Fiber Optic Cable
FOR VOICE AND DATA TRANSMISSION

General Cable
Fiber Optic Cable Products

This catalog contains in-depth information on the General Cable line of fiber optic cable for voice, video and data transmission.

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

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.

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.
What's New?

**NEXTGEN® BRAND BLOWABLE FIBER BUNDLES & INSTALLATION EQUIPMENT**

General Cable has added Blown Optical Fiber Bundles to its product portfolio. Blown Optical Fiber Bundles are engineered for long, straight cable pathways. This is the perfect complement to our Blolite® Blown Optical Fiber Solution, which excels in premise enterprise applications containing many difficult turns and bends.

In support of this exciting new product, General Cable has also introduced a revolutionary new installation machine capable of blowing both Blolite Blown Fiber or NextGen® blowable fiber bundles. This unique piece of equipment gives the installer the ability to use the blown optical fiber product best suited to the application.

**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.

**U.S. GREEN BUILDING COUNCIL**

**U.S. Green Building Council (USGBC) Membership**

General Cable has accelerated its environmental commitment, addressing its green alternative approach by identifying greener opportunities and promoting green cabling solutions wherever feasible. This includes promoting our existing green products, partnering with key customers in their green endeavors, identifying and providing resources for green product gaps, and participating as members in collaborative ventures such as the Green Suppliers Network (GSN) and the United States Green Building Council (USGBC).
POWERS THE WORLD · 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. Today, with approximately 14,000 employees and approaching $6 billion in revenues, we are one of the largest wire and cable manufacturers in the world.

Our company serves customers through a network of 38 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 and locally.

Visit our Website at www.generalcable.com
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.
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GenAssurance℠ 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.

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. Program information can be found at www.pangensolutions.com.

Additional connectivity partners include:

- Allen-Tel
- Hubbell
- Leviton
- Siemon


Fiber Optic Cable for the 21st Century

Not the new kid on the block.

General Cable’s NextGen® Brand fiber optic solutions derive from over 25 years of technical expertise and manufacturing excellence. Long recognized as a leader in copper cabling systems, General Cable offers a broad range of fiber optic cables for every application. NextGen Brand fiber optic cables meet today’s performance expectations while setting the standards for tomorrow.

NextGen Brand delivers the cable construction and performance that best fits — whatever the demand.

Whatever the Demand, NextGen Delivers.
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 ($\lambda_0$) 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-CAB
- 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
<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>General Cable</th>
<th>Corning® Optical Fiber</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Performance Loose Tube SM</td>
<td>AT</td>
<td>SMF-28® Ultra</td>
<td>Full spectrum, high performance low water peak singlemode with 0.35/0.25 attenuation, 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</td>
</tr>
<tr>
<td>Long-Haul SM</td>
<td>AL</td>
<td>LEAF® Fiber</td>
<td>Large A_eff, low water peak, NZ-DSF singlemode, ITU-T G.655</td>
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<tr>
<td>62.5 µm MM</td>
<td>CG</td>
<td>InfiniCor® 300 Fiber</td>
<td>1 Gb/s ≤ 300 m at 850 nm, OM1* 1 Gb/s ≤ 550 m at 1300 nm</td>
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<td>CL</td>
<td>InfiniCor® CL™ 1000 Fiber</td>
<td>1 Gb/s ≤ 500 m at 850 nm, OM1* 1 Gb/s ≤ 1000 m at 1300 nm</td>
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<td>Ultra-Bendable 50 µm MM</td>
<td>BI</td>
<td>ClearCurve® OM2 Fiber</td>
<td>10 Gb/s ≤ 150 m at 850 nm, OM2* 1 Gb/s ≤ 750 m at 850 nm</td>
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<tr>
<td>Ultra-Bendable 50 µm MM</td>
<td>BE</td>
<td>ClearCurve® OM3 Fiber</td>
<td>10 Gb/s ≤ 300 m at 850 nm, OM3* 1 Gb/s ≤ 1000 m at 850 nm</td>
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<tr>
<td>Ultra-Bendable 50 µm MM</td>
<td>BL</td>
<td>ClearCurve® OM4 Fiber</td>
<td>10 Gb/s ≤ 550 m at 850 nm, OM4* 1 Gb/s ≤ 1100 m at 850 nm</td>
</tr>
<tr>
<td>Ultra-Bendable 50 µm MM</td>
<td>BM</td>
<td>ClearCurve® OM4 Fiber</td>
<td>10 Gb/s ≤ 600 m at 850 nm, OM4+* 1 Gb/s ≤ 1100 m at 850 nm</td>
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* Designation per ISO 11801 Fiber Standards

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

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<thead>
<tr>
<th>Fiber Grade</th>
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<tr>
<td>A: Singlemode (sm)</td>
<td></td>
</tr>
<tr>
<td>B: 50 MM Multimode (mm)</td>
<td></td>
</tr>
<tr>
<td>C: 62.5 MM Multimode (mm)</td>
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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

### 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
- RNP: Tight Buffer Distribution Ribbon Plenum

**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

### 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

Note: DJ = Dual Jacket
- SJ = Dual Jacket
- TJ = Triple Jacket
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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<td>Loose Tube Single Jacket Ribbon Cable</td>
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<tr>
<td>Fiber Optic Cable in Conduit</td>
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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 2011/65/EU
  *Sequential meter markings available upon request

Typical Cross-Section

<table>
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<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
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<th>NOMINAL CABLE WEIGHT</th>
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XX denotes glass type. A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

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:**
  - 4-432 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:**
  - Installation: 20 X OD
  - In-Service: 10 X OD
- **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 2011/65/EU

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

Typical Cross-Section

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

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

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.
Fiber Optic Outside Plant Cables

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)
  - Added protection of an inner jacket
- **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:**
  - Installation: 20 X OD
  - In-Service: 10 X OD
- **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 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 2011/65/EU

Options:
- Alternate 6-fiber per tube available upon request
- Sequential meter markings available upon request

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.

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<th>CATALOG NUMBER</th>
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<th>NO. OF FILLERS</th>
<th>NOMINAL CABLE DIAMETER</th>
<th>NOMINAL CABLE WEIGHT</th>
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XX denotes glass type.
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.
Outside Plant Cables  Fiber Optic

Loose Tube Single Jacket Armored Cable

Product Construction:
Fiber:
• 4–432 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 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 2011/65/EU
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)

Typical Cross-Section

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<th>NO. OF FILLERS</th>
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XX denotes glass type. A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

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:
    - Installation: 20 X OD
    - In-Service: 10 X OD
  - 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
  - Factory-installed eyelet option for quick cable-pull setups available.
- **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 2011/65/EU
- **Options:**
  - Gel-free tube versions also available, use "-DT" suffix (XX0124M1F-DT)**
  - Alternate 6-fiber per tube available upon request
- **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**

**AQQ0124H1F-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.

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</table>

XX denotes glass type.
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.
Outside Plant Cables

Fiber Optic

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 2011/65/EU

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.

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.

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.

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<th>CATALOG NUMBER</th>
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<th>NO. OF FILLERS</th>
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<td>18.0 x 28.7</td>
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</table>

XX denotes glass type.
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.
Fiber Optic Outside Plant Cables

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.

Product Construction:

Fiber:
- 2–216 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*

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:
  - Installation 20 X OD
  - In-Service 10 X OD
- 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 2011/65/EU

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.

Typical Cross-Section:

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.

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<th>NOMINAL CABLE WEIGHT</th>
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XX denotes glass type. A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Options:
- Alternate 6-fiber per tube available upon request

Ordering Part Number Example

AQ0244M1N-DWB

Singlemode, 24 fibers, loose tube SJ armored (figure 8)

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

General Cable

XX023M1N-DWB

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.

Typical Cross-Section:

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.
Outside Plant Cables

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)
- Sequential footage markings*

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/oral 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 2011/65/EU

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

Typical Cross-Section

<table>
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<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NO. OF LOOSE TUBES</th>
<th>NO. OF FILLERS</th>
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XX denotes glass type.
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

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

Typical Cross-Section

48 Fiber

Hybrid designs (containing singlenode 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.

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 2011/65/EU

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
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:**
  - Installation: 20 X OD
  - In-Service: 10 X OD
- **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 2011/65/EU

**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

**Typical Cross-Section**

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<th>CATALOG NUMBER</th>
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<th>NO. OF LOOSE TUBES</th>
<th>NO. OF FILLERS</th>
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**Ordering Part Number Example**

**A0124E1S-DWB**

Singlemode, 12 fibers, TJ dual armored

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

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 or aerial/lashed

Compliances:
- Tested in accordance with EIA/TIA-455 FOTPs
- ICEA S-87-640
- GR-20
- RoHS Compliant Directive 2011/65/EU

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

Typical Cross-Section

<table>
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<th>FIBER COUNT</th>
<th>NO. OF RIBBONS</th>
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XX denotes glass type.
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

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
- **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
  - 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 2011/65/EU
*Sequential meter markings available upon request

### Typical Cross-Section

- **12 Fiber**
- Ripcord
- Outer Jacket
- Corrugated Steel Armor
- Ripcord
- Water Blocking Strength Member
- Buffer Tube

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.

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<th>FIBER COUNT</th>
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XX denotes glass type.

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

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<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NO. OF LOOSE TUBES</th>
<th>NOMINAL CABLE DIAMETER</th>
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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

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
- 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

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### Typical Cross-Section

- **Outer Jacket**
- **Strength Members**
- **Ripcord**
- **Water Blocking Material**
- **Buffer Tube**

### 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.

---

### Specifications Table

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NO. OF LOOSE TUBES</th>
<th>NOMINAL CABLE DIAMETER</th>
<th>NOMINAL CABLE WEIGHT</th>
<th>MAXIMUM TENSILE LOAD</th>
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XX denotes glass type.
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

Hybrid designs (containing singlemode and multimode fiber) and composite designs (containing copper conductors) are also available.
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
- 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:
  - Installation: 6.7 X OD
  - In-Service: 2.6 X OD

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

Typical Cross-Section

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

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.
Fiber Optic Cable in Conduit

Since the first modern wind turbine was developed in the 1980s, General Cable has been committed to delivering the renewable power of wind energy through groundbreaking wire and cable technologies. Fiber optic cable in conduit is used in the collection system of a wind farm application. General Cable’s outside plant fiber optic cables can be placed in conduit to meet your wind farm needs.

Build your fiber optic cable in conduit:

1) Select an outside plant fiber optic cable to meet your needs
2) Select the wall type for your conduit/duct
3) Select the size of the conduit based on the outer diameter of the cable you selected

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<th>SDR 13.5</th>
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</table>
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.

Index

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<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Tight Buffer Distribution Riser Cable</td>
<td>24</td>
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<tr>
<td>Tight Buffer Distribution Plenum Cable</td>
<td>25</td>
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<tr>
<td>Tight Buffer Breakout Riser Cable</td>
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<td>Tight Buffer Breakout Plenum Cable</td>
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<td>Tight Buffer Distribution Interlock Armored Riser Cable</td>
<td>28</td>
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<td>Tight Buffer Distribution Interlock Armored Plenum Cable</td>
<td>29</td>
</tr>
<tr>
<td>Ribbon Distribution Plenum Cable</td>
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</tbody>
</table>
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 2011/65/EU
  - GR-409

*Sequential meter markings available upon request

---

**Typical Cross-Sections**

**PNZ ≤ 12 Fiber**
- LSZH Jacket
- Overall Strength Member
- 900 µm Tight Buffer Fiber

**P1Z ≥ 18 Fiber**
- LSZH Jacket
- Overall Strength Member
- 900 µm Tight Buffer Fiber
- Sub-Unit
- Central Strength Member

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 µm 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:
  - Installation: 20 X OD
  - In-Service: 10 X OD
- 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-83-586
- GR-409
- RoHS Compliant Directive 2011/65/EU

**Option:**
- Ripcord available on PNRs, comes as standard on P1Rs

*Sequential meter markings available upon request

**Typical Cross-Sections**

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

**Ordering Part Number Example**

**BE0241PNR or BE0241P1R**

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
Type OFNP, CSA FT6

Product Construction:
Fiber:
- 2–144 fibers
- 900 µm 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 2011/65/EU

Option:
- Ripcord available on PNUs, comes as standard on P1Ds

*Sequential meter markings available upon request

Typical Cross-Sections

PNU ≤ 24 Fiber

P1D ≥ 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 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.

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

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<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NO. OF SUB-UNITS</th>
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<th>NOMINAL CABLE WEIGHT</th>
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Indoor Cables

**Tight Buffer Breakout Riser Cable**

Type OFNR, CSA FT4

### Product Construction:

**Fiber:**
- 2–24 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 (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:
  - 20X OD—Installation
  - 10X 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 2011/65/EU

*Sequential meter markings available upon request

### Typical Cross-Section

- Outer Jacket
- Core Separator Tape
- 2.4 mm Sub-Unit
- 900 µm Tight Buffer Fiber
- Overall Strength Member
- Central Strength Member
- Ripcord

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

### Ordering Part Number Example

**BE0121B3R**

50 µm multimode, 12 fibers, tight buffer breakout riser

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

---

**General Cable**

RoHS Compliant Directive 2011/65/EU

TIA 568 C.3

ICEA S-83-596

GR-409

RoHS Compliant Directive 2011/65/EU

XX denotes glass type.

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

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**CATALOG NUMBER**

**FIBER COUNT**

**NO. OF SUB-UNITS**

**NOMINAL CABLE DIAMETER**

**NOMINAL CABLE DIAMETER**

**MAXIMUM TENSILE LOAD**

**INSTALLATION**

**IN-SERVICE**

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XX denotes glass type.

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

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*Sequential meter markings available upon request
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:
  - Installation: 20 X OD
  - In-Service: 10 X OD
- 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 cETL Listed Type OFNP
- CSA FT6
- TIA 568 C.3
- ICEA S-83-596
- RoHS Compliant Directive 2011/65/EU
- GR-409

*Sequential meter markings available upon request

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 µm 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 2011/65/EU

Note:
- Armored cable without an outer jacket available upon request (-IL)
- *Sequential meter markings available upon request

Typical Cross-Sections

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 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:
- 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**
  - Installation: 20 X OD
  - In-Service: 10 X OD
- **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 2011/65/EU

## Note:
- Armored cable without an outer jacket available upon request (-IL)
- *Sequential meter markings available upon request

### Typical Cross-Sections

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<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
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XX Denotes glass type.
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

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.
Ribbon Distribution Plenum Cable
Type OFNP, CSA FT6

Product Construction:
Fiber:
- 4–12 fibers
- Inked fiber with acrylate coating
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:
- Compatible with MPO/MTP connectors
- Lightweight, flexible design simplifies installation
Performance:
- Temperature:
  Storage -40˚C (-40˚F) to +70˚C (+158˚F)
  Installation 0˚C (+32˚F) to +50˚C (+122˚F)
  In-Service -20˚C (-4˚F) to +70˚C (+158˚F)
- Minimum Bend Radius:
  20 X OD—Installation
  10 X OD—In-Service
Applications:
- ETL listed type OFNP for installation in ducts, plenum 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
- GR-409
- RoHS Compliant Directive 2011/65/EU
*Sequential meter markings available upon request

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

Typical Cross-Section

Ordering Part Number Example

BE0121RNP
50 µm multimode, 12 fibers, tight buffer distribution ribbon plenum cable.
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
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/lassed 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 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 OFN/LS

**Product Construction:**

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

**Central Strength Member:**
- Epoxy/glass rod

**Overall Strength Member:**
- Aramid fiber yarn

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

**Features:**
- Dry Water Block cable core for ease of handling
- Loose tube gel-filled for maximum fiber protection
- LSZH jacket for fire protection

**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
- Maximum Crush Resistance: 150 lbs/in (263 N/cm)
- Maximum Vertical Rise—1,640 ft (500 m)

**Applications:**
- Interbuilding and intrabuilding voice or data communication backbones
- Installed in ducts, underground conduits or aerial/lashed
- ETL Listed Type OFN/LS for installation in cable trays and general horizontal applications when installed in accordance with NEC article 770.154 and 770.179

**Compliances:**
- ETL Listed Type OFN/LS
- ICEA S-104-696
- RoHS Compliant Directive 2011/65/EU
- *Sequential meter markings available upon request

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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**

AQ0244M1Z

Singlemode, 24 fibers, loose tube SJ LSZH
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
### 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:**
  - Installation: 20 X OD
  - In-Service: 10 X OD
- **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 under ground 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 2011/65/EU

*Sequential meter markings available upon request

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**Typical Cross-Sections**

ANR ≤ 24 Fiber

- Flame-Retardant Jacket
- Strength Member
- 900 µm Tight Buffer Fiber
- Filler

A1R ≥ 18 Fiber

- Flame-Retardant Overall Strength Member
- 900 µm Tight Buffer Fiber
- Sub-Unit
- Central Strength Member

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.
Indoor/Outdoor Cables

Fiber Optic

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/EIA 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 2011/65/EU
*Sequential meter markings available upon request

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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.

General Cable
RoHS Compliant Directive 2011/65/EU
TIA 568 C.3
UL Intertek
ETL
ICEA S-104-696
GR-409
TIA 568 C.3
NextGen BRAN
BRAN
Fiber Optic Indoor/Outdoor Cables

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-swellable aramid fiber yarn

Inner Jacket:
• Flame-retardant compound

Armor:
• Interlock aluminum

Outer Jacket:
• UV-resistant black jacket
• Flame-retardant compound
• Sequential footage markings* (optional)

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:
  - Installation: 20 X OD
  - In-Service: 10 X OD
• 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 2011/65/EU

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

*Sequential meter markings available upon request

Typical Cross-Sections

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-swellable 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 2011/65/EU

Note:
- Armored cable without an outer jacket available upon request (-IL)
- Sequential meter markings available upon request

Typical Cross-Sections

![Typical Cross-Sections](image)

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<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NO. OF SUB-UNITS</th>
<th>NOMINAL CABLE DIAMETER</th>
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<th>MAXIMUM TENSILE LOAD</th>
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XX denotes glass type.
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.

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:
• 2–144 fibers
• Dry loose tube with super-absorbent polymer
• Color-coding per TIA/EIA 598 B

Central Strength Member:
• Epoxy/glass rod

Overall Strength Member:
• Aramid fiber yarn

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

Options:
• Interlock steel or aluminum (-ILR or -ILRA)
• Dry Water Block cable core for ease of handling (gel tubes)

Features:
• Dry loose tube for ease of termination
• Riser rated for indoor applications

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)
• Maximum Vertical Rise—1,640 ft (500 m)

Applications:
• Interbuilding and intrabuilding voice or data communication backbones
• Installed in ducts, underground conduits or aerial/lashed
• 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
• ICEA S-104-696
• RoHS Compliant Directive 2011/65/EU

*Sequential meter markings available upon request

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
AQ0124M1M-DT
Singlemode, 12 fibers, loose tube riser
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.

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XX denotes glass type.
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.
Loose Tube Single Jacket Plenum Cable
Type OFNP, CSA FT6

Product Construction:

**Fiber:**
- 2–144 fibers
- Dry loose tube with super-absorbent polymer
- Color-coding per TIA/EIA 598 B

**Central Strength Member:**
- Epoxy/glass rod

**Overall Strength Member:**
- Aramid fiber yarn

**Jacket:**
- Sequential footage markings*

**Options:**
- Interlock steel or aluminum (-ILP or -ILPA)
- Dry Water Block cable core for ease of handling (gel tubes)

**Features:**
- Loose tube plenum design provides maximum cable route flexibility
- Dry loose tube for ease of termination
- Excellent chemical-resistant cable for harsh industrial environments

**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:**
- Interbuilding and intrabuilding voice or data communication backbones
- Install in ducts, underground conduits or aerial/lashed
- ETL Listed Type OFNP for installation in plenum airways and horizontal applications when installed in accordance with NEC article 770.154 and 770.179

**Compliances:**
- ETL Listed Type OFNP
- CSA FT6
- ICEA S-104-696
- RoHS Compliant Directive 2011/65/EU

*Sequential meter markings available upon request

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</table>

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-Section**

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

**Ordering Part Number Example**

AQ0124M1D-DT

Singlemode, 12 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

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.

Index

<table>
<thead>
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<th>Product Description</th>
<th>Page</th>
</tr>
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<tbody>
<tr>
<td>Tight Buffer 3.0 mm Simplex/Duplex Riser and Plenum Cable</td>
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<td>Tight Buffer 1.6 mm Simplex/Duplex Riser Cable</td>
<td>41</td>
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</table>
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 2011/65/EU

Typical Cross-Section

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NO. OF SUB-UNITS</th>
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<td>XX0011SNR3.0</td>
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<tr>
<td>Plenum</td>
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<td></td>
<td>0.114 x 0.247</td>
<td>2.9 x 6.0</td>
<td>12.1</td>
</tr>
</tbody>
</table>

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

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.

General Cable
RoHS Compliant Directive 2011/65/EU
TIA 568 C.3
Intertek
ETL
NextGen® Brand
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 2011/65/EU
*Sequential meter markings available upon request

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.
Blolite® Blown Fiber Technology—Revolutionizing Fiber Networks

Blown Fiber Technology
Blolite® Blown Fiber technology provides unparalleled flexibility in network design—anticipating and facilitating future changes as the network evolves. The Blolite® System delivers the ultimate fiber solution for backbone and Fiber-To-The-X (FTTX) applications. The best long-term choice for your business, our Blown Fiber technology will continue to provide significant and measurable time, cost and service benefits to the network throughout its life cycle.

How Does It Work?
Small, flexible, empty Microduct tubes are initially installed, and compressed air is then used to blow the optical fiber through the Microducts. As a result of our material and design technology, our blown fiber system offers the opportunity to install fiber through difficult runs and further distances where installation of traditional optical fiber would be challenging and expensive. This enhanced feature sets our system apart from others available in today’s market. Microduct eliminates potential damage to fibers during installation since empty Microducts are installed initially, and fiber is blown in later.

Because the Blolite® System is based upon simultaneously blowing individual fibers into each Microduct, 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. If necessary, routes can even be reconfigured on the fly during the installation process.
“Pay as you grow” Deferred Investment
Future-proof your network by installing only the fiber you need today, reserving Microduct capacity for tomorrow’s requirements. Design tactically to meet present needs, but build strategically for the long term. Pay as you grow.

Extraordinary Design Flexibility
The Blolite Blown Fiber System can adapt to any network architecture or topology changes over the life of your network. Quickly and economically add new destinations, relocate routes, change fiber types and counts, reconfigure LANs and add new services and technologies, as required. New sections of Microduct can be spliced to existing Microduct with a simple push-fit connector.

Adaptable to Any Environment
Our Blolite technology is compatible with any network topology and nearly every local area network installation environment. Moves, Adds and Changes (MACs) can be accomplished with minimal workplace disruption as your network evolves and changes.

Installation Ease
Microduct tubing and simple push-fit connectors make building a network infrastructure simple. Blolite eliminates potential damage from pulling and overstressing fiber optic cables, as well as resulting costs, delays or latent failures. Point-to-point links, easily achieved with Blolite for situations in which conventional fiber optic cable would require splices, mean lower attenuation, higher performance and increased system integrity.

Capability for Quick Recovery
Disaster recovery from physical damage to the cabling infrastructure with the Blolite System means days versus weeks, resulting in minimal downtime and labor costs. Only the damaged section of Microduct is removed and replaced, then within minutes, new optical fiber is blown in, then terminated. Much faster and a far less costly disaster recovery is one of the many obvious benefits of the Blolite Blown Fiber System.

Improved Reliability
Because Microduct is installed empty, there is no risk of fiber damage during installation. Optical fibers are blown into place, rather than pulled, with zero tensile stress on the fiber during the installation process. Because point-to-point links are easily accommodated, fiber splice points can be eliminated, lowering attenuation and increasing system performance and integrity.

Installation Cost Savings
Only two people are needed to blow in the optical fiber. Fiber terminations are typically quicker than with conventional cable, since no time needs to be devoted to cable preparation. Additionally, termination and testing is simplified with no dark fiber to contend with.

Blolite® Blown Fiber Maximum Blowing Distance Capability

<table>
<thead>
<tr>
<th>AIR VOLUME</th>
<th>100 LPM (3.5 CFM)</th>
<th>150 LPM (5.3 CFM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO. OF FIBERS</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>DUCT SIZE</td>
<td>5 mm</td>
<td>5 mm</td>
</tr>
<tr>
<td>Semi-Tortuous</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Non-Tortuous</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>DUCT SIZE</td>
<td>8 mm</td>
<td>8 mm</td>
</tr>
<tr>
<td>Semi-Tortuous</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Non-Tortuous</td>
<td>1000</td>
<td>750</td>
</tr>
</tbody>
</table>

Note: The maximum distances stated above must not be exceeded.

DEFINITIONS
SEMI-TORTUOUS: Up to 50 90° bends of the minimum bend radius for the specified diameter tube cable over the maximum installation distance in the table.
NON-TORTUOUS: Up to 20 90° bends of the minimum bend radius for the specified diameter tube cable over the maximum installation distance in the table.
AIR SOURCE REQUIREMENTS: General Cable recommends the use of an air source capable of producing a constant pressure of 15 BarG (217 PSI) with a minimum flow capacity of 150 LPM (5.3 CFM) to achieve the maximum distances detailed in the performance table at left.
The Biolite® Blown Fiber System offers the highest quality of optical fiber from Corning® in standard types of multimode 62.5/125 micron, 50/125 (1 Gb/s) or 50/125 (10 Gb/s), and singlemode 9/125, all with a special 485 micron blowable coating and available in 12 colors. The fibers are stripped and terminated with standard tools and compatible with standard fiber optic connectors.

### Blowable Fiber

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description: BL – 50 μm OM4</th>
<th>Catalog Number</th>
<th>Description: BE – 10 Gig – 50 μm OM3</th>
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<tbody>
<tr>
<td>708210</td>
<td>MULTIMODE 50/125 (10 Gb/s, 550 meters) BLUE</td>
<td>707610</td>
<td>MULTIMODE 50/125 (10 Gb/s, 300 meters) BLUE</td>
</tr>
<tr>
<td>708230</td>
<td>MULTIMODE 50/125 (10 Gb/s, 550 meters) ORANGE</td>
<td>707620</td>
<td>MULTIMODE 50/125 (10 Gb/s, 300 meters) ORANGE</td>
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<tr>
<td>708250</td>
<td>MULTIMODE 50/125 (10 Gb/s, 550 meters) GREEN</td>
<td>707630</td>
<td>MULTIMODE 50/125 (10 Gb/s, 300 meters) GREEN</td>
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<tr>
<td>708270</td>
<td>MULTIMODE 50/125 (10 Gb/s, 550 meters) BROWN</td>
<td>707640</td>
<td>MULTIMODE 50/125 (10 Gb/s, 300 meters) BROWN</td>
</tr>
<tr>
<td>708290</td>
<td>MULTIMODE 50/125 (10 Gb/s, 550 meters) SLATE</td>
<td>707650</td>
<td>MULTIMODE 50/125 (10 Gb/s, 300 meters) SLATE</td>
</tr>
<tr>
<td>708310</td>
<td>MULTIMODE 50/125 (10 Gb/s, 550 meters) YELLOW</td>
<td>707660</td>
<td>MULTIMODE 50/125 (10 Gb/s, 300 meters) YELLOW</td>
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<tr>
<td>708330</td>
<td>MULTIMODE 50/125 (10 Gb/s, 550 meters) RED</td>
<td>707670</td>
<td>MULTIMODE 50/125 (10 Gb/s, 300 meters) RED</td>
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<tr>
<td>708350</td>
<td>MULTIMODE 50/125 (10 Gb/s, 550 meters) VIOLET</td>
<td>707680</td>
<td>MULTIMODE 50/125 (10 Gb/s, 300 meters) VIOLET</td>
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<tr>
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<td>707690</td>
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<td>MULTIMODE 50/125 (10 Gb/s, 550 meters) ROSE</td>
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NextGen® Brand Blowable 6 Fiber Bundles

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<td>BE00064BOF-BUN</td>
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<td>BL00064BOF-BUN</td>
<td>OM4 50μm 6 Fiber Bundle</td>
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Blown Fiber Microduct
Microducts are empty plenum and non-plenum tubes that provide a pathway/conduit for blowing the fiber through the network. Up to 12 fibers or 3 bundles can be installed simultaneously into each Microduct using our installation technique.

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<tr>
<td>FC9700008</td>
<td>OC-5mm-OFNR</td>
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Blown Fiber Multiduct
Multiduct is a jacketed bundle of Microduct tubing available in 2-, 4-, 7- or 19-way configurations. Multiduct cable is offered in plenum and non-plenum for indoor and dry duct outdoor installations or in an armored direct buried configuration.

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<td>FC9700112</td>
<td>OC-19x8mm-DBS</td>
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Blown Fiber Connectors and Accessories

**Blolite® Blown Fiber Connectors and 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.

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>DESCRIPTION</th>
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<td>77-7224</td>
<td>STRAIGHT CONN 5MM</td>
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<tr>
<td>77-7225</td>
<td>STRAIGHT CONN 8MM</td>
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<tr>
<td>77-7259</td>
<td>BULKHEAD CONN 5MM</td>
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<tr>
<td>77-7227</td>
<td>8MM-&gt;5MM REDUCER</td>
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<td>TUBE CUTTER BLADES</td>
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<td>706810</td>
<td>4-FIBER SPLITTER KIT</td>
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<tr>
<td>707600</td>
<td>12-FIBER SPLITTER KIT</td>
</tr>
</tbody>
</table>

**Blolite® Blown Fiber Installation Equipment**
The Blolite® Blown Fiber installation equipment kit (rental only) consists of an Air Supply Conditioning Unit (ACU)—complete with filtration and air-drying units, and the Installation Module—a blowing head utilizing a mechanically driven system to feed the fibers into the Microduct. A lightweight Tripod is the third component used to support the Installation Module. The equipment operates on standard compressed air at safe, low pressures.

**NextGen® Brand Fiber Installation Equipment**
The NextGen® Brand fiber installation equipment is a revolutionary new unit capable of blowing both Blolite® Blown Fiber or NextGen Blowable Fiber Bundles. This unique piece of equipment gives the installer the ability to use the Blown Optical Fiber product best suited to the application: Blolite Blown Fiber for premise enterprise applications that contain many bends and turns, or NextGen Blowable Fiber Bundles for applications that contain longer, straighter paths. The convenience to use either Blown Optical Fiber technology with one machine allows the installer unparalleled flexibility.
Tactical Cable Fiber Specification and Combat Series

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

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>General Cable</th>
<th>Description</th>
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<tr>
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<td>AE</td>
<td>ITU-T G.652.D</td>
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<tr>
<td>500 μm Coated SM, QPL</td>
<td>AK</td>
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<tr>
<td>500 μm Coated, 62.5 MM</td>
<td>CE</td>
<td>1 Gb/s ≤ 300 m at 850 nm, OM1</td>
</tr>
<tr>
<td>500 μm Coated, 62.5 MM, QPL</td>
<td>CK</td>
<td>1 Gb/s ≤ 300 m at 850 nm, OM1</td>
</tr>
</tbody>
</table>

MULTIMODE FIBER SELECTION GUIDE

<table>
<thead>
<tr>
<th>Characteristics:</th>
<th>62.5/125 PRODUCT FAMILY</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Finished Cable Attenuation Coefficient</td>
<td>@850 nm</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>@1300 nm</td>
<td>1.0</td>
</tr>
<tr>
<td>Overfill Launch Bandwidth</td>
<td>@850 nm</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>@1300 nm</td>
<td>500</td>
</tr>
<tr>
<td>Laser Bandwidth</td>
<td>@850 nm</td>
<td>220</td>
</tr>
<tr>
<td>Gigabit Ethernet Link Length (1 Gbps)</td>
<td>1000 BASE-SX (850 nm)</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>1000 BASE-LX (1300 nm)</td>
<td>550</td>
</tr>
<tr>
<td>10 Gigabit Ethernet Link Length (10 Gbps)</td>
<td>10G BASE-SR (850 nm)</td>
<td>33</td>
</tr>
<tr>
<td>Coating</td>
<td>--</td>
<td>500</td>
</tr>
<tr>
<td>QPL</td>
<td>--</td>
<td>No</td>
</tr>
</tbody>
</table>

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 µm 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

Typical Cross-Section

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NO. OF SUB-UNITS</th>
<th>NOMINAL CABLE DIAMETER IN</th>
<th>NOMINAL CABLE DIAMETER mm</th>
<th>NOMINAL CABLE WEIGHT LBS/1000' kg/km</th>
<th>MAXIMUM TENSILE LOAD INSTALLATION LBS N</th>
<th>IN-SERVICE LBS N</th>
</tr>
</thead>
<tbody>
<tr>
<td>XX0021B3C</td>
<td>2</td>
<td>2</td>
<td>0.260</td>
<td>6.6</td>
<td>20</td>
<td>29</td>
<td>450</td>
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<tr>
<td>XX0041B3C</td>
<td>4</td>
<td>4</td>
<td>0.290</td>
<td>7.4</td>
<td>24</td>
<td>36</td>
<td>450</td>
</tr>
<tr>
<td>XX0061B3C</td>
<td>6</td>
<td>6</td>
<td>0.340</td>
<td>8.6</td>
<td>29</td>
<td>43</td>
<td>450</td>
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<tr>
<td>XX0081B3C</td>
<td>8</td>
<td>8</td>
<td>0.390</td>
<td>10.0</td>
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<td>54</td>
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<tr>
<td>XX0101B3C</td>
<td>10</td>
<td>10</td>
<td>0.450</td>
<td>11.4</td>
<td>46</td>
<td>68</td>
<td>900</td>
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<tr>
<td>XX0121B3C</td>
<td>12</td>
<td>12</td>
<td>0.480</td>
<td>12.2</td>
<td>52</td>
<td>78</td>
<td>1100</td>
</tr>
</tbody>
</table>

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

Ordering Part Number Example
AP0041B3C
Singlemode, 4 fibers, tactical breakout
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
NextGen® Brand’s Combat Series™ tactical fiber optic cables are designed, engineered and manufactured to specification for military applications.

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 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.
### 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

### 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.

### CATALOG NUMBER | FIBER COUNT | NOMINAL CABLE DIAMETER | NOMINAL CABLE WEIGHT | MAXIMUM TENSILE LOAD |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>XX0021GNC</td>
<td>2</td>
<td>0.228</td>
<td>5.8</td>
<td>20</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>1800</td>
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<td></td>
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<td></td>
<td>130</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td>578</td>
</tr>
<tr>
<td>XX0041GNC</td>
<td>4</td>
<td>0.228</td>
<td>5.8</td>
<td>20</td>
</tr>
<tr>
<td></td>
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<td>130</td>
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<td></td>
<td></td>
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<td></td>
<td>578</td>
</tr>
</tbody>
</table>

XX denotes glass type.
A complete listing of NextGen® Brand glass types is specified on page 3 of the Fiber Optics catalog.
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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<td>NEC and CSA Fire Resistance Levels</td>
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<td>Color Coding Charts</td>
<td>57</td>
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<td>Conversion Table and Reel Dimensions</td>
<td>58</td>
</tr>
<tr>
<td>Part Number Index</td>
<td>59-60</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispersion</td>
<td>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.</td>
</tr>
<tr>
<td>Duplex</td>
<td>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.</td>
</tr>
<tr>
<td>Electromagnetic Interference (EMI)</td>
<td>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.</td>
</tr>
<tr>
<td>End Finish</td>
<td>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.</td>
</tr>
<tr>
<td>ETL</td>
<td>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.</td>
</tr>
<tr>
<td>FDDI (Fiber Distributed Data Interface)</td>
<td>A standard for a 100 Mbs fiber optic area network.</td>
</tr>
<tr>
<td>Fiber</td>
<td>Any filament or fiber made of dielectric materials that guides light.</td>
</tr>
<tr>
<td>Fiber Channel</td>
<td>A high speed point-to-point, ANSI Optical Communications Standard that supports data transfer rates up to 1,062.5 Mbs (1 Gbps).</td>
</tr>
<tr>
<td>Fiber Cleaving</td>
<td>Controlled fracture of an optical fiber along a crystalline plane which results in a smooth surface.</td>
</tr>
<tr>
<td>Fiber Optics</td>
<td>Branch of optical technology dealing with the transmission of radiant power through fibers made of transparent materials such as glass, fused silica or plastic.</td>
</tr>
<tr>
<td>FOTP</td>
<td>Abbreviation for fiber optic test procedures, which are defined in TIA/EIA Publication Series 455.</td>
</tr>
<tr>
<td>Frequency</td>
<td>Number of cycles per unit of time, measured in Hertz (Hz).</td>
</tr>
<tr>
<td>Fusion Splice</td>
<td>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.</td>
</tr>
<tr>
<td>Gigabit</td>
<td>One billion bits of information.</td>
</tr>
<tr>
<td>Gigahertz (GHz)</td>
<td>One billion Hertz.</td>
</tr>
<tr>
<td>Graded-Index Fiber</td>
<td>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.</td>
</tr>
<tr>
<td>Hertz</td>
<td>Measurement unit of frequency.</td>
</tr>
<tr>
<td>Hybrid Cable</td>
<td>A fiber optic cable containing two or more different types of fiber (e.g., multimode and singlemode).</td>
</tr>
<tr>
<td>Index of Refraction</td>
<td>The ratio of light velocity in a vacuum to its velocity in a given transmission medium.</td>
</tr>
<tr>
<td>Infrared (IR)</td>
<td>The range of electromagnetic wavelengths between the visible part of the spectrum (750nm) and microwaves (30µm).</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>The attenuation caused by insertion of an optical component such as a connector, splice or coupler.</td>
</tr>
<tr>
<td>Intensity</td>
<td>Irradiance.</td>
</tr>
<tr>
<td>Interbuilding</td>
<td>Between buildings.</td>
</tr>
<tr>
<td>Intrabuilding</td>
<td>Within a building.</td>
</tr>
<tr>
<td>Jumper</td>
<td>Fiber optic cable that has connectors terminated on both ends.</td>
</tr>
<tr>
<td>KPSI</td>
<td>Abbreviation used to denote a measurement unit of thousands of pounds per square inch. Commonly used in the fiber proof test tensile strength measurement.</td>
</tr>
<tr>
<td>Kevar</td>
<td>DuPont trade name for aramid material (see Aramid Yarn).</td>
</tr>
<tr>
<td>Kilometer</td>
<td>Unit of measure for length equal to 1000 meters and about 3,281 feet.</td>
</tr>
<tr>
<td>Laser</td>
<td>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.</td>
</tr>
<tr>
<td>Launch Angle</td>
<td>Angle between the propagation direction of the incident light and the optical axis of an optical waveguide.</td>
</tr>
<tr>
<td>LED</td>
<td>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).</td>
</tr>
<tr>
<td>Light</td>
<td>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.</td>
</tr>
<tr>
<td>Light Diffusion</td>
<td>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.</td>
</tr>
<tr>
<td>Light Emitting Diode</td>
<td>See LED.</td>
</tr>
<tr>
<td>Lightwaves</td>
<td>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.</td>
</tr>
<tr>
<td>Loose Tube</td>
<td>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.</td>
</tr>
<tr>
<td>MDPE</td>
<td>Acronym for Medium Density Polyethylene. MDPE is a form of polyethylene commonly used as a jacketing material for outdoor fiber optic cables (see PE).</td>
</tr>
</tbody>
</table>
Macrobounding: Macrophscopic axial deviations of a fiber from a straight line.

MegaHertz: One million Hertz.

Microbounding: Curvatures of the fiber which involve axial displacements a few micrometers and spatial wavelengths of a few millimeters. Microbounds 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).


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 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.
**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.
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.

### NEC and CSA Fire Resistance Levels

<table>
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<th>TEST REQUIREMENT</th>
<th>NEC ARTICLE</th>
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<tr>
<td>(Highest) Plenum Cables</td>
<td>NFPA-262 (Steiner tunnel)</td>
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<td>CSA-FT6 (Steiner tunnel)</td>
<td>OFCP</td>
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<td>Riser Cables</td>
<td>UL-1666 (Vertical Shaft)</td>
<td>OFNR</td>
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<td>Multiple Floors</td>
<td>CSA-FT4 (Vertical Tray)</td>
<td>OFCR</td>
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<td>General Purpose Cables</td>
<td>UL-1581 (Vertical Tray)</td>
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<td>CSA-FT4 (Vertical Tray)</td>
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**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.

**CABLE MARKING**

<table>
<thead>
<tr>
<th>CABLE MARKING</th>
<th>TYPE</th>
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<tr>
<td>OFNP</td>
<td>Nonconductive optical fiber plenum cable</td>
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<tr>
<td>OFCP</td>
<td>Conductive optical fiber plenum cable</td>
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<tr>
<td>OFNR</td>
<td>Nonconductive optical fiber riser cable</td>
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<td>OFCR</td>
<td>Conductive optical fiber riser cable</td>
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<td>Nonconductive optical fiber general-purpose cable</td>
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Cable A may be used in place of cable B.
Fiber Optic Technical Information

**Color Coding Charts**

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

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<th>POSITION NUMBER</th>
<th>LOOSE TUBE BUFFER COLOR CODING</th>
<th>JACKET COLOR CODING</th>
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</table>

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

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

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## STANDARD WOODEN REEL DIMENSIONS

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<td>178 (81)</td>
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Please contact your General Cable representative if a certain reel size is required.

---

**Diagram:**

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

---
## Fiber Optic Catalog Number Index

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General Cable offers GenSPEED® Brand Premise, nextGEN® Brand Fiber Optic, CAROL® Brand Electronics and Portable Cord, and XHHW-2 products without halogens at a competitive price. Removing halogens results in truly “green” cables, which are less toxic and more environmentally friendly.

17 FREE
General Cable, a leading wire and cable innovator for over 170 years, serves customers through a network of 38 manufacturing facilities in our core markets and has worldwide sales representation and distribution. The Company is 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. 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 General Cable to better serve its customers as they expand into new geographic markets.