Fiber Optic Cable
FOR VOICE AND DATA TRANSMISSION
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.

Delivering Solutions THAT KEEP YOU CONNECTED

QUALITY

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What's New?

**GENLITE™ BLOWN OPTICAL FIBER SYSTEMS**

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

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

**FIBER RAPID FULFILLMENT PROGRAM**

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

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

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

**NEXTGEN® 17 FREE®**

General Cable offers halogen-free NextGen® Brand ETL-Listed Riser (CMR) cable. By removing halogens, the cable has reduced toxicity, resulting in a truly “green” cable that is less toxic and more environmentally friendly. Look for this product on page 23 in the catalog and visit us online at www.generalcable.com for a complete line of products to meet your green cabling needs.
General Cable has been a wire and cable innovator for over 170 years, always dedicated to connecting and powering people’s lives. We are one of the largest wire and cable manufacturers in the world.

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

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

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

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.

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

**Standard Warranty**

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

**Standard Warranty Term and Conditions**

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

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

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

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

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

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

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

Extended Warranty

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

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

Datacom System Warranties

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

• Panduit - Premier Connectivity Partner

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

Additional connectivity partners include:

• Allen-Tel
• Hubbell
• Leviton
• Siemon
Introducing our new

Fiber Rapid Fulfillment Program!

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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-CAAB
- Telecordia GR-20-CORE

**Long-Haul**

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

**ClearCurve® ZBL**

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

**Multimode**

**ClearCurve® Multimode Fiber**

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

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

**50 micron**

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

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

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

**62.5 micron**

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

- ISO/IEC 11801, type OM1 fiber
- IEC 60793-2-10, type A1b fiber
- TIA/EIA, 492AAAA-A
### Optical Fiber Code Cross-Reference

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>General Cable</th>
<th>Corning® Optical Fiber</th>
<th>Description</th>
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<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, 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*&lt;br&gt;1 Gb/s ≤ 550 m at 1300 nm</td>
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<tr>
<td>62.5 µm MM</td>
<td>CL</td>
<td>InfiniCor® CL™1000 Fiber</td>
<td>10 Gb/s ≤ 500 m at 850 nm, OM1*&lt;br&gt;1 Gb/s ≤ 1000 m at 1300 nm</td>
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<tr>
<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*&lt;br&gt;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*&lt;br&gt;1 Gb/s ≤ 1000 m at 850 nm</td>
</tr>
<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*&lt;br&gt;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*&lt;br&gt;1 Gb/s ≤ 1100 m at 850 nm</td>
</tr>
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* Designation per ISO 11801 Fiber Standards

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

### Multimode Fiber Selection Guide

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<td>OM3 Type-BE</td>
<td>OM4 Type-BL</td>
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<td>Maximum Finished Cable</td>
<td>@850 nm</td>
<td>@850 nm</td>
<td>@1300 nm</td>
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<tr>
<td>Attenuation Coefficient</td>
<td>3.0</td>
<td>1.0</td>
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<tr>
<td>Overfill Launch Bandwidth</td>
<td>@850 nm</td>
<td>1700</td>
<td>1500</td>
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<td></td>
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<td>2000</td>
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<td>1000 BASE-LX (1300 nm)</td>
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* * Using 3.0 dB cable attenuation and 0.7 dB connector allocation

### Singlemode Fiber Selection Guide

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<td>Premium</td>
<td>AQ</td>
<td>0.40</td>
<td>10,000</td>
<td>5,000</td>
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<tr>
<td>High Performance</td>
<td>AT</td>
<td>0.35</td>
<td>10,000</td>
<td>5,000</td>
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<td>OS2 Singlemode - Tight Buffer</td>
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<td>Distribution</td>
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<td>Large Effective Area</td>
<td>AL</td>
<td>–</td>
<td>DWDM</td>
</tr>
<tr>
<td>Bend-Insensitive</td>
<td>AZ</td>
<td>0.40</td>
<td>SMALL BEND RADIUS</td>
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</table>

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

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

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

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

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

2) **How many fibers are required?**
   The system designer will also have identified the number of fibers that will be in each cable. Fibers are usually cabled in groups of 6 or 12.

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

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

Example: AP0121PNU-ILPA
Singlemode, 12 Fibers, Tight Buffer Distribution Plenum, Interlock Armor Plenum Aluminum

A P 0 1 2 1 P N U [SUFFIX] ILPA

Fiber Grade
Position 1, 2
In position 1
A: Singlemode [sm]
B: 50 MM Multimode (mm)
C: 62.5 MM Multimode (mm)
For position 2, reference pages 2 and 3 for fiber specifications and grades.

Requested Fiber Count
Position 3, 4, 5
Standard Offerings:
6 12 24 36 48 72

Buffer Construction
Position 6
1) Tight Buffer; 3) Single Fiber Loose Tube
4) Multi-Fiber Loose Tube 6) Bare/Ribbon
Note: 2) Quick Strip and 5) Loose Buffer no longer available

Series Type
Position 7, 8, 9
Outdoor:
E1S: Loose Tube TJ Dual Armor
H1A: Loose Tube DJ
H1F: Loose Tube DJ Armored
H1S: Loose Tube DJ Dual Armor
M1A: Loose Tube SJ
M1F: Loose Tube SJ Armored
M1N: Loose Tube SJ Armored Self-Supporting
M1Y: Loose Tube SJ Self-Supporting
R1A: Loose Tube SJ Ribbon cable
U1A: All-Dielectric Flat Drop Cable
U1A.TF: Toneable Flat Drop Cable
U2A: Mini [Figure-8] Drop Cable
UNFC: Compact Central Loose Tube Drop Cable
UNFS: Central Tube SJ Armored

Indoor:
B3D: Tight Buffer Breakout Plenum
B3R: Tight Buffer Breakout Riser
PNR/P1R: Tight Buffer Distribution Riser
PNU/P1D: Tight Buffer Distribution Plenum
PNZ/P1Z: Tight Buffer Distribution LSZH

Indoor/Outdoor:
ANR/A1R: Tight Buffer Distribution Riser
ANU/A1D: Tight Buffer Distribution Plenum
M1D: Loose Tube SJ Plenum
M1M: Loose Tube SJ Riser
M1Z: Loose Tube SJ LSZH

Specialty:
GNC: Military Tactical Distribution Cable

Note: DJ = Dual Jacket
SJ = Single Jacket
TJ = Triple Jacket

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
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>Mini (Figure-8) Drop Cable</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 2002/95/EC

*Sequential meter markings available upon request

### Typical Cross-Section
- Ripcord
- Outer Jacket
- Corrugated Steel Armor
- Overall Strength Members
- Gel-Filled Buffer Tube
- Water Blocking Tape
- Ripcord

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

### Ordering Part Number Example

**AQ0064UNFS**

Singlemode, 6 fibers, central tube SJ armored

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
Loose Tube Single Jacket Cable

Product Construction:
- **Fiber:**
  - 2–312 fibers
  - Loose tube gel-filled
  - Color-coding per TIA/EIA 598 B
- **Central Strength Member:**
  - Epoxy/glass rod
- **Jacket:**
  - Black UV- and moisture-resistant polyethylene (PE)
  - Sequential footage markings*

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

Performance:
- **Temperature:**
  - Storage -40˚C (-40˚F) to +75˚C (+167˚F)
  - Installation -30˚C (-22˚F) to +60˚C (+140˚F)
  - Operating -40˚C (-40˚F) to +70˚C (+158˚F)
- **Minimum Bend Radius:**
  - 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 2002/95/EC

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

*Sequential meter markings available upon request

---

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

**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.

---

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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.
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)
- Color-coding per TIA/EIA 598 B

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

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

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

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

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

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

Typical Cross-Section

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<tr>
<th>CATALOG NUMBER</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
AO0124H1A-DWB
Singlemode, 12 fibers, loose tube DJ
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
Outside Plant Cables

Loose Tube Single Jacket Armored Cable

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

Central Strength Member:
- Epoxy/glass rod

Armor:
- Corrugated coated steel tape

Outer Jacket:
- Black UV- and moisture-resistant polyethylene [PE]
- Sequential footage markings*

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

Performance:
- Temperature:
  - Storage -40˚C (-40˚F) to +75˚C (+167˚F)
  - Installation -30˚C (-22˚F) to +60˚C (+140˚F)
  - Operating -40˚C (-40˚F) to +70˚C (+158˚F)
- Minimum Bend Radius:
  - 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

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

Options:
- Gel-free tube versions also available, use “-DT” suffix [XX0124M1F-DT]**
- Alternate 6-fiber per tube available upon request

*Sequential meter markings available upon request

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

Typical Cross-Section

48 Fiber

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

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

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

Ordering Part Number Example

A00124M1F-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

**Compliances:**

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

**Options:**

- Gel-free tube versions also available, use “-DT” suffix (XX0024M1F-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 (XX0024M1F-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**

**AQ0124H1F-DWB**

Singlemode, 12 fibers, loose tube DJ armored

Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
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:
  - 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 2002/95/EC

Options:
- Alternate 6-fiber per tube available upon request
- *Sequential meter markings available upon request
- **Installation load should be lower than maximum rated cable load to allow for wind and ice loading in accordance with NESC guidelines.

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.

Ordering Part Number Example

AA00244M1Y-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.

General Cable
12
Loose Tube Single Jacket Armored 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
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:
  20 X OD—Installation
  10 X OD—In-Service
• Maximum Crush Resistance:
  Short - 125 lbs/in (220 N/cm)
  Long - 63 lbs/in (110 N/cm)
Applications:
• Interbuilding voice or data communication backbones
• Installed aerially

Compliances:
• Tested in accordance with EIA/TIA-455 FOTPs
• ICEA S-87-640
• GR-20
• RoHS Compliant Directive 2002/95/EC
Options:
• Alternate 6-fiber per tube available upon request
• Sequential meter markings available upon request
**Installation load should be lower than maximum rated cable load to allow for wind and ice loading in accordance with NESC guidelines.

Typical Cross-Section:

<table>
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<tr>
<th>CATALOG NUMBER</th>
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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.

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.

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.
Loose Tube Dual Jacket Dual Armored Cable

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

Central Strength Member:
- Epoxy/glass rod

1st Armor:
- Corrugated coated steel tape

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

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

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

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

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

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

*Sequential meter markings available upon request

Typical Cross-Section

<table>
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<tr>
<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.

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

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

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

*Sequential meter markings available upon request

Typical Cross-Section

48 Fiber

Ripcord
Outer Jacket
Corrugated Steel Armor
Inner Jacket
Corrugated Steel Armor
Overall Strength Members
Water Blocking Tape
Gel-Filled Buffer Tube
Filler
Central Strength Member
Ripcord

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
A00124H1S-DWB
Singlemode, 12 fibers, DJ dual armored
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
Loose Tube Triple Jacket Dual Armored Cable

Product Construction:

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

Central Strength Member:
- Epoxy/glass rod

Inner Jacket:
- Black UV- and moisture-resistant polyethylene (PE)

1st Armor:
- Corrugated coated steel tape

Middle Jacket:
- Black UV- and moisture-resistant polyethylene (PE)

2nd Armor:
- Corrugated coated steel tape

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

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

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

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

Compliances:
- Tested in accordance with EIA/TIA-455 FOTPs
- ICEA 5-87-640
- GR-20
- RoHS Compliant Directive 2002/95/EC

Options:
- Gel-free tube versions also available, use “-DT suffix” (XX0024E1S-DT)
- Alternate 6-fiber per tube available upon request

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/flushed or direct buried

Compliances:
- Tested in accordance with EIA/TIA-455 FOTPs
- ICEA 5-87-640
- GR-20
- RoHS Compliant Directive 2002/95/EC

Options:
- Gel-free tube versions also available, use “-DT suffix” (XX0024E1S-DT)
- Alternate 6-fiber per tube available upon request

*Sequential meter markings available upon request

Typical Cross-Section

- 48 Fiber
- Ripcord
- Outer Jacket
- Corrugated Steel Armor
- Middle Jacket
- Corrugated Steel Armor
- Overall Strength Members
- Inner Jacket
- Water Blocking Tape
- Gel-Filled Buffer Tube
- Central Strength Member
- Filler
- Ripcord

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

Singlemode, 12 fibers, TJ dual armored
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.
Loose Tube Single Jacket Ribbon Cable

Product Construction:
Fiber:
• 288–864 fibers
• Loose tube gel-filled
• Color-coding per TIA/EIA 598 B

Central Strength Member:
• Epoxy/glass rod

Overall Strength Member:
• Fiberglass yarns
• Aramid yarn overall strength member available upon request

Outer Jacket:
• Black UV- and moisture-resistant polyethylene (PE)
• Sequential footage markings*

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

Performance:
• Temperature:
  Storage -40˚C (-40˚F) to +75˚C (+167˚F)
  Installation -30˚C (-22˚F) to +60˚C (+140˚F)
  Operating -40˚C (-40˚F) to +70˚C (+158˚F)

• Minimum Bend Radius:
  20 X OD—Installation
  10 X OD—In-Service

• Maximum Crush Resistance:
  Short - 125 lbs/in (220 N/cm)
  Long - 63 lbs/in (110 N/cm)

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

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

Options:
• Copper trace wire (unarmored design)
• Armor — corrugated steel tape

*Sequential meter markings available upon request
**Rodent resistance and direct-buried applies to armored design only

Typical Cross-Section

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 2002/95/EC

*Sequential meter markings available upon request

Typical Cross-Section

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

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

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

AQ0064U1A.TF

Singlemode, 6 fibers, toneable flat drop cable
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
All-Dielectric Flat Drop Cable

Product Construction:
Fiber:
• 2–12 fibers
• Central tube gel-filled
• Color-coding per TIA/EIA 598 B
Outer Jacket:
• Black UV- and moisture-resistant polyethylene (PE)
• Sequential footage markings*

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

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

Applications:
• Broadband network
• Installed in ducts or aerial/lashed
• FTTX

Compliances:
• Rural Utilities Service (RUS)
  7 CFR 1755.900 [REA PE-90]

*Sequential meter markings available upon request

Typical Cross-Section

Ordering Part Number Example
AQ0064U1A

Singlemode, 6 fibers, all-dielectric flat drop cable
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
**Mini (Figure-8) Drop Cable**

**Product Construction:**

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

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

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

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

**Applications:**
- Broadband network
- Installed in ducts or aerial/lashed
- FTTX

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

*Sequential meter markings available upon request

**Typical Cross-Section**

Hybrid designs [containing singlemode and multimode fiber] and composite designs [containing copper conductors] are also available.

**Ordering Part Number Example**

**AQ0064U2A**

Singlemode, 6 fibers, aerial and duct drop cable

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

<table>
<thead>
<tr>
<th>Index</th>
<th>Page</th>
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<tbody>
<tr>
<td>Tight Buffer Distribution</td>
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<td>Low-Smoke, Zero-Halogen (LSZH) Cable</td>
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<td>Interlock Armored Plenum Cable</td>
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</table>
Fiber Optic Indoor Cables

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

Product Construction:

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

Central Strength Member:
- Epoxy/glass rod (above 12 fibers)

Overall Strength Member:
- Aramid fiber yarn

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

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

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

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

Compliances:
- ETL Listed Type OFNR
- CSA FT4
- TIA 568 C.3
- ICEA S-83-596
- RoHS Compliant Directive 2002/95/EC
- GR-409
*Sequential meter markings available upon request

Typical Cross-Sections

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<th>CATALOG NUMBER</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

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:
  - 20 X OD—Installation
  - 10 X OD—In-Service
- Maximum Crush Resistance:
  - 850 lbs/in (1485 N/cm)
- Maximum Vertical Rise—1,640 ft (500 m)

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

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

Option:
- Ripcord available on PNRs, comes as standard on P1Rs
- Sequential meter markings available upon request

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

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

Option:
- Ripcord available on PNUs, comes as standard on P1Ds
- *Sequential meter markings available upon request

Typical Cross-Sections

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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-Sections

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<th>P1D ≥ 36 Fiber</th>
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<td>Flame-Retardant Jacket</td>
<td>Overall Strength Member</td>
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<td>Sub-Unit</td>
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<tr>
<td>Central Strength Member</td>
<td>Ripcord</td>
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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.
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:
  - 20 X OD—Installation
  - 10 X OD—In-Service
- Maximum Crush Resistance: 1000 lbs/in (1750 N/cm)
- Maximum Vertical Rise—1,640 ft (500 m)

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

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

*Sequential meter markings available upon request

CATALOG NUMBER | FIBER COUNT | NO. OF SUB-UNITS | NOMINAL CABLE DIAMETER | NOMINAL CABLE WEIGHT | MAXIMUM TENSILE LOAD
<table>
<thead>
<tr>
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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
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.
Tight Buffer Breakout Plenum Cable
Type OFNP, CSA FT6

Product Construction:

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

Central Strength Member:
- Aramid fiber yarn
- Optional epoxy glass rod (B1D)

Overall Strength Member:
- Aramid fiber yarn

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

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

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

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

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

*Sequential meter markings available upon request

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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

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.
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  
  - 20 X OD—Installation  
  - 10 X OD—In-Service

- Maximum Crush Resistance:  
  - 1,500 lbs/in (2,627 N/cm)

**Applications:**

- Harsh premises environments requiring heavy-duty protection

- ETL Type OFCP for installation in any premises location when installed in accordance with NEC article 770.154 and 770.179

**Compliances:**

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

**Note:**

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

*Sequential meter markings available upon request

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### Typical Cross-Sections

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<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NO. OF SUB-UNITS</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.

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

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

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

Features: These products reduce the system cost by eliminating splice points, simplifying cable handling and gaining flexibility with the choice of building entrances. All cables meet appropriate NEC requirements and are listed with ETL. Tight buffer designs allow direct termination of fibers with industry-standard connectors and techniques. Loose tube designs provide more fiber protection in harsh outdoor environments and are readily spliced to existing outside plant cables. Most indoor/outdoor fiber optic cables utilize Dry Water Block technology in the cable core to protect the fibers and provide fast, clean fiber preparation.
Loose Tube Single Jacket Low-Smoke, Zero-Halogen (LSZH) Cable Type OFNR-LS

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

Central Strength Member:
- Epoxy/glass rod in stranded designs

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

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

Performance:
- Temperature:
  Storage -40˚C (-40˚F) to +70˚C (+158˚F)
  Installation* -30˚C (-22˚F) to +50˚C (+122˚F)
  Operating -40˚C (-40˚F) to +70˚C (+158˚F)
- Minimum Bend Radius:
  20 X OD—Installation
  10 X OD—In-Service
- XX denotes glass type.
  A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog

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

Compliances:
- ETL Listed Type OFNR-LS
- OFNR for central tube
- ICEA S-104-696
- RoHS Compliant Directive 2002/95/EC
- *Sequential meter markings available upon request

Typical Cross-Section
(M1Z-DT)

Central Loose Tube
(UNZ-DT)

Ordering Part Number Example
AQ0244M1Z-DT

Singlemode, 24 fibers, Loose tube LSZH
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
Tight Buffer Distribution Riser Cable
Type OFNR, CSA FT4

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

Central Strength Member:
- Epoxy/glass rod (A1R)

Overall Strength Member:
- Aramid fiber yarn

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

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

Performance:
- Temperature:
  - Storage: -40˚C (-40˚F) to +70˚C (+158˚F)
  - Installation: 0˚C (+32˚F) to +50˚C (+122˚F)
  - Operating: -20˚C (-4˚F) to +70˚C (+158˚F)
- Minimum Bend Radius:
  - 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 underground conduits
- ETL Listed Type OFNR for installation in vertical riser and general horizontal applications when installed in accordance with NEC article 770.154 and 770.179

Compliances:
- ETL Listed Type OFNR
- CSA FT4
- TIA 568 C.3
- ICEA S-104-696
- GR-409
- RoHS Compliant Directive 2002/95/EC
- Sequential meter markings available upon request

Typical Cross-Sections
ANR ≤ 24 Fiber
- Flame-Retardant Jacket
- Strength Member
- 900 µm Tight Buffer Fiber
- Filler

A1R ≥ 18 Fiber
- Flame-Retardant 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
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.

XX denotes glass type.
A complete listing of NextGen® Brand glass types is specified on page 3 of this catalog.
Tight Buffer Distribution Plenum Cable
Indoor/Outdoor Dry Water Block, Type OFNP, CSA FT6

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

Central Strength Member:
- Epoxy/glass rod (above 12 fibers)

Overall Strength Member:
- Aramid fiber yarn

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

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

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

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

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

Typical Cross-Sections

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<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NO. OF SUB-UNITS</th>
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<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.

Ordering Part Number Example
BE0241ANU.BK or BE0361A1D.BK

50 µm multimode, 24 or 36 fibers, tight buffer distribution plenum
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
Tight Buffer Distribution Interlock Armored Riser Cable
Type OFCR, CSA FT4

Product Construction:
Fiber:
• 2–144 fibers
• 900 µm tight buffer
• Color-coding per TIA/EIA 598 B
Overall Strength Member:
• Water-swellable aramid fiber yarn
Inner Jacket:
• Flame-retardant compound
Armor:
• Interlock aluminum
Outer Jacket:
• UV-resistant black jacket
• Flame-retardant compound
• Sequential footage markings*

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

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

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

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

Note:
Armored cable without an outer jacket available upon request [-IL]

*Sequential meter markings available upon request

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:
  Installation: 20 X OD
  In-Service: 10 X OD
- Maximum Crush Resistance: 1,500 lbs/in (12,627 N/cm)

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

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

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

*Sequential meter markings available upon request

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

Ordering Part Number Example
BE0241ANU-ILPA or BE0241A1D-ILPAS
50 µm multimode, 24 fibers, tight buffer distribution interlock armor plenum
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
Loose Tube Single Jacket Riser Cable
Type OFNR, CSA

Product Construction:
Fiber:
• Up to 288 fibers
• Dry loose tube
• Color-coding per TIA/EIA 598 B

Central Strength Member:
• Epoxy/glass rod in stranded designs

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

Options:
• Interlock aluminum
• Composite (multiple Fiber Types)

Features:
• Dry loose tube for ease of termination
• Riser rated for indoor applications
• Flexible Buffer tubes for routing

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

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

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

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

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
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Ordering Part Number Example
AQ0244M1M-DT
Singlemode, 24 fibers, loose tube riser
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
Loose Tube Single Jacket Plenum Cable
Type OFNP, CSA FT6

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

Central Strength Member:
- Epoxy/glass rod in stranded designs

Jacket:
- Sequential footage markings*

Options:
- Interlock aluminum
- Composite (multiple fiber types)

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

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

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

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

*Sequential meter markings available upon request

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

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<tr>
<th>CATALOG NUMBER</th>
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**Ordering Part Number Example**
AQ0244M1D-DT
Singlemode, 24 fibers, loose tube plenum
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
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.
Interconnect Cables

Tight Buffer 3.0 mm Simplex/Duplex Riser and Plenum Cable
Type OFNR, CSA FT4 and Type OFNP, CSA FT6

Product Construction:

Fiber:
• 1 or 2 fibers
• 900 µm tight buffer

Overall Strength Member:
• Aramid fiber yarn

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

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

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

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

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

*Sequential meter markings available upon request

CATALOG NUMBER | FIBER COUNT | NO. OF SUB-UNITS | NOMINAL CABLE DIAMETER | NOMINAL CABLE WEIGHT | MAXIMUM TENSILE LOAD [IN-SERVICE]
--- | --- | --- | --- | --- | ---
| | | | IN | mm | LBS/1000' | kg/km | LBS | N | LBS | N
Riser
XX0011SNR3.0 | 1 | — | 0.118 | 3.0 | 5.5 | 8.2 | 110 | 490 | 65 | 290
XX0021SNR3.0 | 2 | — | 0.114 x 0.247 | 2.9 x 6.0 | 10.5 | 15.6 | 220 | 980 | 160 | 580
Plenum
XX0011SNU3.0 | 1 | — | 0.118 | 3.0 | 6.5 | 9.7 | 110 | 490 | 65 | 290
XX0021SNU3.0 | 2 | — | 0.114 x 0.247 | 2.9 x 6.0 | 12.1 | 18.0 | 220 | 980 | 160 | 580

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

Typical Cross-Section

Simplex

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

Duplex

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

Zipcord

Hybrid designs [containing singlemode and multimode fiber] and composite designs [containing copper conductors] are also available.

Ordering Part Number Example
BE0011SNU3.0 or BE0021SNU3.0

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
UL
SEI
TIA
RoHS Compliant Directive 2002/95/EC

NEXTGEN BRAND

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Fiber Optic Interconnect Cables

Tight Buffer 1.6 mm Simplex/Duplex Riser Cable
Type OFNR, CSA FT4

Product Construction:
Fiber:
- 1 or 2 fibers
- 900 µm tight buffer

Overall Strength Member:
- Aramid fiber yarn

Jacket:
- 1.6 mm unit diameters
- Flame-retardant compound
- Sequential footage markings*
- Orange jacket—multimode fibers [except 10 Gbps]
- Aqua jacket—10 Gbps multimode fibers
- Yellow jacket—singlemode fibers

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

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

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

Compliances:
- ETL Listed Type OFNR
- CSA FT4
- RoHS Compliant Directive 2002/95/EC
*Sequential meter markings available upon request

Typical Cross-Section

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NO. OF SUB- UNITS</th>
<th>NOMINAL CABLE DIAMETER</th>
<th>NOMINAL CABLE WEIGHT</th>
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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.

Hybrid designs [containing singlemode and multimode fiber] and composite designs [containing copper conductors] are also available.

Ordering Part Number Example
BE0011SNR1.6 or BE0021ZNR1.6

50 µm multimode, one or two fibers
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
Blown Optical Fiber Systems

Blown Optical Fiber technology provides flexibility in network design, while anticipating and facilitating future changes as the network evolves. It delivers the best fiber solution for backbone, specialty, Fiber-To-The-Desk (FTTD) and Fiber-To-The-Home (FTTH) applications. NextGen® Brand’s GenLite™ Blown Optical Fiber (BOF) System from General Cable provides numerous advantages over conventional fiber optic systems, including increased flexibility for the designers of fiber optic networks as well as significant and measurable time, cost and service benefits to the network throughout its life cycle. Offered as 1-12 single fibers per microduct or as 1-3 bundles of 6 fibers per microduct, the GenLite BOF System accommodates Moves, Adds and Changes (MACs) easily and quickly with minimal disruption.

IDEAL APPLICATIONS

Industrial Complex
Education Establishments
Campuses
Healthcare Facilities
Government Buildings
Commercial and Military Shipboard
Stadiums and Sport Arenas
Military Structures
Telecommunications
Broadcasting
Transportation
Fiber-To-The-Home

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How Does the GenLite™ BOF System Work?

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

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

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

Advantages Over Other Blown Fiber Systems

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

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

Advantages Impacting First Installed Cost

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

Advantages Impacting Lifetime System Cost

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

Steps for GenLite™ BOF System Installation:

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

Installation Environments: Indoor and Outdoor

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

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

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

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

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

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

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

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

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

### Indoor Multiduct

<table>
<thead>
<tr>
<th>Configuration</th>
<th># of Microducts Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riser with 5 mm Microduct</td>
<td>2, 4 or 7</td>
</tr>
<tr>
<td>Riser with 8 mm Microduct</td>
<td>2, 4 or 7</td>
</tr>
<tr>
<td>Plenum with 5 mm Microduct</td>
<td>2, 4 or 7</td>
</tr>
<tr>
<td>Plenum with 8 mm Microduct</td>
<td>2, 4 or 7</td>
</tr>
<tr>
<td>Interlock Armored Riser with 5 mm Microduct</td>
<td>2, 4 or 7</td>
</tr>
<tr>
<td>Interlock Armored Riser with 8 mm Microduct</td>
<td>2, 4 or 7</td>
</tr>
<tr>
<td>Interlock Armored Plenum with 5 mm Microduct</td>
<td>2, 4 or 7</td>
</tr>
<tr>
<td>Interlock Armored Plenum with 8 mm Microduct</td>
<td>2, 4 or 7</td>
</tr>
</tbody>
</table>

### Outdoor Multiduct

<table>
<thead>
<tr>
<th>Configuration</th>
<th># of Microducts Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor with 5 mm Microducts</td>
<td>2, 4, 7, 19 or 24</td>
</tr>
<tr>
<td>Outdoor with 8.5 mm Microducts</td>
<td>2, 4, 7, 19 or 24</td>
</tr>
<tr>
<td>Armored Outdoor with 8.5 mm Microducts</td>
<td>4, 7 or 19</td>
</tr>
</tbody>
</table>

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

Blowing Installation Equipment

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

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

### Part Number Description

**BL – 50 μm – OM4**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>708210</td>
<td>Multimode 50/125 Blue</td>
</tr>
<tr>
<td>708230</td>
<td>Multimode 50/125 Orange</td>
</tr>
<tr>
<td>708250</td>
<td>Multimode 50/125 Green</td>
</tr>
<tr>
<td>708270</td>
<td>Multimode 50/125 Brown</td>
</tr>
<tr>
<td>708290</td>
<td>Multimode 50/125 Slate</td>
</tr>
<tr>
<td>708310</td>
<td>Multimode 50/125 Yellow</td>
</tr>
<tr>
<td>708330</td>
<td>Multimode 50/125 Red</td>
</tr>
<tr>
<td>708350</td>
<td>Multimode 50/125 Violet</td>
</tr>
<tr>
<td>708370</td>
<td>Multimode 50/125 White</td>
</tr>
<tr>
<td>708390</td>
<td>Multimode 50/125 Black</td>
</tr>
<tr>
<td>708410</td>
<td>Multimode 50/125 Pink</td>
</tr>
<tr>
<td>708430</td>
<td>Multimode 50/125 Aqua</td>
</tr>
</tbody>
</table>

**ATTENUATION**

| 850 nm | 3.0 dB/km Max. |
| 1300 nm| 1.0 dB/km Max. |

**LASER BANDWIDTH**

4700 MHz • km Min.

**MULTI.MODE 50/125 (10 Gb/s)**

### Part Number Description

**BE – 50 μm – OM3**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>707610</td>
<td>Multimode 50/125 Blue</td>
</tr>
<tr>
<td>707620</td>
<td>Multimode 50/125 Orange</td>
</tr>
<tr>
<td>707630</td>
<td>Multimode 50/125 Green</td>
</tr>
<tr>
<td>707640</td>
<td>Multimode 50/125 Brown</td>
</tr>
<tr>
<td>707650</td>
<td>Multimode 50/125 Slate</td>
</tr>
<tr>
<td>707660</td>
<td>Multimode 50/125 Yellow</td>
</tr>
<tr>
<td>707670</td>
<td>Multimode 50/125 Red</td>
</tr>
<tr>
<td>707680</td>
<td>Multimode 50/125 Violet</td>
</tr>
<tr>
<td>707690</td>
<td>Multimode 50/125 White</td>
</tr>
<tr>
<td>707700</td>
<td>Multimode 50/125 Black</td>
</tr>
<tr>
<td>707710</td>
<td>Multimode 50/125 Pink</td>
</tr>
<tr>
<td>707720</td>
<td>Multimode 50/125 Aqua</td>
</tr>
</tbody>
</table>

**ATTENUATION**

| 850 nm | 3.0 dB/km Max. |
| 1300 nm| 1.0 dB/km Max. |

**LASER BANDWIDTH**

2000 MHz • km Min.

### Part Number Description

**CG – 62.5 μm – OM1**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>705820</td>
<td>Multimode 62.5/125 Blue</td>
</tr>
<tr>
<td>705830</td>
<td>Multimode 62.5/125 Orange</td>
</tr>
<tr>
<td>705840</td>
<td>Multimode 62.5/125 Green</td>
</tr>
<tr>
<td>705850</td>
<td>Multimode 62.5/125 Brown</td>
</tr>
<tr>
<td>705860</td>
<td>Multimode 62.5/125 Slate</td>
</tr>
<tr>
<td>705870</td>
<td>Multimode 62.5/125 Yellow</td>
</tr>
<tr>
<td>705880</td>
<td>Multimode 62.5/125 Red</td>
</tr>
<tr>
<td>705890</td>
<td>Multimode 62.5/125 Violet</td>
</tr>
<tr>
<td>707400</td>
<td>Multimode 62.5/125 White</td>
</tr>
<tr>
<td>707410</td>
<td>Multimode 62.5/125 Black</td>
</tr>
<tr>
<td>707420</td>
<td>Multimode 62.5/125 Pink</td>
</tr>
<tr>
<td>707430</td>
<td>Multimode 62.5/125 Aqua</td>
</tr>
</tbody>
</table>

**ATTENUATION**

| 850 nm | 3.5 dB/km Max. |
| 1300 nm| 1.0 dB/km Max. |

**OFL BANDWIDTH**

200 MHz • km Min.

### Part Number Description

**AQ – SM OS2**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>705900</td>
<td>Singlemode 9/125 Blue</td>
</tr>
<tr>
<td>705910</td>
<td>Singlemode 9/125 Orange</td>
</tr>
<tr>
<td>705920</td>
<td>Singlemode 9/125 Green</td>
</tr>
<tr>
<td>705930</td>
<td>Singlemode 9/125 Brown</td>
</tr>
<tr>
<td>705940</td>
<td>Singlemode 9/125 Slate</td>
</tr>
<tr>
<td>705950</td>
<td>Singlemode 9/125 Yellow</td>
</tr>
<tr>
<td>705960</td>
<td>Singlemode 9/125 Red</td>
</tr>
<tr>
<td>705970</td>
<td>Singlemode 9/125 Violet</td>
</tr>
<tr>
<td>707440</td>
<td>Singlemode 9/125 White</td>
</tr>
<tr>
<td>707450</td>
<td>Singlemode 9/125 Black</td>
</tr>
<tr>
<td>707460</td>
<td>Singlemode 9/125 Pink</td>
</tr>
<tr>
<td>707470</td>
<td>Singlemode 9/125 Aqua</td>
</tr>
</tbody>
</table>

**ATTENUATION**

| 850 nm | 0.5 dB/km Max. |
| 1300 nm| 0.5 dB/km Max. |

### Notes:

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

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

<table>
<thead>
<tr>
<th>Part Number/Ordering Information</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL00064BOF-B1</td>
<td>OM4 50 μm 6-Fiber Bundle</td>
</tr>
<tr>
<td>BE00064BOF-B1</td>
<td>OM3 50 μm 6-Fiber Bundle</td>
</tr>
<tr>
<td>CG0006ABOF-B1</td>
<td>OM1 62.5 μm 6-Fiber Bundle</td>
</tr>
<tr>
<td>AP00064BOF-B1</td>
<td>SM 6-Fiber Bundle</td>
</tr>
</tbody>
</table>

Blowing Distances

Installation capability is a function of the following:
- Compressed air pressure and volume
- Size and length of microduct
- Number of fibers
- Number of bends in the duct route

<table>
<thead>
<tr>
<th>GenLite™ Individual Blown Optical Fiber System</th>
</tr>
</thead>
<tbody>
<tr>
<td>For tortuous routes of shorter distances that may contain tight bends and turns.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># of Individual Fibers</th>
<th>Distance for 5 mm Microduct</th>
<th>Distance for 8 mm Microduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>400 m</td>
<td>600 m</td>
</tr>
<tr>
<td>8</td>
<td>300 m</td>
<td>450 m</td>
</tr>
<tr>
<td>12</td>
<td>200 m</td>
<td>300 m</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GenLite™ Bundled Blown Optical Fiber System</th>
</tr>
</thead>
<tbody>
<tr>
<td>For routes that contain longer, straighter paths.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># of Bundles</th>
<th>Distance for 5 mm Microduct</th>
<th>Distance for 8 mm Microduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>750 m</td>
<td>1.5 km</td>
</tr>
<tr>
<td>2</td>
<td>500 m</td>
<td>1.3 km</td>
</tr>
<tr>
<td>3</td>
<td>NA</td>
<td>1.0 km</td>
</tr>
</tbody>
</table>

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

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

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

### Indoor Multiduct

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riser-Rated Duct</td>
<td></td>
</tr>
<tr>
<td>FC9700009</td>
<td>2-Way 5 mm OFNR</td>
</tr>
<tr>
<td>FC9700010</td>
<td>4-Way 5 mm OFNR</td>
</tr>
<tr>
<td>FC9700011</td>
<td>7-Way 5 mm OFNR</td>
</tr>
<tr>
<td>FC9700013</td>
<td>2-Way 8 mm OFNR</td>
</tr>
<tr>
<td>FC9700012</td>
<td>4-Way 8 mm OFNR</td>
</tr>
<tr>
<td>FC9700015</td>
<td>7-Way 8 mm OFNR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plenum-Rated Duct</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC9700005</td>
</tr>
<tr>
<td>FC9700003</td>
</tr>
<tr>
<td>FC9700004</td>
</tr>
<tr>
<td>FC9700080</td>
</tr>
<tr>
<td>FC9700075</td>
</tr>
<tr>
<td>FC9700076</td>
</tr>
</tbody>
</table>

See page 14 for indoor multiduct configurations and dimensions.

### Indoor Multiduct Specifications

<table>
<thead>
<tr>
<th>Indoor 2-Way</th>
<th>Indoor 4-Way</th>
<th>Indoor 7-Way</th>
</tr>
</thead>
</table>

### Materials

<table>
<thead>
<tr>
<th>Microduct</th>
<th>Jacket (Riser)</th>
<th>Jacket (Plenum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 mm Multiduct</td>
<td>White PVDF</td>
<td>Orange Flame-Retardant PVC</td>
</tr>
<tr>
<td>8 mm Multiduct</td>
<td>Orange Flame-Retardant PVDF</td>
<td>Orange Flame-Retardant PVDF</td>
</tr>
</tbody>
</table>

### Installation Tension

<table>
<thead>
<tr>
<th>2-way</th>
<th>4-way</th>
<th>7-way</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newtons</td>
<td>592</td>
<td>1499</td>
</tr>
<tr>
<td>lbs</td>
<td>133</td>
<td>337</td>
</tr>
</tbody>
</table>

### Temperature Range

<table>
<thead>
<tr>
<th>Storage</th>
<th>Installation</th>
<th>Operating</th>
</tr>
</thead>
<tbody>
<tr>
<td>-40°C to +90°C</td>
<td>0°C to +70°C</td>
<td>-20°C to +90°C</td>
</tr>
</tbody>
</table>

### Minimum Bend Radius

<table>
<thead>
<tr>
<th>2-way</th>
<th>4-way</th>
<th>7-way</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed</td>
<td>4&quot;</td>
<td>5&quot;</td>
</tr>
<tr>
<td>Installation</td>
<td>5&quot;</td>
<td>5&quot;</td>
</tr>
</tbody>
</table>

### Max. Internal Pressure

| Riser (UL) OFNR | 150 PSI |
| Plenum (UL) OFNP | 150 PSI |

### Compliance

<table>
<thead>
<tr>
<th>Riser</th>
<th>Plenum</th>
</tr>
</thead>
<tbody>
<tr>
<td>UL OFNR</td>
<td>UL OFNP</td>
</tr>
</tbody>
</table>

### Overall Diameter

<table>
<thead>
<tr>
<th>2-way [tolerance]</th>
<th>12.65 x 7.65 ±0.44</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-way [tolerance]</td>
<td>14.71 ±0.51</td>
</tr>
<tr>
<td>7-way [tolerance]</td>
<td>17.65 ±0.56</td>
</tr>
</tbody>
</table>

### Nominal Weight

<table>
<thead>
<tr>
<th>Riser (kg/km)</th>
<th>Plenum (lbs/1000')</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-way</td>
<td>49</td>
</tr>
<tr>
<td>4-way</td>
<td>79</td>
</tr>
<tr>
<td>7-way</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Riser (lbs/1000')</th>
<th>Plenum (kg/km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-way</td>
<td>33</td>
</tr>
<tr>
<td>4-way</td>
<td>53</td>
</tr>
<tr>
<td>7-way</td>
<td>67</td>
</tr>
</tbody>
</table>

### Nominal Weight

| 2-way | 54 | 82 |
| 4-way | 85 | 129 |
| 7-way | 107 | 162 |

### Notes:

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

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

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC9700445</td>
<td>2-Way 5 mm OFNR</td>
<td>FC9700437</td>
<td>2-Way 5 mm OFNP</td>
</tr>
<tr>
<td>FC9700446</td>
<td>4-Way 5 mm OFNR</td>
<td>FC9700438</td>
<td>4-Way 5 mm OFNP</td>
</tr>
<tr>
<td>FC9700447</td>
<td>7-Way 5 mm OFNR</td>
<td>FC9700439</td>
<td>7-Way 5 mm OFNP</td>
</tr>
<tr>
<td>FC9700449</td>
<td>2-Way 8 mm OFNR</td>
<td>FC9700441</td>
<td>2-Way 8 mm OFNP</td>
</tr>
<tr>
<td>FC9700450</td>
<td>4-Way 8 mm OFNR</td>
<td>FC9700442</td>
<td>4-Way 8 mm OFNP</td>
</tr>
<tr>
<td>FC9700451</td>
<td>7-Way 8 mm OFNR</td>
<td>FC9700443</td>
<td>7-Way 8 mm OFNP</td>
</tr>
</tbody>
</table>

See page 14 for indoor multiduct configurations and dimensions.

Interlock Armored, Indoor Multiduct

<table>
<thead>
<tr>
<th>5 mm Multiduct</th>
<th>8 mm Multiduct</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MATERIALS</strong></td>
<td></td>
</tr>
<tr>
<td>Microduct</td>
<td>White PVDF</td>
</tr>
<tr>
<td>Jackets (Riser)</td>
<td>Orange Flame-Retardant PVC</td>
</tr>
<tr>
<td>Jackets (Plenum)</td>
<td>Orange Flame-Retardant PVDF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INSTALLATION TENSION</th>
<th>2-way</th>
<th>4-way</th>
<th>7-way</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newtons</td>
<td>1005</td>
<td>2549</td>
<td>3932</td>
</tr>
<tr>
<td>lbs</td>
<td>226</td>
<td>573</td>
<td>884</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEMPERATURE RANGE</th>
<th>Storage</th>
<th>Installation</th>
<th>Operating</th>
<th>Storage</th>
<th>Installation</th>
<th>Operating</th>
</tr>
</thead>
<tbody>
<tr>
<td>°C</td>
<td>-40°C to +90°C</td>
<td>0°C to +90°C</td>
<td>-20°C to +90°C</td>
<td>-40°C to +90°C</td>
<td>0°C to +90°C</td>
<td>-20°C to +90°C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MINIMUM BEND RADIUS</th>
<th>2-way</th>
<th>4-way</th>
<th>7-way</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed</td>
<td>4”</td>
<td>5”</td>
<td>6”</td>
</tr>
<tr>
<td>Installation</td>
<td>5”</td>
<td>5”</td>
<td>7”</td>
</tr>
<tr>
<td>Installation</td>
<td>7”</td>
<td>8”</td>
<td>10”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MAX. INTERNAL PRESSURE</th>
<th>150 PSI</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>COMPLIANCE</th>
<th>Riser</th>
<th>Plenum</th>
</tr>
</thead>
<tbody>
<tr>
<td>(UL) OFNR-ILRA</td>
<td></td>
<td>(UL) OFNP-ILPA</td>
</tr>
<tr>
<td>(UL) OFNP-ILPA</td>
<td></td>
<td>(UL) OFNP-ILPA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OVERALL DIAMETER</th>
<th>2-way (tolerance)</th>
<th>4-way (tolerance)</th>
<th>7-way (tolerance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>18.64 (±0.97)</td>
<td>22.71 (±1.02)</td>
<td>25.76 (±1.07)</td>
</tr>
<tr>
<td>Inches</td>
<td>0.734 (±0.038)</td>
<td>0.894 (±0.040)</td>
<td>1.014 (±0.042)</td>
</tr>
<tr>
<td>mm</td>
<td>28.04 (±0.97)</td>
<td>30.84 (±1.02)</td>
<td>35.92 (±1.07)</td>
</tr>
<tr>
<td>Inches</td>
<td>1.104 (±0.038)</td>
<td>1.214 (±0.040)</td>
<td>1.414 (±0.042)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOMINAL WEIGHT (RISER)</th>
<th>2-way</th>
<th>4-way</th>
<th>7-way</th>
</tr>
</thead>
<tbody>
<tr>
<td>kg/km</td>
<td>216</td>
<td>262</td>
<td>340</td>
</tr>
<tr>
<td>lbs/1000’</td>
<td>145</td>
<td>176</td>
<td>242</td>
</tr>
<tr>
<td>kg/km</td>
<td>226</td>
<td>278</td>
<td>381</td>
</tr>
<tr>
<td>lbs/1000’</td>
<td>152</td>
<td>187</td>
<td>256</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOMINAL WEIGHT (PLENUM)</th>
<th>2-way</th>
<th>4-way</th>
<th>7-way</th>
</tr>
</thead>
<tbody>
<tr>
<td>kg/km</td>
<td>342</td>
<td>424</td>
<td>513</td>
</tr>
<tr>
<td>lbs/1000’</td>
<td>230</td>
<td>285</td>
<td>345</td>
</tr>
<tr>
<td>kg/km</td>
<td>359</td>
<td>448</td>
<td>543</td>
</tr>
<tr>
<td>lbs/1000’</td>
<td>241</td>
<td>301</td>
<td>365</td>
</tr>
</tbody>
</table>

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

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

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

See page 15 for indoor multiduct configurations and dimensions.

### Outdoor Multiduct

#### MATERIALS
- **Microduct**
  - White High-Density Polyethylene
- **Jacket**
  - Black High-Density Polyethylene

#### INSTALLATION TENSION

<table>
<thead>
<tr>
<th>Way</th>
<th>Installation Tension</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-way</td>
<td>638 Newtons / 143 lbs</td>
</tr>
<tr>
<td>4-way</td>
<td>1228 Newtons / 276 lbs</td>
</tr>
<tr>
<td>7-way</td>
<td>1819 Newtons / 409 lbs</td>
</tr>
<tr>
<td>19-way</td>
<td>4092 Newtons / 920 lbs</td>
</tr>
<tr>
<td>24-way</td>
<td>6982 Newtons / 1120 lbs</td>
</tr>
</tbody>
</table>

#### TEMPERATURE RANGE

<table>
<thead>
<tr>
<th>Way</th>
<th>Storage</th>
<th>Installation</th>
<th>Operating</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-way</td>
<td>-40˚C to +82˚C</td>
<td>-40˚C to +82˚C</td>
<td>-40˚C to +82˚C</td>
</tr>
<tr>
<td>4-way</td>
<td>-10˚C to +65˚C</td>
<td>-10˚C to +65˚C</td>
<td>-10˚C to +65˚C</td>
</tr>
<tr>
<td>7-way</td>
<td>-40˚C to +82˚C</td>
<td>-40˚C to +82˚C</td>
<td>-40˚C to +82˚C</td>
</tr>
</tbody>
</table>

#### MINIMUM BEND RADIUS

<table>
<thead>
<tr>
<th>Way</th>
<th>Installed</th>
<th>Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-way</td>
<td>3”</td>
<td>5”</td>
</tr>
<tr>
<td>4-way</td>
<td>5”</td>
<td>6”</td>
</tr>
<tr>
<td>7-way</td>
<td>6”</td>
<td>7”</td>
</tr>
<tr>
<td>19-way</td>
<td>10”</td>
<td>11”</td>
</tr>
<tr>
<td>24-way</td>
<td>10”</td>
<td>13”</td>
</tr>
</tbody>
</table>

#### MAX. INTERNAL PRESSURE

- 150 PSI

#### COMPLIANCE

- GR-3155-CORE

#### OVERALL DIAMETER

<table>
<thead>
<tr>
<th>Way</th>
<th>Tolerance</th>
<th>mm</th>
<th>Inches</th>
<th>kg/km</th>
<th>lbs/1000’</th>
<th>kg/km</th>
<th>lbs/1000’</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-way</td>
<td>11.53 x 6.53 (±0.71)</td>
<td>0.454 x 0.257 (±0.028)</td>
<td>0.079 x 0.395 (±0.028)</td>
<td>39</td>
<td>26</td>
<td>112</td>
<td>75</td>
</tr>
<tr>
<td>4-way</td>
<td>12.04 x 12.04 (±0.71)</td>
<td>0.474 x 0.474 (±0.028)</td>
<td>0.790 x 0.790 (±0.028)</td>
<td>74</td>
<td>50</td>
<td>202</td>
<td>136</td>
</tr>
<tr>
<td>7-way</td>
<td>17.04 x 17.04 (±0.81)</td>
<td>0.671 x 0.671 (±0.032)</td>
<td>1.125 x 1.125 (±0.032)</td>
<td>112</td>
<td>75</td>
<td>308</td>
<td>207</td>
</tr>
<tr>
<td>19-way</td>
<td>27.10 x 24.41 (±1.02)</td>
<td>1.067 x 0.961 (±0.040)</td>
<td>4.410 x 4.102 (±1.02)</td>
<td>250</td>
<td>168</td>
<td>702</td>
<td>472</td>
</tr>
<tr>
<td>24-way</td>
<td>32.08 x 24.41 (±1.12)</td>
<td>1.265 x 0.961 (±0.044)</td>
<td>5.300 x 4.102 (±1.12)</td>
<td>301</td>
<td>202</td>
<td>862</td>
<td>579</td>
</tr>
</tbody>
</table>

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

## 8.5 mm

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC9700463</td>
<td>4-Way 8.5 mm GR-3155-CORE</td>
</tr>
<tr>
<td>FC9700464</td>
<td>7-Way 8.5 mm GR-3155-CORE</td>
</tr>
<tr>
<td>FC9700112</td>
<td>19-Way 8.5 mm GR-3155-CORE</td>
</tr>
</tbody>
</table>

See page 15 for outdoor multiduct configurations and dimensions.

---

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armored, Outdoor-Rated Duct</td>
<td>8.5 mm Multiduct</td>
</tr>
</tbody>
</table>

### Materials

<table>
<thead>
<tr>
<th>Microduct Jackets</th>
<th>White High-Density Polyethylene</th>
<th>Black High-Density Polyethylene</th>
</tr>
</thead>
</table>

### Installation Tension

<table>
<thead>
<tr>
<th>4-way</th>
<th>7-way</th>
<th>19-way</th>
<th>Newtons</th>
<th>lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>5542</td>
<td>7669</td>
<td>15449</td>
<td>1246</td>
<td>3473</td>
</tr>
</tbody>
</table>

### Temperature Range

<table>
<thead>
<tr>
<th>Storage</th>
<th>-40°C to +82°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation</td>
<td>-10°C to +65°C</td>
</tr>
<tr>
<td>Operating</td>
<td>-40°C to +82°C</td>
</tr>
</tbody>
</table>

### Minimum Bend Radius

<table>
<thead>
<tr>
<th>4-way</th>
<th>7-way</th>
<th>19-way</th>
<th>Installed</th>
<th>Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>11&quot;</td>
<td>14&quot;</td>
<td>20&quot;</td>
<td>11&quot;</td>
<td>14&quot;</td>
</tr>
</tbody>
</table>

### Max. Internal Pressure

150 PSI

### Compliance

GR-3155-CORE

### Overall Diameter

<table>
<thead>
<tr>
<th>4-way (tolerance)</th>
<th>mm</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.19 x 20.07 (±1.22)</td>
<td>1.110 x 0.790 (±0.048)</td>
<td></td>
</tr>
<tr>
<td>28.58 x 33.27 (±1.32)</td>
<td>1.125 x 1.310 (±0.052)</td>
<td></td>
</tr>
<tr>
<td>46.10 x 50.29 (±1.52)</td>
<td>1.815 x 1.980 (±0.060)</td>
<td></td>
</tr>
</tbody>
</table>

### Nominal Weight

<table>
<thead>
<tr>
<th>4-way</th>
<th>7-way</th>
<th>19-way</th>
<th>kg/km</th>
<th>lbs/1000'</th>
</tr>
</thead>
<tbody>
<tr>
<td>473</td>
<td>624</td>
<td>1195</td>
<td>318</td>
<td>419</td>
</tr>
</tbody>
</table>

**Notes:**

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

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

**Duct Connectors**

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

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>77-7224</td>
<td>5 mm Duct Connector (Straight)</td>
</tr>
<tr>
<td>77-7225</td>
<td>8 mm Duct Connector (Straight)</td>
</tr>
<tr>
<td>77-7226</td>
<td>8.5 mm Duct Connector (Straight)</td>
</tr>
<tr>
<td>77-7228</td>
<td>5 mm Duct Connector (T)</td>
</tr>
<tr>
<td>77-7229</td>
<td>8 mm Duct Connector (T)</td>
</tr>
<tr>
<td>77-7227</td>
<td>8 mm to 5 mm Reducer</td>
</tr>
<tr>
<td>77-7234</td>
<td>8.5 mm to 5 mm Reducer</td>
</tr>
<tr>
<td>77-7233</td>
<td>8.5 mm to 8.0 mm Reducer</td>
</tr>
</tbody>
</table>

**Accessories & Tools**

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

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

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>77-7230</td>
<td>Fitting Plug for 5 mm</td>
</tr>
<tr>
<td>77-7231</td>
<td>Fitting Plug for 8 mm or 8.5 mm</td>
</tr>
<tr>
<td>706920</td>
<td>Tapered Plug [2-6 fiber] for 8 mm or 8.5 mm</td>
</tr>
<tr>
<td>706930</td>
<td>Tapered Plug [8-12 fiber] for 8 mm or 8.5 mm</td>
</tr>
<tr>
<td>705630</td>
<td>5 mm Duct End Cap</td>
</tr>
<tr>
<td>705620</td>
<td>8 mm Duct End Cap</td>
</tr>
<tr>
<td>77-7235</td>
<td>8.5 mm Duct End Cap</td>
</tr>
<tr>
<td>77-7232</td>
<td>Horseshoe Clips 8 mm</td>
</tr>
<tr>
<td>707050</td>
<td>Duct Cutter</td>
</tr>
</tbody>
</table>
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>
</tr>
</thead>
<tbody>
<tr>
<td>500 µm Coated SM</td>
<td>AE</td>
<td>ITU-T G.652.D</td>
</tr>
<tr>
<td>500 µm Coated SM, QPL</td>
<td>AK</td>
<td>ITU-T G.652.D</td>
</tr>
<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></td>
<td></td>
<td>1 Gb/s ≤ 550 m at 1300 nm</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>
<tr>
<td></td>
<td></td>
<td>1 Gb/s ≤ 550 m at 1300 nm</td>
</tr>
</tbody>
</table>

### Multimode Fiber Selection Guide

**Characteristics:**
- Maximum Finished Cable Attenuation Coefficient
  - @850 nm: 3.5 dB/km
  - @1300 nm: 1 dB/km
- Overfill Launch Bandwidth
  - @850 nm: 500 MHz.km
  - @1300 nm: 500 MHz.km
- Laser Bandwidth
  - @850 nm: 220 MHz.km
- Gigabit Ethernet Link Length (10 Gbps)
  - 10G BASE-SR (850 nm) 33 meters
- Coating
  - 500 microns
- QPL
  - No

### Singlemode Fiber Selection Guide

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>Fiber Description</th>
<th>Typical Attenuation (dB/km)</th>
<th>Gigabit Ethernet Distance (meters)</th>
<th>10 Gigabit Ethernet Distance (meters)</th>
<th>Coating</th>
<th>QPL</th>
</tr>
</thead>
</table>
| Singlemode - Tight Buffer
| 500 µm SM   | AE                | 1.00 -                       | 10,000                            | 5,000                                 | 500     | No  |
|            | 500 µm SM QPL     | 1.00 -                       | 10,000                            | 5,000                                 | 500     | Yes |

**NOTE:** Use the code in the "Fiber Type" column to replace the XX notation in the catalog number shown on the catalog page. This identifies the fiber that will be provided with the cable choice. The fibers in all completed cables are tested 100% at the factory for attenuation, and each fiber must meet the minimum requirements specified by the customer.
Tactical Breakout Cable

Product Construction:

Fiber:
- 2–12 fibers
- 900 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

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NO. OF SUB-UNITS</th>
<th>NOMINAL CABLE DIAMETER</th>
<th>NOMINAL CABLE WEIGHT</th>
<th>MAXIMUM TENSILE LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IN</td>
<td>mm</td>
<td>LBS/1000'</td>
</tr>
<tr>
<td>XX0021B3C</td>
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<td>0.260</td>
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<td>XX0041B3C</td>
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<tr>
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<tr>
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<td>8</td>
<td>8</td>
<td>0.390</td>
<td>10.0</td>
<td>36</td>
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<tr>
<td>XX0101B3C</td>
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<td>10</td>
<td>0.450</td>
<td>11.4</td>
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<td>XX0121B3C</td>
<td>12</td>
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<td>0.480</td>
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<td>52</td>
</tr>
</tbody>
</table>

Ordering Part Number Example

AQ0041B3C

Singlemode, 4 fibers, tactical breakout
Please see pages 4 and 5 for a complete guide on part number selection and ordering information.
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 patent-pending jacketing compound, HydroGuard™, which is fully water-resistant for ultimate protection.

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

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>FIBER COUNT</th>
<th>NOMINAL CABLE DIAMETER</th>
<th>NOMINAL CABLE WEIGHT</th>
<th>MAXIMUM TENSILE LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IN mm</td>
<td>LBS/1000' kg/km</td>
<td>INSTALLATION LBS N</td>
<td>IN-SERVICE LBS N</td>
</tr>
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<td>XX0021GNC</td>
<td>2</td>
<td>0.228</td>
<td>5.8 20 30</td>
<td>400 1800 130</td>
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<tr>
<td>XX0041GNC</td>
<td>4</td>
<td>0.228</td>
<td>5.8 20 30</td>
<td>400 1800 130</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.

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

Overall Strength Member:
- Aramid yarn

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

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

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

COMPLIANCES:
- Tested to CECOM A3159879 Revision D Standard

APPLICATIONS:
- Military tactical field applications in re-deployable communication systems

ORDERING
Part Number Example:
CE0041GNC
62.5 mm multimode, 4 fibers, tactical distribution
Please see pages 4 and 5 of the Fiber Optics catalog for a complete guide on part number selection and ordering information.
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>Part Number Index</td>
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<td>Notes</td>
<td>67-68</td>
</tr>
</tbody>
</table>
### Glossary

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

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

**Adapter**: A mechanical media termination device designed to align and join optic fiber 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 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.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Gigabit**: One billion bits of information.

**Gigahertz (GHz)**: One billion Hertz.

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

**Hertz**: Measurement unit of frequency.

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

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

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

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

**Intensity**: Irradiance.

**Interbuilding**: Between buildings.

**Intrabuilding**: Within a building.

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

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

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

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

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

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

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

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

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

**Light Emitting Diode**: See LED.

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

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

**MDPE**: Acronym for Medium Density Polyethylene. MDPE is a form of polyethylene commonly used as a jacketing material for outdoor fiber optic cables (see PE).
Macrobending: Macroscopic axial deviations of a fiber from a straight line.

MegaHertz: One million Hertz.

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

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

Micron: See Micrometer.

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

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

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

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

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

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

Nanometer: One billionth of a meter [nm].


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

Per: 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>
<thead>
<tr>
<th>FIRE RESISTANCE LEVEL</th>
<th>TEST REQUIREMENT</th>
<th>NEC ARTICLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Highest) Plenum Cables</td>
<td>NFPA-262 (Steiner tunnel) CSA-FT6 (Steiner tunnel)</td>
<td>OFNP OFCP</td>
</tr>
<tr>
<td>Riser Cables Multiple Floors</td>
<td>UL-1666 (Vertical Shaft) CSA-FT4 (Vertical Tray)</td>
<td>OFNR OFCR</td>
</tr>
<tr>
<td>General Purpose Cables</td>
<td>UL-1581 (Vertical Tray) CSA-FT4 (Vertical Tray)</td>
<td>OFNG OFN OFCG OFC</td>
</tr>
</tbody>
</table>

**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>
</tr>
</thead>
<tbody>
<tr>
<td>OFNP</td>
<td>Nonconductive optical fiber plenum cable</td>
</tr>
<tr>
<td>OFCP</td>
<td>Conductive optical fiber plenum cable</td>
</tr>
<tr>
<td>OFNR</td>
<td>Nonconductive optical fiber riser cable</td>
</tr>
<tr>
<td>OFCR</td>
<td>Conductive optical fiber riser cable</td>
</tr>
<tr>
<td>OFNG</td>
<td>Nonconductive optical fiber general-purpose cable</td>
</tr>
<tr>
<td>OFCG</td>
<td>Conductive optical fiber general-purpose cable</td>
</tr>
<tr>
<td>OFN</td>
<td>Nonconductive optical fiber general-purpose cable</td>
</tr>
<tr>
<td>OFC</td>
<td>Conductive optical fiber general-purpose cable</td>
</tr>
</tbody>
</table>

A Cable A may be used in place of cable B.
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.

Ordering Part Number Example
AQ012/BM0124M1A-DWB

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.

Ordering Part Number Example
AP012/BM0121PNU

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
AP012/BM0121P1R

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

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

* Black tracer is visible on black buffer tube.
### Conversion Table and Reel Dimensions

#### Conversion Table

<table>
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<th>SYMBOL</th>
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#### Standard Wooden Reel Dimensions

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

#### Reel Dimensions

\[ F = \text{Flange Diameter} \]
\[ T = \text{Traverse Width} \]
\[ D = \text{Drum Diameter} \]
\[ A = \text{Arbor Hole} \]
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WITH OUR CABLES
Less Means More

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.
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