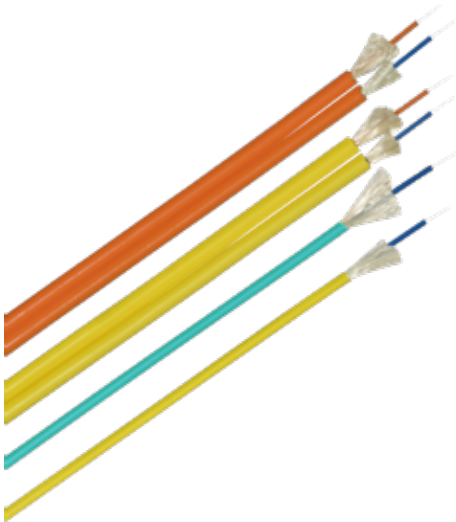




A Furukawa Company

## Fiber Optic Interconnect Cordage

Durable, Flexible Cordage Surpasses Industry Strength Standards for Interconnect Cables



### Features and Benefits

- Available in riser, plenum and dual-rated non-halogen rated designs
- Simplex and duplex zipcord constructions offered in a wide range of fiber types
- Exceptional tight buffering
- Cordage outer jacket color-coded for easy identification of fiber type
- Complies with Telcordia Technologies GR-409
- RoHS compliant and environmentally friendly; free of heavy metals and halogenated materials
- Available with a full range of OFS optical fibers including AllWave® FLEX+ ZWP Single-Mode Optical Fibers and LaserWave® FLEX Multimode Optical Fiber

### Product Description

OFS Fiber Optic Interconnect Cordage offers outstanding optical performance through our expertise in optical design and manufacturing, and the use of durable, flexible and reliable materials. Choosing the right fiber optic cordage should be based on much more than merely price comparisons. Understanding application requirements and how materials interact when connectorized is critical to product selection.

Why not help reduce the chance of connector fiber breaks by specifying a product that offers excellent bend performance, negligible buffer shrinkage and a tensile rating three times the ICEA industry standard?

OFS Cordage is available in Simplex and Duplex constructions, with your choice of Riser, Plenum, Non-Halogen and Dual Riser/LSZH ratings, all in a full range of fiber types.

### Why OFS Interconnect Cordage?

**Optical Fiber:** OFS develops and produces world-class optical fibers with precise geometries for a broad range of global applications.

**Strength:** OFS fiber cordage is designed to exceed industry tensile standards and features extra yarn in each cordage for added strength.

**Jacket and Buffer Performance:** Controlling cordage shrinkage is key to delivering a high-performance connectorized product. OFS' extensive knowledge of materials allows us to design and produce cordages that help ensure reliable performance by limiting coating shrink back.

**Depth of Offer:** Riser, Plenum, Non-Halogen and Dual Riser/LSZH Rated jackets; a full range of simplex and duplex cordage constructions in 1.6, 2.0, and 3.0 diameters

**Environmentally Friendly:** RoHS compliant and free of heavy metals.

## Why Materials are Critical to Optical Performance

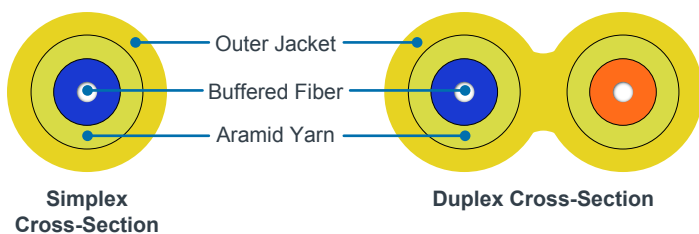
### Optical Fiber

Selecting the right optical fiber for your application is key to successful cordage performance. Central Offices, Data Centers, in-home wiring (FTTx) and traditional local area network (LAN) applications all have differing needs. OFS offers you flexibility with a full array of optical fiber types including bend-insensitive fiber for stringent needs along with our advanced Full Spectrum Fibers.

### Jacket and Tight Buffer

Cordage materials lie at the foundation of any cable assembly connectorization point. Telcordia Technologies' GR testing puts cable assemblies through rigorous thermal tests to ensure the compatibility and life cycling of all materials. The right materials are critical to ensuring that shrinkage between the optical fiber and cordage layers is precisely controlled. It is common knowledge in the fiber optic industry that excess cordage jacket shrinkage can cause terminated product failures due to internal fiber buckling induced from shrinkage. Unlike some other interconnect cordages, OFS' total cordage constructions are specifically designed to limit this type of hazardous shrinkage.

### Specifications - All Cordages



| Key Outer Diameter Dimensions (mm) |               |         |
|------------------------------------|---------------|---------|
| Simplex Cordages                   |               |         |
| Reference                          | Average Range | Nominal |
| 1.6 (9U16-D-001)                   | 1.6 - 1.9     | 1.75    |
| 2.0 (9U20-D-001)                   | 1.9 - 2.2     | 2.00    |
| 3.0 (9U30-D-001)                   | 2.8 - 3.0     | 2.90    |

| Key Outer Diameter Dimensions (mm) |                |                |             |
|------------------------------------|----------------|----------------|-------------|
| Duplex Cordages                    |                |                |             |
| Reference                          | Average Length | Average Height | Nominal     |
| 1.6 (9U16-D-002)                   | 3.38 - 4.14    | 1.6 - 1.9      | 1.75 x 3.76 |
| 2.0 (9U20-D-002)                   | 3.74 - 4.50    | 1.9 - 2.2      | 2.0 x 4.12  |
| 3.0 (9U30-D-002)                   | 6.28 - 6.68    | 2.8 - 3.0      | 2.9 - 6.48  |

| Cordage Materials  |            |             |  |
|--|------------|-------------|--|
| Component  | Riser OFNR | Plenum OFNP | Non-Halogen CPR: Eca                         |
| Jacket   | PVC        | PVC         | Non-Halogen                                  |
| Tight Buffer (900 μm)  | PVC        | PVC         | UV-Cured                                     |
| Strength Members   | Aramid     | Aramid      | Aramid                                       |
| DoP Lookup: <a href="http://www.ofs-sales.com/cpr/">www.ofs-sales.com/cpr/</a> |            |             | 9U16-XXX-E-D<br>9U20-XXX-E-D<br>9U30-001-E-D |

## 1.6 mm Fiber Optic Cordages Ordering Information

Example: 9P16-002C-WRY-4<sup>1</sup>

Part Number: AAAA - NNN B- X Y Z - V

- AAAA = Cordage Type
  - 9P16 = 1.6 mm Cordage w/ 900 μm LSPVC Buffers (Riser and Plenum Only)
  - 9U16 = 1.6 mm Cordage w/ 900 μm UV Buffers (Dual-Rated LSZH Only)
- NNN = Fiber Count
  - 001 = Simplex
  - 002 = Duplex
- B = Cordage Version
  - C = Riser or Plenum
  - E = Dual-Rated, Zero Halogen
- X = Fiber Type
  - W = AllWave® FLEX+ ZWP Bend-Optimized Single-Mode Optical Fiber (G.657.A2)
  - 9 = AllWave FLEX Max Bend-Optimized Single-Mode Optical Fiber (G.657.B3 & G.652.D)
  - 5 = LaserWave® FLEX 550 Multimode Optical Fiber (OM4)
  - 3 = LaserWave® FLEX 300 Multimode Optical Fiber (OM3)
  - K = LaserWave® FLEX G+ Multimode Optical Fiber (OM2)
- Y = Jacket Material
  - R = Riser
  - P = Plenum
  - D = Dual-Rated LSZH (UL 1666 & CPR: Eca)
- Z = Jacket Color<sup>2</sup>
  - Y = Yellow (Single-Mode)
  - O = Orange (50/125 μm, OM2)
  - A = Aqua (LaserWave FLEX)
- V = Maximum Cable Attenuation<sup>3</sup>
  - 4 = Single-Mode Optical Fibers (AllWave FLEX+ Optical Fiber)
  - G = LaserWave FLEX G+, LaserWave FLEX 300 and LaserWave FLEX 550 Optical Fibers

### 1.6 mm Cordage Weights

| Reference       | Simplex                | Duplex                 |
|-----------------|------------------------|------------------------|
| Riser           | 2.9 kg/km (1.9 lb/kft) | 5.7 kg/km (3.9 lb/kft) |
| Plenum          | 3.5 kg/km (2.4 lb/kft) | 7.0 kg/km (4.7 lb/kft) |
| Dual-Rated LSZH | 2.5 kg/km (1.7 lb/kft) | 5.0 kg/km (3.4 lb/kft) |

<sup>1</sup> Part Number shown is for a 1.6 mm AllWave FLEX+ ZWP Riser (OFNR) Duplex Cordage with PVC Buffers and featuring a yellow jacket and with a Maximum Attenuation of 0.40 dB/km @ 1300 nm and 0.30 dB/km @ 1550 nm and standard print.

OFS INTERCONNECT ALLWAVE® FLEX+ ZWP BIF G.657.A2 OPTICAL CABLE -C- 9P16-002C-WRY-4 9/125 C (UL) US TYPE OFNR OFW CSA OFN FT4] [MM/YY] [LOT NO] [LENGTH IN FEET]

<sup>2</sup> Alternate jacket colors are available upon request.

<sup>3</sup> See maximum attenuation table for values.

<sup>4</sup> Contact OFS Order Management for information on other cable variations including additional fiber types, fiber counts, attenuation and custom cable print.

## 2.0 mm Fiber Optic Cordages Ordering Information

Example: 9P20-001C-3PA-G<sup>1</sup>

Part Number: AAAA - NNN B - X Y Z - V

**AAAA** = Cordage Type  
**9P20** = 2.0 mm Cordage w/ 900 µm LSPVC Buffers (Riser and Plenum Only)  
**9U20** = 2.0 mm Cordage w/ 900 µm UV Buffers (Dual-Rated LSZH Only)

**NNN** = Fiber Count  
**001** = Simplex  
**002** = Duplex

**B** = Cordage Version  
**C** = Riser or Plenum  
**E** = Dual-Rated, Zero Halogen

**X** = Fiber Type  
**W** = AllWave® *FLEX+* ZWP Bend-Optimized Single-Mode Optical Fiber (G.657.A2)  
**9** = AllWave *FLEX* Max Bend-Optimized Single-Mode Optical Fiber (G.657.B3 & G.652.D)  
**5** = LaserWave® *FLEX* 550 Multimode Optical Fiber (OM4)  
**3** = LaserWave® *FLEX* 300 Multimode Optical Fiber (OM3)  
**K** = LaserWave® *FLEX* G+ Multimode Optical Fiber (OM2)

**Y** = Jacket Material  
**R** = Riser  
**P** = Plenum  
**D** = Dual-Rated LSZH (UL 1666 & CPR: Eca)

**Z** = Jacket Color<sup>2</sup>  
**Y** = Yellow (Single-Mode)  
**O** = Orange (50/125 µm, OM2)  
**A** = Aqua (LaserWave *FLEX*)

**V** = Maximum Cable Attenuation<sup>3</sup>  
**4** = Single-Mode Optical Fibers (AllWave *FLEX+* Optical Fiber)  
**G** = LaserWave *FLEX* G+, LaserWave *FLEX* 300 and LaserWave *FLEX* 550 Optical Fibers

### 2.0 mm Cordage Weights

| Reference       | Simplex                | Duplex                 |
|-----------------|------------------------|------------------------|
| Riser           | 3.7 kg/km (2.5 lb/kft) | 7.4 kg/km (5.0 lb/kft) |
| Plenum          | 4.0 kg/km (2.7 lb/kft) | 8.0 kg/km (5.4 lb/kft) |
| Dual-Rated LSZH | 3.6 kg/km (2.5 lb/kft) | 7.2 kg/km (4.9 lb/kft) |

<sup>1</sup> Part Number shown is for a 2.0 mm LaserWave *FLEX* 300 Simplex Plenum (OFNP) Cordage with UV Buffers and featuring an aqua jacket and with a Maximum Attenuation of 3.5 dB/km @ 850 nm and 1.5 dB/km @ 1300 nm and standard print:

OFS INTERCONNECT LASERWAVE® FLEX 300 OM3 BIF OPTICAL CABLE -C- 9P20-001C-3PA-G 50/125 C (UL) US TYPE OFNP [CSA OFN FT4 FT6] [MM/YY] [LOT NO] [LENGTH IN FEET]

<sup>2</sup> Alternate jacket colors are available upon request.

<sup>3</sup> See maximum attenuation table for values.

<sup>4</sup> Contact OFS Order Management for information on other cable variations including additional fiber types, fiber counts, attenuation and custom cable print.

## 3.0 mm Fiber Optic Cordages Ordering Information

Example: 9P30-001C-WRY-4<sup>1</sup>

Part Number: AAAA - NNN B - X Y Z - V

**AAAA** = Cordage Type  
**9P30** = 3.0 mm Cordage w/ 900 µm LSPVC Buffers  
**9U30** = 3.0 mm Cordage w/ 900 µm UV Buffers  
**9N30** = 3.0 mm Cordage w/ 900 µm Nylon (Dual-Rated LSZH Only)

**NNN** = Fiber Count  
**001** = Simplex  
**002** = Duplex Zipcord

**B** = Cordage Version  
**C** = Riser or Plenum  
**D** = Dual-Rated, LSZH (2-fiber Duplex only with 9N30)  
**E** = Dual-Rated, LSZH (1-fiber Simplex only with 9U30)

**X** = Fiber Type  
**W** = AllWave® *FLEX+* ZWP Bend-Optimized Single-Mode Optical Fiber (G.657.A2)  
**9** = AllWave *FLEX* Max Bend-Optimized Single-Mode Optical Fiber (G.657.B3 & G.652.D)  
**5** = LaserWave® *FLEX* 550 Multimode Optical Fiber (OM4)  
**3** = LaserWave® *FLEX* 300 Multimode Optical Fiber (OM3)  
**K** = LaserWave® *FLEX* G+ Multimode Optical Fiber (OM2)

**Y** = Jacket Material  
**R** = Riser  
**P** = Plenum  
**D** = Dual-Rated LSZH (UL 1666 & CPR: Eca)

**Z** = Jacket Color<sup>2</sup>  
**Y** = Yellow (Single-Mode)  
**O** = Orange (50/125 µm, OM2)  
**A** = Aqua (LaserWave *FLEX*)

**V** = Maximum Cable Attenuation<sup>3</sup>  
**4** = Single-Mode Optical Fibers (AllWave *FLEX+* Optical Fiber)  
**G** = LaserWave *FLEX* G+, LaserWave *FLEX* 300 and LaserWave *FLEX* 550 Optical Fibers

### 3.0 mm Cordage Weights

| Reference       | Simplex                | Duplex                   |
|-----------------|------------------------|--------------------------|
| Riser           | 7.6 kg/km (5.2 lb/kft) | 15.2 kg/km (10.4 lb/kft) |
| Plenum          | 8.1 kg/km (5.5 lb/kft) | 16.2 kg/km (11 lb/kft)   |
| Dual-Rated LSZH | 8.5 kg/km (5.7 lb/kft) | 17.0 kg/km (11.4 lb/kft) |

<sup>1</sup> Part Number shown is for a 3.0 mm AllWave *FLEX+* ZWP Simplex Riser (OFNR) Duplex Cordage with PVC Buffers and featuring a yellow jacket and with a Maximum Attenuation of 0.40 dB/km @ 1300 nm and 0.30 dB/km @ 1550 nm and standard print.

OFS INTERCONNECT ALLWAVE® FLEX+ ZWP BIF G.657.A2 OPTICAL CABLE -C- 9P30-001C-WRY-4 9/125 C (UL) US TYPE OFNR [CSA OFN FT4] [MM/YY] [LOT NO] [LENGTH IN FEET]

<sup>2</sup> Alternate jacket colors are available upon request.

<sup>3</sup> See maximum attenuation table for values.

<sup>4</sup> Contact OFS Order Management for information on other cable variations including additional fiber types, fiber counts, attenuation and custom cable print.

## Minimum Bend Radius - All Cordages

| Cordages                  | All Standard Multimode Cables (including cables with standard LaserWave Multimode Fiber) |                                | AllWave FLEX+ ZWP Bend-Optimized Single-Mode Cable |                                |
|---------------------------|--|--------------------------------|--|--------------------------------|
|                           | Installation (Short Term)  | After Installation (Long Term) | Installation (Short Term)                          | After Installation (Long Term) |
| 1.6 mm Simplex and Duplex | 38 mm (1.5 in.)  | 25 mm (1.0 in.)                | 38 mm (1.5 in.)                                    | 10 mm (0.4 in.)                |
| 2.0 mm Simplex and Duplex | 38 mm (1.5 in.)  | 25 mm (1.0 in.)                | 38 mm (1.5 in.)                                    | 10 mm (0.4 in.)                |
| 3.0 mm Simplex and Duplex | 64 mm (2.5 in.)  | 32 mm (1.25 in.)               | 64 mm (2.5 in.)                                    | 10 mm (0.4 in.)                |

## Performance Standards

### Maximum Cable Attenuation\*

| Single-mode Optical Fiber (dB/km)               | 1310 nm | 1550 nm | MAC (V)* |
|---|---------|---------|----------|
| AllWave® FLEX+ ZWP Bend-Optimized Optical Fiber | 0.4     | 0.3     | 4        |
| AllWave FLEX Max Bend-Optimized Optical Fiber   | 0.4     | 0.3     | 4        |
| Multimode Optical Fiber (dB/km)                 | 850 nm  | 1300 nm | MAC (V)* |
| LaserWave® FLEX Optical Fibers                  | 3.5     | 1.5     | G        |

\* Installed attenuation values shall be at or below those listed above

|                     | Riser-Rated (OFNR UL) | Plenum-Rated (OFNP UL) |
|---------------------|-----------------------|------------------------|
| Certificate Testing | UL Test               | UL Test                |
| Specific Test       | UL 1666               | NFPA 262 (UL 910)      |
| Sheath Marking      | OFNR                  | OFNP                   |
| NEC Compliance      | NEC Article 770       | NEC Article 770        |

## Handling

### Load (Rated per ICEA-S-83-596 Standard)

| Load                              | OFS 1.6 and 2.0 mm Simplex      | OFS 3.0 mm Simplex |
|-----------------------------------|---------------------------------|--------------------|
| Standard 220 N (50 lbf)           | -                               | 220N (50 lb)       |
| Small Form Factor (≤ 2.0 mm) 49 N | 133 N (30 lbf)<br>~ 3x Standard | -                  |

### Compressive Loading Test (FOTP-41)

| ICEA-S-83-596 Standard | All Cordages           |
|------------------------|------------------------|
| Compressive Load       | 35 N/cm (3.5 N/mm)     |
| Impact Resistance      | 0.74 N/m impact energy |

### Temperature (all cordages)

|              |                              |
|--------------|------------------------------|
| Installation | -20 to 60 °C (-4 to 140 °F)  |
| Operation    | -20 to 70 °C (-4 to 158 °F)  |
| Storage      | -40 to 70 °C (-40 to 158 °F) |



For additional information please contact your sales representative.

You can also visit our website at [www.ofsoptics.com](http://www.ofsoptics.com) or call 1-888-fiberhelp (1-888-342-3743) USA or 1-770-798-5555 outside the USA.



Copyright © 2021 OFS Fitel, LLC.  
All rights reserved, printed in USA.

OFS Marketing Communications  
Doc ID: prem-118 Date: 02/21



AllWave and LaserWave are registered trademarks of OFS FITEL, LLC.

OFS reserves the right to make changes to the prices and product(s) described in this document at any time without notice. This document is for informational purposes only and is not intended to modify or supplement any OFS warranties or specifications relating to any of its products or services.