



Fiber Optic Cable

FOR VOICE AND DATA TRANSMISSION



June 2017

 General Cable



The product and technical sections feature the latest information on fiber optic cable products, from applications and construction to detailed technical and specific data.

Our products are readily available through our network of authorized stocking distributors and distribution centers.

We are dedicated to customer service and satisfaction – so call our team of professionally trained sales personnel to meet your application needs.

Fiber Optic Cable for the 21st Century



All information in this catalog is presented solely as a guide to product selection and is believed to be reliable. All printing errors are subject to correction in subsequent releases of this catalog. Although General Cable has taken precautions to ensure the accuracy of the product specifications at the time of publication, the specifications of all products contained herein are subject to change without notice.

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Delivering Solutions

THAT KEEP YOU CONNECTED

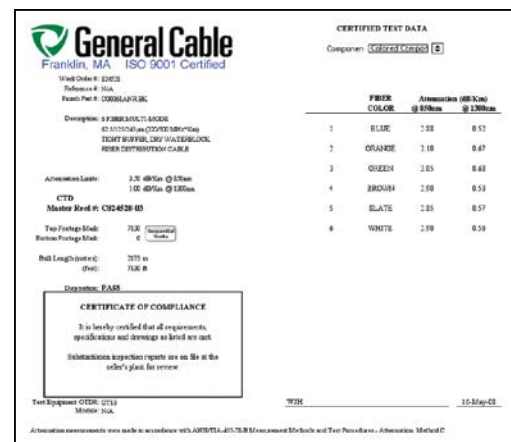
QUALITY



General Cable is committed to developing, producing, and marketing products that exceed performance, quality, value and safety requirements of our customers. General Cable's goal and objectives reflect this commitment, whether it's through our focus on customer service, continuous improvement and manufacturing excellence demonstrated by our TL9000-registered business management system, the independent third-party certification of our products, or the development of new and innovative products. Our aim is to deliver superior performance from all of General Cable's processes and to strive for world-class quality throughout our operations.



TIA/EIA 568B



CUSTOMER SERVICE



General Cable is dedicated to customer service and satisfaction. Call our team of professionally trained sales associates at

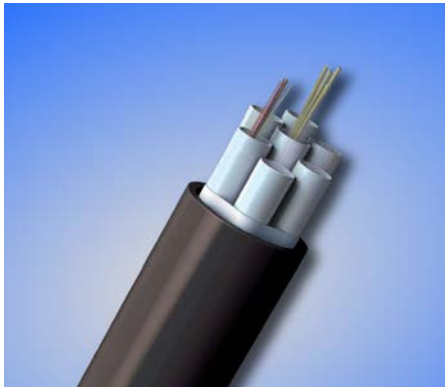
800-424-5666

with any questions to meet your application needs,
or visit our website at www.generalcable.com.

GENERALCABLE.COM

What's New?

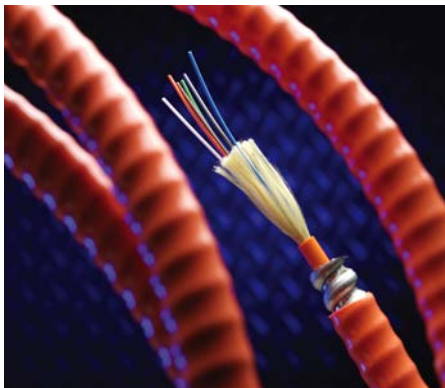
GENLITE™ BLOWN OPTICAL FIBER SYSTEMS



Blown Optical Fiber technology provides flexibility in network design, while anticipating and facilitating future changes as the network evolves. It delivers the best fiber solution for backbone, specialty, Fiber-To-The-Desk (FTTD) and Fiber-To-The-Home (FTTH) applications.

NextGen® Brand's GenLite™ Blown Optical Fiber (BOF) System from General Cable provides numerous advantages over conventional fiber optic systems, including increased flexibility for the designers of fiber optic networks as well as significant and measurable time, cost and service benefits to the network throughout its life cycle. Offered as 1-12 single fibers per microduct or as 1-3 bundles of 6 fibers per microduct, the GenLite BOF System accommodates Moves, Adds and Changes (MACs) easily and quickly with minimal disruption. Learn More on pages 40 – 52 of this catalog!

FIBER RAPID FULFILLMENT PROGRAM



General Cable is pleased to announce its Fiber Rapid Fulfillment Program for NextGen® Brand fiber optic cables. With Fiber Rapid Fulfillment, stock NextGen Brand fiber optic cable is cut to length and shipped the same day.

Order in stock product by 10:30 a.m. EST (Lebanon, IN warehouse) or 10:30 a.m. PST (Chino, CA warehouse) = SAME DAY SHIPPING! Orders received after 10:30 AM will be shipped the next day.

Keep your inventory low while eliminating waste! We can now provide you with NextGen Brand fiber optic cables that can be cut to length and shipped the same day, taking the hassle out of your hands!

NEXTGEN® 17 FREE®



General Cable offers halogen-free NextGen® Brand ETL-Listed Riser (CMR) cable. By removing halogens, the cable has reduced toxicity, resulting in a truly "green" cable that is less toxic and more environmentally friendly. Look for this product on page 23 in the catalog and visit us online at www.generalcable.com for a complete line of products to meet your green cabling needs.



One Company Connecting The World

POWERFUL PRESENCE · PRODUCTS PERFORMANCE · PEOPLE

General Cable has been a wire and cable innovator for over 170 years, always dedicated to connecting and powering people's lives. We are one of the largest wire and cable manufacturers in the world.

Our company serves customers through a network of manufacturing facilities in our core markets and has worldwide sales representation and distribution. We are dedicated to the production of high-quality aluminum, copper and fiber optic wire and cable and systems solutions for the energy, construction, industrial, specialty and communications sectors. With a vast portfolio of products to meet thousands of diverse application requirements, we continue to invest in research and development in order to maintain and extend our technology leadership by developing new materials, designing new products, and creating new solutions to meet tomorrow's market challenges.

In addition to our strong brand recognition and strengths in technology and manufacturing, General Cable is also competitive in such areas as distribution and logistics, marketing, sales and customer service. This combination enables us to better serve our customers globally and as they expand into new geographic markets.

General Cable offers our customers all the strengths and value of a large company, but our people give us the agility and responsiveness of a small one. We service you globally or locally.



General Cable

ONE COMPANY
CONNECTING THE WORLD

Visit our Website at
www.generalcable.com



Corporate Social Responsibility

CREATING SHARED VALUE

General Cable believes corporate social responsibility (CSR) is about creating shared value. That means keeping a dual focus in our business decisions: what is good for us as a company and what contributes to the greater good of the communities in which we live and work.



SAFETY

Working safer by working together

General Cable has one worldwide safety vision and goal – **ZERO & BEYOND**. We measure safety performance globally, share best practices and implement sound health and safety management systems. Many of our facilities worldwide are OHSAS 18001 (safety management system) certified. All North American facilities have implemented an equivalent health and safety management system. General Cable was a pioneer in obtaining the OHSAS 18001 Certificate for Occupational Health and Safety Management Systems in Europe and North Africa.



SUSTAINABILITY

Responsible practices in daily operations

As a global leader in the wire and cable industry, General Cable recognizes its role and responsibility in promoting sustainability. Our strongest business value is continuous improvement in all areas of our company. Across our many businesses, the quest to introduce new and better products through continuous improvement in environmental designs reflects our commitment to achieving industry-leading standards and responding proactively to global environmental issues. General Cable was the first cable manufacturer to obtain certification for its environmental management system, in accordance with the ISO 14001 and EMAS Standards.



CITIZENSHIP

A commitment to being good citizens

Being responsible citizens in our communities is of the utmost importance to us. Unequivocal honesty, integrity, forthrightness and fair dealing have long been part of General Cable's core values and are expected globally in all of our business relationships with our customers, employees, suppliers, neighbors and competitors. Our company leaders and employees strive to make a difference throughout a host of volunteer activities and financial support, improving the communities in which we live and work.



INNOVATION

Technologies that power and connect the world

General Cable is delivering innovation that matters. We are focusing on R&D expertise and investing in developing wire and cable solutions that meet the challenges confronting our customers and the world. In working together and using all the ingenuity and creativity we have, we will reach the goal of being the preeminent supplier of wire and cabling solutions in the industry, with both green constructions and designs for the ever-growing renewable energy market.



A commitment to achieving industry-leading standards and responding proactively to environmental global issues.

+1.859.572.8000
info@generalcable.com

Visit www.GeneralCableCSR.com
to learn more.



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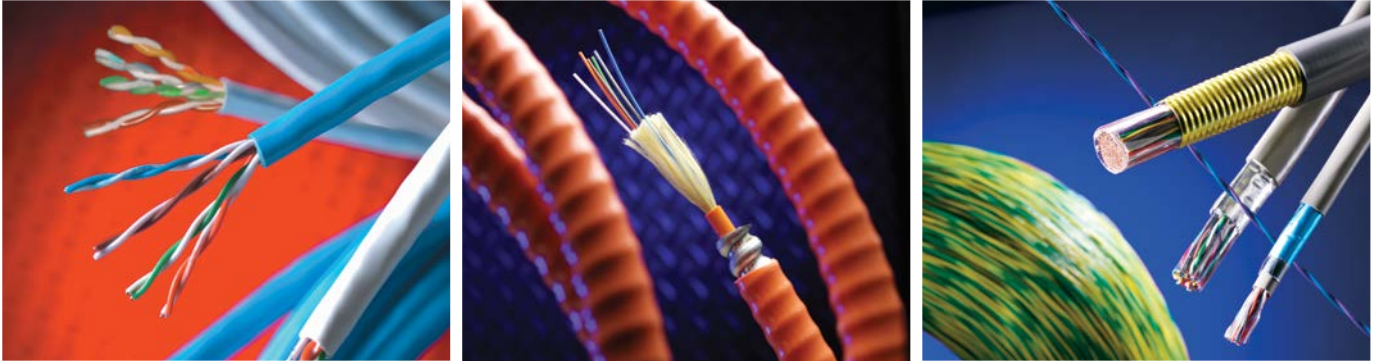
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GenAssuranceSM Product Warranty

FOR GENERAL CABLE DATACOM PRODUCTS



General Cable is committed to exceeding our customers' expectations for quality and performance. We strive to ensure this quality through extensive in-house and third-party testing with strict adherence to our product specifications and industry standards. As such, our products carry a standard one-year limited warranty. Additionally, a 25-year extended warranty protection plan is available for registered products.



Standard Warranty

Products covered are Voice and Data Communications cables, including Category 3 cable and higher, Fiber Optic cables, Central Office cables (e.g., switchboard cable), Terminating cable, and Distribution Frame Wire, Electronics and Telecommunications (e.g., OSP and OVD) products.

Standard Warranty Term and Conditions

General Cable warrants that its product will conform to its applicable specifications and will be otherwise free from defects in material and workmanship for a period of 12 months from the date the product is shipped from its factory (the "Warranty Period").

General Cable must be given immediate written notice of any defect and the opportunity to inspect the product to determine whether a breach of warranty has occurred. This warranty covers only products installed at the original installation location. All repairs or replacements covered by this warranty will be shipped to the destination point specified in the original order. The defective product will, at General Cable's option, be either scrapped or returned to General Cable at its expense and per its shipping instructions.

If General Cable replaces a product under this warranty, the replacement will be warranted for the balance of the original Warranty Period.

General Cable's sole responsibility under this warranty will be to repair or replace, at its option and expense, any length of product found to be defective during either installation or normal or proper use. This warranty does not apply to normal wear and tear or damage caused by negligence, lack of maintenance, accident, abnormal operation, improper installation or service, unauthorized repair, fire, floods, and acts of God. All costs incidental to repairing or replacing defective products, including but not limited to removal, disassembly, reinstallation and reconstruction, will be borne by the buyer, and in no event will General Cable be liable for such costs.

THE FOREGOING CONSTITUTES GENERAL CABLE'S SOLE AND EXCLUSIVE OBLIGATIONS AND LIABILITIES. GENERAL CABLE MAKES NO OTHER WARRANTIES ON ITS PRODUCTS, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ALL OTHER WARRANTIES ARE EXPRESSLY DISCLAIMED.

In no event will General Cable be liable for any incidental, special, consequential or punitive damages of any nature or kind, however arising, whether in contract, tort or otherwise, even if General Cable is deemed to be aware of the possibility of such damages.

General Cable, in no event, will be responsible for any claims or damage arising out of or connected with this warranty or the manufacture, sale, delivery, installation, or use of the product in excess of the purchase price of the product.

Count on us to deliver the solutions that keep you connected.

Extended Warranty

General Cable offers a 25-year limited cable warranty on Datacom and Electronics products. Registration is required, and the warranty is administered by General Cable. To register, please complete the registration form, found at www.generalcable.com in the Product Warranty section, and return along with required documents.

In addition to offering an extended 25-year limited warranty on Datacom and Electronics products, General Cable now offers the same extended limited warranty on OVD and OSP Telecom products. In order to become eligible for the Telecom extended GenAssurance warranty, the network project must use only General Cable Datacom copper and fiber for the structured cable portion (horizontal cable and inside backbone). Upon meeting this criteria, submit the completed registration documents to General Cable, and the extended GenAssurance warranty will be provided for the Telecom cable products.

Datacom System Warranties

System warranties include the link and channel. End-to-end warranties are typically issued by the connectivity partner.

- Panduit - Premier Connectivity Partner



Registered PanGen and NetGen solutions have a 25-year warranty that covers repair or replacement of defective components and one point of contact for all cable and component inquiries. The warranty is issued by Panduit and maintained by both Panduit and General Cable. Additional program information can be found at www.pangensolutions.com.

Additional connectivity partners include:

- Allen-Tel
- Hubbell
- Leviton
- Siemon



Introducing our new *Fiber Rapid Fulfillment Program!*

General Cable is pleased to announce it's **Fiber Rapid Fulfillment Program** for NextGen® Brand fiber optic cables. With Fiber Rapid Fulfillment, stock NextGen® Brand fiber optic cable is cut to length and shipped the same day.



Order in stock product by 10:30 a.m. EST (Lebanon IN Warehouse) or 10:30 a.m. PST (Chino, CA Warehouse) = SAME DAY SHIPPING!

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Keep you inventory low while eliminating waste!

We can now provide you with NextGen Brand fiber optic cables that can be cut to length and shipped the same day, taking the hassle out of your hands!

Learn more about the new Fiber Rapid Fulfillment Program and our NextGen Brand products by calling us at **800-424-5666** or visit **gcna.us**

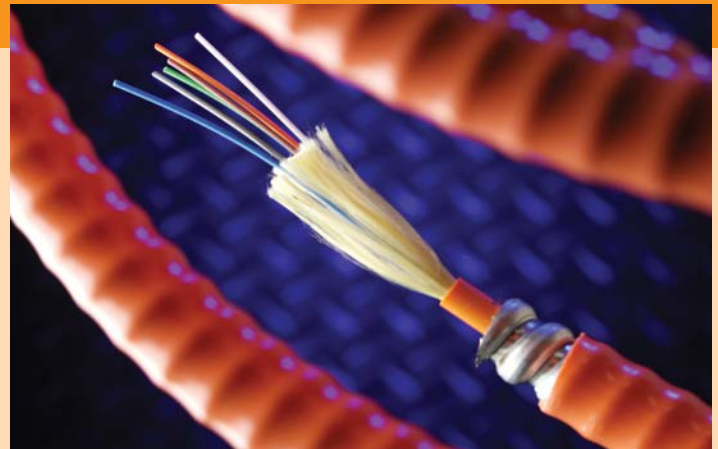
Cable Choice Matters...Choose General Cable



1.800.424.5666
www.generalcable.com
info@generalcable.com

Optical Fiber

General Cable, Corning® Optical Fiber. Names that are synonymous with cable and fiber combine to create the ultimate in fiber optics. General Cable partners with Corning Optical Fiber to deliver the world's most reliable and technologically advanced optical fiber cables.



Singlemode

Standard

General Cable utilizes Corning® SMF-28e+™ fiber as its standard singlemode offering. This is a full-spectrum fiber that is fully backward-compatible with legacy singlemode fiber. It enables increased optical launch power of legacy singlemode fiber, improved macrobend specifications from 0.05 dB to 0.03 dB, and tighter zero dispersion wavelength (λ_0) tolerance from a range of ± 10 nm to ± 7 nm. This fiber supports all broadband applications and complies with the most stringent industry standards, such as:

- ITU-T G.652 (Tables A, B, C and D)
- IEC 60793-2-50 Type B1.3
- ISO 11801 052
- TIA/EIA 492-CAAB
- Telecordia GR-20-CORE

Long-Haul

For long-haul applications, rely on General Cable's long history of cable experience and the technology of Corning® LEAF® fiber. This is the most widely deployed non-zero dispersion shifted (NZ-DSF) fiber in the world and the first low water peak NZ-DSF fiber. Its large effective area and industry-leading polarization mode dispersion (PMD) specifications enable 10 Gb/s and 40 Gb/s network systems of the future.

ClearCurve® ZBL

General Cable, utilizing Corning® ClearCurve® ZBL Optical Fiber, delivers the best macrobending performance in the industry while maintaining compatibility with current optical fibers, equipment, practices and procedures. This full-spectrum singlemode optical fiber, when subjected to smaller radii bends, experiences virtually no signal loss. ClearCurve fiber exceeds the most stringent bend performance requirements of ITU-T Recommendations G.657.B3 while remaining fully compliant with ITU-T Recommendation G.652.D and the installed base of Corning SMF-28e® and SMF-28e+® fiber.

Multimode

ClearCurve® Multimode Fiber

Corning® ClearCurve® ultra-bendable laser-optimized™ multimode optical fiber delivers the best macrobending performance in the industry while maintaining compatibility with current optical fibers, equipment, practices and procedures. ClearCurve OM3/OM4 multimode fiber is designed to withstand tight bends and challenging cable routes with substantially less signal loss than conventional multimode fiber.

These fibers have superior measurement technology and manufacturing control, and industry-leading CPC® coatings for superior microbend and environmental performance. ClearCurve fiber performance is ensured by minEMBc, the industry's leading standards-approved bandwidth measurement for OM3 fibers. ClearCurve fibers are the only ones to use this measurement to ensure 10 Gb/s performance.

50 micron

These fibers support data rates of 10 Gb/s at 850 nm. They also comply with the most stringent industry standards, such as:

- ISO/IEC 11801, type OM2, OM3 and OM4* fibers
- IEC 60793-2-10, type A1a.1, A1a.2 and A1a.3* fibers
- TIA/EIA, 492AAAB, 492AAAC-A and 492AAAD

* Assumes IEC draft standard is harmonized with 492AAAD, which was approved by TIA

62.5 micron

These fibers support data rates of 1 Gb/s in both the 850 nm and 1300 nm windows. They comply with the most stringent industry standards, such as:

- ISO/IEC 11801, type OM1 fiber
- IEC 60793-2-10, type A1b fiber
- TIA/EIA, 492AAAA-A

Optical Fiber Code Cross-Reference

Fiber Type	General Cable	Corning® Optical Fiber	Description
Standard Loose Tube SM	AQ	SMF-28® Ultra	Full spectrum, low water peak singlemode, ITU-T, Recommendation G.657.A1, IEC 60793-2-50 FOR B1.3 and B6_a1 class fibers, TIA/EIA-492CAAB and Telcordia GR-20-CORE, Issue 3
Performance Loose Tube SM	AT	SMF-28® Ultra	Full spectrum, high performance low water peak singlemode with 0.35/0.25 attenuation, Recommendation G.657.A1, IEC 60793-2-50 FOR B1.3 and B6_a1 class fibers, TIA/EIA-492CAAB and Telcordia GR-20-CORE, Issue 3
Tight Buffer SM	AP	SMF-28® Ultra	Full spectrum, low water peak singlemode with 900 µm PVC buffer, ITU-T Recommendation G.657.A1, IEC 60793-2-50 FOR B1.3 and B6_a1 class fibers, TIA/EIA-492CAAB and Telcordia GR-20-CORE, Issue 3
Long-Haul SM	AL	LEAF® Fiber	Large A _{eff} , low water peak, NZ-DSF singlemode, ITU-T G.655
Bendable SM	AY	ClearCurve® LBL	Full spectrum with best macrobending performance, ITU-T G.652.D and ITU-T G.657.A21B2
Ultra-Bendable SM	AZ	ClearCurve® ZBL	Full spectrum with best macrobending performance, ITU-T G.652.D and ITU-T G.657.A
62.5 µm MM	CG	InfiniCor® 300 Fiber	1 Gb/s ≤ 300 m at 850 nm, OM1* 1 Gb/s ≤ 550 m at 1300 nm
62.5 µm MM	CL	InfiniCor® CL™1000 Fiber	10 Gb/s ≤ 500 m at 850 nm, OM1* 1 Gb/s ≤ 1000 m at 1300 nm
Ultra-bendable 50 µm MM	BI	ClearCurve® OM2 Fiber	10 Gb/s ≤ 150 m at 850 nm, OM2* 1 Gb/s ≤ 750 m at 850 nm
Ultra-bendable 50 µm MM	BE	ClearCurve® OM3 Fiber	10 Gb/s ≤ 300 m at 850 nm, OM3* 1 Gb/s ≤ 1000 m at 850 nm
Ultra-bendable 50 µm MM	BL	ClearCurve® OM4 Fiber	10 Gb/s ≤ 550 m at 850 nm, OM4+* 1 Gb/s ≤ 1100 m at 850 nm
Ultra-bendable 50 µm MM	BM	ClearCurve® OM4 Fiber	10 Gb/s ≤ 600 m at 850 nm, OM4+* 1 Gb/s ≤ 1100 m at 850 nm

* Designation per ISO 11801 Fiber Standards

SMF-28e+ is a trademark and Corning, LEAF, InfiniCor and Plus Corning Optical Fiber are registered trademarks of Corning Incorporated, Corning, NY, U.S.A.

Fiber Specification and Selection

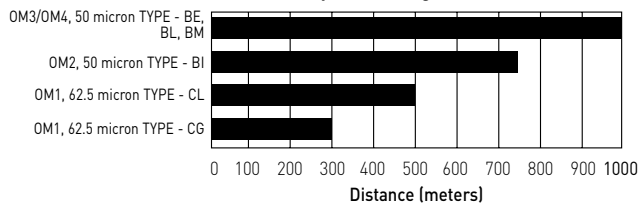
1

MULTIMODE FIBER SELECTION GUIDE

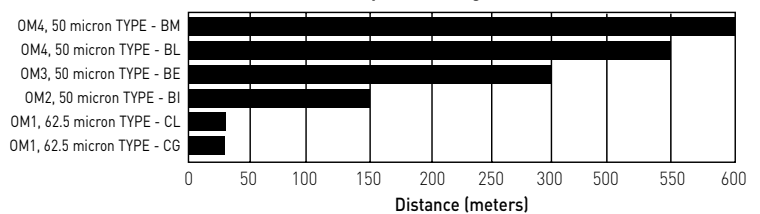
Optical Characteristics:		50/125 PRODUCT FAMILY				62.5/125 PRODUCT FAMILY		UNITS
		OM2 Type-BI	OM3 Type-BE	OM4 Type-BL	OM4 Type-BM	OM1 Type-CG	OM1 Type-CL	
Maximum Finished Cable Attenuation Coefficient	@850 nm	3.0	3.0	3.0	3.0	3.5	3.5	dB/km
	@1300 nm	1.0	1.0	1.0	1.0	1.0	1.0	dB/km
Overfill Launch Bandwidth	@850 nm	700	1500	3500	3500	200	200	MHz.km
	@1300 nm	500	500	500	500	500	500	MHz.km
Laser Bandwidth	@850 nm	850	2000	4700	5350*	220	385	MHz.km
Gigabit Ethernet Link Length (1 Gbps)	1000 BASE-SX (850 nm)	750	1000	1100	1100	300	500	meters
	1000 BASE-LX (1300 nm)	550	550	550	550	550	1000	meters
10 Gigabit Ethernet Link Length (10 Gbps)	10G BASE-SR (850 nm)	150	300	550	600	33	33	meters

* Using 3.0 dB cable attenuation and 0.7 dB connector allocation

1 Gbps Link Lengths @ 850 nm



10 Gbps Link Lengths @ 850 nm



SINGLEMODE FIBER SELECTION GUIDE

FIBER DESCRIPTION	FIBER TYPE	TYPICAL ATTENUATION [dB/km]				GIGABIT ETHERNET DISTANCE (METERS)	10 GIGABIT ETHERNET DISTANCE (METERS)	
		1310 nm	1383 nm	1550 nm	1625 nm	1310 nm	1310 nm	1550 nm
OS2 Singlemode - Loose Tube								
Premium	AQ	0.40	0.40	0.30	0.35	10,000	5,000	30,000
High Performance	AT	0.35	0.35	0.25	0.30	10,000	5,000	30,000
OS2 Singlemode - Tight Buffer								
Distribution	AP	0.65	–	0.65	–	10,000	5,000	30,000
Breakout	AP	1.00	–	1.00	–	10,000	5,000	30,000

SPECIALTY FIBERS — SINGLEMODE

FIBER DESCRIPTION	FIBER TYPE	TYPICAL ATTENUATION (dB/km)				TYPICAL APPLICATION
		1310 nm	1383 nm	1550 nm	1625 nm	
Singlemode (NZDS)						
Large Effective Area	AL	–	–	0.30	0.30	DWDM
Singlemode						
Bend-Insensitive	AZ	0.40	0.40	0.30	0.30	SMALL BEND RADIUS

Use the code in the "Fiber Type" column to replace the XX notation in the catalog number shown on the catalog page. This identifies the fiber that will be provided with the cable choice.

The fibers in all completed cables are tested 100% at the factory for attenuation, and each fiber must meet the minimum requirements specified by the customer.

Fiber Optic Ordering Information

2

We strive to have a variety of cables in stock for immediate delivery to our customers. Should the cable not be in stock, it will be manufactured to your specifications.

To choose a fiber optic cable, you need to know the following:

1) What type and grade of fiber is required?

The system designer will have identified the fiber that is required for the network. Find the fiber type that is needed from the Fiber Specification and Selection Guide. Use the two-digit NextGen® Fiber Type code to identify the fiber. This code becomes the first two digits of the catalog part number, replacing the XX notation.

2) How many fibers are required?

The system designer will also have identified the number of fibers that will be in each cable. Fibers are usually cabled in groups of 6 or 12.

3) What cable construction is needed?

The cable construction that is needed is based on a variety of factors. We have a full range of products for premises, outside plant and indoor/outdoor to solve nearly every application need. Using the catalog as a guide, identify the cable type and construction that is needed.

With the cable construction decided, move down the table on the catalog page to find the number of fibers required. The first column of that row is the catalog part number. Simply replace the XX at the beginning of the catalog number shown with the Fiber Type code found in step 1, and the part number is complete.

Fiber Optic Part Number System

Example: AP0121PNU-ILPA

Singlemode, 12 Fibers, Tight Buffer Distribution Plenum,
Interlock Armor Plenum Aluminum

A	P	0	1	2	1	P	N	U	ILPA
1	2	3	4	5	6	7	8	9	[SUFFIX]

Fiber Grade

Position 1, 2

In position 1

A: Singlemode (sm)

B: 50 MM Multimode (mm)

C: 62.5 MM Multimode (mm)

For position 2, reference pages 2 and 3
for fiber specifications and grades.

Requested Fiber Count

Position 3, 4, 5

Standard Offerings:

6 12 24 36 48 72

Buffer Construction

Position 6

1) Tight Buffer; 3) Single Fiber Loose Tube

4) Multi-Fiber Loose Tube 6) Bare/Ribbon

Note: 2) Quick Strip and 5) Loose Buffer no longer available

Suffixes

- **BK** Black Jacket (UV Resistant)
- **DWB** Dry Water Block Cable Core
- **DT** Dry Tube
- **ILP** Interlock Armor Plenum Steel
- **ILPA** Interlock Armor Plenum Aluminum
- **ILPS** Interlock Armor Plenum Steel w/Sub-Units
- **ILPAS** Interlock Armor Plenum Aluminum w/Sub-Units
- **ILR** Interlock Armor Riser Steel
- **ILRA** Interlock Armor Riser Aluminum
- **ILRS** Interlock Armor Riser Steel w/Sub-Units
- **ILRAS** Interlock Armor Riser Aluminum w/Sub-Units
- **RIP** Ripcord

Series Type

Position 7, 8, 9

Outdoor:

E1S: Loose Tube TJ Dual Armor

H1A: Loose Tube DJ

H1F: Loose Tube DJ Armored

H1S: Loose Tube DJ Dual Armor

M1A: Loose Tube SJ

M1F: Loose Tube SJ Armored

M1N: Loose Tube SJ Armored Self-Supporting

M1Y: Loose Tube SJ Self-Supporting

R1A: Loose Tube SJ Ribbon cable

U1A: All-Dielectric Flat Drop Cable

U1A.TF: Toneable Flat Drop Cable

U2A: Mini (Figure-8) Drop Cable

UNFC: Compact Central Loose Tube Drop Cable

UNFS: Central Tube SJ Armored

Indoor:

B3D: Tight Buffer Breakout Plenum

B3R: Tight Buffer Breakout Riser

PNR/P1R: Tight Buffer Distribution Riser

PNU/P1D: Tight Buffer Distribution Plenum

PNZ/P1Z: Tight Buffer Distribution LSZH

Indoor/Outdoor:

ANR/A1R: Tight Buffer Distribution Riser

ANU/A1D: Tight Buffer Distribution Plenum

M1D: Loose Tube SJ Plenum

M1M: Loose Tube SJ Riser

M1Z: Loose Tube SJ LSZH

Specialty:

GNC: Military Tactical Distribution Cable

Note: DJ = Dual Jacket

SJ = Single Jacket

TJ = Triple Jacket

NextGen® Brand Outside Plant Cables

3



NextGen® Brand fiber optic cable is right for any outside plant application.

Applications: Outside plant cables with loose tube constructions are built to withstand adverse environments and provide the maximum fiber protection. These cables perform exceptionally well in wet conditions and during extreme temperature cycles. They can be installed in ducts, direct buried and aerial/lashed, providing the flexibility needed to meet the demands of campus backbones and other outside plant requirements.

Range of Products: A wide range of cables from 2–312 fibers are manufactured with a variety of designs to meet the demands of most installation conditions.

Features: Only the highest quality materials are used in NextGen fiber optic cables to ensure that the cable strength and optical integrity are not compromised. Rugged jacket materials and the addition of armor provide the right level of protection. The line of outside plant products conforms to TIA/EIA, ICEA, Telcordia and RUS standards.

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Central Tube Single Jacket Armored Cable

Product Construction:

Fiber:

- 2–12 fibers
- Central tube gel-filled
- Color-coding per TIA/EIA 598 B

Armor:

- Corrugated coated steel tape

Outer Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Compact, user-friendly design
- Central tube armored design provides excellent fiber protection

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation -30°C (-22°F) to +60°C (+140°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
150 lbs/in (440 N/cm)

Applications:

- Interbuilding voice or data communication backbones
- Installed in ducts, underground conduits, aerial/lashed or direct buried
- FTTX

Compliances:

- Tested in accordance with EIA/TIA-455 FOTPs
- GR-20
- RoHS Compliant Directive 2002/95/EC

*Sequential meter markings available upon request

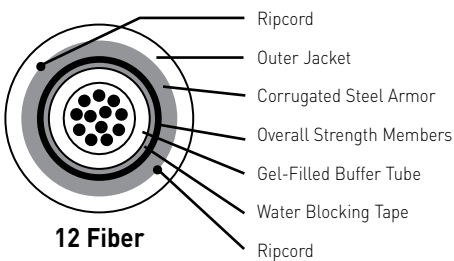


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	SUB-UNIT		CABLE	
XX0024UNFS	2	1	0.42	10.7	78	116	600	2670	180	800
XX0044UNFS	4	1	0.42	10.7	78	116	600	2670	180	800
XX0064UNFS	6	1	0.42	10.7	78	116	600	2670	180	800
XX0084UNFS	8	1	0.42	10.7	78	116	600	2670	180	800
XX0124UNFS	12	1	0.42	10.7	78	116	600	2670	180	800

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

AQ0064UNFS

Singlemode, 6 fibers, central tube SJ armored

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Loose Tube Single Jacket Cable

Product Construction:

Fiber:

- 2–312 fibers
- Loose tube gel-filled
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod

Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Loose tube gel-filled construction for superior fiber protection
- UV- and moisture-resistant design
- Dry Water Block cable core for ease of handling

Performance:

- Temperature:
 - Storage -40°C (-40°F) to +75°C (+167°F)
 - Installation -30°C (-22°F) to +60°C (+140°F)
 - Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
 - 20 X OD—Installation
 - 10 X OD—In-Service
- Maximum Crush Resistance:
 - Short - 125 lbs/in (220 N/cm)
 - Long - 63 lbs/in (110 N/cm)

Applications:

- Interbuilding voice or data communication backbones
- Installed in ducts, underground conduit or aerial/lashed

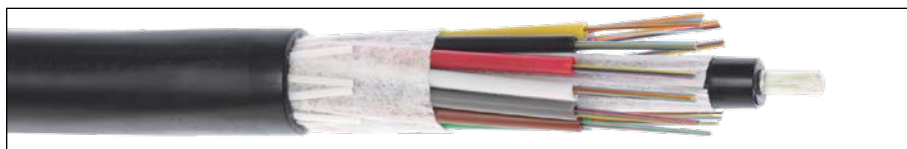
Compliances:

- Tested in accordance with EIA/TIA-455 FOTPs
- ICEA S-87-640
- Rural Utilities Service (RUS) 7 CFR 1755.900 (REA PE-90)
- GR-20
- RoHS Compliant Directive 2002/95/EC

Options:

- Gel-free tube versions also available, use “-DT” suffix (XX0124M1A-DT)
- Alternate 6-fiber per tube available upon request

*Sequential meter markings available upon request

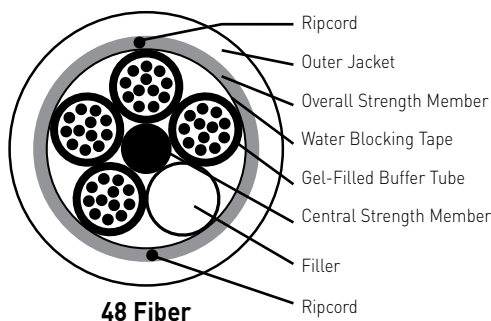


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NO. OF FILLERS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
				IN	mm	LBS/1000'	kg/km	SUB-UNIT		CABLE	
XX0023M1A-DWB	2	2	3	0.44	11.1	55	82	600	2700	180	800
XX0044M1A-DWB	4	1	4	0.44	11.1	55	82	600	2700	180	800
XX0064M1A-DWB	6	1	4	0.44	11.1	55	82	600	2700	180	800
XX0084M1A-DWB	8	1	4	0.44	11.1	55	82	600	2700	180	800
XX0124M1A-DWB	12	1	4	0.44	11.1	55	82	600	2700	180	800
XX0184M1A-DWB	18	2	3	0.44	11.1	55	82	600	2700	180	800
XX0244M1A-DWB	24	2	3	0.44	11.1	55	82	600	2700	180	800
XX0364M1A-DWB	36	3	2	0.44	11.1	55	82	600	2700	180	800
XX0484M1A-DWB	48	4	1	0.44	11.1	55	82	600	2700	180	800
XX0604M1A-DWB	60	5	0	0.44	11.1	55	82	600	2700	180	800
XX0724M1A-DWB	72	6	0	0.47	12.0	66	98	600	2700	180	800
XX0964M1A-DWB	96	8	0	0.54	13.7	84	125	600	2700	180	800
XX1204M1A-DWB	120	10	0	0.61	15.4	106	158	600	2700	180	800
XX1444M1A-DWB	144	12	0	0.68	17.3	132	197	600	2700	180	800
XX1924M1A-DWB	192	16	2	0.69	17.6	128	191	600	2700	180	800
XX2164M1A-DWB	216	18	0	0.69	17.6	128	191	600	2700	180	800
XX2404M1A-DWB	240	20	2	0.75	19.0	153	228	600	2700	180	800
XX2644M1A-DWB	264	22	0	0.75	19.0	153	228	600	2700	180	800
XX2884M1A-DWB	288	24	0	0.79	20.0	171	255	600	2700	180	800
XX3124M1A-DWB	312	26	0	0.84	21.3	191	285	600	2700	180	800

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



48 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

For complete listing of all fiber counts offered, please contact your General Cable sales representative.

Factory-installed eyelet option for quick cable-pull setups available.

Ordering Part Number Example

AQ0124M1A-DWB

Singlemode, 12 fibers, loose tube SJ

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Loose Tube Dual Jacket Cable

Product Construction:

Fiber:

- 2–144 fibers
- Loose tube gel-filled
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod

Inner Jacket:

- Black UV- and moisture-resistant polyethylene (PE)

Outer Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Loose tube gel-filled construction for superior fiber protection
- UV- and moisture-resistant design
- Added protection of an inner jacket
- Dry Water Block cable core for ease of handling

Performance:

- Temperature:
Storage -40°C (-40°F) to +75°C (+167°F)
Installation -30°C (-22°F) to +60°C (+140°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
Short - 125 lbs/in (220 N/cm)
Long - 63 lbs/in (110 N/cm)

Applications:

- Interbuilding voice or data communication backbones
- Installed in ducts, underground conduits, aerial/lashed or direct buried

Compliances:

- Tested in accordance with EIA/TIA-455 FOTPs
- ICEA S-87-640
- Rural Utilities Service (RUS) 7 CFR 1755.900 (REA PE-90)
- GR-20
- RoHS Compliant Directive 2002/95/EC

Options:

- Alternate 6-fiber per tube available upon request

*Sequential meter markings available upon request

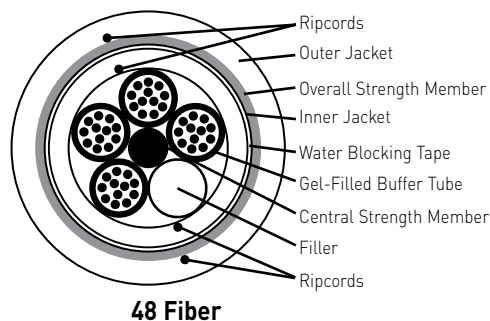


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NO. OF FILLERS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
				IN	mm	LBS/1000'	kg/km	SUB-UNIT		CABLE	
XX0023H1A-DWB	2	2	3	0.51	13.0	78	116	600	2700	180	800
XX0044H1A-DWB	4	1	4	0.51	13.0	78	116	600	2700	180	800
XX0064H1A-DWB	6	1	4	0.51	13.0	78	116	600	2700	180	800
XX0084H1A-DWB	8	1	4	0.51	13.0	78	116	600	2700	180	800
XX0124H1A-DWB	12	1	4	0.51	13.0	78	116	600	2700	180	800
XX0184H1A-DWB	18	2	3	0.51	13.0	78	116	600	2700	180	800
XX0244H1A-DWB	24	2	3	0.51	13.0	78	116	600	2700	180	800
XX0364H1A-DWB	36	3	2	0.51	13.0	78	116	600	2700	180	800
XX0484H1A-DWB	48	4	1	0.51	13.0	78	116	600	2700	180	800
XX0604H1A-DWB	60	5	0	0.51	13.0	78	116	600	2700	180	800
XX0724H1A-DWB	72	6	0	0.54	13.7	90	134	600	2700	180	800
XX0964H1A-DWB	96	8	0	0.61	15.4	111	165	600	2700	180	800
XX1204H1A-DWB	120	10	0	0.67	17.1	131	195	600	2700	180	800
XX1444H1A-DWB	144	12	0	0.75	19.0	167	248	600	2700	180	800

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



48 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

For complete listing of all fiber counts offered, please contact your General Cable sales representative.

Factory-installed eyelet option for quick cable-pull setups available.

Ordering Part Number Example

AQ0124H1A-DWB

Singlemode, 12 fibers, loose tube DJ

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Loose Tube Single Jacket Armored Cable

Product Construction:

Fiber:

- 2–312 fibers
- Loose tube gel-filled
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod

Armor:

- Corrugated coated steel tape

Outer Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Loose tube gel-filled construction for superior fiber protection
- UV- and moisture-resistant design
- Rodent-resistant construction
- Dry Water Block cable core for ease of handling

Performance:

- Temperature:
Storage -40°C (-40°F) to +75°C (+167°F)
Installation -30°C (-22°F) to +60°C (+140°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
Short - 125 lbs/in (220 N/cm)
Long - 63 lbs/in (110 N/cm)

Applications:

- Interbuilding voice or data communication backbones
- Installed in ducts, underground conduits, aerial/lashed or direct buried

Compliances:

- Tested in accordance with EIA/TIA-455 FOTPs
- ICEA S-87-640
- Rural Utilities Service (RUS) 7 CFR 1755.900 (REA PE-90)
- GR-20
- RoHS Compliant Directive 2002/95/EC

Options:

- Gel-free tube versions also available, use “-DT” suffix (XX0124M1F-DT)**
- Alternate 6-fiber per tube available upon request

*Sequential meter markings available upon request

**DT-Max 216 Fiber (call to request cable dimensions)

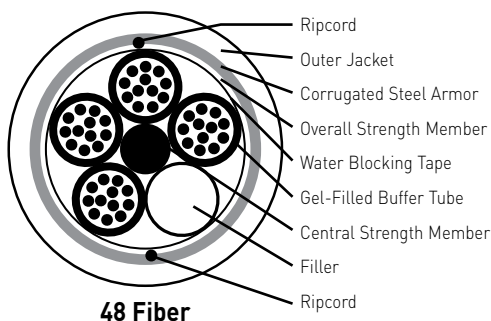


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NO. OF FILLERS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
				IN	mm	LBS/1000'	kg/km	SUB-UNIT		CABLE	
								LBS	N	LBS	N
XX0023M1F-DWB	2	2	3	0.48	12.1	91	135	600	2670	180	800
XX0044M1F-DWB	4	1	4	0.48	12.1	91	135	600	2670	180	800
XX0064M1F-DWB	6	1	4	0.48	12.1	91	135	600	2670	180	800
XX0084M1F-DWB	8	1	4	0.48	12.1	91	135	600	2670	180	800
XX0124M1F-DWB	12	1	4	0.48	12.1	91	135	600	2670	180	800
XX0184M1F-DWB	18	2	3	0.48	12.1	91	135	600	2670	180	800
XX0244M1F-DWB	24	2	3	0.48	12.1	91	135	600	2670	180	800
XX0364M1F-DWB	36	3	2	0.48	12.1	91	135	600	2670	180	800
XX0484M1F-DWB	48	4	1	0.48	12.1	91	135	600	2670	180	800
XX0604M1F-DWB	60	5	0	0.48	12.1	91	135	600	2670	180	800
XX0724M1F-DWB	72	6	0	0.54	13.6	109	162	600	2670	180	800
XX0964M1F-DWB	96	8	0	0.60	15.3	129	191	600	2670	180	800
XX1204M1F-DWB	120	10	0	0.68	17.2	161	239	600	2670	180	800
XX1444M1F-DWB	144	12	0	0.75	19.1	193	287	600	2670	180	800
XX1924M1F-DWB	192	16	2	0.76	19.4	189	281	600	2670	180	800
XX2164M1F-DWB	216	18	0	0.76	19.4	189	281	600	2670	180	800
XX2404M1F-DWB	240	20	2	0.82	20.7	212	315	600	2670	180	800
XX2644M1F-DWB	264	22	0	0.82	20.7	212	315	600	2670	180	800
XX2884M1F-DWB	288	24	0	0.85	21.7	236	351	600	2670	180	800
XX3124M1F-DWB	312	26	0	0.91	23.0	258	384	600	2670	180	800

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



48 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

For complete listing of all fiber counts offered, please contact your General Cable sales representative.

Factory-installed eyelet option for quick cable-pull setups available.

Ordering Part Number Example

AQ0124M1F-DWB

Singlemode, 12 fibers, loose tube SJ armored

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Loose Tube Dual Jacket Armored Cable

Product Construction:

Fiber:

- 2–312 fibers
- Loose tube gel-filled
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod

Inner Jacket:

- Black UV- and moisture-resistant polyethylene (PE)

Armor:

- Corrugated coated steel tape

Outer Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Loose tube gel-filled construction for superior fiber protection
- UV- and moisture-resistant design
- Rodent-resistant construction
- Dry Water Block cable core for ease of handling

Performance:

- Temperature:
Storage -40°C (-40°F) to +75°C (+167°F)
Installation -30°C (-22°F) to +60°C (+140°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
Short - 125 lbs/in (220 N/cm)
Long - 63 lbs/in (110 N/cm)

Applications:

- Interbuilding voice or data communication backbones
- Installed in ducts, underground conduits, aerial/lashed or direct buried

Compliances:

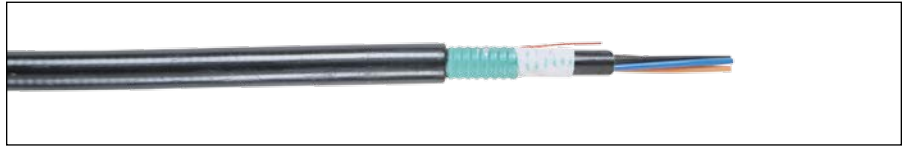
- Tested in accordance with EIA/TIA-455 FOTPs
- ICEA S-87-640
- Rural Utilities Service (RUS) 7 CFR 1755.900 (REA PE-90)
- GR-20
- RoHS Compliant Directive 2002/95/EC

Options:

- Gel-free tube versions also available, use "-DT" suffix (XX0124M1F-DT)**
- Alternate 6-fiber per tube available upon request

*Sequential meter markings available upon request

**DT-Max 216 Fiber (call to request cable dimensions)

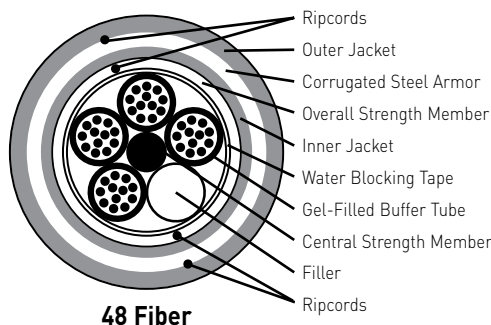


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NO. OF FILLERS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
				IN	mm	LBS/1000'	kg/km	SUB-UNIT		CABLE	
XX0023H1F-DWB	2	2	3	0.59	15.0	128	190	600	2670	180	800
XX0044H1F-DWB	4	1	4	0.59	15.0	128	190	600	2670	180	800
XX0064H1F-DWB	6	1	4	0.59	15.0	128	190	600	2670	180	800
XX0084H1F-DWB	8	1	4	0.59	15.0	128	190	600	2670	180	800
XX0124H1F-DWB	12	1	4	0.59	15.0	128	190	600	2670	180	800
XX0184H1F-DWB	18	2	3	0.59	15.0	128	190	600	2670	180	800
XX0244H1F-DWB	24	2	3	0.59	15.0	128	190	600	2670	180	800
XX0364H1F-DWB	36	3	2	0.59	15.0	128	190	600	2670	180	800
XX0484H1F-DWB	48	4	1	0.59	15.0	128	190	600	2670	180	800
XX0604H1F-DWB	60	5	0	0.59	15.0	128	190	600	2670	180	800
XX0724H1F-DWB	72	6	0	0.63	15.9	143	213	600	2670	180	800
XX0964H1F-DWB	96	8	0	0.69	17.6	169	251	600	2670	180	800
XX1204H1F-DWB	120	10	0	0.76	19.3	201	299	600	2670	180	800
XX1444H1F-DWB	144	12	0	0.84	21.2	234	348	600	2670	180	800
XX1924H1F-DWB	192	16	2	0.85	21.5	230	342	600	2670	180	800
XX2164H1F-DWB	216	18	0	0.85	21.5	230	342	600	2670	180	800
XX2404H1F-DWB	240	20	2	0.90	22.9	259	385	600	2670	180	800
XX2644H1F-DWB	264	22	0	0.90	22.9	259	385	600	2670	180	800
XX2884H1F-DWB	288	24	0	0.94	23.9	282	420	600	2670	180	800
XX3124H1F-DWB	312	26	0	0.99	25.2	310	461	600	2670	180	800

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

For complete listing of all fiber counts offered, please contact your General Cable sales representative.

Factory-installed eyelet option for quick cable-pull setups available.

Ordering Part Number Example

AQ0124H1F-DWB

Singlemode, 12 fibers, loose tube DJ armored

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Loose Tube Single Jacket Self-Supporting (Figure-8) Cable

Product Construction:

Fiber:

- 2-216 fibers
- Loose tube gel-filled
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod

Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Messenger Wire:

- 1/4" stranded EHS galvanized steel
- MRCL with messenger** = 14,923 N/3,350 kF

Features:

- Loose tube gel-filled construction for superior fiber protection
- UV- and moisture-resistant design
- Self-supporting figure-8 design

Performance:

- Temperature:
Storage -40°C (-40°F) to +75°C (+167°F)
Installation -30°C (-22°F) to +60°C (+140°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
Short - 125 lbs/in (220 N/cm)
Long - 63 lbs/in (110 N/cm)

Applications:

- Interbuilding voice or data communication backbones
- Installed aerially

Compliances:

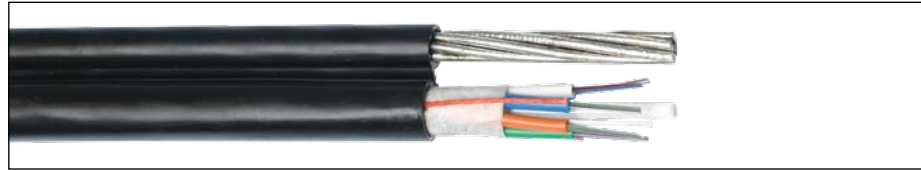
- Tested in accordance with EIA/TIA-455 FOTPs
- ICEA S-87-640
- GR-20
- RoHS Compliant Directive 2002/95/EC

Options:

- Alternate 6-fiber per tube available upon request

*Sequential meter markings available upon request

**Installation load should be lower than maximum rated cable load to allow for wind and ice loading in accordance with NESC guidelines.

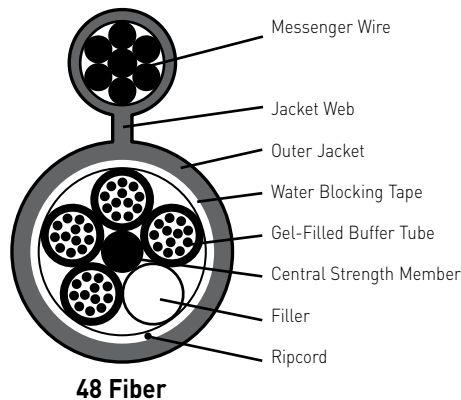


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NO. OF FILLERS	NOMINAL CABLE DIAMETER X CABLE HEIGHT		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD WITHOUT MESSENGER			
				IN	mm	LBS/1000'	kg/km	SUB-UNIT		CABLE	
								LBS	N	LBS	N
XX0023M1Y-DWB	2	2	3	0.465 x 0.925	11.8 x 23.5	208	310	600	2700	180	800
XX0044M1Y-DWB	4	1	4	0.465 x 0.925	11.8 x 23.5	208	310	600	2700	180	800
XX0064M1Y-DWB	6	1	4	0.465 x 0.925	11.8 x 23.5	208	310	600	2700	180	800
XX0084M1Y-DWB	8	1	4	0.465 x 0.925	11.8 x 23.5	208	310	600	2700	180	800
XX0124M1Y-DWB	12	1	4	0.465 x 0.925	11.8 x 23.5	208	310	600	2700	180	800
XX0184M1Y-DWB	18	2	3	0.465 x 0.925	11.8 x 23.5	208	310	600	2700	180	800
XX0244M1Y-DWB	24	2	3	0.465 x 0.925	11.8 x 23.5	208	310	600	2700	180	800
XX0364M1Y-DWB	36	3	2	0.465 x 0.925	11.8 x 23.5	208	310	600	2700	180	800
XX0484M1Y-DWB	48	4	1	0.465 x 0.925	11.8 x 23.5	208	310	600	2700	180	800
XX0604M1Y-DWB	60	5	0	0.465 x 0.925	11.8 x 23.5	208	310	600	2700	180	800
XX0724M1Y-DWB	72	6	0	0.500 x 0.957	12.7 x 24.3	217	323	600	2700	180	800
XX0964M1Y-DWB	96	8	0	0.567 x 1.028	14.4 x 26.1	236	351	600	2700	180	800
XX1204M1Y-DWB	120	10	2	0.697 x 1.157	17.7 x 29.4	278	426	600	2700	180	800
XX1444M1Y-DWB	144	12	0	0.697 x 1.157	17.7 x 29.4	278	426	600	2700	180	800
XX1924M1Y-DWB	192	16	2	0.709 x 1.169	18.0 x 29.7	286	414	600	2700	180	800
XX2164M1Y-DWB	216	18	0	0.709 x 1.169	18.0 x 29.7	286	414	600	2700	180	800

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



48 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

For complete listing of all fiber counts offered, please contact your General Cable sales representative.

Ordering Part Number Example

AQ0244M1Y-DWB

Singlemode, 24 fibers, loose tube (figure 8)

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Installation Notes:

The Maximum Tensile Load in the data table refers to the cable core only. Users should base sag and tension calculations on 1/4" EHS messenger per local guidelines and practices. Additional data is available upon request.

13

Loose Tube Dual Jacket Dual Armored Cable

Product Construction:

Fiber:

- 2–144 fibers
- Loose tube gel-filled
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod

1st Armor:

- Corrugated coated steel tape

Inner Jacket:

- Black UV- and moisture-resistant polyethylene (PE)

2nd Armor:

- Corrugated coated steel tape

Outer Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Loose tube gel-filled construction for superior fiber protection
- UV- and moisture-resistant design
- Rodent-resistant construction
- Dry Water Block cable core for ease of handling

Performance:

- Temperature:
Storage -40°C (-40°F) to +75°C (+167°F)
Installation -30°C (-22°F) to +60°C (+140°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
Short - 125 lbs/in (220 N/cm)
Long - 250 lbs/in (440 N/cm)

Applications:

- Interbuilding voice or data communication backbones
- Installed in ducts, underground conduits, aerial/lashed or direct buried

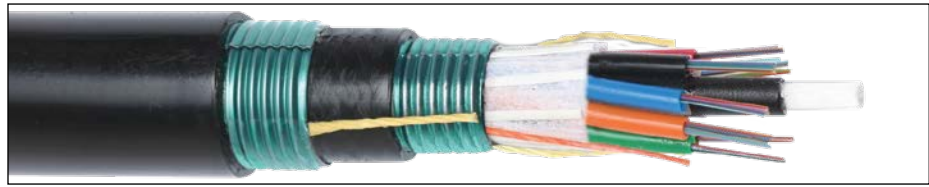
Compliances:

- Tested in accordance with EIA/TIA 455 FOTPs
- ICEA S-87-640
- Rural Utilities Service (RUS) 7 CFR 1755.900 (REA PE-90)
- GR-20
- RoHS Compliant Directive 2002/95/EC

Options:

- Gel-free tube versions also available, use “-DT suffix” (XX0124M1F-DT)
- Alternate 6-fiber per HIS tube available upon request

*Sequential meter markings available upon request

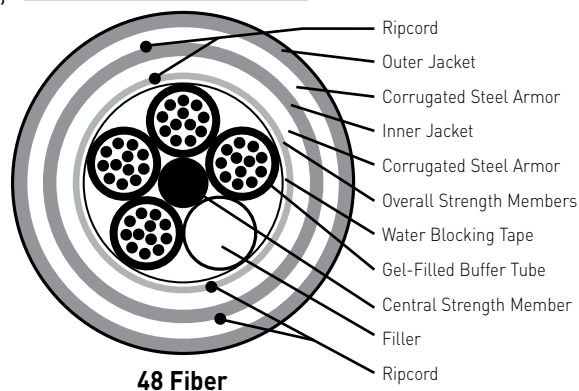


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NO. OF FILLERS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
				IN	mm	LBS/1000'	kg/km	SUB-UNIT		CABLE	
XX0024H1S-DWB	2	5	3	0.66	16.8	188	280	600	2700	180	800
XX0044H1S-DWB	4	5	4	0.66	16.8	188	280	600	2700	180	800
XX0064H1S-DWB	6	5	4	0.66	16.8	188	280	600	2700	180	800
XX0084H1S-DWB	8	5	4	0.66	16.8	188	280	600	2700	180	800
XX0124H1S-DWB	12	5	4	0.66	16.8	188	280	600	2700	180	800
XX0184H1S-DWB	18	5	3	0.66	16.8	188	280	600	2700	180	800
XX0244H1S-DWB	24	5	3	0.66	16.8	188	280	600	2700	180	800
XX0364H1S-DWB	36	5	2	0.66	16.8	188	280	600	2700	180	800
XX0484H1S-DWB	48	5	1	0.66	16.8	188	280	600	2700	180	800
XX0604H1S-DWB	60	5	0	0.66	16.8	188	280	600	2700	180	800
XX0724H1S-DWB	72	6	0	0.72	18.3	217	324	600	2700	180	800
XX0964H1S-DWB	96	8	0	0.79	20.0	247	368	600	2700	180	800
XX1204H1S-DWB	120	10	2	0.86	21.9	292	435	600	2700	180	800
XX1444H1S-DWB	144	12	0	0.94	23.8	338	505	600	2700	180	800

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



48 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

For complete listing of all fiber counts offered, please contact your General Cable sales representative.

Factory-installed eyelet option for quick cable-pull setups available.

Ordering Part Number Example

AQ0124H1S-DWB

Singlemode, 12 fibers, DJ dual armored

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Loose Tube Triple Jacket Dual Armored Cable

Product Construction:

Fiber:

- 2–144 fibers
- Loose tube gel-filled
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod

Inner Jacket:

- Black UV- and moisture-resistant polyethylene (PE)

1st Armor:

- Corrugated coated steel tape

Middle Jacket:

- Black UV- and moisture-resistant polyethylene (PE)

2nd Armor:

- Corrugated coated steel tape

Outer Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Loose tube gel-filled construction for superior fiber protection
- UV- and moisture-resistant design
- Rodent-resistant construction
- Dry Water Block cable core for ease of handling

Performance:

- Temperature:
Storage -40°C (-40°F) to +75°C (+167°F)
Installation -30°C (-22°F) to +60°C (+140°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
Short - 125 lbs/in (220 N/cm)
Long - 250 lbs/in (440 N/cm)

Applications:

- Interbuilding voice or data communication backbones
- Installed in ducts, underground conduits, aerial/lashed or direct buried

Compliances:

- Tested in accordance with EIA/TIA-455 FOTPs
- ICEA S-87-640
- GR-20
- RoHS Compliant Directive 2002/95/EC

Options:

- Gel-free tube versions also available, use "-DT suffix" (XX0124M1F-DT)
- Alternate 6-fiber per tube available upon request

*Sequential meter markings available upon request

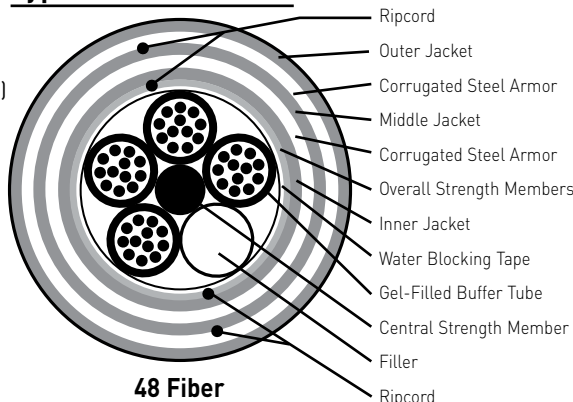


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NO. OF FILLERS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
				IN	mm	LBS/1000'	kg/km	SUB-UNIT		CABLE	
XX0024E1S-DWB	2	5	3	0.78	19.7	243	362	600	2700	180	800
XX0044E1S-DWB	4	5	4	0.78	19.7	243	362	600	2700	180	800
XX0064E1S-DWB	6	5	4	0.78	19.7	243	362	600	2700	180	800
XX0084E1S-DWB	8	5	4	0.78	19.7	243	362	600	2700	180	800
XX0124E1S-DWB	12	5	4	0.78	19.7	243	362	600	2700	180	800
XX0184E1S-DWB	18	5	3	0.78	19.7	243	362	600	2700	180	800
XX0244E1S-DWB	24	5	3	0.78	19.7	243	362	600	2700	180	800
XX0364E1S-DWB	36	5	2	0.78	19.7	243	362	600	2700	180	800
XX0484E1S-DWB	48	5	1	0.78	19.7	243	362	600	2700	180	800
XX0604E1S-DWB	60	5	0	0.78	19.7	243	362	600	2700	180	800
XX0724E1S-DWB	72	6	0	0.81	20.6	262	390	600	2700	180	800
XX0964E1S-DWB	96	8	0	0.88	22.3	302	450	600	2700	180	800
XX1204E1S-DWB	120	10	2	0.94	24.0	346	515	600	2700	180	800
XX1444E1S-DWB	144	12	0	1.02	25.9	392	585	600	2700	180	800

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

For complete listing of all fiber counts offered, please contact your General Cable sales representative.

Factory-installed eyelet option for quick cable-pull setups available.

Ordering Part Number Example

AQ0124E1S-DWB

Singlemode, 12 fibers, TJ dual armored

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Loose Tube Single Jacket Ribbon Cable

Product Construction:

Fiber:

- 288–864 fibers
- Loose tube gel-filled
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod

Overall Strength Member:

- Fiberglass yarns
- Aramid yarn overall strength member available upon request

Outer Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Loose tube gel-filled construction for superior fiber protection
- UV- and moisture-resistant design
- Rodent-resistant construction**
- Dry Water Block cable core for ease of handling

Performance:

- Temperature:
Storage -40°C (-40°F) to +75°C (+167°F)
Installation -30°C (-22°F) to +60°C (+140°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
Short - 125 lbs/in (220 N/cm)
Long - 63 lbs/in (110 N/cm)

Applications:

- Interbuilding voice or data communication backbones
- Installed in ducts, underground conduits, aerial/lashed or direct buried**

Compliances:

- Tested in accordance with EIA/TIA-455 FOTPs
- ICEA S-87-640
- GR-20
- RoHS Compliant Directive 2002/95/EC

Options:

- Copper trace wire (unarmored design)
- Armor — corrugated steel tape

*Sequential meter markings available upon request

**Rodent resistance and direct-buried applies to armored design only

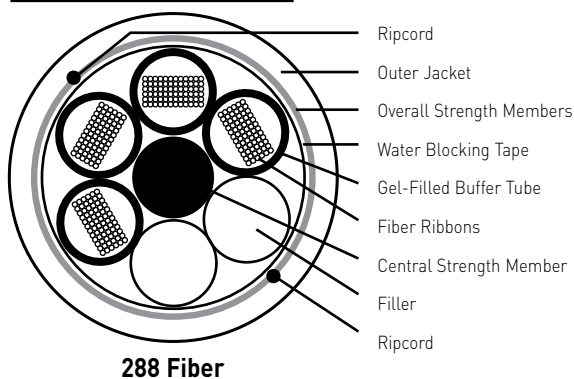


CATALOG NUMBER	FIBER COUNT	NO. OF RIBBONS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	SUB-UNIT		CABLE	
XX2886R1A-DWB	228	24	0.841	21.4	208	310	1000	4500	180	800
XX3606R1A-DWB	360	30	0.841	21.4	208	310	1000	4500	180	800
XX4326R1A-DWB	432	36	0.841	21.4	208	310	1000	4500	180	800
XX4446R1A-DWB	444	37	1.050	26.7	297	442	1000	4500	180	800
XX5046R1A-DWB	504	42	1.050	26.7	297	442	1000	4500	180	800
XX5766R1A-DWB	576	48	1.050	26.7	297	442	1000	4500	180	800
XX6486R1A-DWB	648	54	1.050	26.7	297	442	1000	4500	180	800
XX7206R1A-DWB	720	60	1.050	26.7	297	442	1000	4500	180	800
XX7926R1A-DWB	792	66	1.050	26.7	297	442	1000	4500	180	800
XX8646R1A-DWB	864	72	1.050	26.7	297	442	1000	4500	180	800

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

For complete listing of all fiber counts offered, please contact your General Cable sales representative.

Factory-installed eyelet option for quick cable-pull setups available.

Ordering Part Number Example

AQ2886R1A-DWB

Singlemode, 12 fibers, loose tube ribbon

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Compact Central Loose Tube Drop Cable

Product Construction:

Fiber:

- 2–12 fibers
- Central tube gel-filled
- Color-coding per TIA/EIA 598 B

Aarmor:

- Corrugated coated steel tape

Outer Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Compact, user-friendly design
- Central tube armored design provides excellent fiber protection
- Easy to install

Performance:

- Temperature:
 - Storage -40°C (-40°F) to +75°C (+167°F)
 - Installation -30°C (-22°F) to +60°C (+140°F)
 - Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
 - 20 X OD—Installation
 - 10 X OD—In-Service
- Maximum Crush Resistance:
 - 150 lbs/in (440 N/cm)

Applications:

- Broadband network
- Installed in ducts, underground conduits, aerial/lashed or direct buried
- FTTX

Compliances:

- Tested in accordance with EIA/TIA-455 FOTPs
- GR-20
- RoHS Compliant Directive 2002/95/EC

*Sequential meter markings available upon request

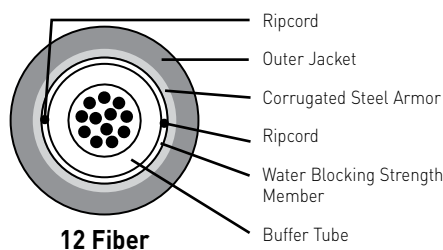


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	SUB-UNIT		CABLE	
XX0024UNFC	2	1	0.36	9.1	62	93	600	2700	180	800
XX0044UNFC	4	1	0.36	9.1	62	93	600	2700	180	800
XX0064UNFC	6	1	0.36	9.1	62	93	600	2700	180	800
XX0084UNFC	8	1	0.36	9.1	62	93	600	2700	180	800
XX0124UNFC	12	1	0.36	9.1	62	93	600	2700	180	800

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



12 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

AQ0064UNFC

Singlemode, 6 fibers, fiber compact central loose tube cable

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Toneable Flat Drop Cable

Product Construction:

Fiber:

- 2–12 fibers
- Central tube gel-filled
- Color-coding per TIA/EIA 598 B

Outer Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Compact, user-friendly design
- Central tube armored design provides excellent fiber protection
- Easy to install

Performance:

- Temperature:
Storage -40°C (-40°F) to +75°C (+167°F)
Installation -30°C (-22°F) to +60°C (+140°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
5.9 X OD—Installation
3.9 X OD—In-Service
- Highly crush-resistant

Applications:

- Broadband network
- Installed in ducts
- FTTX

Compliances:

- Rural Utilities Service (RUS)
7 CFR 1755.900 (REA PE-90)

*Sequential meter markings available upon request

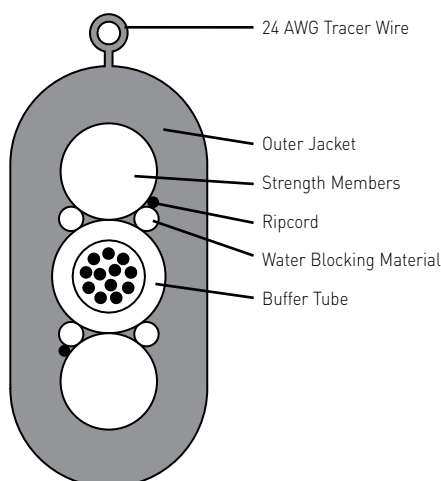


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD	
			IN	mm	LBS/1000'	kg/km	INSTALLATION	
							LBS	N
XX0024U1A.TF	2	1	0.440	0.20	28	42	300	1336
XX0044U1A.TF	4	1	0.440	0.20	28	42	300	1336
XX0064U1A.TF	6	1	0.440	0.20	28	42	300	1336
XX0084U1A.TF	8	1	0.440	0.20	28	42	300	1336
XX0124U1A.TF	12	1	0.440	0.20	28	42	300	1336

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



12 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

AQ0064U1A.TF

Singlemode, 6 fibers, toneable flat drop cable

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

All-Dielectric Flat Drop Cable

Product Construction:

Fiber:

- 2–12 fibers
- Central tube gel-filled
- Color-coding per TIA/EIA 598 B

Outer Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Compact, user-friendly design
- Central tube armored design provides excellent fiber protection
- Easy to install

Performance:

- Temperature:
 - Storage -40°C (-40°F) to +75°C (+167°F)
 - Installation -30°C (-22°F) to +60°C (+140°F)
 - Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
 - 5.9 X OD—Installation
 - 3.9 X OD—In-Service
- Highly crush-resistant

Applications:

- Broadband network
- Installed in ducts or aerial/lashed
- FTTX

Compliances:

- Rural Utilities Service (RUS)
7 CFR 1755.900 (REA PE-90)

*Sequential meter markings available upon request

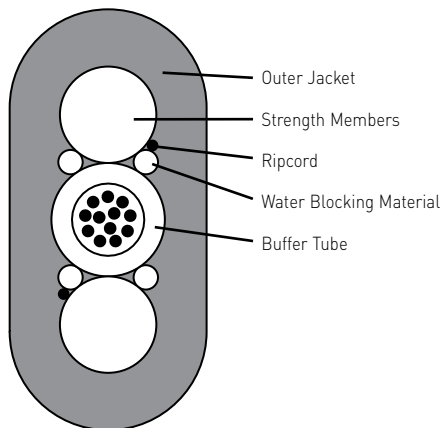


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD	
			IN	mm	LBS/1000'	kg/km	INSTALLATION	
XX0024U1A	2	1	0.33 x 0.20	8.5 x 5.0	26	39	300	1336
XX0044U1A	4	1	0.33 x 0.20	8.5 x 5.0	26	39	300	1336
XX0064U1A	6	1	0.33 x 0.20	8.5 x 5.0	26	39	300	1336
XX0084U1A	8	1	0.33 x 0.20	8.5 x 5.0	26	39	300	1336
XX0124U1A	12	1	0.33 x 0.20	8.5 x 5.0	26	39	300	1336

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



12 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

AQ0064U1A

Singlemode, 6 fibers, all-dielectric flat drop cable

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Mini (Figure-8) Drop Cable

Product Construction:

Fiber:

- 2–12 fibers
- Color-coding per TIA/EIA 598 B

Outer Jacket:

- Black UV- and moisture-resistant polyethylene (PE)
- Sequential footage markings*

Features:

- Compact, user-friendly design
- Central tube armored design provides excellent fiber protection
- Easy to install

Performance:

- Temperature:
Storage -40°C (-40°F) to +75°C (+167°F)
Installation -20°C (-4°F) to +60°C (+140°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
6.7 X OD—Installation
2.6 X OD—In-Service

Applications:

- Broadband network
- Installed in ducts or aerial/lashed
- FTTX

Compliances:

- Rural Utilities Service (RUS)
7 CFR 1755.900 (REA PE-90)

*Sequential meter markings available upon request

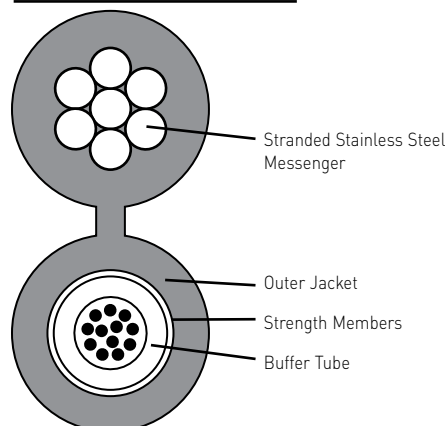


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
							SUB-UNIT		CABLE	
			IN	mm	LBS/1000'	kg/km	LBS	N	LBS	N
XX0024U2A	2	1	0.33 x 0.17	8.5 x 4.4	37	55	30	134	525	2335
XX0044U2A	4	1	0.33 x 0.17	8.5 x 4.4	37	55	30	134	525	2335
XX0064U2A	6	1	0.33 x 0.17	8.5 x 4.4	37	55	30	134	525	2335
XX0084U2A	8	1	0.33 x 0.17	8.5 x 4.4	37	55	30	134	525	2335
XX0124U2A	12	1	0.33 x 0.17	8.5 x 4.4	37	55	30	134	525	2335

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



12 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

AQ0064U2A

Singlemode, 6 fibers, aerial and duct drop cable

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

NextGen® Brand Indoor Cables

4



NextGen® Brand fiber optic cables are optimized for any premises application.

Applications: Premises cables with 900 µm tight buffer constructions are built to withstand the continuous handling and difficult routing typical of building backbones. These fiber optic cables emphasize flexibility, handling and proper fiber termination characteristics. This provides reliable and simple installations every time. These cables are used for intrabuilding vertical (backbone) and horizontal runs.

Range of Products: Includes the manufacture of riser, plenum and low-smoke, zero-halogen (LSZH) cables. This includes distribution designs as well as breakout style cables. Fiber counts range up to 144 fibers.

Features: Premises cables have an industry-standard 900 µm tight buffer for termination to connectors. The tight buffer diameter is tightly controlled to provide reliable, first-time connections. Breakout cables utilize 2.4 mm breakout dimensions for rugged environments and compatibility with connectors. All fibers are color-coded and subgrouped (if necessary) for easy identification for handling.

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Tight Buffer Distribution Low-Smoke, Zero-Halogen (LSZH) Cable Type OFNR, CSA FT4



Product Construction:

Fiber:

- 2–72 fibers
- 900 µm tight buffer
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod (above 12 fibers)

Overall Strength Member:

- Aramid fiber yarn

Jacket:

- Flame-retardant LSZH compound
- Sequential footage markings*
- Orange jacket—multimode fibers (except 10 Gbps)
- Aqua jacket—10 Gbps multimode fibers
- Yellow jacket—singlemode fibers

Features:

- Lightweight, flexible design simplifies installation
- Tight buffer provides individual fiber protection
- Tight buffered fibers are easy to handle and strip for field connectorization
- Sub-units are numbered for identification

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
850 lbs/in (1485 N/cm)
- Maximum Vertical Rise—1,640 ft (500 m)

Applications:

- Intrabuilding voice or data communication backbones
- ETL Listed Type OFNR for installation in vertical riser and general horizontal applications when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFNR
- CSA FT4
- TIA 568 C.3
- ICEA S-83-596
- RoHS Compliant Directive 2002/95/EC
- GR-409

*Sequential meter markings available upon request

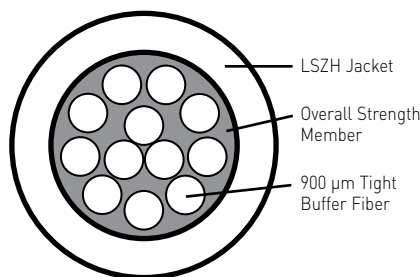


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021PNZ	2	—	0.17	4	11	16	225	1000	65	290
XX0041PNZ	4	—	0.18	5	13	19	225	1000	65	290
XX0061PNZ	6	—	0.20	5	15	22	225	1000	65	290
XX0081PNZ	8	—	0.20	5	17	25	245	1090	70	310
XX0121PNZ	12	—	0.23	6	21	31	320	1425	112	500
XX0181P1Z	18	3	0.47	12	84	125	600	2670	200	890
XX0241P1Z	24	4	0.53	13	92	137	800	3560	270	1201
XX0361P1Z	36	6	0.64	16	142	211	1000	4448	335	1490
XX0481P1Z	48	4	0.61	15	122	182	1000	4448	335	1490
XX0601P1Z	60	5	0.67	17	156	232	1200	5338	400	1780
XX0721P1Z	72	6	0.74	19	192	286	1500	6672	500	2224

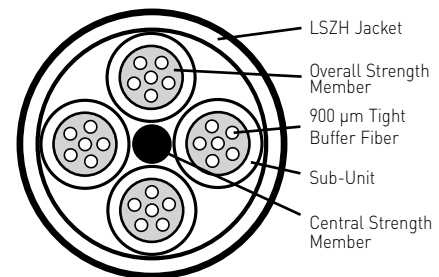
XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Sections



PNZ ≤ 12 Fiber



P1Z ≥ 18 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0121PNZ or BE0241P1Z

50 µm multimode, 12 or 24 fibers, tight buffer LSZH

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Tight Buffer Distribution Riser Cable

Type OFNR, CSA FT4

Product Construction:

Fiber:

- 2–144 fibers
- 900 μ m tight buffer
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod (P1R)

Overall Strength Member:

- Aramid fiber yarn

Jacket:

- Flame-retardant compound
- Sequential footage markings*
- Orange jacket—multimode fibers (except 10 Gbps)
- Aqua jacket—10 Gbps multimode fibers
- Yellow jacket—singlemode fibers

Features:

- Lightweight, flexible design simplifies installation
- Tight buffer provides individual fiber protection
- Tight buffered fibers are easy to handle and strip for field connectorization
- Sub-units are numbered for identification

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
850 lbs/in (1485 N/cm)
- Maximum Vertical Rise—1,640 ft (500 m)

Applications:

- Intrabuilding voice or data communication backbones
- ETL Listed Type OFNR for installation in vertical riser and general horizontal applications when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFNR
- CSA FT4
- TIA 568 C.3
- ICEA S-83-596
- GR-409
- RoHS Compliant Directive 2002/95/EC

Option:

- Ripcord available on PNRs, comes as standard on P1Rs

*Sequential meter markings available upon request

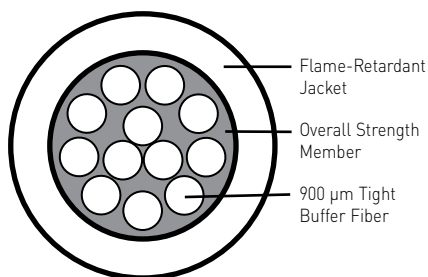


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021PNR	2	—	0.19	5	14	20	225	1000	65	290
XX0041PNR	4	—	0.20	5	16	23	225	1000	65	290
XX0061PNR	6	—	0.20	5	18	27	225	1000	65	290
XX0081PNR	8	—	0.22	6	20	30	245	1090	70	310
XX0101PNR	10	—	0.24	6	23	34	320	1425	112	500
XX0121PNR	12	—	0.25	6	24	36	320	1425	112	500
XX0181P1R	18	3	0.46	12	76	113	600	2670	200	890
XX0181PNR	18	—	0.33	8	45	67	320	1425	112	500
XX0241P1R	24	4	0.52	13	84	125	800	3560	270	1201
XX0241PNR	24	—	0.34	9	47	70	320	1425	112	500
XX0361P1R	36	6	0.65	17	152	226	1000	4448	335	1490
XX0481P1R	48	4	0.63	16	133	197	1000	4448	335	1490
XX0601P1R	60	5	0.69	17	155	231	1200	5338	400	1780
XX0721P1R	72	6	0.76	19	202	301	1500	6672	500	2224
XX0961P1R	96	8	0.89	23	289	430	2000	8896	670	2980
XX1201P1R	120	10	1.00	25	297	442	3000	13345	1000	4448
XX1441P1R	144	12	1.00	25	304	452	3000	13345	1000	4448

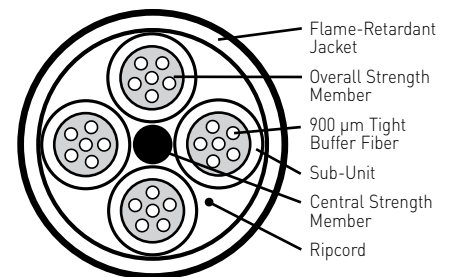
XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Sections



PNR ≤ 24 Fiber



P1R ≥ 18 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0241PNR or BE0241P1R

50 μ m multimode, 24 fibers, tight buffer distribution riser

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Tight Buffer Distribution Plenum Cable

Type OFNP, CSA FT6

Product Construction:

Fiber:

- 2–144 fibers
- 900 μ m tight buffer
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod (P1D)

Overall Strength Member:

- Aramid fiber yarn

Jacket:

- Flame-retardant compound or fluoropolymer
- Sequential footage markings*
- Orange jacket—multimode fibers (except 10 Gbps)
- Aqua jacket—10 Gbps multimode fibers
- Yellow jacket—singlemode fibers

Features:

- Lightweight, flexible design simplifies installation
- Tight buffer provides individual fiber protection
- Tight buffered fibers are easy to handle and strip for field connectorization
- Sub-units are numbered for identification

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
850 lbs/in (1485 N/cm)
- Maximum Vertical Rise—1,640 ft (500 m)

Applications:

- Intrabuilding voice or data communication backbones
- ETL Listed Type OFNP for installation in ducts, plenums and other spaces used as environmental air returns when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFNP
- CSA FT6
- TIA 568 C.3
- ICEA S-83-596
- GR-409
- RoHS Compliant Directive 2002/95/EC

Option:

- Ripcord available on PNUs, comes as standard on P1Ds

*Sequential meter markings available upon request

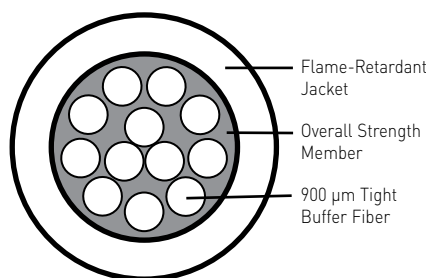


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021PNU	2	—	0.17	4	12	17	225	1000	65	290
XX0041PNU	4	—	0.18	5	14	20	225	1000	65	290
XX0061PNU	6	—	0.18	5	16	24	225	1000	65	290
XX0081PNU	8	—	0.21	5	18	27	245	1090	70	311
XX0121PNU	12	—	0.22	6	23	34	320	1423	112	500
XX0181PNU	18	—	0.31	8	42	63	320	1423	112	500
XX0241PNU	24	—	0.32	8	45	67	320	1423	112	500
XX0361P1D	36	6	0.61	16	151	225	1000	4448	335	1490
XX0481P1D	48	4	0.58	15	135	200	1000	4448	335	1490
XX0601P1D	60	5	0.67	17	186	277	1000	4448	335	1490
XX0721P1D	72	6	0.73	19	217	323	1000	4448	335	1490
XX0961P1D	96	8	0.86	22	312	464	1500	6672	500	2224
XX1201P1D	120	10	0.96	24	374	556	1500	6672	500	2224
XX1441P1D	144	12	0.96	24	394	586	1500	6672	500	2224

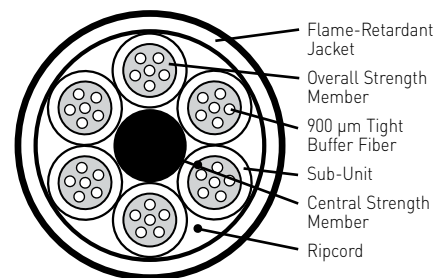
XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Sections



PNU \leq 24 Fiber



P1D \geq 36 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0241PNU or BE0361P1D

50 μ m multimode, 24 or 36 fibers, tight buffer distribution plenum

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Tight Buffer Breakout Riser Cable

Type OFNR, CSA FT4

Product Construction:

Fiber:

- 2–24 fibers
- 900 μ m white tight buffer
- 2.4 mm jacketed sub-units, with overall jacket color coding

Central Strength Member:

- Aramid fiber yarn
- Optional epoxy glass rod (BIR)

Overall Strength Member:

- Aramid fiber yarn

Jacket:

- Flame-retardant compound
- Sequential footage markings*
- Orange jacket—multimode fibers (except 10 Gbps)
- Aqua jacket—10 Gbps multimode fibers
- Yellow jacket—singlemode fibers

Features:

- Rugged individual fiber protection
- Easily terminated with fiber sub-units
- Heavy-duty premises applications
- Sub-units are numbered for identification

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
1000 lbs/in (1750 N/cm)
- Maximum Vertical Rise—1,640 ft (500 m)

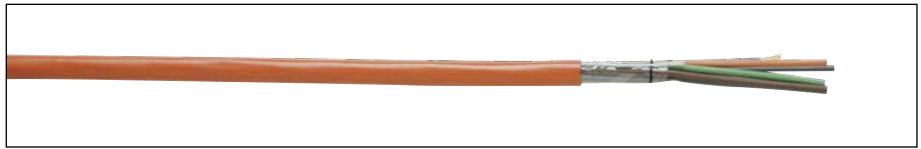
Applications:

- Intrabuilding voice or data communication backbones
- ETL Listed Type OFNR for installation in vertical riser and general horizontal applications when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFNR
- CSA FT4
- TIA 568 C.3
- ICEA S-83-596
- GR-409
- RoHS Compliant Directive 2002/95/EC

*Sequential meter markings available upon request

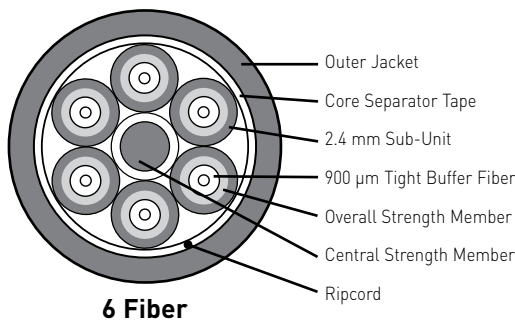


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021B3R	2	2	0.27	7	28	41	270	1200	110	490
XX0041B3R	4	4	0.31	8	37	54	450	2000	180	800
XX0061B3R	6	6	0.37	9	51	76	450	2000	180	800
XX0081B3R	8	8	0.43	11	71	106	600	2670	200	890
XX0121B3R	12	12	0.47	12	79	117	790	3515	270	1200
XX0181B3R	18	18	0.56	14	111	165	1000	4450	400	1780
XX0241B3R	24	24	0.65	16	153	228	1230	5470	450	2000

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



6 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0121B3R

50 μ m multimode, 12 fibers, tight buffer breakout riser

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Tight Buffer Breakout Plenum Cable

Type OFNP, CSA FT6

Product Construction:

Fiber:

- 2–48 fibers
- 900 µm white tight buffer
- 2.4 mm jacketed sub-units, with overall jacket color coding

Central Strength Member:

- Aramid fiber yarn
- Optional epoxy glass rod (B1D)

Overall Strength Member:

- Aramid fiber yarn

Jacket:

- Flame-retardant compound
- Sequential footage markings*
- Orange jacket—multimode fibers (except 10 Gbps)
- Aqua jacket—10 Gbps multimode fibers
- Yellow jacket—singlemode fibers

Features:

- Rugged individual fiber protection
- Easily terminated with fiber sub-units
- Heavy-duty premises applications
- Sub-units are numbered for identification

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
850 lbs/in (1485 N/cm)
- Maximum Vertical Rise—1,640 ft (500 m)

Applications:

- Intrabuilding voice or data communication backbones
- ETL Listed Type OFNP for installation in ducts, plenums and other spaces used as environmental air returns when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL and c(ETL) Listed Type OFNP
- CSA FT6
- TIA 568 C.3
- ICEA S-83-596
- RoHS Compliant Directive 2002/95/EC
- GR-409

*Sequential meter markings available upon request

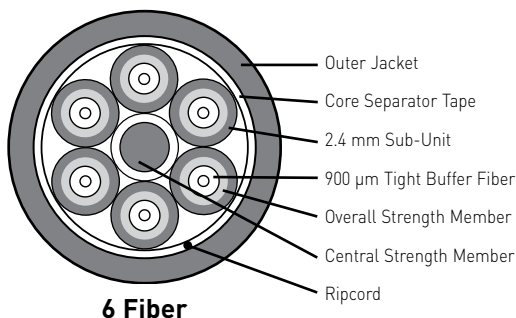


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021B3D	2	2	0.24	6	27	40	270	1200	110	490
XX0041B3D	4	4	0.28	7	33	49	450	2000	180	800
XX0061B3D	6	6	0.34	9	50	74	450	2000	180	800
XX0081B3D	8	8	0.40	10	72	107	600	2670	200	890
XX0121B3D	12	12	0.44	11	76	113	790	3515	270	1200
XX0181B3D	18	18	0.54	14	122	181	1000	4450	400	1780
XX0241B3D	24	24	0.63	16	171	254	1230	5470	450	2000
XX0361B3D	36	36	0.73	19	209	311	2000	8896	600	2669
XX0481B3D	48	48	0.84	21	261	388	2600	11565	780	3470

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0121B3D

50 µm multimode, 12 fibers, tight buffer breakout plenum

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Tight Buffer Distribution Interlock Armored Riser Cable

Type OFCR, CSA FT4

Product Construction:

Fiber:

- 2–144 fibers
- 900 μ m tight buffer
- Color-coding per TIA/EIA 598 B

Overall Strength Member:

- Aramid fiber yarn

Inner Jacket:

- Flame-retardant compound

Armor:

- Interlock aluminum (-ILRA)

Outer Jacket:

- Flame-retardant compound
- Sequential footage markings*
- Orange jacket—multimode fibers (except 10 Gbps)
- Aqua jacket—10 Gbps multimode fibers
- Yellow jacket—singlemode fibers

Features:

- Interlock armor provides outstanding mechanical protection
- Interlock armor is flexible and easy to use
- Tight buffer provides individual fiber protection
- Sub-units are numbered for identification

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
1,500 lbs/in (2,627 N/cm)

Applications:

- Harsh premises environments requiring heavy-duty protection
- ETL Type OFCR for installation in any premises location when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFCR
- CSA FT4
- TIA 568 C.3
- ICEA S-83-596
- GR-409
- RoHS Compliant Directive 2002/95/EC

Note:

Armored cable without an outer jacket available upon request (-IL)

*Sequential meter markings available upon request

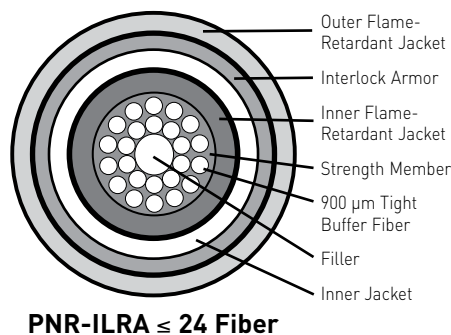


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
							LBS	N	LBS	N
XX0021PNR-ILRA	2	—	0.52	13	85	126	550	2447	165	734
XX0041PNR-ILRA	4	—	0.57	14	95	141	550	2447	165	734
XX0061PNR-ILRA	6	—	0.57	14	98	146	550	2447	165	734
XX0121PNR-ILRA	12	—	0.57	14	104	155	550	2447	165	734
XX0241PNR-ILRA	24	—	0.67	17	144	214	550	2447	165	734
XX0241P1R-ILRA	24	4	0.87	22	238	354	1000	4448	300	1334
XX0361P1R-ILRA	36	6	0.99	25	360	536	1000	4448	300	1334
XX0481P1R-ILRA	48	4	0.99	25	330	491	1000	4448	300	1334
XX0601P1R-ILRA	60	5	1.04	26	364	542	1000	4448	300	1334
XX0721P1R-ILRA	72	6	1.09	28	422	628	1000	4448	300	1334
XX0961P1R-ILRA	96	8	1.24	32	543	808	1000	4448	335	1490
XX1201P1R-ILRA	120	10	1.39	35	584	826	1000	4448	335	1490
XX1441P1R-ILRA	144	12	1.39	35	555	869	1000	4448	335	1490

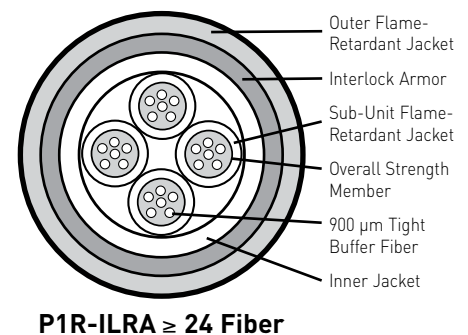
XX Denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Sections



PNR-ILRA ≤ 24 Fiber



P1R-ILRA ≥ 24 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0241PNR-ILRA or BE0241PNR-ILRA

50 μ m multimode, 24 fibers, tight buffer distribution interlock armor riser
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Tight Buffer Distribution Interlock Armored Plenum Cable

Type OFCP, CSA FT6

Product Construction:

Fiber:

- 4–144 fibers
- 900 µm tight buffer
- Color-coding per TIA/EIA 598 B

Overall Strength Member:

- Aramid fiber yarn

Inner Jacket:

- Flame-retardant compound

Armor:

- Interlock aluminum (-ILPA)

Outer Jacket:

- Flame-retardant compound
- Sequential footage markings*
- Orange jacket—multimode fibers (except 10 Gbps)
- Aqua jacket—10 Gbps multimode fibers
- Yellow jacket—singlemode fibers

Features:

- Interlock armor provides outstanding mechanical protection
- Interlock armor is flexible and easy to use
- Tight buffer provides individual fiber protection
- Sub-units are numbered for identification

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
1,500 lbs/in (2,627 N/cm)

Applications:

- Harsh premises environments requiring heavy-duty protection
- ETL Type OFCP for installation in any premises location when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFCP
- CSA FT6
- TIA 568 C.3
- ICEA S-83-596
- GR-409
- RoHS Compliant Directive 2002/95/EC

Note:

Armored cable without an outer jacket available upon request (-IL)

*Sequential meter markings available upon request

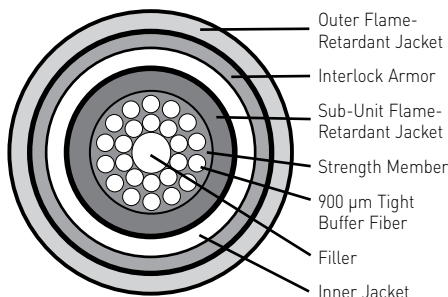


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021PNU-ILPA	2	—	0.49	12	80	119	550	2447	165	734
XX0041PNU-ILPA	4	—	0.49	12	82	122	550	2447	165	734
XX0061PNU-ILPA	6	—	0.49	12	84	125	550	2447	165	734
XX0121PNU-ILPA	12	—	0.49	12	100	149	550	2447	165	734
XX0241PNU-ILPA	24	—	0.59	15	138	205	550	2447	165	734
XX0241PNU-ILPAS	24	4	0.70	18	136	202	1000	4448	300	1334
XX0361PNU-ILPAS	36	6	0.73	19	158	235	1000	4448	300	1334
XX0481PNU-ILPAS	48	4	0.80	20	209	311	1000	4448	300	1334
XX0601PNU-ILPAS	60	5	0.85	22	187	278	1000	4448	300	1334
XX0721PNU-ILPAS	72	6	0.95	24	273	406	1000	4448	300	1334
XX0961PNU-ILPAS	96	8	1.05	27	328	488	1000	4448	335	1490
XX1201PNU-ILPAS	120	10	1.10	28	372	554	1000	4448	335	1490
XX1441PNU-ILPAS	144	12	1.20	31	386	574	1000	4448	335	1490

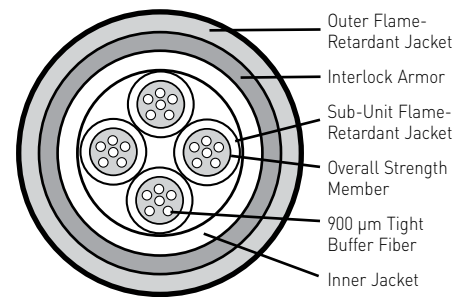
XX Denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Sections



PNU-ILPA ≤ 24 Fiber



PNU-ILPAS ≥ 24 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

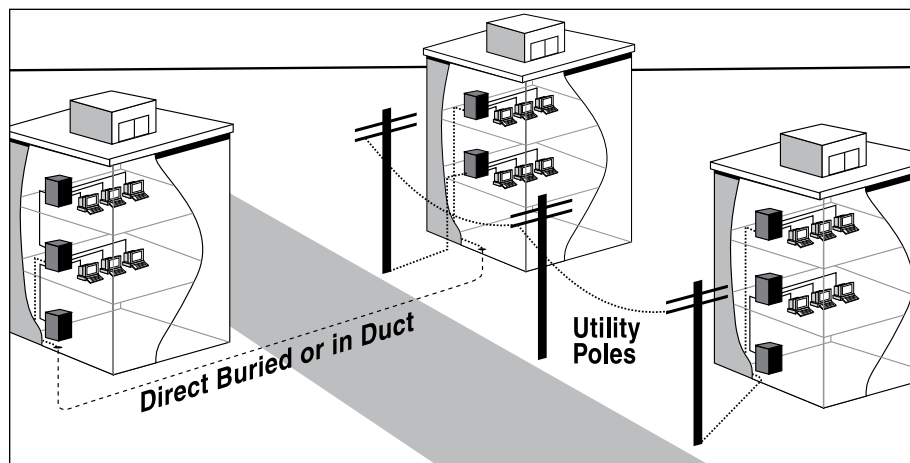
Ordering Part Number Example

BE0241PNU-ILPA or BE0241PNU-ILPAS

50 µm multimode, 24 fibers, tight buffer distribution interlock armor plenum
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

NextGen® Brand Indoor/Outdoor Cables

5



The concept, production and application of indoor/outdoor fiber optic cables has been a big part of the NextGen® Brand product line for more than a decade. As a leader in easy-to-use, field-friendly fiber optic cables, the indoor/outdoor product line has been especially well-known to users who appreciate the features it provides.

Applications: Whether primarily for indoor or outdoor use, we have an impressive choice of products that have the ability to route from either a plenum or riser building space to an outdoor run. This eliminates the costly and space-consuming transition point at the building entrance and improves the system loss budget. These cables are most efficient when used to directly connect equipment rooms (on any floor) in different buildings or to connect a manhole location to an equipment room.

Range of Products:

Indoor/outdoor fiber optic cables include loose tube (dry or gel-filled) and tight buffer (900 µm) designs. These are available in a variety of configurations and jacket types to cover riser and plenum requirements for indoor cable and the ability to be run in duct, direct buried or aerial/lashed in the outside plant. The following catalog pages provide information on proper interbuilding and intrabuilding applications.

Features: These products reduce the system cost by eliminating splice points, simplifying cable handling and gaining flexibility with the choice of building entrances. All cables meet appropriate NEC requirements and are listed with ETL. Tight buffer designs allow direct termination of fibers with industry-standard connectors and techniques. Loose tube designs

Index	Page
Loose Tube Single Jacket Low-Smoke, Zero-Halogen (LSZH) Cable	30
Tight Buffer Distribution Riser Cable	31
Tight Buffer Distribution Plenum Cable	32
Tight Buffer Distribution Interlock Armored Riser Cable	33
Tight Buffer Distribution Interlock Armored Plenum Cable	34
Loose Tube Single Jacket Riser Cable	35
Loose Tube Single Jacket Plenum Cable	36

provide more fiber protection in harsh outdoor environments and are readily spliced to existing outside plant cables. Most indoor/outdoor fiber optic cables utilize Dry Water Block technology in the cable core to protect the fibers and provide fast, clean fiber preparation.

Loose Tube Single Jacket Low-Smoke, Zero-Halogen (LSZH) Cable Type OFNR-LS



Product Construction:

Fiber:

- Up to 144 fibers
- Dry Loose Tube
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod in stranded designs

Jacket:

- Black UV-, moisture-resistant and flame-retardant LSZH polymer
- Other colors available upon request
- Sequential footage markings*

Features:

- Dry loose tube for termination
- Flexible buffer tubes for routing
- LSZH jacket for fire protection

Performance:

- Temperature:
 - Storage -40°C (-40°F) to +70°C (+158°F)
 - Installation* -30°C (-22°F) to +50°C (+122°F)
 - Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
 - 20 X OD—Installation
 - 10 X OD—In-Service
- *-10°C (+14°F) to 50°C (122°F) for central loose tube

Applications:

- Interbuilding and intrabuilding voice or data communication backbones
- Installed in ducts, underground conduits or aerial/lashed

Compliances:

- ETL Listed Type OFNR-LS
- OFNR for central tube
- ICEA S-104-696
- RoHS Compliant Directive 2002/95/EC

*Sequential meter markings available upon request

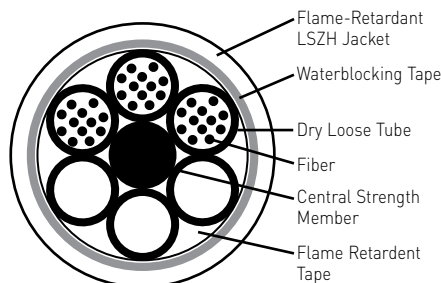


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0064UNZ-DT	6	1	0.31	7.9	43	64	300	1335	90	400
XX0124UNZ-DT	12	1	0.31	7.9	43	64	300	1335	90	400
XX0244M1Z-DT	24	2	0.41	10.3	64	95	600	2670	180	800
XX0364M1Z-DT	36	3	0.41	10.3	64	95	600	2670	180	800
XX0484M1Z-DT	48	4	0.41	10.3	64	95	600	2670	180	800
XX0604M1Z-DT	60	5	0.41	10.3	64	95	600	2670	180	800
XX0724M1Z-DT	72	6	0.44	11.2	70	104	600	2670	180	800
XX0964M1Z-DT	96	8	0.51	12.9	96	143	600	2670	180	800
XX1204M1Z-DT	120	10	0.57	14.8	123	183	600	2670	180	800
XX1444M1Z-DT	144	12	0.63	16.1	155	231	600	2670	180	800

XX denotes glass type.

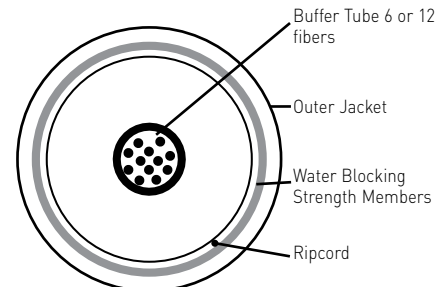
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog

Typical Cross-Section (M1Z-DT)



36 Fiber

Central Loose Tube (UNZ-DT)



Ordering Part Number Example

AQ0244M1Z-DT

Singlemode, 24 fibers, Loose tube LSZH

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Tight Buffer Distribution Riser Cable

Type OFNR, CSA FT4

Product Construction:

Fiber:

- 2–144 fibers
- 900 µm tight buffer
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod (A1R)

Overall Strength Member:

- Aramid fiber yarn

Jacket:

- UV-resistant black jacket
- Flame-retardant compound
- Sequential footage markings*

Features:

- Dry Water Block cable core for fiber protection
- Direct termination of connectors on tight buffer
- Sub-units are numbered for identification

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
850 lbs/in (1485 N/cm)
- Maximum Vertical Rise—1,640 ft (500 m)

Applications:

- Intrabuilding and interbuilding voice or data communication backbones
- Outdoor use in ducts and underground conduits
- ETL Listed Type OFNR for installation in vertical riser and general horizontal applications when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFNR
- CSA FT4
- TIA 568 C.3
- ICEA S-104-696
- GR-409
- RoHS Compliant Directive 2002/95/EC

*Sequential meter markings available upon request

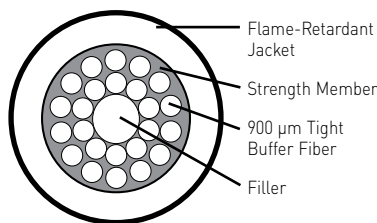


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021ANR.BK	2	—	0.19	5	14	20	300	1334	90	400
XX0041ANR.BK	4	—	0.20	5	16	24	320	1423	96	427
XX0061ANR.BK	6	—	0.20	6	18	27	320	1423	96	427
XX0081ANR.BK	8	—	0.22	6	20	30	320	1423	96	427
XX0101ANR.BK	10	—	0.24	6	23	34	400	1780	120	534
XX0121ANR.BK	12	—	0.25	6	24	36	400	1780	120	534
XX0181A1R.BK	18	3	0.47	12	79	118	750	3336	250	1112
XX0181ANR.BK	18	—	0.33	8	45	67	320	1425	112	500
XX0241A1R.BK	24	4	0.53	13	86	128	1000	4448	300	1334
XX0241ANR.BK	24	—	0.34	9	47	70	320	1425	112	500
XX0361A1R.BK	36	6	0.66	17	147	219	1300	5783	390	1735
XX0481A1R.BK	48	4	0.64	16	137	204	1300	5783	390	1735
XX0601A1R.BK	60	5	0.70	18	168	250	1500	6672	450	2002
XX0721A1R.BK	72	6	0.77	20	207	308	1900	8452	570	2535
XX0961A1R.BK	96	8	0.91	23	289	430	2000	8896	670	2980
XX1201A1R.BK	120	10	1.02	26	313	466	3000	13345	1000	4448
XX1441A1R.BK	144	12	1.02	26	314	467	3000	13345	1000	4448

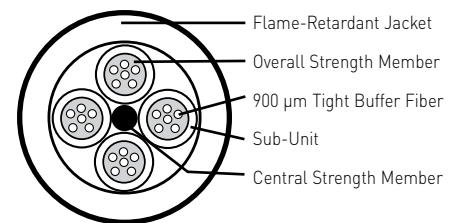
XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Sections



ANR ≤ 24 Fiber



A1R ≥ 18 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0241ANR.BK or BE0241A1R.BK

50 µm multimode, 24 fibers, tight buffer distribution riser

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Tight Buffer Distribution Plenum Cable

Indoor/Outdoor Dry Water Block, Type OFNP, CSA FT6

Product Construction:

Fiber:

- 2–144 fibers
- 900 µm tight buffer
- Color-coding per TIA/IEIA 598 B

Central Strength Member:

- Epoxy/glass rod (above 12 fibers)

Overall Strength Member:

- Aramid fiber yarn

Jacket:

- UV-resistant black jacket
- Flame-retardant compound
- Sequential footage markings*

Features:

- Dry Water Block cable core for fiber protection
- Direct termination of connectors on tight buffer
- Sub-units are numbered for identification

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
850 lbs/in (1485 N/cm)
- Maximum Vertical Rise—1,640 ft (500 m)

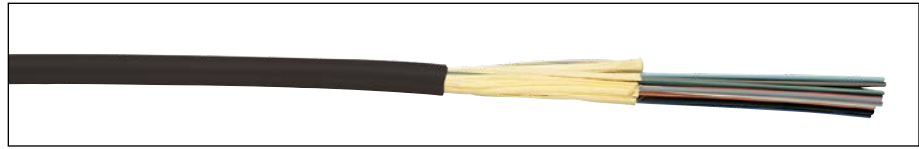
Applications:

- Intrabuilding and interbuilding voice or data communication backbones
- Outdoor use in ducts and underground conduits
- ETL Listed Type OFNP for installation in vertical riser and general horizontal applications when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFNP
- CSA FT6
- TIA 568 C.3
- ICEA S-104-696
- GR-409
- RoHS Compliant Directive 2002/95/EC

*Sequential meter markings available upon request



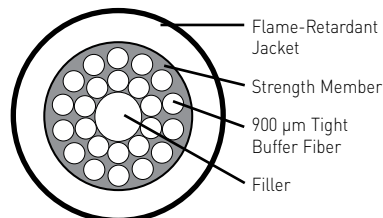
CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021ANU.BK	2	—	0.17	4	11.7	17.4	300	1334	90	400
XX0041ANU.BK	4	—	0.18	5	13.7	20.4	320	1423	96	427
XX0061ANU.BK	6	—	0.18	5	16.0	23.8	320	1423	96	427
XX0081ANU.BK	8	—	0.19	5	18.0	26.8	320	1423	96	427
XX0101ANU.BK	10	—	0.22	6	20.7	30.8	400	1780	120	534
XX0121ANU.BK	12	—	0.22	6	22.7	33.8	400	1780	120	534
XX0181ANU.BK	18	—	0.31	8	42.0	63	320	1423	112	500
XX0241ANU.BK	24	—	0.32	8	45.0	67	320	1423	112	500
XX0361A1D.BK	36	6	0.61	16	151	225	1300	5783	390	1735
XX0481A1D.BK	48	4	0.58	15	135	200	1300	5783	390	1735
XX0601A1D.BK	60	5	0.67	17	186	277	1500	6672	450	2002
XX0721A1D.BK	72	6	0.73	19	217	323	1900	8452	570	2535
XX0961A1D.BK	96	8	0.86	22	312	464	2000	8896	670	2980
XX1201A1D.BK	120	10	0.96	24	374	556	2000	8896	670	2535
XX1441A1D.BK	144	12	0.96	24	394	586	2000	8896	670	2980

XX denotes glass type.

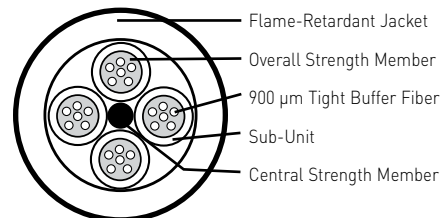
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

* Double jacket design

Typical Cross-Sections



ANU.BK ≤ 24 Fiber



A1D.BK ≥ 36 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0241ANU.BK or BE0361A1D.BK

50 µm multimode, 24 or 36 fibers, tight buffer distribution plenum

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Tight Buffer Distribution Interlock Armored Riser Cable

Type OFCR, CSA FT4

Product Construction:

Fiber:

- 2-144 fibers
- 900 µm tight buffer
- Color-coding per TIA/EIA 598 B

Overall Strength Member:

- Water-swellaable aramid fiber yarn

Inner Jacket:

- Flame-retardant compound

Armor:

- Interlock aluminum

Outer Jacket:

- UV-resistant black jacket
- Flame-retardant compound
- Sequential footage markings*

Features:

- Interlock armor provides outstanding mechanical protection
- Interlock armor is flexible and easy to use
- Tight buffer provides individual fiber protection
- Sub-units are numbered for identification

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
1,500 lbs/in (2,627 N/cm)

Applications:

- Harsh premises environments requiring heavy-duty protection
- Outdoor use in ducts and underground conduits
- ETL Type OFCR for installation in any premises location when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFCR
- CSA FT4
- TIA 568 C.3
- ICEA S-104-696
- GR-409
- RoHS Compliant Directive 2002/95/EC

Note:

Armored cable without an outer jacket available upon request (-IL)

*Sequential meter markings available upon request

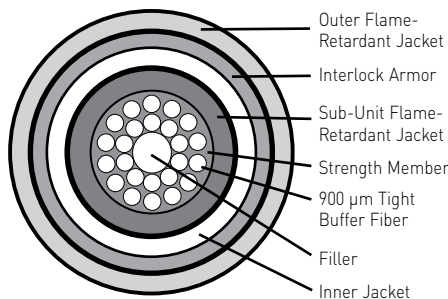


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021ANR-ILRA	2	—	0.52	13	85	126	550	2447	165	734
XX0041ANR-ILRA	4	—	0.57	14	95	141	550	2447	165	734
XX0061ANR-ILRA	6	—	0.57	14	98	146	550	2447	165	734
XX0121ANR-ILRA	12	—	0.57	14	104	155	550	2447	165	734
XX0241ANR-ILRA	24	—	0.67	17	144	214	550	2447	165	734
XX0241A1R-ILRA	24	4	0.87	22	238	354	1000	4448	300	1334
XX0361A1R-ILRA	36	6	0.99	25	360	536	1000	4448	300	1334
XX0481A1R-ILRA	48	4	0.99	25	330	491	1000	4448	300	1334
XX0601A1R-ILRA	60	5	1.04	26	364	542	1000	4448	300	1334
XX0721A1R-ILRA	72	6	1.09	28	422	628	1000	4448	300	1334
XX0961A1R-ILRA	96	8	1.24	32	543	808	1000	4448	335	1490
XX1201A1R-ILRA	120	10	1.39	35	584	869	1000	4448	335	1490
XX1441A1R-ILRA	144	12	1.39	35	555	826	1000	4448	335	1490

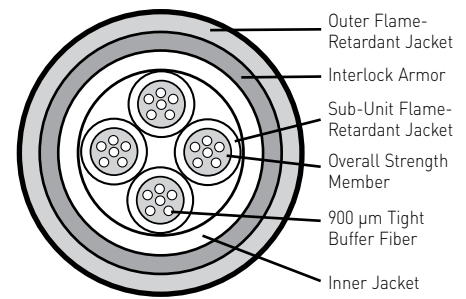
XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Sections



ANR-ILRA ≤ 24 Fiber



A1R-ILRA ≥ 24 Fiber

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0241ANR-ILRA or BE0241A1R-ILRA

50 µm multimode, 24 fibers, tight buffer distribution interlock armor riser
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Tight Buffer Distribution Interlock Armored Plenum Cable

Type OFCP, CSA FT6

Product Construction:

Fiber:

- 4–144 fibers
- 900 µm tight buffer
- Color-coding per TIA/EIA 598 B

Overall Strength Member:

- Water-swellaible aramid fiber yarn

Inner Jacket:

- Flame-retardant compound

Armor:

- Interlock aluminum

Outer Jacket:

- Flame-retardant compound
- UV-resistant black jacket
- Sequential footage markings*

Features:

- Interlock armor provides outstanding mechanical protection
- Interlock armor is flexible and easy to use
- Tight buffer provides individual fiber protection
- Sub-units are numbered for identification

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
1,500 lbs/in (2,627 N/cm)

Applications:

- Harsh premises environments requiring heavy-duty protection
- Outdoor use in ducts and underground conduits
- ETL Type OFCP for installation in any premises location when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFCP
- CSA FT6
- TIA 568 C.3
- ICEA S-104-696
- GR-409
- RoHS Compliant Directive 2002/95/EC

Note:

Armored cable without an outer jacket available upon request (-IL)

*Sequential meter markings available upon request

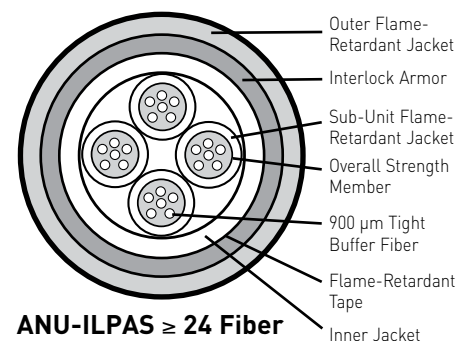
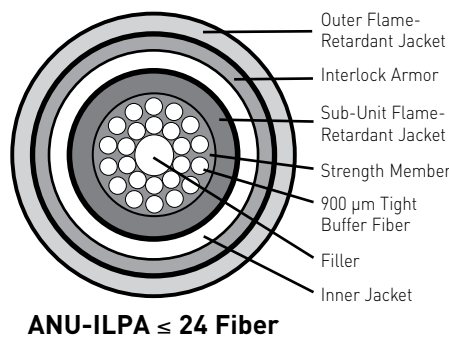


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021ANU-ILPA	2	—	0.49	12	80	119	550	2447	165	734
XX0041ANU-ILPA	4	—	0.49	12	82	122	550	2447	165	734
XX0061ANU-ILPA	6	—	0.49	12	84	125	550	2447	165	734
XX0121ANU-ILPA	12	—	0.49	12	100	149	550	2447	165	734
XX0241ANU-ILPA	24	—	0.59	15	138	205	550	2447	165	734
XX0241ANU-ILPAS	24	2	0.70	18	136	202	1000	4448	300	1334
XX0361ANU-ILPAS	36	3	0.73	19	158	235	1000	4448	300	1334
XX0481ANU-ILPAS	48	4	0.80	20	209	311	1000	4448	300	1334
XX0601ANU-ILPAS	60	5	0.85	22	187	278	1000	4448	300	1334
XX0721ANU-ILPAS	72	6	0.95	24	273	406	1000	4448	300	1334
XX0961ANU-ILPAS	96	8	1.05	27	328	488	1000	4448	335	1490
XX1201ANU-ILPAS	120	10	1.10	28	372	554	1000	4448	335	1490
XX1441ANU-ILPAS	144	12	1.20	31	386	574	1000	4448	335	1490

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Sections



Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0241ANU-ILPA or BE0241A1D-ILPAS

50 µm multimode, 24 fibers, tight buffer distribution interlock armor plenum
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Loose Tube Single Jacket Riser Cable

Type OFNR, CSA

Product Construction:

Fiber:

- Up to 288 fibers
- Dry loose tube
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod in stranded designs

Jacket:

- UV-resistant black jacket
- Flame-retardant compound
- Sequential footage markings*

Options:

- Interlock aluminum
- Composite (multiple Fiber Types)

Features:

- Dry loose tube for ease of termination
- Riser rated for indoor applications
- Flexible Buffer tubes for routing

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation -10°C (+14°F) to +50°C (+122°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service

Applications:

- Interbuilding and intrabuilding voice or data communication backbones
- Installed in ducts, underground conduits or aerial/lashed

Compliances:

- ETL Listed Type OFNR
- CSA FT4
- ICEA S-104-696
- RoHS Compliant Directive 2002/95/EC

*Sequential meter markings available upon request

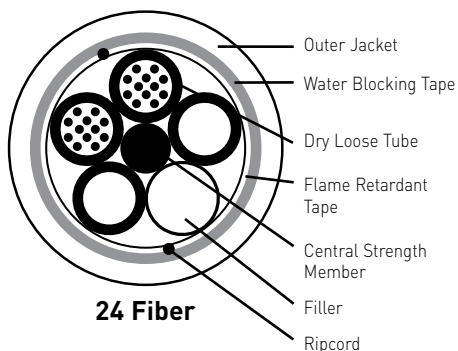


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
							LBS	N	LBS	N
XX0064UNM-DT	6	1	0.31	7.9	40	60	300	1335	90	400
XX0124UNM-DT	12	1	0.31	7.9	40	60	300	1335	90	400
XX0244M1M-DT	24	2	0.40	10.1	63	93	600	2670	180	800
XX0364M1M-DT	36	3	0.40	10.1	63	93	600	2670	180	800
XX0484M1M-DT	48	4	0.40	10.1	63	93	600	2670	180	800
XX0604M1M-DT	60	5	0.40	10.1	63	93	600	2670	180	800
XX0724M1M-DT	72	6	0.43	10.8	69	102	600	2670	180	800
XX0964M1M-DT	96	8	0.50	12.8	96	143	600	2670	180	800
XX1444M1M-DT	144	12	0.64	16.3	158	234	600	2670	180	800
XX2884M1M-DT	288	24	0.78	19.7	205	305	600	2670	180	800

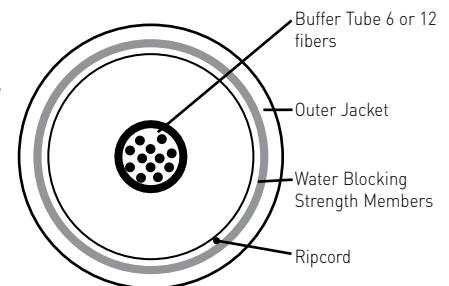
XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Stranded Core (M1M-DT)



Central Loose Tube (UNM-DT)



Ordering Part Number Example

AQ0244M1M-DT

Singlemode, 24 fibers, loose tube riser

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Loose Tube Single Jacket Plenum Cable

Type OFNP, CSA FT6

Product Construction:

Fiber:

- Up to 144 fibers
- Dry loose tube
- Color-coding per TIA/EIA 598 B

Central Strength Member:

- Epoxy/glass rod in stranded designs

Jacket:

- Sequential footage markings*

Options:

- Interlock aluminum
- Composite (multiple fiber types)

Features:

- Loose tube plenum design provides maximum cable route flexibility
- Dry loose tube for ease of termination
- Flexible Buffer tubes for routing

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation* 0°C (+32°F) to +50°C (+122°F)
Operating -40°C (-40°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- *-5°C(+41°F) to +50°C (+122°F) for central loose tube

Applications:

- Interbuilding and intrabuilding voice or data communication backbones
- Install in ducts, underground conduits or aerial/lashed

Compliances:

- ETL Listed Type OFNP
- CSA FT6
- ICEA S-104-696
- RoHS Compliant Directive 2002/95/EC

*Sequential meter markings available upon request

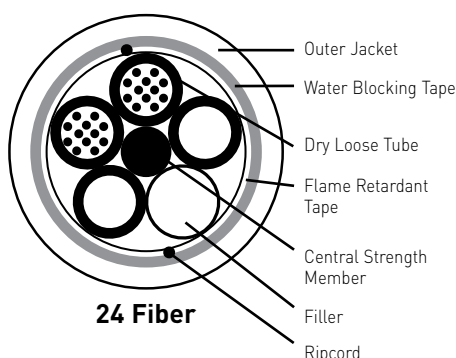


CATALOG NUMBER	FIBER COUNT	NO. OF LOOSE TUBES	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0064UNU-DT	6	1	0.31	7.9	36	53	300	1335	90	400
XX0124UNU-DT	12	1	0.31	7.9	36	53	300	1335	90	400
XX0244M1D-DT	24	2	0.37	9.3	55	82	600	2670	180	800
XX0364M1D-DT	36	3	0.37	9.3	55	82	600	2670	180	800
XX0484M1D-DT	48	4	0.37	9.3	55	82	600	2670	180	800
XX0604M1D-DT	60	5	0.37	9.3	55	82	600	2670	180	800
XX0724M1D-DT	72	6	0.40	10.2	67	99	600	2670	180	800
XX0964M1D-DT	96	8	0.48	12.2	97	145	600	2670	180	800
XX1444H1D-DT*	144	12	0.61	15.6	138	206	600	2670	180	800

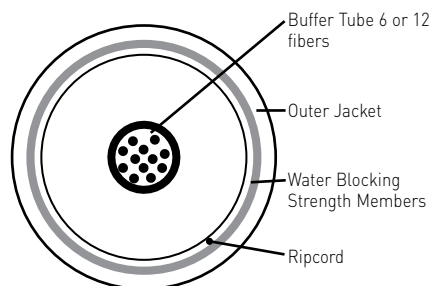
XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Stranded Core (M1D-DT)



Central Loose Tube (UNU-DT)



Ordering Part Number Example

AQ0244M1D-DT

Singlemode, 24 fibers, loose tube plenum

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

NextGen® Brand Interconnect Cables

6



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Tight Buffer 3.0 mm Simplex/Duplex Riser and Plenum Cable	38
Tight Buffer 1.6 mm Simplex/Duplex Riser Cable	39

Interconnect cables are used in a variety of Fiber-To-The-Desk (FTTD) and network connection schemes. These cables are constructed to easily terminate with industry-standard connectors such as the SC and ST. To serve the new market evolution into high-density cabling and terminations, we offer an extended cable product line that is compatible with all of the new connection systems, such as MT-RJ, MTP, LC and other Small Form Factor (SFF) components.

Applications: Interconnect cables are generally one- or two-fiber cable constructions for use in horizontal runs (Fiber-To-The-Desk), as patchcords in communication closets and for OEM assemblies. These cables are constructed to easily terminate with industry-standard connectors such as the SC and the ST, as well as the new generation of Small Form Factor (SFF) connector designs.

Range of Products: Low fiber count (≤ 2) cables with riser (OFNR) or plenum (OFNP) listings comprise this family of cables.

Features: The interconnect cables are constructed to have the proper geometry to mate with industry-standard terminations. Generally, no breakout or splitter kits are required. The cables are very small and flexible so that they may be incorporated into high-density cable management systems.

Tight Buffer 3.0 mm Simplex/Duplex Riser and Plenum Cable

Type OFNR, CSA FT4 and Type OFNP, CSA FT6

Product Construction:

Fiber:

- 1 or 2 fibers
- 900 µm tight buffer

Overall Strength Member:

- Aramid fiber yarn

Jacket:

- 3.0 mm unit diameters
- Flame-retardant compound
- Sequential footage markings*
- Orange jacket—multimode fibers (except 10 Gbps)
- Aqua jacket—10 Gbps multimode fibers
- Yellow jacket—singlemode fibers

Features:

- Industry-standard design
- Ideal for interconnect and Fiber-To-The-Desk (FTTD)

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
500 lbs/in (875 N/cm)

Applications:

- Interconnect design compatible with connectors requiring 3.0 mm jacket diameter
- Fiber-To-The-Desk (FTTD)
- ETL Listed Type OFNR for installation in vertical riser and general horizontal applications when installed in accordance with NEC article 770.154 and 770.179
- ETL Listed Type OFNP for installation in ducts, plenums and other spaces used as environmental air returns when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFNR/OFNP
- CSA FT4, CSA FT6
- TIA 568 C.3
- GR-409
- RoHS Compliant Directive 2002/95/EC

*Sequential meter markings available upon request

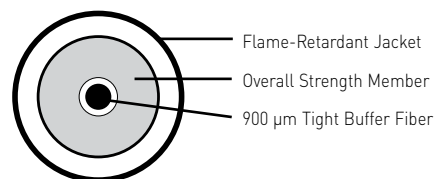


CATALOG NUMBER	FIBER COUNT	NO. OF SUB- UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
							INSTALLATION		IN-SERVICE	
			IN	mm	LBS/1000'	kg/km	LBS	N	LBS	N
Riser										
XX0011SNR3.0	1	—	0.118	3.0	5.5	8.2	110	490	65	290
XX0021ZNR3.0	2	—	0.114 x 0.247	2.9 x 6.0	10.5	15.6	220	980	160	580
Plenum										
XX0011SNU3.0	1	—	0.118	3.0	6.5	9.7	110	490	65	290
XX0021ZNU3.0	2	—	0.114 x 0.247	2.9 x 6.0	12.1	18.0	220	980	160	580

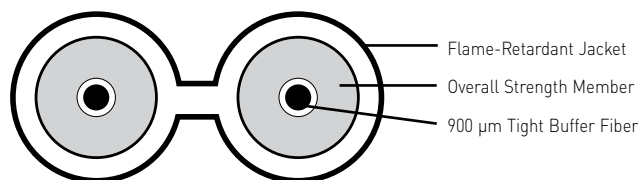
XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



Simplex



Duplex
Zipcord

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0011SNU3.0 or BE0021ZNU3.0

50 µm multimode, one or two fibers

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Tight Buffer 1.6 mm Simplex/Duplex Riser Cable

Type OFNR, CSA FT4

Product Construction:

Fiber:

- 1 or 2 fibers
- 900 µm tight buffer

Overall Strength Member:

- Aramid fiber yarn

Jacket:

- 1.6 mm unit diameters
- Flame-retardant compound
- Sequential footage markings*
- Orange jacket—multimode fibers (except 10 Gbps)
- Aqua jacket—10 Gbps multimode fibers
- Yellow jacket—singlemode fibers

Features:

- Compatible with LC connectors
- Ideal for interconnect and Fiber-To-The-Desk (FTTD)

Performance:

- Temperature:
Storage -40°C (-40°F) to +70°C (+158°F)
Installation 0°C (+32°F) to +50°C (+122°F)
Operating -20°C (-4°F) to +70°C (+158°F)
- Minimum Bend Radius:
20 X OD—Installation
10 X OD—In-Service
- Maximum Crush Resistance:
150 lbs/in (263 N/cm)

Applications:

- Interconnect design compatible with LC and other connectors requiring 1.6mm jacket diameter
- Fiber-To-The-Desk (FTTD)
- ETL Listed Type OFNR for installation in vertical riser and general horizontal applications when installed in accordance with NEC article 770.154 and 770.179

Compliances:

- ETL Listed Type OFNR
- CSA FT4
- RoHS Compliant Directive 2002/95/EC

*Sequential meter markings available upon request

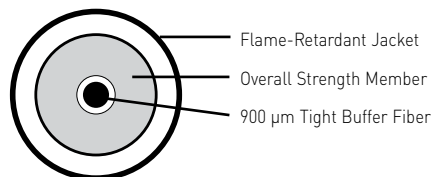


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0011SNR1.6	1	—	0.063	1.6	1.7	2.5	25	111	7.5	33
XX0021ZNR1.6	2	—	0.063 x 0.136	1.6 x 3.5	3.5	5.2	50	222	15.0	67

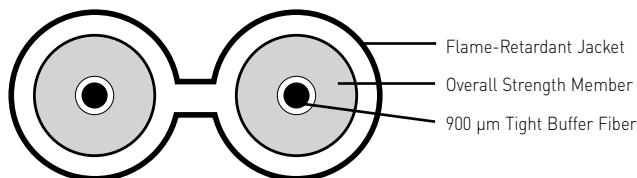
XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



Simplex



Duplex

Zipcord

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.

Ordering Part Number Example

BE0011SNR1.6 or BE0021ZNR1.6

50 µm multimode, one or two fibers

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Blown Optical Fiber Systems

Blown Optical Fiber technology provides flexibility in network design, while anticipating and facilitating future changes as the network evolves. It delivers the best fiber solution for backbone, specialty, Fiber-To-The-Desk (FTTD) and Fiber-To-The-Home (FTTH) applications. NextGen® Brand's GenLite™ Blown Optical Fiber (BOF) System from General Cable provides numerous advantages over conventional fiber optic

systems, including increased flexibility for the designers of fiber optic networks as well as significant and measurable time, cost and service benefits to the network throughout its life cycle. Offered as 1-12 single fibers per microduct or as 1-3 bundles of 6 fibers per microduct, the GenLite BOF System accommodates Moves, Adds and Changes (MACs) easily and quickly with minimal disruption.

IDEAL APPLICATIONS

Industrial Complex
Education Establishments
Campuses
Healthcare Facilities
Government Buildings
Commercial and Military Shipboard

Stadiums and Sport Arenas
Military Structures
Telecommunications
Broadcasting
Transportation
Fiber-To-The-Home

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How Does the GenLite™ BOF System Work?

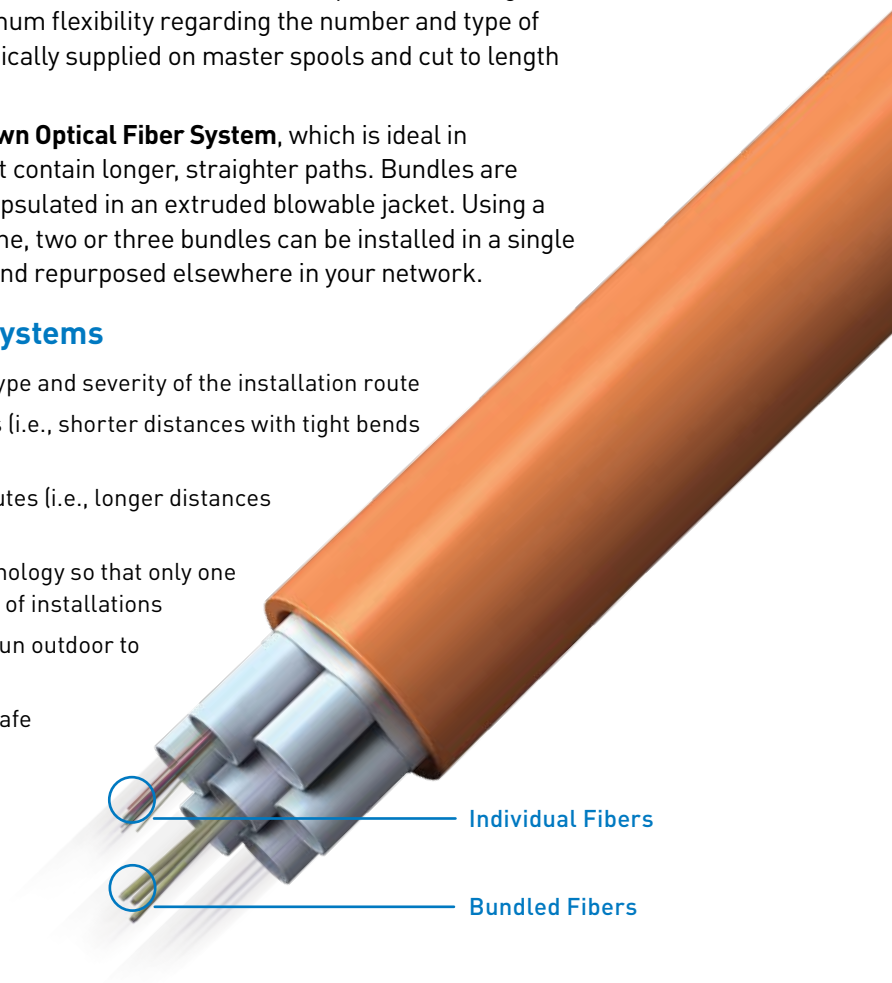
NextGen® Brand's GenLite BOF System from General Cable provides the right system for the right application with its **Individual & Bundled Blown Optical Fiber Systems**. The first and only blown fiber system on the market to feature dual blowing technologies within a single installation machine, the GenLite BOF System allows the user to match the technology to the type and severity of the installation route.

The **GenLite Individual Blown Optical Fiber System** is best suited for premise enterprise applications with *tortuous routes*, routes of shorter distances that may contain tight bends and turns. This system employs a series of empty microduct tubes between cable routing points; compressed air is then used to blow the optical fiber into the microducts, which eliminates potential damage to fibers during installation. Designers have maximum flexibility regarding the number and type of fibers per microduct. Color-coded fibers are typically supplied on master spools and cut to length during the blowing process.

The second offering is the **GenLite Bundled Blown Optical Fiber System**, which is ideal in applications with *non-tortuous routes*, routes that contain longer, straighter paths. Bundles are comprised of six color-coded optical fibers encapsulated in an extruded blowable jacket. Using a similar process as the Individual BOF System, one, two or three bundles can be installed in a single run. Additionally, bundles can be "uninstalled" and repurposed elsewhere in your network.

Advantages Over Other Blown Fiber Systems

- Allows the user to match the technology to the type and severity of the installation route
- Individual fibers can be blown in tortuous routes (i.e., shorter distances with tight bends and turns)
- Bundled fibers can be blown in non-tortuous routes (i.e., longer distances with straight paths)
- Installation machine features dual blowing technology so that only one machine is required to accommodate both types of installations
- The same fiber (individual and bundled) can be run outdoor to indoor without splicing
- Compressed air is used instead of nitrogen for safe installation in any environment



BOF System Advantages

Main Advantages vs. Traditional Fiber

- Expand, upgrade, reconfigure or relocate network cabling at minimal cost and effort.
- Install empty microduct so there is no risk of fiber damage during installation. Optical fibers are then blown into place, rather than pulled, with zero tensile stress on the fiber during the process. Because point-to-point links are easily accommodated, fiber splice points can be eliminated, lowering attenuation and increasing system performance and integrity.
- Once the microduct highway is in place, a two-person crew (one at each end) can install Blown Optical Fiber on an as-needed basis.
- Change fiber types and counts by blowing out old optical fibers and blowing in new ones.
- Install the fiber type you need today and easily upgrade to new grades of fiber when technology changes.
- With the GenLite™ BOF System, physical damage to the cabling infrastructure from disaster means days versus weeks for recovery, resulting in minimal downtime and labor costs. Only the damaged section of microduct is removed and replaced; within minutes, new optical fiber is blown in and terminated.

Advantages Impacting First Installed Cost

- GenLite's BOF Individual and Bundled Systems let you install only the fiber you need for today's requirements. New fiber can easily be added in the future based upon actual requirements. No dark fiber needs to be installed. In addition to fiber cost savings, the testing and termination costs associated with dark fiber are also eliminated.
- The BOF System microduct can be pulled in sections that can be easily joined together to create continuous bundles, blowing routes up to 3,280 ft. (1000 m). Even for extremely tortuous routes with hundreds of small bends, the Individual BOF System uses fiber that can be blown in continuous runs of nearly 1,969 ft. (600 m).
- Multiduct that is designed to meet outside plant cable requirements can easily be mechanically joined to multiduct that is designed to meet indoor building requirements. Fiber can then be continuously blown through a duct route that includes both indoor and outdoor portions, saving attenuation loss associated with an extra splice point and the expense of performing the splice.
- System multiduct cables are offered in riser and plenum for indoor installations as well as outside plant for dry-duct outdoor installations.
- BOF System microduct can be installed more easily than conventional fiber optic cable, so disruptions to the workplace are kept to a minimum. Optical fiber can be blown in without disturbing the existing cable plant and without disrupting network services.

Advantages Impacting Lifetime System Cost

- Fiber performance specifications have changed rapidly in the past few years. With the GenLite BOF System, fiber can be installed to meet today's standard and then economically replaced or new fiber added as fiber performance improves in the future.
- Save on the cost of installing completely new fiber optic cables to react to network reconfigurations. Instead, pay only for new sections of microduct required to meet the new network topology and add additional Blown Optical Fiber only as needed.
- Restoration to GenLite's BOF System ductwork can be accomplished by replacing the small damaged section of microduct; network performance is not degraded with any additional splice points.
- The flexibility of blown fiber ensures installed microduct will never need to be abandoned. Future changes in fiber requirements can be easily dealt with by blowing out the existing fiber and blowing in new fiber. Future network topology changes can be addressed by joining new sections of microduct to configure new route paths as needed.

BOF System Installation

Steps for GenLite™ BOF System Installation:

1. First, a small empty tube, GenLite's BOF microduct, is installed instead of conventional fiber optic or copper cable.
2. The GenLite BOF blowing head delivers compressed air to propel the optical fiber through the microduct tube.
3. The optical fiber catches the flow of air, floating the fiber through the microduct.
4. In turning tight corners, individual optical fiber can follow the curve around tight bends (to a 1" radius), an advantage of the GenLite BOF System.
5. For straight pathways, the fiber optic bundle option allows high-density fiber packing and long-distance blowing.
6. Push-fit pneumatic connectors extend length of microduct highways and byways to each destination.
7. Transparent center section of connector permits visual inspection to verify if path is empty or populated with optical fiber(s).
8. Conventional fiber optic termination methods can be used for both individual and bundled fibers.



Installation Environments: Indoor and Outdoor

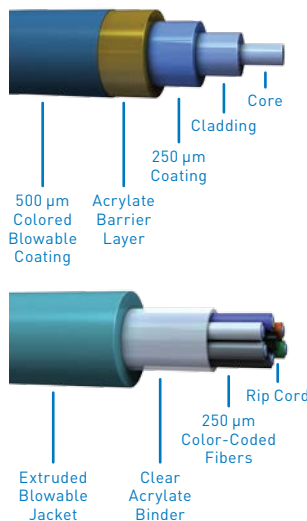
The GenLite BOF System offers a solution for any installation environment. Any fiber cable installed indoors must be in accordance with local fire and electrical codes. For blown optical fiber systems, the multiduct cables are required to pass fire tests whether they are empty or filled with optical fibers. Indoor multiduct cables are typically categorized into one of three types based on the level of flame retardancy: General Purpose (OFN), Riser (OFNR) and Plenum (OFNP). General purpose (OFN) cables can be used in non-Riser or non-Plenum indoor spaces. Riser (OFNR) multiduct cables are designed to resist flame spread for vertical installations. Plenum (OFNP) multiduct cables can be installed in air-handling areas that require the cable to be highly flame-retardant and also emit a low amount of smoke if exposed to flame.

Multiduct cables used for Outdoor (OSP) installations do not have the same type of flame resistance as indoor cables but are designed for exposure to the elements. Abrasion-, moisture- and sunlight-resistant Polyethylene (PE) jackets are typically used, and armor can be added for direct burial applications and for protection against rodents. Note that Outdoor multiduct cables can only enter a building up to 50 feet because they do not carry necessary flame ratings to meet National Electrical Code requirements. GenLite's Outdoor and Indoor-rated multiduct cables can be connected directly to one another, and either individual or bundled GenLite fibers can be blown in from outdoor to indoor stations.

GenLite™ BOF System Components

Blowable Fiber

GenLite's Individual BOF System offers the highest quality of Corning® optical fiber in Clearcurve® multimode 62.5/125 and 50/125 (1, 40 & 100 GB), as well as Ultra singlemode 9/125, all with a state-of-the-art blowable coating and available in 12 colors. The fibers are stripped and terminated with standard tools and compatible with standard fiber optic connectors.



Blowable Bundle

GenLite's Bundled BOF System is constructed in a compact 6-fiber arrangement with an overall lightweight, blowable jacket. Bundled fiber also uses any type of Corning® optical fibers which are color-coded for easy identification. Up to three 6-fiber bundles can be simultaneously installed in a single, double or triple run, providing 6, 12 or 18 fibers per microduct. Bundles can be stripped and terminated using the same standard tools and techniques as traditional cable.

- Individual and bundled fiber is available in bulk payoff packaging and is cut to length following install.

62.5/125	OM1/OM2
50/125	OM1/OM2
50/125	OM3
50/125	OM4
9/125	OS1 (G652)
9/125	OS1 (G657)

Fiber Available In All Colors: White, Black, Blue, Orange, Green, Red, Grey, Yellow, Brown, Violet, Turquoise, Pink

- Up to 12 individual fibers or 18 bundled fibers can be installed in a single microduct simultaneously.
- As technology changes, bundled fiber can be safely removed from the microduct and reused elsewhere in the network.
- Individual or bundled fiber is fully compatible. Install bundled fiber for longer cable runs and use individual fibers to complete shorter or more complicated cable runs.

Microduct

Microduct is constructed with a low-friction, static-dissipating inner liner and an extruded jacket. Multiple microducts are assembled to create multiduct cables, which are the infrastructure for the BOF System. Microduct is available in two standard sizes:

- 5mm OD/3mm ID microduct
- 8mm OD/6mm ID microduct

Microduct Termination Accessories

Simple push-fit connectors join the microduct sections and extend the microduct network to each destination. A clear center section of the connectors permits visual inspection to verify if the path is empty or populated with optical fiber. GenLite's BOF System connectors come in straight or T configurations. Duct connector plugs and end caps provide a method of sealing unused tubes during shipment, storage and installation. See page 16 for a complete listing of microduct termination accessories.



Multiduct

Multiduct is a jacketed bundle of microduct tubing, available in 2-, 4-, 7-, 19- or 24-way configurations and in different installation types such as indoor riser and plenum, indoor riser and plenum interlock armored, outdoor and outdoor armored. See below for a complete list of configurations available.

Indoor Multiduct	# of Microducts Available
Riser with 5 mm Microduct	2, 4 or 7
Riser with 8 mm Microduct	2, 4 or 7
Plenum with 5 mm Microduct	2, 4 or 7
Plenum with 8 mm Microduct	2, 4 or 7
Interlock Armored Riser with 5 mm Microduct	2, 4 or 7
Interlock Armored Riser with 8 mm Microduct	2, 4 or 7
Interlock Armored Plenum with 5 mm Microduct	2, 4 or 7
Interlock Armored Plenum with 8 mm Microduct	2, 4 or 7

Outdoor Multiduct	# of Microducts Available
Outdoor with 5 mm Microducts	2, 4, 7, 19 or 24
Outdoor with 8.5 mm Microducts	2, 4, 7, 19 or 24
Armored Outdoor with 8.5 mm Microducts	4, 7 or 19

Microduct tubing comes standard in white color, but colored microduct is available upon request. Consult Sales for options.

Indoor



Indoor Interlock Armored



Outdoor



Outdoor Armored



With Colored Microduct

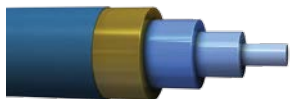


Blowing Installation Equipment

GenLite™ BOF System installation equipment is capable of blowing both its **Blown Single Fibers** and **Blowable Fiber Bundles**. The convenience of using either BOF technology with one machine allows the installer unparalleled flexibility. The equipment kit consists of an air conditioning unit (ACU) complete with filtration and air-drying units; the installation module, a blowing head utilizing a mechanically driven system to feed the fibers onto payoff trays and into the microduct; and a lightweight tripod which is used to support the installation module. This equipment operates on standard compressed air at safe, low pressures.



Blowable Fiber



The **GenLite™ Individual BOF System** offers the highest quality of Corning® optical fiber with a state-of-the-art blowable coating in Clearcurve® multimode 62.5/125 and 50/125 (1, 40 & 100 GB), as well as Ultra singlemode 9/125. Designed to be stripped and terminated with standard tools, the BOF System optical fibers are compatible with standard fiber optic connectors and available in 12 standard colors.

Part Number	Description
BL – 50 µm – OM4	
708210	Multimode 50/125 Blue
708230	Multimode 50/125 Orange
708250	Multimode 50/125 Green
708270	Multimode 50/125 Brown
708290	Multimode 50/125 Slate
708310	Multimode 50/125 Yellow
708330	Multimode 50/125 Red
708350	Multimode 50/125 Violet
708370	Multimode 50/125 White
708390	Multimode 50/125 Black
708410	Multimode 50/125 Pink
708430	Multimode 50/125 Aqua
MULTIMODE 50/125 (10 Gb/s)	ATTENUATION LASER BANDWIDTH
850 nm	3.0 dB/km Max. 4700 MHz • km Min.
1300 nm	1.0 dB/km Max.

Part Number	Description
CG – 62.5 µm – OM3	
705820	Multimode 62.5/125 Blue
705830	Multimode 62.5/125 Orange
705840	Multimode 62.5/125 Green
705850	Multimode 62.5/125 Brown
705860	Multimode 62.5/125 Slate
705870	Multimode 62.5/125 Yellow
705880	Multimode 62.5/125 Red
705890	Multimode 62.5/125 Violet
707400	Multimode 62.5/125 White
707410	Multimode 62.5/125 Black
707420	Multimode 62.5/125 Pink
707430	Multimode 62.5/125 Aqua
MULTIMODE 62.5/125	ATTENUATION OFL BANDWIDTH
850 nm	3.5 dB/km Max. 200 MHz • km Min.
1300 nm	1.0 dB/km Max. 500 MHz • km Min.

Part Number	Description
BE – 50 µm – OM3	
707610	Multimode 50/125 Blue
707620	Multimode 50/125 Orange
707630	Multimode 50/125 Green
707640	Multimode 50/125 Brown
707650	Multimode 50/125 Slate
707660	Multimode 50/125 Yellow
707670	Multimode 50/125 Red
707680	Multimode 50/125 Violet
707690	Multimode 50/125 White
707700	Multimode 50/125 Black
707710	Multimode 50/125 Pink
707720	Multimode 50/125 Aqua
MULTIMODE 50/125 (10 Gb/s)	ATTENUATION LASER BANDWIDTH
850 nm	3.0 dB/km Max. 2000 MHz • km Min.
1300 nm	1.0 dB/km Max.

Part Number	Description
AQ – SM OS2	
705900	Singlemode 9/125 Blue
705910	Singlemode 9/125 Orange
705920	Singlemode 9/125 Green
705930	Singlemode 9/125 Brown
705940	Singlemode 9/125 Slate
705950	Singlemode 9/125 Yellow
705960	Singlemode 9/125 Red
705970	Singlemode 9/125 Violet
707440	Singlemode 9/125 White
707450	Singlemode 9/125 Black
707460	Singlemode 9/125 Pink
707470	Singlemode 9/125 Aqua
SINGLEMODE 9/125	ATTENUATION
850 nm	0.5 dB/km Max.
1300 nm	0.5 dB/km Max.

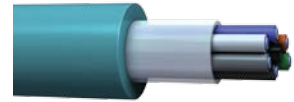
TEMPERATURE RANGE:
Storage -30°C to +80°C
Operating -20°C to +70°C

NOTES:

1. Fiber is supplied on standard plastic fiber optic spools up to 4 km. Alternative fiber specifications and reel lengths may be available on request.
2. Other optical characteristics are determined by the actual fiber type specified.

Blowable Bundles

The **GenLite™ Bundled BOF System** offers bundled fiber constructed in a 6-fiber arrangement with an overall lightweight, blowable jacket. Bundled fiber can use any type of Corning® optical fibers which are color-coded for easy identification. Up to three 6-fiber bundles can be simultaneously installed in a single, double or triple run, providing 6, 12 or 18 fibers per microduct. Bundles can be stripped and terminated using the same standard tools and techniques as traditional cable. Fibers are color coded per TIA/EIA 598 D.



Part Number/Ordering Information			Description
6 Fibers/Duct	12 Fibers/Duct	18 Fibers/Duct	
BL00064BOF-B1	BL00064BOF-B1 BL00064BOF-B2	BL00064BOF-B1 BL00064BOF-B2 BL00064BOF-B3	OM4 50 µm 6-Fiber Bundle
BE00064BOF-B1	BE00064BOF-B1 BE00064BOF-B2	BE00064BOF-B1 BE00064BOF-B2 BE00064BOF-B3	OM3 50 µm 6-Fiber Bundle
CG0006ABOF-B1	CG0006ABOF-B1 CG0006ABOF-B2	CG0006ABOF-B1 CG0006ABOF-B2 CG0006ABOF-B3	OM1 62.5 µm 6-Fiber Bundle
AP00064BOF-B1	AP00064BOF-B1 AP00064BOF-B2	AP00064BOF-B1 AP00064BOF-B2 AP00064BOF-B3	SM 6-Fiber Bundle

Blowing Distances

Installation capability is a function of the following:

- Compressed air pressure and volume
- Size and length of microduct
- Number of fibers
- Number of bends in the duct route

GenLite™ Individual Blown Optical Fiber System		
<i>For tortuous routes of shorter distances that may contain tight bends and turns.</i>		
# of Individual Fibers	Distance for 5 mm Microduct	Distance for 8 mm Microduct
4	400 m	600 m
8	300 m	450 m
12	200 m	300 m

GenLite™ Bundled Blown Optical Fiber System		
<i>For routes that contain longer, straighter paths.</i>		
# of Bundles	Distance for 5 mm Microduct	Distance for 8 mm Microduct
1	750 m	1.5 km
2	500 m	1.3 km
3	NA	1.0 km

Blowing distances above are achieved with compressed air at 6 bar (90 PSI) and 8 SCFM.

Indoor Multiduct

Indoor 2-Way



Indoor 4-Way



Indoor 7-Way



Riser- or Plenum-Rated, 5 mm or 8 mm

Indoor-rated multiduct, available in riser or plenum, consists of a number of 5 mm OD/3.5 mm ID or 8 mm OD/6 mm ID microducts covered by a flame-retardant tape and an outer jacket. Available in 2-, 4- and 7-way constructions, all indoor-rated microducts are white PVDF and are printed with a unique number at regular intervals. The overall jacket, an orange flame-retardant PVC for riser products or an orange flame-retardant PVDF for plenum products, features product identification printing and sequential length marking at two-foot intervals.

Part Number	Description
Riser-Rated Duct	
FC9700009	2-Way 5 mm OFNR
FC9700010	4-Way 5 mm OFNR
FC9700011	7-Way 5 mm OFNR
FC9700013	2-Way 8 mm OFNR
FC9700012	4-Way 8 mm OFNR
FC9700015	7-Way 8 mm OFNR

See page 14 for indoor multiduct configurations and dimensions.

Part Number	Description
Plenum-Rated Duct	
FC9700005	2-Way 5 mm OFNP
FC9700003	4-Way 5 mm OFNP
FC9700004	7-Way 5 mm OFNP
FC9700080	2-Way 8 mm OFNP
FC9700075	4-Way 8 mm OFNP
FC9700076	7-Way 8 mm OFNP

See page 14 for indoor multiduct configurations and dimensions.

Indoor Multiduct					
		5 mm Multiduct		8 mm Multiduct	
MATERIALS	Microduct Jacket (Riser) Jacket (Plenum)	White PVDF Orange Flame-Retardant PVC Orange Flame-Retardant PVDF		White PVDF Orange Flame-Retardant PVC Orange Flame-Retardant PVDF	
INSTALLATION TENSION	2-way	Newtons	lbs	Newtons	lbs
	4-way	592	133	1677	377
	7-way	1499	337	2784	626
TEMPERATURE RANGE	Storage	-40°C to +90°C		-40°C to +90°C	
	Installation	0°C to +70°C		0°C to +70°C	
	Operating	-20°C to +90°C		-20°C to +90°C	
MINIMUM BEND RADIUS	2-way	Installed	Installation	Installed	Installation
	4-way	4"	5"	7"	8"
	7-way	5"	5"	8"	8"
MAX. INTERNAL PRESSURE		150 PSI		150 PSI	
COMPLIANCE	Riser Plenum	(UL) OFNR (UL) OFNP		(UL) OFNR (UL) OFNP	
OVERALL DIAMETER	2-way (tolerance)	mm	Inches	mm	Inches
	4-way (tolerance)	12.65 x 7.65 (±0.46)	0.498 x 0.301 (±0.018)	18.14 x 10.13 (±0.46)	0.714 x 0.399 (±0.018)
	7-way (tolerance)	14.71 (±0.51)	0.579 (±0.020)	21.92 (±0.51)	0.863 (±0.020)
NOMINAL WEIGHT (RISER)	2-way	kg/km	lbs/1000'	kg/km	lbs/1000'
	4-way	49	33	76	51
	7-way	79	53	118	79
NOMINAL WEIGHT (PLENUM)	2-way	kg/km	lbs/1000'	kg/km	lbs/1000'
	4-way	100	67	149	100
	7-way	54	36	82	55
		85	57	129	87
		107	72	162	109

NOTES:

1. Standard lengths are 500 and 1000 feet, supplied on nonreturnable reels. Ends are sealed to prevent the penetration of moisture prior to shipping.

Interlock Armored, Indoor Multiduct

Riser- or Plenum-Rated, 5 mm or 8 mm

Interlock armored, indoor-rated multiduct, available in riser or plenum, consists of a number of 5 mm OD/3.5 mm ID or 8 mm OD/6 mm ID microducts covered by a flame-retardant tape, inner jacket, interlocked metal armor and an outer jacket. Available in 2-, 4- and 7-way constructions, all indoor-rated microducts are white PVDF and are printed with a unique number at regular intervals. The interlock armor provides additional mechanical protection from crush or impact as well as resistance to rodents, but it is still flexible enough for ease of installation. The inner and overall jackets, an orange flame-retardant PVC for riser products or an orange flame-retardant PVDF for plenum products, feature product identification printing and sequential length marking at two-foot intervals.

Interlock Armored, Indoor 2-Way



Interlock Armored, Indoor 4-Way



Interlock Armored, Indoor 7-Way



Part Number	Description
Interlock Armored, Riser-Rated Duct	
FC9700445	2-Way 5 mm OFNR
FC9700446	4-Way 5 mm OFNR
FC9700447	7-Way 5 mm OFNR
FC9700449	2-Way 8 mm OFNR
FC9700450	4-Way 8 mm OFNR
FC9700451	7-Way 8 mm OFNR

See page 14 for indoor multiduct configurations and dimensions.

Part Number	Description
Interlock Armored, Plenum-Rated Duct	
FC9700437	2-Way 5 mm OFNP
FC9700438	4-Way 5 mm OFNP
FC9700439	7-Way 5 mm OFNP
FC9700441	2-Way 8 mm OFNP
FC9700442	4-Way 8 mm OFNP
FC9700443	7-Way 8 mm OFNP

See page 14 for indoor multiduct configurations and dimensions.

Interlock Armored, Indoor Multiduct					
		5 mm Multiduct		8 mm Multiduct	
MATERIALS	Microduct Jackets (Riser) Jackets (Plenum)	White PVDF Orange Flame-Retardant PVC Orange Flame-Retardant PVDF		White PVDF Orange Flame-Retardant PVC Orange Flame-Retardant PVDF	
INSTALLATION TENSION	2-way	Newtons	lbs	Newtons	lbs
	4-way	1005	226	2851	641
	7-way	2549	573	4733	1064
TEMPERATURE RANGE	Storage	-40°C to +90°C		-40°C to +90°C	
	Installation	0°C to +70°C		0°C to +70°C	
	Operating	-20°C to +90°C		-20°C to +90°C	
MINIMUM BEND RADIUS	2-way	Installed	Installation	Installed	Installation
	4-way	4"	5"	7"	8"
	7-way	5"	5"	8"	8"
MAX. INTERNAL PRESSURE		150 PSI		150 PSI	
COMPLIANCE	Riser Plenum	(UL) OFNR-ILRA (UL) OFNP-ILPA		(UL) OFNR-ILRA (UL) OFNP-ILPA	
OVERALL DIAMETER	2-way (tolerance)	mm	Inches	mm	Inches
	4-way (tolerance)	18.64 (±0.97)	0.734 (±0.038)	28.04 (±0.97)	1.104 (±0.038)
	7-way (tolerance)	22.71 (±1.02)	0.894 (±0.040)	30.84 (±1.02)	1.214 (±0.040)
NOMINAL WEIGHT (RISER)	2-way	kg/km	lbs/1000'	kg/km	lbs/1000'
	4-way	216	145	226	152
	7-way	262	176	278	187
NOMINAL WEIGHT (PLENUM)	2-way	kg/km	lbs/1000'	kg/km	lbs/1000'
	4-way	342	230	359	241
	7-way	424	285	448	301

NOTES:

1. Standard lengths are 500 and 1000 feet, supplied on nonreturnable reels. Ends are sealed to prevent the penetration of moisture prior to shipping.

Outdoor Multiduct

Outdoor 2-Way



Outdoor 4-Way



Outdoor 7-Way



Outdoor 19-Way



Outdoor 24-Way



5 mm or 8.5 mm

Outdoor-rated multiduct consists of a number of 5 mm OD/3.5 mm ID or 8.5 mm OD/6 mm ID microducts covered by an outer jacket. Available in 2-, 4-, 7-, 19- and 24-way constructions, all outdoor-rated microducts are white high-density polyethylene and are printed with a unique number at regular intervals. The overall jacket is a black, high-density polyethylene and features product identification printing and sequential length marking at two-foot intervals.

Part Number	Description
Outdoor-Rated Duct	
FC9700016	2-Way 5 mm GR-3155-CORE
FC9700017	4-Way 5 mm GR-3155-CORE
FC9700018	7-Way 5 mm GR-3155-CORE
FC9700113	19-Way 5 mm GR-3155-CORE
FC9700102	24-Way 5 mm GR-3155-CORE
FC9700019	2-Way 8.5 mm GR-3155-CORE
FC9700020	4-Way 8.5 mm GR-3155-CORE
FC9700021	7-Way 8.5 mm GR-3155-CORE
FC9700047	19-Way 8.5 mm GR-3155-CORE
FC9700103	24-Way 8.5 mm GR-3155-CORE

See page 15 for indoor multiduct configurations and dimensions.

Outdoor Multiduct					
		5 mm Multiduct		8.5 mm Multiduct	
MATERIALS	Microduct Jacket	White High-Density Polyethylene Black High-Density Polyethylene		White High-Density Polyethylene Black High-Density Polyethylene	
INSTALLATION TENSION	2-way	Newtons	lbs	Newtons	lbs
	4-way	636	143	1797	404
	7-way	1228	276	3260	733
	19-way	1819	409	4946	1112
	24-way	4092	920	11245	2528
TEMPERATURE RANGE	Storage	-40°C to +82°C		-40°C to +82°C	
	Installation	-10°C to +65°C		-10°C to +65°C	
	Operating	-40°C to +82°C		-40°C to +82°C	
MINIMUM BEND RADIUS	2-way	Installed	Installation	Installed	Installation
	4-way	3"	5"	5"	8"
	7-way	5"	6"	8"	10"
	19-way	6"	7"	11"	12"
	24-way	10"	11"	16"	18"
MAX. INTERNAL PRESSURE		150 PSI		150 PSI	
COMPLIANCE		GR-3155-CORE		GR-3155-CORE	
OVERALL DIAMETER	2-way (tolerance)	mm	Inches	mm	Inches
	4-way (tolerance)	11.53 x 6.53 (±0.71)	0.454 x 0.257 (±0.028)	19.56 x 11.05 (±0.71)	0.770 x 0.435 (±0.028)
	7-way (tolerance)	12.04 x 12.04 (±0.71)	0.474 x 0.474 (±0.028)	20.07 x 20.07 (±0.71)	0.790 x 0.790 (±0.028)
	19-way (tolerance)	17.04 x 15.70 (±0.81)	0.671 x 0.618 (±0.032)	28.58 x 26.29 (±0.81)	1.125 x 1.035 (±0.032)
	24-way (tolerance)	27.10 x 24.41 (±1.02)	1.067 x 0.961 (±0.040)	46.10 x 41.53 (±1.02)	1.815 x 1.635 (±0.040)
NOMINAL WEIGHT	2-way	kg/km	lbs/1000'	kg/km	lbs/1000'
	4-way	39	26	112	75
	7-way	74	50	202	136
	19-way	112	75	308	207
	24-way	250	168	702	472
		301	202	862	579

NOTES: 1. Standard lengths are 500 and 1000 feet, supplied on nonreturnable reels. Ends are sealed to prevent the penetration of moisture prior to shipping.

Armored, Outdoor Multiduct

8.5 mm

Armored, outdoor-rated multiduct consists of a number of 8.5 mm OD/6 mm ID microducts covered by an inner jacket, a steel armor and an outer jacket. Available in 4-, 7- and 19-way constructions, all outdoor-rated microducts are white high-density polyethylene and are printed with a unique number at regular intervals. The steel armor with corrosion-resistant coating provides crush resistance for direct burial applications, as well as some protection against moisture penetration and rodents. The inner and overall jackets are a black, high-density polyethylene, and the overall jacket features product identification printing and sequential length marking at two-foot intervals.

Armored, Outdoor 4-Way



Armored, Outdoor 7-Way



Armored, Outdoor 19-Way



Part Number	Description
Armored, Outdoor-Rated Duct	
FC9700463	4-Way 8.5 mm GR-3155-CORE
FC9700464	7-Way 8.5 mm GR-3155-CORE
FC9700112	19-Way 8.5 mm GR-3155-CORE

See page 15 for outdoor multiduct configurations and dimensions.

Armored, Outdoor Multiduct			
8.5 mm Multiduct			
MATERIALS	Microduct Jackets	White High-Density Polyethylene Black High-Density Polyethylene	
INSTALLATION TENSION	4-way	Newtons	lbs
	7-way	5542	1246
	19-way	7669	1724
TEMPERATURE RANGE	Storage	-40°C to +82°C	
	Installation	-10°C to +65°C	
	Operating	-40°C to +82°C	
MINIMUM BEND RADIUS	4-way	Installed	Installation
	7-way	11"	11"
	19-way	14"	14"
MAX. INTERNAL PRESSURE		150 PSI	
COMPLIANCE		GR-3155-CORE	
OVERALL DIAMETER	4-way (tolerance)	mm	Inches
	7-way (tolerance)	28.19 x 20.07 (±1.22)	1.110 x 0.790 (±0.048)
	19-way (tolerance)	28.58 x 33.27 (±1.32)	1.125 x 1.310 (±0.052)
NOMINAL WEIGHT	4-way	kg/km	lbs/1000'
	7-way	473	318
	19-way	624	419
		1195	803

NOTES:

1. Standard lengths are 500 and 1000 feet, supplied on nonreturnable reels. Ends are sealed to prevent the penetration of moisture prior to shipping.

BOF System Connectors & Accessories

Simple push-fit connectors join the microduct sections and extend the microduct network to each destination. A transparent center section of the connectors permits visual inspection to verify if the path is empty or populated with optical fiber. GenLite™ BOF System connectors come in straight or T configurations as well as a reducer configuration for joining ducts of different size. Duct connector plugs and end caps provide a method of sealing unused tubes during shipment, storage and installation.

Duct Connectors

These plastic-bodied pneumatic connectors are suitable for joining indoor or outdoor microduct. Maximum operating pressure is 140 PSI. The connectors are constructed of a transparent plastic material permitting a visual verification of fiber population. They are installed onto the microduct with a simple push-pull technique.

NOTES:

1. When purchasing these connectors for installing on the ends of tubes that will not be immediately connected, it is recommended that a duct connector plug be installed to prevent the penetration of moisture or contamination.
2. To ensure correct sealing, a purpose-built duct cutter should be used.

Duct Connector (Straight)



Duct Reducer



Duct Connector (T)



Part Number	Description
Duct Connector (Straight)	
77-7224	5 mm Duct Connector (Straight)
77-7225	8 mm Duct Connector (Straight)
77-7226	8.5 mm Duct Connector (Straight)
Duct Connector (T)	
77-7228	5 mm Duct Connector (T)
77-7229	8 mm Duct Connector (T)
Duct Reducer	
77-7227	8 mm to 5 mm Reducer
77-7234	8.5 mm to 5 mm Reducer
77-7233	8.5 mm to 8.0 mm Reducer

Accessories & Tools

Plastic duct connector plugs fit snugly into duct connectors, and together, these components provide a semi-permanent method of sealing installed, unused tubes. Using a simple push-pull technique, plugs can be easily installed or removed from duct connectors as needed over the lifetime of the installation.

Plastic end caps fit directly onto individual microducts to provide a temporary means of sealing microducts during shipment, storage and installation. All empty microducts should be sealed with the appropriate-sized duct connectors or end caps at all times to prevent the penetration of moisture or contamination, maintaining microduct integrity prior to, during and after installation.

Horseshoe clips slide over the connectors to lock the push-fit mechanism. A purpose-built duct cutter should be used to ensure correct sealing of connectors and microducts.

Fitting Plug Tapered Plug



End Cap



Duct Cutter



Part Number	Description
Duct Connector Fitting Plug	
77-7230	Fitting Plug for 5 mm
77-7231	Fitting Plug for 8 mm or 8.5 mm
Duct Connector Tapered Plug	
706920	Tapered Plug (2-6 fiber) for 8 mm or 8.5 mm
706930	Tapered Plug (8-12 fiber) for 8 mm or 8.5 mm
Duct End Cap	
705630	5 mm Duct End Cap
705620	8 mm Duct End Cap
77-7235	8.5 mm Duct End Cap
Clips	
77-7232	Horseshoe Clips 8 mm
Cutter	
707050	Duct Cutter

Tactical Cable Fiber Specification and Combat Series 8

Reliability for Your Toughest Applications

General Cable's tactical fiber optic cables are designed, engineered, and manufactured to specification for an extensive range of markets in military, marine/oil rig, transit, utility, industrial, TV camera, and other diverse applications.

Advance Performance

General Cable's tactical fiber optic cables are lightweight and rugged to withstand repeated flexing. The compact design allows for ease of deployment and re-configuration. The UV- and flame-resistant polyurethane jackets withstand even the harshest conditions, resulting in mechanical, chemical, and weather resistance.

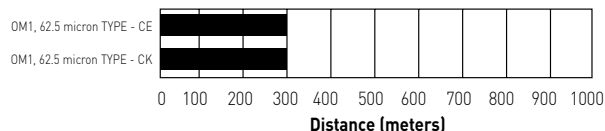
OPTICAL FIBER CODE GUIDE

Fiber Type	General Cable	Description
500 μ m Coated SM	AE	ITU-T G.652.D
500 μ m Coated SM, QPL	AK	ITU-T G.652.D
500 μ m Coated, 62.5 MM	CE	1 Gb/s \leq 300 m at 850 nm, OM1 1 Gb/s \leq 550 m at 1300 nm
500 μ m Coated, 62.5 MM, QPL	CK	1 Gb/s \leq 300 m at 850 nm, OM1 1 Gb/s \leq 550 m at 1300 nm

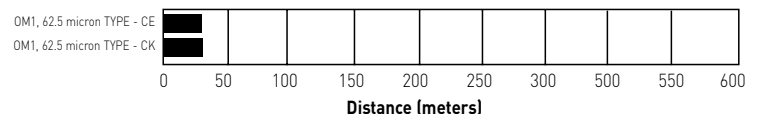
MULTIMODE FIBER SELECTION GUIDE

Characteristics:		62.5/125 PRODUCT FAMILY		UNITS
		OM1 Type-CE	OM1 Type-CK	
Maximum Finished Cable Attenuation Coefficient	@850 nm	3.5	3.5	dB/km
	@1300 nm	1.0	1.0	dB/km
Overfill Launch Bandwidth	@850 nm	200	200	MHz.km
	@1300 nm	500	500	MHz.km
Laser Bandwidth	@850 nm	220	200	MHz.km
Gigabit Ethernet Link Length (1 Gbps)	1000 BASE-SX (850 nm)	300	300	meters
	1000 BASE-LX (1300 nm)	550	550	meters
10 Gigabit Ethernet Link Length (10 Gbps)	10G BASE-SR (850 nm)	33	33	meters
Coating	—	500	500	microns
QPL	—	No	Yes	—

1 Gbps Link Lengths @ 850 nm



10 Gbps Link Lengths @ 850 nm



SINGLEMODE FIBER SELECTION GUIDE

FIBER DESCRIPTION	FIBER TYPE	TYPICAL ATTENUATION (dB/km)				GIGABIT ETHERNET DISTANCE (METERS)	10 GIGABIT ETHERNET DISTANCE (METERS)		COATING	QPL
		1310 nm	1383 nm	1550 nm	1625 nm	1310 nm	1310 nm	1550 nm	microns	
Singlemode - Tight Buffer										
500 μm SM	AE	1.00	–	1.00	–	10,000	5,000	30,000	500	No
500 μm SM QPL	AK	1.00	–	1.00	–	10,000	5,000	30,000	500	Yes

NOTE: Use the code in the "Fiber Type" column to replace the XX notation in the catalog number shown on the catalog page. This identifies the fiber that will be provided with the cable choice.

The fibers in all completed cables are tested 100% at the factory for attenuation, and each fiber must meet the minimum requirements specified by the customer.

Tactical Breakout Cable

Product Construction:

Fiber:

- 2–12 fibers
- 900 μ m tight buffer
- Color-coding per TIA/EIA 598B
- 2.0 mm jacketed sub-units

Central Strength Member:

- Aramid yarn

Overall Strength Member:

- Aramid yarn

Jacket:

- Black polyurethane
- Sequential footage markings*
- Optional matte finish

Features:

- Rugged individual fiber protection
- Easy-to-terminate sub-units
- Heavy-duty field applications
- Designed to military standards
- Color-coded units for identification

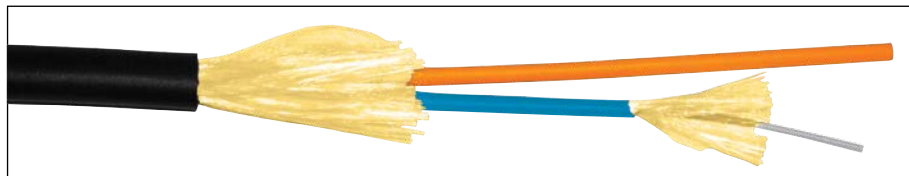
Performance:

- Temperature:
Storage -70°C [-94°F] to +85°C [+185°F]
Operating -55°C [-67°F] to +85°C [+185°F]
- Minimum Bend Radius:
16 X OD—Installation
8 X OD—In-Service
- Maximum Crush Resistance:
251 lbs/in (440 N/cm)
EIA/TIA-455-41
- Impact Resistance:
200 impacts
EIA/TIA-455-25
- Flex Resistance:
2000 cycles
EIA/TIA-455-104

Applications:

- Military tactical field use and commercial applications in re-deployable communication systems
- TV camera applications
- Mining and harsh environments needing mechanical and chemical resistance

*Sequential meter markings available upon request

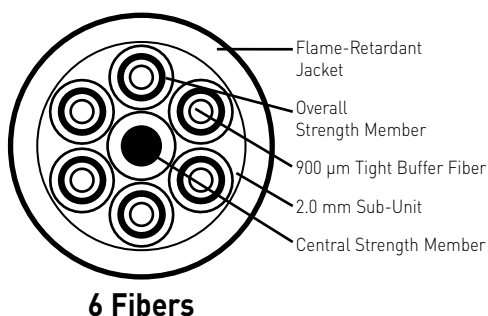


CATALOG NUMBER	FIBER COUNT	NO. OF SUB-UNITS	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
			IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021B3C	2	2	0.260	6.6	20	29	450	2002	149	663
XX0041B3C	4	4	0.290	7.4	24	36	450	2002	149	663
XX0061B3C	6	6	0.340	8.6	29	43	450	2002	149	663
XX0081B3C	8	8	0.390	10.0	36	54	700	3114	231	1028
XX0101B3C	10	10	0.450	11.4	46	68	900	4003	300	1334
XX0121B3C	12	12	0.480	12.2	52	78	1100	4893	360	1601

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Typical Cross-Section



6 Fibers

Ordering Part Number Example

AQ0041B3C

Singlemode, 4 fibers, tactical breakout

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

Combat Series™

Military Tactical Distribution Cable TFOCA & TFOCA-II®

**Whatever
the demand,
NextGen®
delivers.**

Reliability For Your Toughest Applications

NextGen® Brand's Combat Series™ tactical fiber optic cables are designed, engineered and manufactured to specification for military applications.

Advanced Performance

Combat Series tactical fiber optic cables are lightweight and rugged to withstand repeated flexing. The compact design allows for ease of deployment and re-configuration. The UV- and flame-resistant polyurethane jackets withstand even the harshest conditions, resulting in mechanical, chemical and weather resistance.

General Cable's NextGen Brand Combat Series contains a patent-pending jacketing compound, HydroGuard™, which is fully water-resistant for ultimate protection.

General Cable also offers a broad range of fiber optic cable constructions for every application. NextGen Brand fiber optic cables meet today's performance expectations while setting the standards for tomorrow.



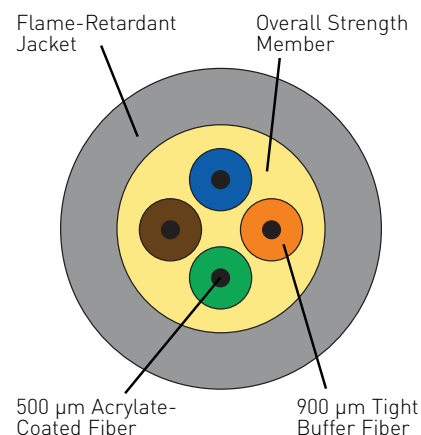


CATALOG NUMBER	FIBER COUNT	NOMINAL CABLE DIAMETER		NOMINAL CABLE WEIGHT		MAXIMUM TENSILE LOAD			
		IN	mm	LBS/1000'	kg/km	INSTALLATION		IN-SERVICE	
XX0021GNC	2	0.228	5.8	20	30	400	1800	130	578
XX0041GNC	4	0.228	5.8	20	30	400	1800	130	578

XX denotes glass type.

A complete listing of NextGen® Brand glass types is specified on page 3 of the Fiber Optics catalog.

Typical Cross-Section



4 Fibers

PRODUCT CONSTRUCTION:

Fiber:

- 2 or 4 fibers
- 900 µm tight buffer, overlaid on a 500 µm acrylate-coated fiber
- Color-coding per TIA/EIA 598B
- Type CK includes QPL-certified glass

Overall Strength Member:

- Aramid yarn

Jacket:

- Black matte flame-retardant polyurethane
- Black UV- and moisture-resistant HydroGuard™
- Sequential footage markings
- Sequential meter markings available upon request

FEATURES:

- Patent-pending HydroGuard™ jacket
- Lightweight, rugged
- Withstands repeated flexing
- Compact design for ease of deployment
- Excellent mechanical protection for the fibers
- Designed to military standards

PERFORMANCE:

- Temperature:
Storage -55°C (-67°F) to +85°C (+185°F)
Operating -46°C (-51°F) to +71°C (+140°F)
- Minimum Bend Radius:
16 X OD—Installation
8 X OD—In-Service

COMPLIANCES:

- Tested to CECOM A3159879
Revision D Standard

APPLICATIONS:

- Military tactical field applications in re-deployable communication systems

ORDERING

Part Number Example:

CE0041GNC

62.5 mm multimode, 4 fibers,
tactical distribution

Please see pages 4 and 5 of the
Fiber Optics catalog for a complete
guide on part number selection and
ordering information.

Technical Information

9



The complexity of today's telecommunications, voice and data transmissions has generated an increasing demand for more technical information. In the current business world, customer service representatives, engineers, distributors and end-users do not have the time to search for answers to their technical questions.

We have included a limited technical section to help simplify these decisions and enable our customers to more expeditiously locate the products needed and answer product-specific questions.

For additional technical information, please contact your sales representative or our customer service department.

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Glossary

Absorption: Physical phenomenon that attenuates light traveling in fibers by converting it into heat, thereby raising the fiber's temperature. Absorption results from impurities and defects in the glass structure.

Acceptance Angle: The half-angle of the cone within which all incident light is totally internally reflected by the fiber core. For graded index fibers, acceptance angle is a function of position on the entrance face of the core.

Adapter: A mechanical media termination device designed to align and join fiber optic connectors. Often referred to as a coupling, bulkhead, or interconnect sleeve.

Amplitude: Height of a waveform that represents signal strength.

Analog: A format that uses continuous physical variables such as voltage amplitude or frequency variations to transmit information.

Angle of Incidence: The angle between an incident ray and the normal to a reflecting surface.

Angle of Refraction: Angle formed between a refracted ray and the normal to the surface. This angle lies in a common plane with the angle of incidence.

Aramid Yarn: Strength elements that provide tensile strength, support and additional protection of fiber bundles. It is commonly referred to as Kevlar (a DuPont trademark).

Armor: Protective covering, usually metal, used underneath plastic jackets to provide additional environmental protection in harsh environments.

Attenuation: Loss of signal strength between points. Usually measured in decibels per a unit length (e.g., dB/km).

Backbone: The main portion of network cabling connecting equipment rooms or communications closets. These cables often have the largest number of fibers and/or the longest continuous cable runs.

Backscattering: The scattering of light in a direction opposite to the original one.

Bandwidth: A characterization of the information-carrying capacity of a multimode optical fiber. It is expressed in terms of frequency and is often normalized to a unit length (e.g., MHz-km).

Bend Loss: A form of increased attenuation in a fiber that results from bending a fiber around a restrictive curvature (a macrobend) or from minute distortions in the fiber (microbends).

Bend Radius: Radius of curvature that a fiber can bend without breaking.

Breakout: Multifiber cable constructed in the tight buffered design with individually jacketed fibers. Designed for ease of connectorization and rugged applications for intra- or interbuilding requirements.

Buffer: Coating used to protect optical fiber from physical damage. Types include tight buffer (indoor) or loose tube (outdoor).

Bundle: Several individual fibers contained within a single jacket or buffer tube. Also a group of buffered fibers distinguished in some fashion from another group in the same cable core.

Cable Assembly: Optical fiber cable that has connectors installed on one or both ends.

Cable Bend Radius: The radius that a fiber can be bent before risking increased attenuation or fiber breaks.

Central Member: A material located in the middle of a cable that provides extra strength and anti-buckling properties.

Chromatic Dispersion: Spreading of a light pulse caused by the difference in refractive indices at different lengths.

Cladding: Dielectric material surrounding the core of an optical fiber.

Coating: Material put on a fiber during the drawing process for mechanical protection.

Conduit: Pipe or tubing through which cables can be pulled and housed.

Connector: A passive device attached at the end of a fiber to couple light from a transmitter to a receiver or between two fibers.

Connector Return Loss: Amount of power reflected from the connector to connector interface, typically expressed in decibels.

Core: Central region of an optical fiber through which light is transmitted.

Core Eccentricity: Measure of the displacement of the center of the core relative to the cladding center.

Core Ellipticity: Measure of the non-roundness of the core.

Coupling Efficiency: Efficiency of optical power transfer between two components.

Coupling Loss: Power loss suffered when coupling light from one optical device to another.

Critical Angle: Smallest angle at which a meridional ray may be totally reflected within a fiber at the core-cladding interface.

Crosstalk: Phenomenon of unwanted light transfer between fibers.

CSA: Abbreviation for Canadian Standards Association.

Decibel (dB): Standard unit used to express the magnitude of signal gain or loss.

Dielectric: Any non-metallic, non-conductive material.

Diffraction: Phenomenon that results when light passes by an opaque edge or through an opening, generating weaker secondary wavefronts. These secondary wavefronts interfere with the primary wavefronts, as well as with each other, to form various patterns.

Digital: Data format that uses two physical levels, ones and zeros, to transmit information.

Glossary

Dispersion: Spread of the signal delay in an optical waveguide. It consists of various components: modal dispersion, material dispersion and waveguide dispersion. As a result of the dispersion, an optical waveguide acts as a low-pass filter for the transmitted signals.

Duplex: Referring to a type of data transmission, either half or full. Half duplex permits only one-way communication. Full duplex allows simultaneous two-way transmission.

Electromagnetic Interference (EMI): Flowing currents generate magnetic fields. Depending on the strength and proximity, these magnetic fields can induce unwanted current in nearby conductive media, negatively affecting signal transfer.

End Finish: Quality of the surface at an optical fiber's end, commonly described as mirror, mist, hackle, chipped, cracked or specified by final grit size used in polishing.

ETL: Abbreviation for Edison Testing Laboratory, which is a division of Intertek Group plc. ETL specializes in electrical product testing, EMC testing and benchmark performance testing.

FDDI (Fiber Distributed Data Interface): A standard for a 100 Mbs fiber optic area network.

Fiber: Any filament or fiber made of dielectric materials that guides light.

Fiber Channel: A high speed point-to-point, ANSI Optical Communications Standard that supports data transfer rates up to 1,062.5 Mbs (1 Gps).

Fiber Cleaving: Controlled fracture of an optical fiber along a crystalline plane which results in a smooth surface.

Fiber Optics: Branch of optical technology dealing with the transmission of radiant power through fibers made of transparent materials such as glass, fused silica or plastic.

FOTP: Abbreviation for fiber optic test procedures, which are defined in TIA/EIA Publication Series 455.

Frequency: Number of cycles per unit of time, measured in Hertz (Hz).

Fusion Splice: Splice accomplished by the application of localized heat sufficient to fuse or melt the ends of two lengths of optical fiber, forming a continuous single fiber.

Gigabit: One billion bits of information.

Gigahertz (GHz): One billion Hertz.

Graded-Index Fiber: An optical fiber core that has a nonuniform index of refraction. The core is composed of concentric rings of glass, which have refractive indices that decrease from the center axis. The refractive index is changed in a systematic way from the center to the edges in order to decrease modal dispersion.

Hertz: Measurement unit of frequency.

Hybrid Cable: A fiber optic cable containing two or more different types of fiber (e.g., multimode and singlemode).

Index of Refraction: The ratio of light velocity in a vacuum to its velocity in a given transmission medium.

Infrared (IR): The range of electromagnetic wavelengths between the visible part of the spectrum (750nm) and microwaves (30µm).

Insertion Loss: The attenuation caused by insertion of an optical component such as a connector, splice or coupler.

Intensity: Irradiance.

Interbuilding: Between buildings.

Intrabuilding: Within a building.

Jumper: Fiber optic cable that has connectors terminated on both ends.

KPSI: Abbreviation used to denote a measurement unit of thousands of pounds per square inch. Commonly used in the fiber proof test tensile strength measurement.

Kevlar: DuPont trade name for aramid material (see Aramid Yarn).

Kilometer: Unit of measure for length equal to 1000 meters and about 3,281 feet.

Laser: A device which produces a narrow band of light and is used as a transmitting device for light signals traveling along optical fibers. Laser is an acronym for Light Amplification by Stimulated Emission of Radiation.

Launch Angle: Angle between the propagation direction of the incident light and the optical axis of an optical waveguide.

LED: Acronym for Light Emitting Diode. It is a semiconductor device that emits incoherent light from a p-n junction (when biased with an electrical current).

Light: In the laser and optical communications fields, the portion of the electromagnetic spectrum that can be handled by the basic optical techniques used for the visible spectrum extending from the near ultraviolet region of approximately 0.3 micron, through the visible region and into the mid-infrared region of about 30 microns.

Light Diffusion: Scattering of light by reflection or transmission. Diffuse reflection results when light strikes an irregular surface such as a frosted window or coated light bulb.

Light Emitting Diode: See LED.

Lightwaves: Electromagnetic waves in the region of optical frequencies. The term "light" was originally restricted to radiation visible to the human eye, with wavelengths between 400 and 700nm. However, it has become customary to refer to radiation in the speed regions adjacent to visible light as "light" to emphasize the physical and technical characteristics they have in common with visible light.

Loose Tube: Type of cable design in which coated fibers are encased in buffer tubes offering excellent fiber protection and segregation. Mainly used in outdoor cable types.

MDPE: Acronym for Medium Density Polyethylene. MDPE is a form of polyethylene commonly used as a jacketing material for outdoor fiber optic cables (see PE).

Glossary

Macrobending: Macroscopic axial deviations of a fiber from a straight line.

MegaHertz: One million Hertz.

Microbending: Curvatures of the fiber which involve axial displacements a few micrometers and spatial wavelengths of a few millimeters. Microbends cause loss of light and consequently increase the attenuation of the fiber.

Micrometer (µm): One millionth of a meter or a micron. Conventional unit of measurement for optical fibers.

Micron: See Micrometer.

Modal Dispersion: Pulse spreading due to multiple light rays traveling different distances and speeds through an optical fiber.

Mode: A term used to describe an independent light path through a fiber, as in multimode or singlemode.

Mode Field Diameter (MFD): The diameter of optical energy in a singlemode fiber. Because the MFD is greater than the core diameter, MFD replaces core diameter as a practical parameter.

Monochromatic: Consisting of a single wavelength. In practice, radiation is never perfectly monochromatic but, at best, displays a narrow band of wavelengths.

Multimode Fiber: An optical waveguide in which light travels in several modes. Typical core and cladding sizes are 50 µm/125 µm and 62.5 µm/125 µm.

Multiplex: Combining two or more signals into a single bit stream that can be individually recovered.

Nanometer: One billionth of a meter (nm).

National Electric Code (NEC): Defines building flammability requirements for indoor cables.

Numerical Aperture (NA): Measure of the range of angles of incident light transmitted through a fiber. Depends on the differences in index of refraction between the core and the cladding. (The number that expresses the light-gathering ability of a fiber.)

Optical Return Loss (ORL): The ratio, expressed in decibels, of optical power reflected by a component or an assembly to the optical power incident on a component or assembly that is induced into a link or system.

Optical Time Domain Reflectometer (OTDR): An instrument used to measure the transmission performance of optical fibers.

Optical Transmitter: See Transmitter.

Optical Waveguide: Dielectric waveguide with a core consisting of optically transparent material of low attenuation (usually silica glass) and with cladding consisting of optically transparent material of lower refractive index than that of the core. It is used for the transmission of signals with lightwaves and is frequently referred to as a fiber. In addition, there are some optical components, such as laser diodes, which are referred to as optical waveguides.

PE: Abbreviation used for polyethylene. Polyethylene is a type of plastic, commonly used as a jacketing material for outside plant cables, that possesses good mechanical properties including good moisture resistance. However, it is very flammable and not suitable for indoor jacketing applications.

PVC: Abbreviation used for polyvinyl chloride. Polyvinyl chloride is a plastic material that is widely used as a jacketing material in indoor cables.

PVDF: Abbreviation denoting polyvinylidene fluoride, a fluoropolymer plastic material often used as a jacket in plenum cables, especially in larger fiber count cables.

Pigtail: A fiber optic connector that is terminated to one end of an optical fiber cable. A short length of optical fiber, permanently fixed to a component, used to couple power between the component and a transmission fiber.

Plenum: The air handling space such as that found above drop-ceiling tiles or in raised floors. It is also the most stringent fire code rating for indoor cables.

Plenum Cable: A cable that meets the most stringent flammability and smoke-generating test and is suitable for installation in a plenum area without a conduit.

Power: The rate at which energy is transferred.

Preform: A glass structure from which an optical fiber waveguide can be drawn.

Primary Coating: The plastic coating applied directly to the cladding surface of the fiber during manufacture to preserve the integrity of the surface.

Receiver: A detector and electronic circuitry to change optical signals into electrical signals.

Reflection: The abrupt change in direction of a light beam at an interface between two dissimilar media so that the light beam returns into the media from which it originated.

Refraction: The bending of a beam of light at an interface between two dissimilar media or in a medium whose refractive index is a continuous function of position (graded index medium).

Refractive Index: The ratio of the velocity of light in a vacuum to that in an optically dense medium.

Repeater: In an optical-fiber communication system, an optoelectronic device or module that receives an optical signal, converts it to electrical form, amplifies it (or in the case of a digital signal, reshapes, retimes or otherwise reconstructs it) and retransmits it in optical form.

Riser: Pathways for indoor cables that pass between floors. It is normally a vertical shaft or space. A riser cable rating indicates good flammability characteristics, but not necessarily low smoke as in a plenum type.

Glossary

Scattering: Property of glass that causes light to deflect from the fiber and contributes to optical attenuation.

Simplex: Transmission in only one direction. Generally a communications system or device capable of transmission in one direction only.

Singlemode Fiber: Optical fiber with a small core diameter (typically 9 μm) in which only a singlemode, the fundamental mode, is capable of propagation. This type of fiber is particularly suitable for wideband transmission over large distances, since its bandwidth is limited only by chromatic dispersion.

Source: A light emitter, either an LED or laser diode, in a fiber optic link; a device that when properly driven will produce information-carrying optical signals.

Spectral Bandwidth: The difference between wavelengths at which the radiant intensity of illumination is half its peak intensity.

Speed of Light: 186,000 miles per second.

Splice: A permanent joint between two optical waveguides.

ST® Connector: Type of connector used on fiber optic cable utilizing a spring-loaded twist-and-lock coupling similar to the BNC connectors used with coaxial cabling.

Step Index Fiber: A fiber having a uniform refractive index within the core and a sharp decrease in refractive index at the core/cladding interface.

Strength Member: Part of a fiber optic cable composed of aramid yarn, steel strands or fiberglass filaments that increase the tensile strength of the cable.

Tight Buffer: Type of cable construction whereby each glass fiber is tightly buffered by a protective thermoplastic coating to a diameter of 900 μm . Increased buffering provides ease of handling and connectorization.

Time-Division Multiplex (TDM): The process or device by which more than one signal can be sent over a single channel by using different time intervals for the different signals. This may be done by varying the pulse duration, pulse amplitude and pulse position.

Total Internal Reflection: The total reflection that occurs when light strikes an interface at angles of incidence greater than the critical angle.

Transmitter: A driver and a source used to change electrical signals into optical signals.

UL: Abbreviation for Underwriters Laboratories, Inc., a non-profit organization that rates fiber optic cables according to their flammability characteristics. (See Plenum and Riser.)

VCSEL (Vertical Cavity Surface Emitting Laser): A specialized laser diode used in fiber optic communications to improve efficiency and increase data speeds. These devices emit energy at 850 nm and 1300 nm. The VCSEL emits a narrow, more nearly circular beam than traditional light emitting diodes (LEDs) or laser diodes, which makes it easier to get the energy from the device into an optical fiber.

Wavelength: The distance, measured in the direction of propagation, of a repetitive electrical pulse or waveform between two successive points that are characterized by the same phase of vibration.

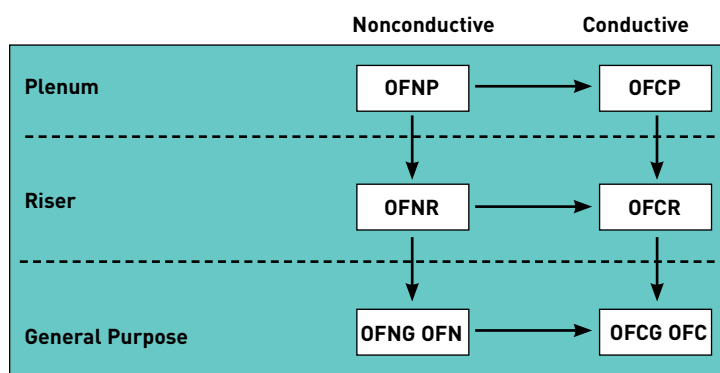
Zero-Dispersion Wavelength: Wavelength at which the chromatic dispersion of an optical fiber is zero. Occurs when waveguide dispersion cancels out material dispersion.

NEC and CSA Fire Resistance Levels

Communications wire and cable for premise installations are in accordance with Article 770, and other applicable parts of the National Electrical Code (NEC), latest issue. Communications wire and cables for Canada are in accordance with the harmonized Canadian Standard Association C22.2 No. 214, Underwriters Laboratories UL 444, latest issue.

FIRE RESISTANCE LEVEL	TEST REQUIREMENT	NEC ARTICLE
		770
(Highest) Plenum Cables	NFPA-262 (Steiner tunnel) CSA-FT6 (Steiner tunnel)	OFNP OFCP
Riser Cables Multiple Floors	UL-1666 (Vertical Shaft) CSA-FT4 (Vertical Tray)	OFNR OFCR
General Purpose Cables	UL-1581 (Vertical Tray) CSA-FT4 (Vertical Tray)	OFNG OFN OFCG OFC

Notes 1. Cables with a higher fire resistance level may be substituted for those with a lower fire resistance level.
2. Non-fire rated outside plant telephone cables may not run outside of a rigid metal conduit more than 50 feet from the point of entrance into a building.
3. Per the latest NEC issue, listed optical fiber cables are permitted in trays.



A → **B** Cable A may be used in place of cable B

CABLE MARKING	TYPE
OFNP	Nonconductive optical fiber plenum cable
OFCP	Conductive optical fiber plenum cable
OFNR	Nonconductive optical fiber riser cable
OFCR	Conductive optical fiber riser cable
OFNG	Nonconductive optical fiber general-purpose cable
OFCG	Conductive optical fiber general-purpose cable
OFN	Nonconductive optical fiber general-purpose cable
OFC	Conductive optical fiber general-purpose cable

Color Coding Charts

Color coding in compliance with TIA/EIA 598 B.3

LOOSE TUBE BUFFER COLOR CODING

POSITION NUMBER	BASE COLOR AND TRACER	ABBREVIATION
1	Blue	BL
2	Orange	OR
3	Green	GR
4	Brown	BR
5	Slate	SL
6	White	WH
7	Red	RD
8	Black	BK
9	Yellow	YL
10	Violet	VI
11	Rose	RS
12	Aqua	AQ
13	Blue with Black Tracer	D/BL ¹
14	Orange with Black Tracer	D/OR
15	Green with Black Tracer	D/GR
16	Brown with Black Tracer	D/BR
17	Slate with Black Tracer	D/SL
18	White with Black Tracer	D/WH
19	Red with Black Tracer	D/RD
20	Black with Yellow Tracer	D/BK
21	Yellow with Black Tracer	D/YL
22	Violet with Black Tracer	D/VI
23	Rose with Black Tracer	D/RS
24	Aqua with Black Tracer	D/AQ

1) "D/" denotes a dashed mark or tracer. That is, D/BL is Dash-Blue, meaning blue with a tracer.

TIGHT BUFFER COLOR CODING

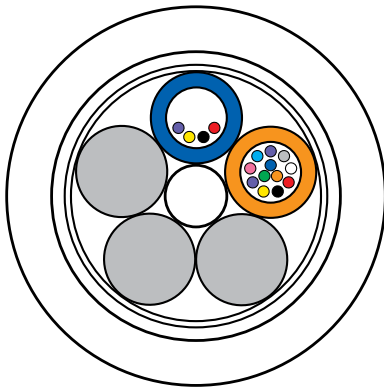
POSITION NUMBER	BASE COLOR AND TRACER	ABBREVIATION
1	Blue	BL
2	Orange	OR
3	Green	GR
4	Brown	BR
5	Slate	SL
6	White	WH
7	Red	RD
8	Black	BK
9	Yellow	YL
10	Violet	VI
11	Pink	PK
12	Aqua	AQ
13	Blue with Black Tracer	D/BL ¹
14	Orange with Black Tracer	D/OR
15	Green with Black Tracer	D/GR
16	Brown with Black Tracer	D/BR
17	Slate with Black Tracer	D/SL
18	White with Black Tracer	D/WH
19	Red with Black Tracer	D/RD
20*	Black with Black Tracer	D/BK
21	Yellow with Black Tracer	D/YL
22	Violet with Black Tracer	D/VI
23	Rose with Black Tracer	D/RS
24	Aqua with Black Tracer	D/AQ

1) "D/" denotes a dashed mark or tracer. That is, D/BL is Dash-Blue, meaning blue with a tracer.

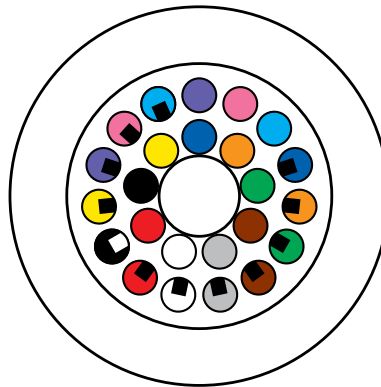
* Black tracer is visible on black buffer tube.

JACKET COLOR CODING

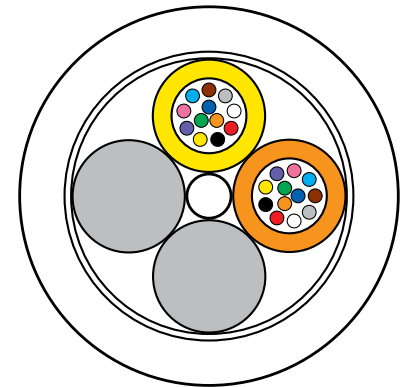
CONSTRUCTION	FIBER TYPE	JACKET COLOR
TIGHT BUFFER	Multimode	Orange
	10 G Multimode	Aqua
	Singlemode	Yellow
	Hybrid	Black
LOOSE TUBE	Multimode	Black
	10 G Multimode	
	Singlemode	
	Hybrid	



For loose tube hybrid cable constructions, cables containing both singlemode (SM) and multimode (MM), the first tubes in the TIA/EIA 598 color-coded tubes will contain singlemode, and the remaining tubes will contain multimode.



For tight buffered single pass hybrid cable constructions (≤ 24 fibers), cables containing both singlemode and multimode, the first buffers in the TIA/EIA 598 color-coded tubes will contain singlemode, and the remaining buffers will contain multimode.



For tight buffered subunit hybrid cable constructions (≥ 24 fibers), cables containing both singlemode and multimode, the singlemode subunit tubes will be yellow and numerically marked, 62.5 μ multimode subunit tubes will be orange and numerically marked, and 50 μ multimode subunit tubes will be aqua and numerically marked.

Ordering Part Number Example

AQ012/BE0124M1A-DWB

Ordering Part Number Example

AP012/BE0121PNU

Ordering Part Number Example

AP012/BE0121P1R

Conversion Table and Reel Dimensions

CONVERSION TABLE

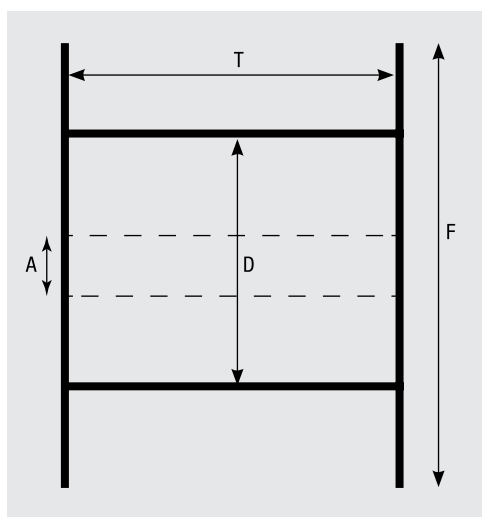
SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL
LENGTH				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km

STANDARD WOODEN REEL DIMENSIONS

Flange	inches meters	36 (0.9)	48 (1.2)	60 (1.5)	72 (1.8)	84 (2.1)	96 (2.4)
Traverse	inches meters	26 (0.7)	22 (0.6)	31 (0.8)	36 (0.9)	47 (1.2)	42 (1.1)
Drum	inches meters	18 (0.5)	24 (0.6)	30 (0.8)	36 (0.9)	44 (1.1)	48 (1.2)
Tare Weight	lbs kg	104 (47)	178 (81)	324 (147)	616 (279)	834 (378)	1,146 (520)

Please contact your General Cable representative if a certain reel size is required.

REEL DIMENSIONS



F = Flange Diameter
T = Traverse Width
D = Drum Diameter
A = Arbor Hole

Catalog Number Index

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77-7226	52	708370	46	XX0021ANU-ILPA	34	XX0061PNR	23
77-7227	52	708390	46	XX0021B3C	54	XX0061PNR-ILRA	27
77-7228	52	708410	46	XX0021B3D	26	XX0061PNU	24
77-7229	52	708430	46	XX0021B3R	25	XX0061PNU-ILPA	28
77-7230	52	AP00064BOF-B1	47	XX0021GNC	56	XX0061PNZ	22
77-7231	52	AP00064BOF-B2	47	XX0021PNR	23	XX0064E1S-DWB	15
77-7232	52	AP00064BOF-B3	47	XX0021PNR-ILRA	27	XX0064H1A-DWB	9
77-7233	52	BE00064BOF-B1	47	XX0021PNU	24	XX0064H1F-DWB	11
77-7234	52	BE00064BOF-B2	47	XX0021PNU-ILPA	28	XX0064H1S-DWB	14
77-7235	52	BE00064BOF-B3	47	XX0021PNZ	22	XX0064M1A-DWB	8
705620	52	BL00064BOF-B1	47	XX0021ZNR1.6	39	XX0064M1F-DWB	10
705630	52	BL00064BOF-B2	47	XX0021ZNR3.0	38	XX0064M1N-DWB	13
705820	46	BL00064BOF-B3	47	XX0021ZNU3.0	38	XX0064M1Y-DWB	12
705830	46	CG00064BOF-B1	47	XX0023H1A-DWB	9	XX0064U1A	19
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705860	46	FC9700003	48	XX0023M1F-DWB	13	XX0064UNFC	17
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705920	46	FC9700012	48	XX0024U1A.TF	18	XX0081ANU.BK	32
705930	46	FC9700013	48	XX0024U2A	20	XX0081B3C	54
705940	46	FC9700015	48	XX0024UNFC	17	XX0081B3D	26
705950	46	FC9700016	50	XX0024UNFS	7	XX0081B3R	25
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705970	46	FC9700018	50	XX0041ANR-ILRA	33	XX0081PNU	24
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Notes

Notes

- 
- > No Chlorine
 - > No Fluorine
 - > No Bromine
 - > No Iodine

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