

# FREEDM® Ribbon Interlocking Armored, Gel-Filled Cable, Riser

24 F, 50 µm multimode (OM3)



Corning FREEDM® ribbon interlocking armored, gel-filled riser cables continue the innovative breakthrough in indoor/outdoor cable technology with a new generation of high-fiber-count single tube cables. These cables are designed to maximize the use of critical duct space with excellent installation results. Encased in spirally-wrapped aluminum interlocking armor for ruggedness and superior crush resistance, the cables are ideal for industrial and heavy traffic areas and installations requiring extra protection for optical cables. The UV-resistant, flame-retardant jacket allows this cable to be installed outdoors or in indoor general purpose horizontal and riser applications. The cable employs a single buffer tube containing a stack of 12 fiber ribbons within a gel-filled central buffer tube.

*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.*

## 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

### Flexible interlocking armor

Up to seven times the crush protection compared to non-armored cables

### Common installations

Outdoor aerial and duct; indoor general purpose horizontal according to NEC Article 770

## Standards

### Listings

National Electrical Code®  
(NEC®) OFNR

### Design Criteria

CSA OFN FT-4



Part Number: 024TCF-14180-A1

Cross Section of Part Number: 024TCF-14180-A1



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## Standards

Test Criteria

ANSI/ICEA S-104-696

## 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 (OM3)                                                            |

### 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                                         | 24                                                                               |
| Ribbons per Tube                                    | 2                                                                                |
| 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                            | 277 kg/km (185.59 lb/1000 ft) |
| Nominal Outer Diameter            | 19.3 mm (0.76 in)             |
| Min. Bend Radius Installation     | 289.5 mm (11.4 in)            |
| Min. Bend Radius Operation        | 193 mm (7.6 in)               |

## Chemical Characteristics

|      |                                                           |
|------|-----------------------------------------------------------|
| RoHS | Free of hazardous substances according to RoHS 2002/95/EG |
|------|-----------------------------------------------------------|

## Fiber Specifications

### Optical Characteristics (cabled)

|                                         |                          |
|-----------------------------------------|--------------------------|
| Fiber Core Diameter                     | 50 µm                    |
| Fiber Category                          | OM4 Extended Distance    |
| Fiber Code                              | T                        |
| Performance Option Code                 | 91                       |
| Wavelengths                             | 850 nm / 1300 nm         |
| Maximum Attenuation                     | 3.0 dB/km / 1.0 dB/km    |
| Serial 1 Gigabit Ethernet               | 1100 m / 600 m           |
| Serial 10 Gigabit Ethernet              | 600 m / -                |
| Min. Overfilled Launch (OFL) Bandwidth  | 3500 MHz*km / 500 MHz*km |
| Minimum Effective Modal Bandwidth (EMB) | 5350 MHz*km / -          |

\* Assumes 0.7 dB maximum total connector/splice loss.

\* Meets 0.75 ns optical skew when used in all Corning Plug and Play™/EDGE™ systems solutions.

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.

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## Ordering Information

|                     |                                                                                           |
|---------------------|-------------------------------------------------------------------------------------------|
| Part Number         | 024TCF-14180-A1                                                                           |
| Product Description | FREEDM® Ribbon Interlocking Armored, Gel-Filled Cable, Riser, 24 F, 50 µm multimode (OM3) |
| EAN Code            | 4056418160634                                                                             |



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