# FREEDM® Ribbon, Gel-Filled Cable, Riser

**12 F, 50 µm multimode (OM2)**

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Corning FREEDM® ribbon riser cables are lightweight cables designed for indoor/outdoor installations such as campus backbones in aerial, duct and riser applications. A UV-resistant, flame-retardant jacket allows added flexibility in placing this cable outdoors, whether it is an aerial, duct or direct-buried application, or indoor general horizontal or riser applications.

The cable consists of a ribbon stack of 12-fiber ribbons within a gel-filled central buffer tube. With easily accessible individual 250 µm colored fibers, the ribbons have readily identifiable ribbon ID numbers and fiber colors. The precise fiber and ribbon geometries result in excellent mass splicing yields. Surrounding the tube are dielectric strength members that provide tensile strength and innovative waterblocking tapes that reduce cable weight and preparation time. This design is also compatible with standard ribbon cable procedures and hardware for easy field installation and reduced labor costs.

*Note: This cable is available in 12 different jacket colors – blue, orange, green, brown, slate, white, red, black, yellow, violet, rose and aqua. The colored jacket allows for easy visual identification of the cables while still providing all of the required environmental protection of an indoor/outdoor cable jacket. Black is the standard jacket color using the part numbers shown here. Contact Customer Care at 1-800-743-2675 to order other color options.*



Part Number: 012TCF-14131-20

## Features and Benefits

**Precise fiber and ribbon geometries**
Excellent mass splicing yields

**Waterblocked cable**
Enables use of cables for outdoor applications

**12-fiber ribbons with ribbon IDs**
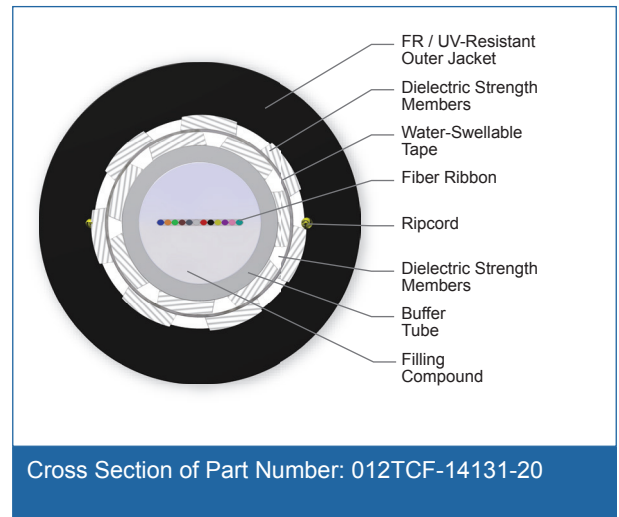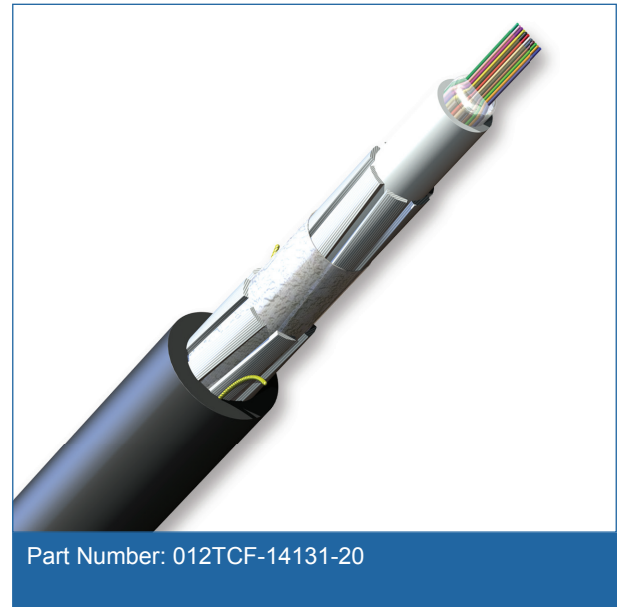Easy identification

**UV-resistant, flame-retardant jacket**
Rugged, durable and easy to strip

**Available in preconnectorized assemblies**
Easy field installation and reduced labor costs

**Common installations**
Outdoor aerial and duct; indoor vertical riser and general purpose horizontal according to NEC Article 770



FR / UV-Resistant Outer Jacket
Dielectric Strength Members
Water-Swellable Tape
Fiber Ribbon
Ripcord
Dielectric Strength Members
Buffer Tube
Filling Compound

Cross Section of Part Number: 012TCF-14131-20

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## Standards

| | |
|---|---|
| **Listings** | National Electrical Code® (NEC®) OFNR, FT-4 |
| **Design and Test Criteria** | ANSI/ICEA S-104-696, CSA OFN FT-4 |

## Specifications

| General Specifications | |
|---|---|
| Environment | Indoor/Outdoor Cables |
| Application | Aerial, Direct Buried, Duct, General Purpose Horizontal, (Vertical Riser) |
| Cable Type | Ribbon |
| Product Type | Dielectric |
| Flame Rating | Riser (OFNR) |
| Fiber Category | 50 µm MM (OM2) |

| Temperature Range | |
|---|---|
| Storage | -40 °C to 70 °C  (-40 °F to 158 °F) |
| Installation | -10 °C to 60 °C  (14 °F to 140 °F) |
| Operation | -40 °C to 70 °C  (-40 °F to 158 °F) |

| Cable Design | |
|---|---|
| Fiber Count | 12 |
| Ribbons per Tube | 1 |
| Fibers per Ribbon | 12 |
| Fiber Coloring | Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua |
| Buffer Tube Color | Natural |
| Buffer Tube Diameter | 5.6 mm   (0.22 in) |
| Tensile Strength Elements and/or Armoring - Layer 1 | Dielectric strength members |
| Tape | Water-swellable |
| Tensile Strength Elements and/or Armoring - Layer 2 | Dielectric strength members |
| Number of Ripcords | 2 |
| Outer Jacket Material | Flame-Retardant, UV-Resistant |
| Outer Jacket Color | Black |

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| Mechanical Characteristics Cable | |
| --- | --- |
| Max. Tensile Strength, Short-Term | 2700 N  (600 lbf) |
| Max. Tensile Strength, Long-Term | 600 N  (135 lbf) |
| Weight | 141 kg/km  (94 lb/1000 ft) |
| Nominal Outer Diameter | 12.0 mm   (0.47 in) |
| Min. Bend Radius Installation | 180 mm  (7.1 in) |
| Min. Bend Radius Operation | 120 mm  (4.7 in) |

| Chemical Characteristics | |
| --- | --- |
| RoHS | Free of hazardous substances according to RoHS 2011/65/EU |

## Fiber Specifications

| Optical Characteristics (cabled) | |
| --- | --- |
| Fiber Core Diameter | 50 µm |
| Fiber Category | OM2 |
| Fiber Code | T |
| Performance Option Code | 31 |
| Wavelengths | 850 nm / 1300 nm |
| Maximum Attenuation | 3.0 dB/km / 1.0 dB/km |
| Serial 1 Gigabit Ethernet | 750 m / 500 m |
| Serial 10 Gigabit Ethernet | 150 m / - |
| Min. Overfilled Launch (OFL) Bandwidth | 700 MHz*km / 500 MHz*km |
| Minimum Effective Modal Bandwidth (EMB) | 950 MHz*km / - |

Notes:  1) *50 µm multimode fiber macrobend loss ≤ 0.2 dB at 850 nm for two turns around 7.5 mm radius mandrel.*
2) *Improved attenuation and bandwidth options available.*
3) *Bend-insensitive single-mode fibers available on request.*
4) *Contact a Corning Customer Care Representative for additional information.*

## Ordering Information

| Part Number | 012TCF-14131-20 |
| --- | --- |
| Product Description | FREEDM® Ribbon, Gel-Filled Cable, Riser, 12 F, 50 µm multi-mode (OM2) |
| EAN Code | 4056418174198 |

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*Notes*

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