"	SDR 11 or 13.5	398	343				
			1 1/2"	SDR 11 or 13.5	494	422				
			2"	SDR 13.5 or SCH 40	610	550				
<b>Arid-Core Loose Tube Dielectric</b> 74 - 96 Fibers	O- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.57" 101 lbs.	1"	SDR 11 or 13.5	305	300				
			1 1/4"	SDR 11 or 13.5	421	366				
			1 1/2"	SDR 11 or 13.5	517	445				
			2"	SDR 13.5 or SCH 40	610	550				
			<b>Arid-Core Loose Tube Dielectric</b> 98 - 120 Fibers	O- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.66" 125 lbs.	1 1/4"	SDR 11 or 13.5	445	418	
1 1/2"	SDR 11 or 13.5	541				497				
2"	SDR 13.5 or SCH 40	685				597				
<b>Arid-Core Loose Tube Dielectric</b> 122 - 144 Fibers	O- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.74" 153 lbs.				1 1/4"	SDR 11 or 13.5	473	418	
						1 1/2"	SDR 11 or 13.5	569	497	
			2"	SDR 13.5 or SCH 40	685	625				
			<b>Arid-Core Loose Tube Dielectric</b> 146 - 216 Fibers	O- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.74" 150 lbs.	1 1/4"	SDR 11 or 13.5	470	415	
						1 1/2"	SDR 11 or 13.5	566	494	
2"	SDR 13.5 or SCH 40	682				622				
<b>Arid-Core Loose Tube Dielectric</b> 218 - 288 Fibers	O- <b>XXX</b> -LN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.86" 197 lbs.				1 1/2"	SDR 11 or 13.5	613	541	
						2"	SDR 13.5 or SCH 40	729	669	

Other cables and wall sizes may be available upon request.

\* Weight does not include reel.

### Variables in the Catalog Number:

**XXX** = Total Fiber Count  
**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber  
**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**6F** 62.5µm, FDDI Grade Multimode Fiber  
**5M** LaserCore™ 150, 50µm, Multimode Fiber  
**5L** LaserCore™ 300, 50µm, Multimode Fiber  
**5K** LaserCore™ 500, 50µm, Multimode Fiber

**For Composites Only:** **aaa** is replaced with singlemode fiber count  
**AA** is replaced with singlemode type

**bbb** is replaced by multimode fiber count  
**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Arid-Core Loose Tube Fiber-In-Conduit

(72 Fiber Construction in Toneable Conduit Shown)

- Copper Clad Steel Tone Wire
- High-Grade Polyethylene Conduit
- Silicon-Based Lubricant
- Arid-Core Loose Tube Cable



Specifications are subject to change without notice.

\* Weight does not include reel.

Other cables and wall sizes may be available upon request.

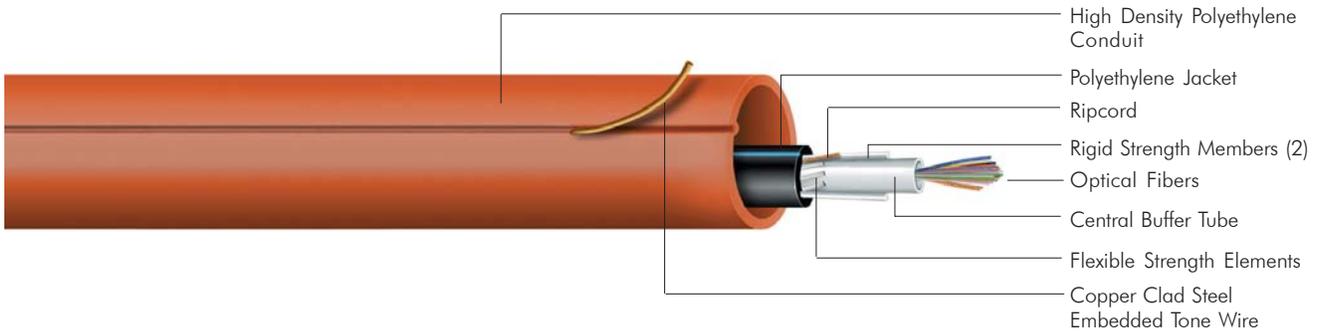
# ConQuest® Conduit

Pre-Installed with CommScope Central Tube Fiber Optic Cable



## Fiber Optic Cable

All-dielectric Central Tube Fiber Cable  
Shown in ConQuest® Toneable Conduit™



Cable Type/ Fiber Count	Fiber Part Number & Conduit Description	Cable OD & Weight (kft)	Available Conduit OD	Available Wall Thicknesses	Weight (lb/kft)*		
					SDR 11	SDR 13.5	SCH 40
<b>Central Tube Dielectric</b> 2 - 24 Fibers	O- <b>XXX</b> -CN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.40" 63 lbs.	1"	SDR 11 or 13.5	265	230	
			1 1/4"	SDR 11 or 13.5	381	326	
			1 1/2"	SDR 11 or 13.5	477	405	
			2"	SDR 13.5 or SCH 40		593	533
<b>Central Tube Dielectric</b> 26 - 48 Fibers	O- <b>XXX</b> -CN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.47" 86 lbs.	1"	SDR 11 or 13.5	273	238	
			1 1/4"	SDR 11 or 13.5	389	334	
			1 1/2"	SDR 11 or 13.5	485	413	
			2"	SDR 13.5 or SCH 40		601	541
<b>Central Tube Dielectric</b> 50 - 96 Fibers	O- <b>XXX</b> -CN- <b>XY</b> -F12NS Specify Conduit OD, Wall Thickness and Color	0.55" 110 lbs.	1"	SDR 11 or 13.5	291	256	
			1 1/4"	SDR 11 or 13.5	407	352	
			1 1/2"	SDR 11 or 13.5	503	431	
			2"	SDR 13.5 or SCH 40		619	559

Other cables and wall sizes may be available upon request.

\* Weight does not include reel.

### Variables in the Catalog Number:

**XXX** = Total Fiber Count

**XY** = Fiber Grade

**8W** LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber

**8T** LightScope NZD™ Non-Zero Dispersion-Shifted Singlemode Fiber

**For Composites Only:**

**aaa** is replaced with singlemode fiber count

**AA** is replaced with singlemode type

**6F** 62.5µm, FDDI Grade Multimode Fiber

**5M** LaserCore™ 150, 50µm, Multimode Fiber

**5L** LaserCore™ 300, 50µm, Multimode Fiber

**5K** LaserCore™ 500, 50µm, Multimode Fiber

**bbb** is replaced by multimode fiber count

**BB** is replaced by multimode type

**Buffer Tubes/Fiber Identification colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White, 7/Red, 8/Black, 9/Yellow, 10/Violet, 11/Rose, 12/Aqua

### Central Tube Fiber-In-Conduit

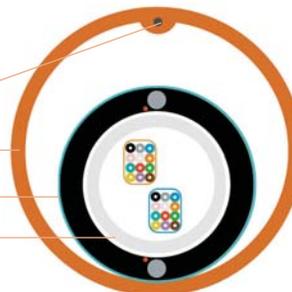
(24 Fiber Construction in  
Toneable Conduit Shown)

Copper Clad Steel  
Tone Wire

High-Grade Polyethylene Conduit

Silicon-Based Lubricant

Central Tube Cable



Specifications are subject to change without notice.

**Fiber-In-Conduit**

All of CommScope’s fiber cables can be pre-installed in conduit, including the Fiber Drop cables. Available in 1/2" or 3/4" and two different wall thicknesses - SDR 11 or SDR 13.5. For more information or specifications on Fiber Optic cables, please visit our website at [www.commscope.com](http://www.commscope.com).

**Figure-8 Fiber Drop Cable In Conduit**

Cable Type/ Fiber Count	Catalog Number (Description)	Cable OD & Weight (kft)	Available Conduit OD	Available Wall Thickness	Weight (lb/kft)*	
					SDR 11	SDR 13.5
<b>Fiber Drop Messengered</b> 1 - 6 Fibers	M- <del>XXX</del> -MN-XY-FZZNS/BSS (Stranded Steel Construction) Specify Conduit OD, Wall Thickness and Color	0.16" x 0.31" 29 lbs.	1/2" 3/4"	SDR 11 or 13.5	114	100
					159	140
<b>Fiber Drop Messengered</b> 1 - 6 Fibers	M- <del>XXX</del> -MN-XY-FZZNS/CCS (Solid Steel Construction) Specify Conduit OD, Wall Thickness and Color	0.16" x 0.31" 27 lbs.	1/2" 3/4"	SDR 11 or 13.5	112	98
					157	138

**NOTE:** The solid or stranded steel messengers can be used to pull the cable during installation, and for locating after burial.

**All-Dielectric Flat Drop Cable In Conduit**

Cable Type/ Fiber Count	Catalog Number (Description)	Cable OD & Weight (kft)	Available Conduit OD	Available Wall Thickness	Weight (lb/kft)*	
					SDR 11	SDR 13.5
<b>Flat Drop</b> 1 - 6 Fibers	O- <del>XXX</del> -DF-XY-FZZNS Specify Conduit OD, Wall Thickness and Color	0.18" x 0.32" 30 lbs.	1/2" 3/4"	SDR 11 or 13.5	115	101
					160	141

\*Other size conduits may be available upon request.

\* Weight does not include reel.

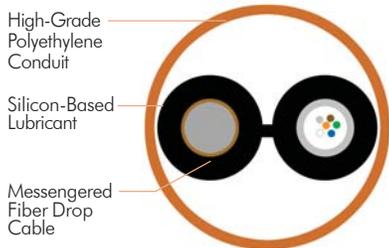
**Variables in the Catalog Number**

- XXX = Total Fiber Count**
- XY = Fiber Type and Grade**
- ZZ = Number of Fibers per Tube**

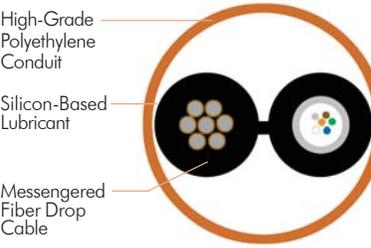
**Fiber Identification Colors:** 1/Blue, 2/Orange, 3/Green, 4/Brown, 5/Slate, 6/White

<p><b>8W</b> LightScope ZWP™ Dispersion-Unshifted, Matched-Clad Singlemode Fiber</p> <p><b>6F</b> 62.5µm, FDDI Grade Multimode Fiber</p>	<p><b>5M</b> LaserCore® 150, 50µm, Multimode Fiber</p> <p><b>5L</b> LaserCore® 300, 50µm, Multimode Fiber</p> <p><b>5K</b> LaserCore® 500, 50µm, Multimode Fiber</p>	
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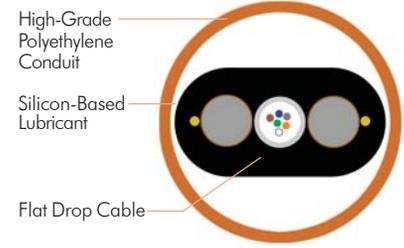
**Solid Steel Messengered  
Fiber Drop In ConQuest Conduit**  
(6 Fiber Construction Shown)



**Stranded Steel Messengered  
Fiber Drop In ConQuest Conduit**  
(6 Fiber Construction Shown)



**All-Dielectric Flat Drop  
Cable in ConQuest Conduit**  
(6 Fiber Construction Shown)



Drawings are not to scale  
Specifications are subject to change without notice

# ConQuest® Conduit Accessories

## WHUPP!® Cable Pulling Lubricant



CommScope offers a full line of accessories for use with our ConQuest Conduit Products, including cutters, couplings and lubricants. Please contact your CommScope sales representative for availability and pricing.

### WHUPP!® Cable Pulling Lubricant

WHUPP is uniquely designed to address all the cable pulling requirements that customers demand in a lubricant.

#### Friction Reduction

WHUPP's unique formula contains microspheres that reduce surface contact and allow the cable to ROLL on thousands of tiny "ball bearings". This excellent friction-reduction feature, along with its slow-drying, superior-wetting and cling properties; enables cable pulls through multiple bends and over long distances.

#### Safety Concerns



##### Personal Safety:

WHUPP is non-flammable, non-toxic, non-irritating to skin, and easy to clean up with soap and water.

##### Environmental Safety:

WHUPP is environmentally safe, made from INERT ingredients, and presents no air or water pollution concerns.

**Cable Safety:** WHUPP is recommended for use in all types of pulling operations. WHUPP is recommended for use with all types of polyethylene, vinyl, semi-conductive, and rubber cable jackets.

#### Installation Savings

WHUPP is designed to limit the cost burden of pulling cable. The recommended application rate for WHUPP is less than or equal to the following:

$$Q = 0.0015 \times L \times D$$

Q = Quantity needed in gallons

L = Length of the cable pull in feet

D = Nominal inside diameter of the conduit

**For example...**When pulling a cable through a 1" conduit over a distance of 1,000 feet:

$$Q = 0.0015 \times 1000 \text{ ft} \times 1 \text{ in} = 1.5 \text{ gallons}$$

**NOTE:** Double the calculation for corrugated conduit



Quart Size Bottle of WHUPP!

#### Packaging

WHUPP is conveniently packaged in the following sizes:

Container Size	WHUPP Packs	WHUPP Pallets
1 Quart size	24 per case	720 units
1 Gallon size	6 per case	162 units
5 Gallon size	NA	32 units

#### Typical Specifications

Appearance	Viscous, white liquid
Odor	Slight, non-objectionable
Ph	Neutral
Flash Point	No flash point to boiling
Freezing Point	30° F (-1° C)
Coefficient of Friction	0.14 per ASTM D 4172

**Scissor Shears**

Description	Manufacturers Part Number	Product Code
Scissor Shear	CQASC125	1160300
Blade for SC125	CQASC1268	1160400

NOTE: This tool is recommended for conduit sizes 13mm - 1/4"



**Ratchet Shears**

Description	Manufacturers Part Number	Product Code
Ratchet Shear	CQARS1	1160100
Blade for RS1	CQARS18	1160200

NOTE: This tool is recommended for conduit sizes 13mm - 1/4"



**Tubing Cutter**

Description	Manufacturers Part Number	Product Code
Tubing Cutter	CQATC2QP	1160000
Wheel for TC2QP	CQAOP2	1160500

NOTE: This tool is recommended for conduit sizes up to and including 2"



**QuadCut™ DID Cutter**

Description	Manufacturers Part Number	Product Code
QuadCut Cutter	CQQC100	1164500
QuadCut Blades/Cutting Wheels	CQQC111	1164600

NOTE: This tool is recommended for conduit sizes 13mm - 3/4"



# ConQuest® Conduit Accessories

## Conduit End Caps and Couplings



### Conduit Finger End Caps

Description	Manufacturers Part Number	Product Code
13mm Finger Cap	CQACC7325	1160600
1/2" Finger Cap	CQACC7322	1160700
3/4" Finger Cap	CQACC7318	1160800
1" Finger Cap	CQACC7311	1160900
1 1/4" Finger Cap	CQACC7313	1161000
1 1/2" Finger Cap	CQACC7315	1161100
1 1/2" Finger Cap (2 Cables)	CQACC7314	1162000
2" Finger Cap (2 Cables)	CQACC7320	1161200



### Aluminum Conduit Couplings

Description	Manufacturers Part Number	Product Code
1" Aluminum Threaded Coupling	BT-100	1162100
1 1/4" Aluminum Threaded Coupling	BT-125	1162200
1 1/2" Aluminum Threaded Coupling	BT-150	1162300
2" Aluminum Threaded Coupling	BT-200	1162400



### Conduit Compression Couplings

Description	Manufacturers Part Number	Product Code
13mm Compression Coupling	CQACCOUP13MM	1161300
1/2" Compression Coupling	CQACCOUP050	1161400
3/4" Compression Coupling	CQACCOUP075	1161500
1" Compression Coupling	CQACCOUP100	1161600
1 1/4" Compression Coupling	CQACCOUP125	1161700
1 1/2" Compression Coupling	CQACCOUP150	1161800
2" Compression Coupling	CQACCOUP200	1161900



**E-Loc® Couplings**

Description	Manufacturers Part Number	Product Code
1/2" E-Loc Coupling	CQELOC050	1165300
3/4" E-Loc Coupling	CQELOC075	1164200
1" E-Loc Coupling	CQELOC100	1165200
1 1/4" E-Loc Coupling	CQELOC125	1163600
1 1/2" E-Loc Coupling	CQELOC150	1163700
2" E-Loc Coupling	CQELOC200	1163800
3" E-Loc Coupling	CQELOC300	1163900
4" E-Loc Coupling	CQELOC400	1164000



**Double E-Loc® Couplings**

Description	Manufacturers Part Number	Product Code
1" Double E-Loc Coupling	CQDELOC100	1164700
1 1/4" Double E-Loc Coupling	CQDELOC125	1164800
1 1/2" Double E-Loc Coupling	CQDELOC150	1164900
2" Double E-Loc Coupling	CQDELOC200	1165000



**Toneable Conduit T-Loc® Couplings**

Description	Manufacturers Part Number	Product Code
1" T-Loc Coupling	CQATCOUP100	1162800
1 1/4" T-Loc Coupling	CQATCOUP125	1162900
1 1/2" T-Loc Coupling	CQATCOUP150	1163000
2" T-Loc Coupling	CQATCOUP200	1163100
T-Loc Cap	CQATCAP	1163200



®E-Loc and T-Loc are registered trademarks of ETCO Speciality.

# ConQuest® Conduit

## Packaging and Shipping Information



ConQuest products can be packaged and shipped on either wooden reels (A), ReelSmart® Composite Reels (B), or lightweight steel reels (C).

Drop conduit products can be packaged on "reel-less" coils (D), making them light weight and easier to handle.

### ConQuest Reel Dimensions and Weight Chart (Standards in Bold)

Lengths*	13mm	1/2"	3/4"	1"	1 1/4"	1 1/2 "	2"	3"	4"
<b>500</b>									<b>102x74x43</b> <b>217 lbs.</b>
<b>1,000</b>	<b>24x12x18</b> <b>16 lbs.</b>	<b>35x16 1/2x18</b> <b>60 lbs.</b>	<b>42x24x24</b> <b>130 lbs.</b>	50 x 24 x 24 182 lbs.	54 x 28 x 43 106 lbs.			<b>102x64x43</b> <b>217 lbs.</b>	
<b>2,500</b>							<b>90x43x43</b> <b>195 lbs.</b>		
<b>3,000</b>			54 x 28 x 43 106 lbs.	<b>63x28x43</b> <b>121 lbs.</b>	<b>68x43x43</b> <b>132 lbs.</b>	<b>80x43x43</b> <b>174 lbs.</b>			
<b>4,000</b>							102 x 43 x 43 217 lbs.		
<b>5,000</b>			63 x 28 x 43 121 lbs.	68 x 28 x 43 121 lbs.	80 x 28 x 43 174 lbs.	102 x 43 x 43 217 lbs.			

(Flange x Drum x Traverse)

\*Longer lengths may be available upon request.

#### Reel Stenciling

All wood reel heads are to be stenciled "COMMSCOPE" and "MADE IN THE USA" (in black letters). All reel heads will be stenciled to identify reel size and date of reel manufacture, in 3/4" - 1" letters located below the arbor hole with diagram R-2 red roller system stencil ink or approved equivalent. All flanges (except 35" or smaller) cut with a start hole, must be stenciled with the warning "THIS SIDE UP" in 1 1/2" to 2" letters.

#### Reel Recycling

CommScope is equipped to serve cable companies like yours with Reel Recycling Centers on both sides of the country. Whether your load consists of reusable CommScope knocked down or assembled reels, wooden flanges, metal reels or a truckload of ReelSmart® composite reels, our Reel Recycling Coordinator can customize a program to fit your needs. Call the CommScope Reel Recycling Coordinator at 1.800.982.1708 for assistance in establishing a customized recycling program.

### Palletizing

24" reels are palletized (standard 8 reels per pallet) and stretched wrapped. For substandard palletizing: 4 reels per pallet, 2 reels per pallet, or 1 reel per pallet, shall be used.

### End Preparation

The cable ends are secured to the conduit by a nylon cord, or CommScope approved equivalent, to ensure that the cable does not draw back into the conduit prior to installation. Each end shall be tightly sealed by a conduit end cap to prevent contamination ingress. For wooden reels, the bottom end shall be secured into the start hole by a chess board "stayback" or a CommScope approved equivalent. The top end of the conduit shall be secured to the flange by a metal pipe band or sufficient cable ties.

### Reel Identification

Each reel tag for CIC (as shown below) shall provide the following information and instructions:



Typical reel tag for CIC with P3 500 JCASS Product.

- CommScope's Shipping Address
- CommScope's Product Code
- Length of the Cable inside the Conduit
- Product Description
- Reel Number and Bar Code
- Spectrum, Reel Size, and Manufacturing Date
- Special Comments (if needed)

# ConQuest® Cable-In-Conduit

## Important Installation Information



### Cable Withdrawal

ConQuest® CIC conduit is slightly longer than the coaxial cable it contains. Allow an average of 1.5% of cable withdrawal back toward the reel during unspooling (example: 2000' of conduit will yield 1970' of cable). Cable withdrawal will be greater as you approach the end of the reel.

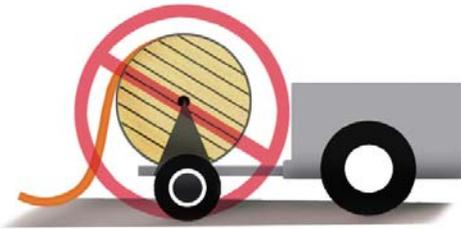
### Cut the Restraint

Prior to installation of coaxial CIC, remove the conduit end cap and cut the cable restraint. This relaxes the cable and transfers all of the pulling tension to the conduit. When deploying fiber optic CIC, **DO NOT remove the conduit end cap or cut the cable restraint** prior to installation.

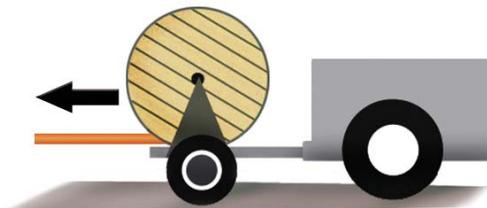
### Payoff

When installing ConQuest, pay-off the reel from underneath and in as direct a line as possible to the trench to avoid unnecessary bending of the conduit or rubbing of the conduit against the reel flange.

#### INCORRECT METHOD



#### CORRECT METHOD



conduit pay-off under reel drum

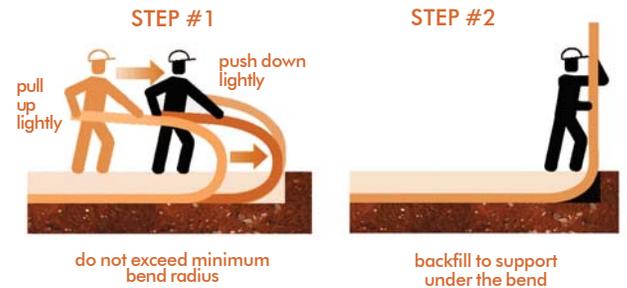
### Bending Technique

ConQuest Coaxial CIC can be easily shaped by rolling a bend into it. Take 10 - 12 feet (3 - 3.5 meters) of conduit and pull the free end of it towards you forming a "horizontal U". Push into the bend lightly and roll the entire radius of the conduit forward. **DO NOT** bend the conduit any further once it begins to show signs of ovality, i.e. begins to bulge. **DO NOT** press down on the conduit with your foot as you bend it.

#### INCORRECT METHOD



#### CORRECT METHOD



### Padding

Utilizing sand for "padding", the conduit provides protection during future excavation near your facilities. The apparent change in soil condition provides warning that there is a utility buried there. This should not replace the practice of placing warning tape, but rather should serve as a supplement.

### Wait One Hour

The effects of stress caused from pulling conduit through existing duct will cause the conduit to elongate (or stretch) in proportion to the amount of stress but less than 2% of the total length placed. Due to this effect, it is important to pull past the duct slightly. An allowance of at least one hour needs to be given for the conduit to "relax" before cutting and trimming it.

See our *ConQuest Conduit Products Applications & Construction Manual* for more installation instructions and product information.

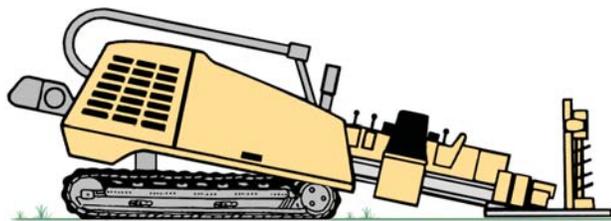
### ○ Elongation of Conduit and Wire

CommScope toneable conduit is comprised of a sturdy 18 AWG copper clad steel tone wire embedded in a high-density polyethylene (HDPE) wall. During a normal installation, the conduit will elongate (normally 3 to 3.5%) and the steel wire will move within the HDPE wall freely. Elongation of the steel wire is approximately 1%, much less than the conduit. However, once the conduit reaches maximum elongation, the steel wire and the conduit can couple and begin to elongate together. At installation tensions beyond those recommended, the conduit can be elongated beyond the ability of the steel to compensate, and the steel wire may break. It is also possible for the steel wire to break free from the conduit wall as the conduit relaxes from extreme installation tensions, since plastic will recover (shrink) faster than the steel wire can compensate. Monitoring pulling tension, ensures maximum pulling tension is not exceeded, will avoid these conditions.

**NOTE:** The steel wire must not come in contact with the pulling eye. The steel wire should always be free at both ends to avoid a tensile break during installation.

CommScope's toneable conduit tone wire is coated with fluoropolymer which is a novel design feature that enables easy "rip out" of the tone wire from the conduit wall with only simple hand tools. The fluoropolymer allows the wire to move independently and eliminates potential stress on the combination of tone wire and conduit. However, tension and elongation on the conduit should remain within specifications.

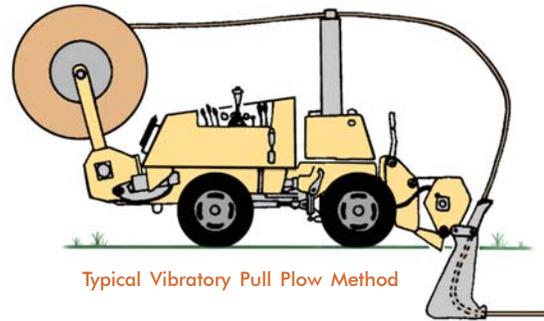
For successful installation of toneable conduit, environmental concerns and proper installation methods must be addressed. While open trench installation does not present a concern because of its inherent low tension, two other installation methods, horizontal directional drilling (HDD),



Typical Horizontal Directional Drilling (HDD) Method

and static/vibratory pull plowing present unique challenges. Each of these methods has specific guidelines for successful installations and among other considerations, installation crews need to be mindful of factors such as soil type, temperature, pulling speed, equipment used and slurry mix.

HDD can result in higher tensile loads due to the hole not being straight or level and the type of slurry mix used. When drilling, the drill head is capable of being moved in any direction which may be required to avoid objects encountered. During pull back, the drill operator can control tension on the pipe through speed, type and amount of slurry used. The tension monitoring gauge on the drill machine should be calibrated once a year.



Typical Vibratory Pull Plow Method

The Pull Plowing method requires the most attention of all in certain soil types and conditions. This method can create excess tension on the conduit due to the plow blade following the tractor over the terrain.

- The plow blade must have a cone or bullet of sufficient diameter to create a hole for the conduit either on the end of the blade or pulled behind.
- An ideal installation would be on flat terrain.
- Wet clay soil is very sticky and will create excessive tension.
- Sandy soil will collapse behind the cone creating additional tension.

Each of these situations may limit the installation to a short distance before the conduit and wire will elongate (stretch) to the point of breaking.

**ALL PRECAUTIONS** must be taken not to exceed maximum recommended pulling tension. Please refer to the CommScope ConQuest Conduit Catalog for specifications or visit our web site [www.commscope.com](http://www.commscope.com)

# ConQuest® vs. Traditional PVC Stick Pipe

## ConQuest Cable-in-Conduit Outperforms Traditional PVC Stick Pipe



ConQuest high-density polyethylene conduit with factory pre-assembled CommScope cables (CIC) outperforms traditional PVC stick pipe installations.

### In Field Trials,

- A two-man installation crew was unable to install 600 feet of 2" PVC stick pipe in a trench, glue joints, install sweeps, blow pull line, and pull cable in **less than one hour**.
- A two-man installation crew was able to install 600 feet of 2" ConQuest Cable-in-Conduit in **less than ten minutes**.

**NOTE:** Time required to open and close the trench not included

### In Product Comparisons,

- PVC stick pipe is traditionally manufactured in ten or twenty foot lengths that can be difficult to transport or handle.
- PVC stick pipe requires substantially more warehouse/yard space than HDPE on reels.
- Warehouse personnel must stock an assortment of PVC stick pipe components, such as sweeps, glues, preparation solvents, and pull lines to ensure that projects can be completed.

Criteria	Traditional PVC	ConQuest CIC
Requires sweeps and bends	Yes	No
Requires joints to be glued	Yes	No
Ground movement can cause separation	Yes	No
Installation can cause stress on cable	Yes	No
Susceptible to shattering at low temperatures	Yes	No
Low coefficient of friction	No	Yes
Internal lubrication	No	Yes
Continuous lengths	No	Yes
Can be plowed over extended distances	No	Yes
Faster more efficient installation	No	Yes

## Direct Burial vs. ConQuest®

### Direct Burial vs. ConQuest Empty Conduit or Cable-in-Conduit

Maximizing return on investment (ROI) is the number one goal of today's investor. That makes sense. But, what about tomorrow's investment?...And the day after?... And the day after that? Lowest initial investment does not guarantee the biggest return.

Today, broadband providers choose one or more of the following manners to address ROI in buried plant.

- Carefully limiting the cost of their initial investment
- Reducing or eliminating the cost and frequency of re-investments that are associated with system maintenance and upgrades
- Installing high quality or value-added products that minimize the cost of their initial investment, and reduce or eliminate the future re-investment cost of system maintenance and upgrades.

**DIRECT BURIAL of your cable certainly reduces your initial investment cost, but fails to address future costs.**

- Initial investment...**Reduced**
- Material and labor costs associated with repairs and upgrades...**Increased**
- Lost revenue due to system downtime resulting from cable repairs or upgrades...**Increased**
- Lost customers due to system downtime...**Increased**
- Poor customer relations resulting from damaged landscape due to repairs or upgrades...**Increased**
- Inflationary material and labor costs...**Increased**

**EMPTY HDPE CONDUIT adds to your initial investment cost, but addresses your need to reduce future costs.**

- Initial investment due to materials...**Increased**
- Material and labor costs associated with repairs and upgrades...**Reduced**
- Lost revenue due to system downtime resulting from cable repairs or upgrades...**Reduced**
- Lost customers due to system downtime...**Reduced**
- Poor customer relations resulting from damaged landscape due to repairs or upgrades...**Generally Eliminated**
- Inflationary material and labor costs...**Reduced**

**CABLE-IN-CONDUIT addresses the same future costs savings as Empty HDPE conduit, while reducing initial costs versus other conduit options. Other advantages of CIC include:**

- Installation time...**Reduced**
- Labor costs associated with pulling cable...**Reduced**
- Potential for cable stress and damaged due to improper field handling...**Reduced**
- Space required for storage of both conduit and cable...**Reduced**

### Introduction

Traditional approaches to making underground facilities locatable required extra material and labor costs. Many system operators have even cited that sometimes the wire or tape was “forgotten” or they were “out of the material” during construction, making an expensive solution even more costly. Additionally these methods are not always reliable, subject to damage and degradation.

Now the solution is simple, reliable and most of all, affordable. CommScope’s revolutionary Toneable Conduit can provide you with confidence in knowing the location can easily be found.

CommScope’s Toneable Conduit is a unique product that combines a polyethylene conduit with an integrated toning wire. Buried toneable conduit is easily located using tone detection locating equipment. The toning wire has a novel feature that enables it to be ‘ripped’ or pulled out of the conduit wall with simple hand tools, enabling easy access for toning and/or splicing to subsequent lengths.

### Product Discussion

CommScope toneable conduit is made from high quality high-density polyethylene (HDPE). The conduit meets industry standard wall thickness in 1, 1<sup>1/4</sup>, 1<sup>1/2</sup>, and 2 inch diameters. The polyethylene is blended with a premium UV stabilization and protection package. Color concentrate chips can be added to produce the conduit in an array of colors.

Our unique toning wire is 18-gauge copper clad steel (CCS) coated with a fluoropolymer jacket. The wire is embedded in the wall of the conduit. An 18-gauge wire was selected to maintain wall thickness and provide optimal tone carrying characteristics. CCS provides the necessary amount of copper to carry a tone over long distances and a steel core that is more durable than a solid copper wire. CCS is easily ripped out of the wall without the wire breaking. The wire meets the specifications listed on page 14 of this catalog.

The fluoropolymer-coated wire is designed to be ‘ripped’ out of the conduit wall using simple hand tools. The fluoropolymer allows the wire to move independently of the conduit eliminating stresses on the wire and conduit, and eases the separation of the wire from the wall of the conduit. The fluoropolymer coating also provides critical insulative and corrosion protection to the ‘exposed’ wire.

Fluoropolymer, the polymer group that includes Teflon®, was ultimately selected because it offers higher resistance to chemicals, water, and abrasion relative to plastics.

Other composite materials, such as polyurethane/nylon, fail to offer the necessary resistance. Nylon, in particular, is subject to attack by strong mineral acids and has a high rate of water absorption.

### The Function of Toning

Toning is a method of using a generated signal, or ‘tone’, that is transmitted over a conductor so that the portion of the conductor buried below the earth’s surface can be located without digging.

The tone is produced at a very low frequency with a transmitter tuned to a particular frequency. The frequency range available on the transmitter varies between manufacturers but often ranges from 400Hz to about 80KHz. Transmission power is often variable and is usually controlled in a range of 0.033 watts up to 5.0 watts. A ‘radio’ receiver tuned to the transmit frequency is then used to precisely locate the energized wire.

The set-up requires that a transmitter be attached to the conductive material that will act as an ‘antenna’ and that a ground plane be established at the end of the antenna to close the circuit.



**ConQuest® Toneable Conduit™**  
(Patent pending)

### Installation Notes

Typical installations will consist of direct burial in an open trench, directional bores, static plowing or vibratory plowing. The design of this revolutionary conduit with the tone wire embedded within the conduit wall lends itself to all applications. The sturdy 18 AWG copper clad steel wire is protected by both the HDPE wall and the fluoropolymer insulation around the wire.

During a normal installation, the conduit may have several splice points either in the trench, pull box or in above ground enclosures. The tone wire can be

spliced together at these locations for a longer tone length, possibly beyond 5 miles (depending on burial conditions and the toning equipment used).

Splicing the wire together can be accomplished in a variety of ways. As with any insulated wire some of the fluoropolymer jacket must be removed before crimping on the connector. A minimal amount of fluoropolymer jacket should be removed to make the connection, leaving the remainder of the jacket intact to protect the wire from corrosion.

- Simple wire splices for 18 AWG copper clad steel wire can be used and environmentally protected with a self-healing waterproof tape.
- All splices below grade must be environmentally sealed against the elements.
- Splices above grade such as inside an enclosure should have the ends sealed with tape.
- At each end of the conduit, the wire should be ripped from the conduit to a length long enough for splicing or grounding.
- Using pliers and tubing cutter, ripping the wire from the conduit is simple and easy.
- Do not ground the 18 AWG copper clad steel wire within the system. Grounding of the tone wire should only be done for toning.

**Note:** Installations where the conduit is used as a riser to the strand and the wire is exposed may be subject to local authority.

### Field Trial

<b>Location</b>	Catawba, NC (CommScope Test Site)
<b>Date</b>	February 15, 2002
<b>Product</b>	Two inch Schedule 40, Terra cotta with insulated 18 AWG copper clad steel
<b>Length</b>	2,200 feet
<b>Equipment</b>	DitchWitch® 950R/T 3M-753 Dynatel®

This trial was conducted to measure the performance abilities of the toneable conduit. The conduit was installed into an open trench at depths of one to three feet.



For toning, CommScope recommends equipment such as the DitchWitch 950R/T (shown above).

- In the first test, a DitchWitch 950R/T was set at its lowest power settings (1 KHz at 0.033 watts) with only the transmitter end grounded. The 2,200 feet of conduit was easily located and the depth measured was accurate within three inches.

In the second test, approximately 2,000 feet of tone wire was attached to one end of the conduit above ground. Again, the DitchWitch 950R/T with the same settings (1 KHz at 0.033 watts) located and toned the 4,200 feet length.



ConQuest Toneable Conduit undergoes rigorous field testing to ensure the same quality as our other products.

The same results were achieved with the 3M® Dynatel unit.

There are ten power settings on each frequency on the DitchWitch 950R/T, 1 being the lowest at 0.033 watts and 10 being the highest at 3.0 watts. It is possible that a tone would be obtainable over 5 miles using higher levels.

### Summary

Constructing networks that require provisioning for toneable locating can now be achieved using CommScope's Toneable Conduit. The conduit is designed to the same high standards used in all of CommScope's ConQuest conduit family. The unique design of the toneable conduit makes it easy to install and easy to locate.

DitchWitch® is a registered trademark of Charles Machine Works, Inc.  
Dynatel® is a registered trademark of 3M Corporation.



### ○ Big Money is Lost When Locating Loses Priority

Someone recently asked me, “What is the fastest way to find a buried telecommunications cable?” Being a little too spirited, I jested, “With a backhoe.” You’re probably thinking this cannot be for real. Unfortunately, I could not be any more real.

Suburban sprawl has prompted community builders to create an aesthetically pleasing environment and to remove unsightly utility poles from landscapes. Although this placement of utilities has been common practice in new-build constructions for some time, it is starting to get noticed by older or urban communities that had long been used to the presence of utility poles. Over the past few years, in fact, a growing number of communities had proposed legislation for the removal of utility poles. This, of course, requires that utility operators relocate their facilities. Where? You got it – underground.

The advantages of underground installation are proven time and again. Of course, public safety is improved by eliminating the hazards of automobile collisions with utility poles and downed lines during severe weather conditions. Utility operators and their customers then benefit from the reduction in outages created by these events. What’s more, maintenance requirements and

expense for underground plant are significantly lower than aerial plant that is constantly exposed to a harsh environment.

The disadvantages are less obvious. There is a lot of digging going on around communities, and utility easements are becoming more and more congested. And when excavation for the buried utilities begins, the problems accumulate quickly if effective locating is not done. Here, we will discuss the consequences of not properly locating utilities, and we’ll discuss best practices for building an accurately locatable underground plant.

### ○ Is Your Locating System Booby Trapped?

As a result of many early excavation fatalities, the federal government passed legislation 29 CFR 1926.651\* as a measure to protect workers from the hazards of excavating in areas where buried utilities are located.

Thankfully, today 49 states (not Hawaii) have passed legislation to mitigate excavation damage. These state laws require that the location of buried utilities be marked to both protect workers and prevent utility service disruption. In most states, the law will not afford utility operators the right to recover damages if they failed to properly locate their subsurface plant when a locate was properly requested. Despite this legislation, underground utilities continue to be damaged at alarmingly high rates, and the severity of the damage has increased as the underground continues to get more and more congested.

A recent study conducted by the U.S. Department of Agriculture found that 25% of hits on located facilities were due to mislocates. In the past five years, there has been a nation-wide annual average of 21 major underground fiber optic cables cut, and 39 underground copper trunk cables cut where locates were off the mark and underground excavations found them.

The service disruptions from these events affect 911 services, local telephone service, long-distance service, and nationwide data networks. Service disruption is of particular concern when it comes to fiber optic cables. With each optical fiber capable of carrying as many as 30,000 circuits, the revenue loss from service disruption on a single optical fiber can be as high as \$175,000 per minute or more.

### ○ Location Options

Most providers understand the need for a locatable system, but building it can be more challenging. While there are nearly two dozen geophysical methods for locating buried facilities, they can be categorized into three types of systems commonly used today: passive magnetic systems, electronic marking systems and radio detection systems.

○ **Type A: Passive magnetic systems** work on the principle of placing a magnet, or more often a strip of magnets, in close proximity to the utility lines to create a magnetic disturbance that can be detected using a magnetometer. These are best suited for areas where no other utilities are located and away from large mineral deposits.

- **Advantages:** Least expensive to deploy.
- **Limitations:** Magnetic anomalies can occur, and are often created by other ferrous objects in the ground such as water or gas pipelines and some types of mineral deposits. Creating conflicting detections and a mislocation of the intended target utility.

○ **Type B: Electronic marking systems (EMS)** use a technology that is considered a passive circuit, which is usually contained in a plastic ball or disc that is placed in the trench with the utility. To locate the passive circuit, a marker locator is used to excite the tuned circuit in the marker. This causes the passive circuit to produce a spherical RF field that can then be detected by the marker locator.

- **Advantages:** These devices provide a higher degree of accuracy attributed to each utility using an assigned frequency for their EMS system.
- **Limitations:** Most systems require a specific orientation of the marker so that the RF field is aligned for surface detection and this technology can be efficiently deployed only in open trench construction. Due to the cost, markers are usually spaced to optimize the RF field's footprint from one marker to the next. This may result in the locator hunting for the next marker, particularly when the utility changes direction.

○ **Type C: Radio detection systems**, more commonly known as tone location or tone detection, operate on the principle of inducing a tone on a conductor (metallic material) that acts as an antenna. This transmits the signal through the ground that can be intercepted by a radio receiver tuned to the transmitter's frequency.

- **Advantages:** The ability to discern the intended target more accurately by seeking a specific frequency transmitted over wire that is continuous and follows the changes in utilities direction and can tolerate greater depth capabilities.
- The key to the use of tone locating technology is the metallic conductor used. A fiber optic cable may contain a steel armor, which can be toned, or may have an all-dielectric construction (no metal). Steel armor is not a very good conductor for radio frequency signals as it is a highly resistive metal, greatly limiting the range of accuracy using tone location. **Essentially, this makes it imperative to use a tone wire not only with an all-dielectric cable but also with an armored cable.**
- **Limitations:** Copper wires are commonly used for the tone wire, since copper provides the best path for the radio frequency (tone) to travel on. The downside to a solid copper wire as a conductor is that the malleability of the material is too great; this limits its tensile strength. This limited tensile strength can present problems if the wire is being pulled in during boring installations or when backfilling an open trench. These activities can easily result in excessive tension, breaking the wire and losing continuity.
- To avoid concerns of tensile strength issues, a copper clad steel (CCS) wire may be used. The CCS wire increases the tensile strength significantly. This thin layer of copper is equally capable of carrying the tone signal across distances at a fraction of the cost of solid copper wire.
- Most systems use a wire size ranging from 22 AWG to 10 AWG. But, an 18 AWG wire size will suffice, since smaller sizes attenuate signals at a greater rate and affect the range of accuracy. Larger wire sizes are overkill, wasting material and money.

*(continued on page 34)*

*“In the past five years, there has been a nation-wide annual average of 21 major underground fiber optic cables cut, and 39 underground copper trunk cables cut where locates were off the mark and underground excavations found them.”*

### Going the Distance

Most providers want to deploy technologies and systems that will go the distance and stand the test of time. Placing cables underground is a big investment in initial labor and a minimal investment in material. Therefore, the providers’ goal should be to establish a locate system that is as reliable as the network itself.

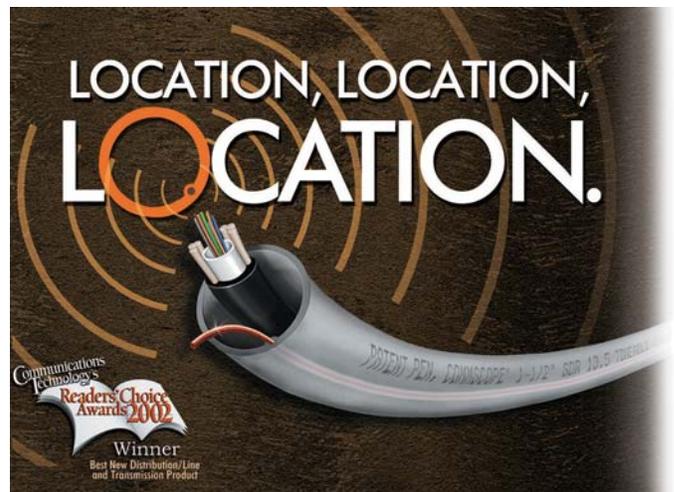
One method used in the field to improve on locating accuracy is to place an external tone wire with cable or conduit during the installation process. This can result in breaking the wire or damaging the jacket and contributes to wire corrosion or potential failure.

To remedy this situation, some suggest installing the wire inside a conduit with the fiber or even in a separate conduit placed alongside the fiber cable’s conduit. With this, however, they risk the fiber wrapping around the wire during installation, increasing the pulling tension and restricting cable movement.

Alternatively, cable pulling tapes have been produced with a wire woven into their construction. While these products tend to lie flat in the conduit, they also present unique challenges. One common problem is that construction crews may use the tape to pull a cable into the conduit, not realizing that they are removing the only possible way of locating that fiber in the future.

To overcome these issues, CommScope has developed specialized conduits that incorporate a tone wire into the construction of the conduit itself. These toneable conduits create a one-step, one-material installation while providing additional protection to the wire with the surrounding polyethylene. Our embedded wall design is ConQuest® Toneable Conduit™.

Proper installation of a tone wire is guaranteed with this kind of system. In addition, pinpoint accuracy is achievable. Some plant and construction managers have cited reduced installation costs as a result of the integrated installation process that toneable conduit products offer.



CommScope’s ConQuest® Toneable Conduit™

The ability to consistently locate underground facilities with accuracy can best be achieved by using the “Type C” option discussed in this article. By establishing a reliable detecting system, workers, utility owners, and customers can have confidence in quality locates that will protect buried utilities for years to come.

**Introduction**

This comparative test was conducted by a major multiple system operator (MSO) to determine the impact on reliability of placing drops in conduit. A drop not requiring a truck roll during its lifespan reduces operating expenses while promoting greater customer satisfaction. The comparison of drop-in-conduit to direct buried drops was conducted in two areas chosen for having similar numbers of trouble calls reported. The first area, Test Area A, had its drops installed exclusively in conduit. The second area, Test Area B, had its drops installed exclusively as direct buried. The number of truck roll trouble calls for cut or damaged drops in each area was then recorded over a 1-year period. The drop-in-conduit installation produced a 70% reduction in truck rolls, saving \$9,600 over the first year.

**Test Areas**

Test Area "A": 3 subdivisions in metropolitan Florida built exclusively with drop cable preinstalled in conduit.

Test Area "B": 3 subdivisions in metropolitan Florida built exclusively with direct buried drop cable.

**Results**

Test Area	Total Calls	Drop Related Calls	Percentage
A	3114	56	.8%
B	3120	184	5.9%

At the end of one year, it was found that there were 128 less truck roll trouble calls for cut or damaged drops in Test Area A where all the drop cables had been installed exclusively in conduit. This resulted in 70% less total truck roll trouble calls for Test Area A as compared to Test Area B with its directly buried drops.

**Cost Savings Comparison**

Using \$75.00 for the estimated cost of each truck roll and multiplying that number by 128, which is the number of avoided truck rolls, a savings of \$9,600 is recognized in one year alone. This cost savings would continue to improve over time and an additional cost savings for labor would be realized should the drops ever need to be upgraded, since new cable could be pulled directly through the existing installed conduit.

**Costs Associated with Drop-Related Truck Roll Trouble Calls in One Year**



Deploying drop-in-conduit does involve additional material and labor costs initially. A drop-in-conduit can cost approximately 12 cents more per foot than flooded cable alone. In addition, the extra labor cost for installation of drop-in-conduit averages about \$15.00 per job for installations involving less than 200 feet. The cost can vary depending upon regional soil conditions. 100 feet of direct buried drop from the tap averages about \$40.00 per installation. 100 feet of drop-in-conduit from the tap averages about \$27.00 more per installation or \$67.00 per job. The figure \$27.00 is based on \$12.00 more in material plus \$15.00 more in labor as compared to the cost of installing a direct buried drop.

**Conclusions**

This case study shows that within one year there is 70% less trouble calls for damaged or cut drops when conduit is used. Each drop-in-conduit installation costs \$27.00 more than direct buried installations, but \$9,600 is saved in reduced truck rolls each year. The cost savings is anticipated to improve even more over time and additional labor cost savings realized with any plant upgrades involving new cable directly pulled through the existing conduit. Additionally, one of the primary benefits of drop-in-conduit versus direct buried is a corresponding increase in customer satisfaction with the 70% reduction in trouble calls. Satisfaction is directly associated with the customer's perceived better reliability for video, high speed and digital voice services. Customer satisfaction means customer retention and customer retention means profitability.