

# Class 3 Limited Power Cable, Indoor/ Outdoor, FREEDM<sup>®</sup> Riser

CORNING

## Features and Benefits

**12, 14, 16 or 20 AWG copper conductors**  
Power transmission with flexibility in design

**2, 4, 6, 8, 12 or 24 ClearCurve<sup>®</sup> ZBL or SMF-28<sup>®</sup> Ultra fibers**  
Reliable performance in challenging routes

**Individual fibers**  
Easily accessible for splicing

**Mutual capacitance between adjacent conductors**  
<50 pF/ft

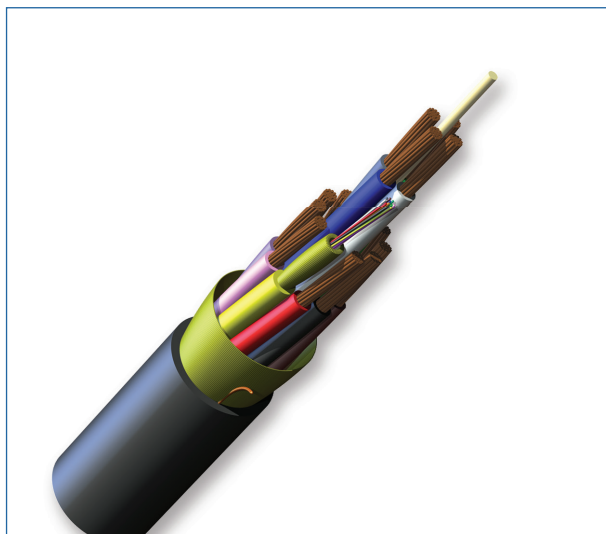
**2-in-1 composite cable design**  
One cable meets power and signal needs

**Conductor color code**  
Same as Telcordia color code

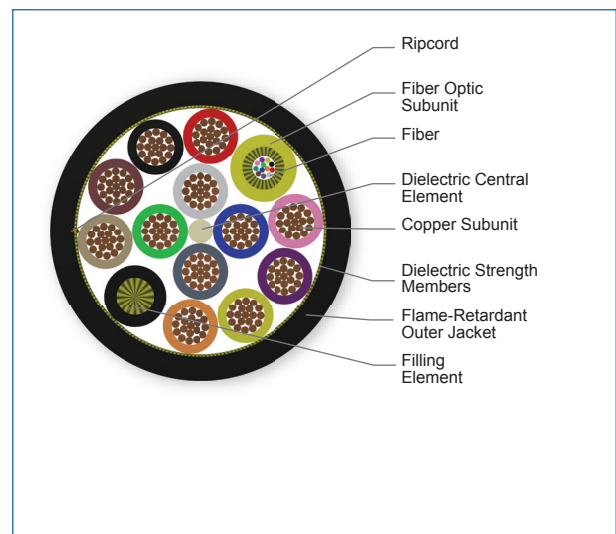
**Conductor insulation material and thickness**  
PVC insulation, thickness varies depending on AWG size

Corning Class 3 Limited Power FREEDM<sup>®</sup> Cables provide the ultimate solution for indoor-outdoor remote powering of distributed antenna systems (DAS), optical networks, small cells and more. The design uses fiber and linear-laid copper conductors rated at 300 VAC. These cables are suitable for use with remote powering systems and +/-190VDC installations in accordance with NEC Article 830.15. They may also be used with low voltage installations in accordance with NEC Article 725.

Corning Class 3 Limited Power FREEDM<sup>®</sup> Cables provide a time and cost-saving solution for installations requiring remotely powered equipment. By integrating linear-laid copper and loose tube fiber in one cable, class 3 limited power cables eliminate the need to install separate power and fiber cables. This saves installation time, labor costs and duct or tray space. This compact and versatile design is available with interlocking armor option for additional protection where conduit may not be feasible.



Class 3 Limited Power, FREEDM<sup>®</sup> Cables, Riser,  
12-Fibers



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## Standards

**Approvals and Listings** CSA certified listed to UL 444, CSA C22.2, No. 214  
NEC Article 725 Class 3 (CL3R)

**Common Installations** Compliant with ICEA S-83-696 (compliant at tensile loads listed in the specifications table)

**Design and Test Criteria** ICEA S-120-742, UL-13; 300 VAC, 80 C

## Specifications

| Temperature Range |                                    |
|-------------------|------------------------------------|
| Storage           | -40 °C to 70 °C (-40 °F to 158 °F) |
| Installation      | 0 °C to 60 °C (32 °F to 140 °F)    |
| Operation         | -40 °C to 70 °C (-40 °F to 158 °F) |

| Fiber Count                                | Number of Conductors | Weight                              | Nominal Outer Diameter | Min. Bend Radius Installation | Min. Bend Radius Operation |
|--|----------------------|-------------------------------------|------------------------|-------------------------------|----------------------------|
| 3.0 mm MIC <sup>®</sup> 250 2.0 with 12AWG |                      |                                     |                        |                               |                            |
| 2 - 4                                      | 2                    | 124.90 kg/km<br>(83.93 lb/1000 ft)  | 9.0 mm<br>(0.35 in)    | 133.35 mm<br>(5.25 in)        | 88.90 mm<br>(3.50 in)      |
| 4 - 8                                      | 6                    | 231.81 kg/km<br>(155.77 lb/1000 ft) | 13.3 mm<br>(0.52 in)   | 198.12 mm<br>(7.80 in)        | 132.08 mm<br>(5.20 in)     |
| 4 - 12                                     | 4                    | 203.80 kg/km<br>(136.95 lb/1000 ft) | 10.9 mm<br>(0.43 in)   | 163.83 mm<br>(6.45 in)        | 109.22 mm<br>(4.30 in)     |
| 6 - 12                                     | 12                   | 528.34 kg/km<br>(355.03 lb/1000 ft) | 17.9 mm<br>(0.70 in)   | 266.70 mm<br>(10.50 in)       | 177.80 mm<br>(7.00 in)     |
| 6 - 12                                     | 2                    | 133.50 kg/km<br>(89.71 lb/1000 ft)  | 9.0 mm<br>(0.35 in)    | 133.35 mm<br>(5.25 in)        | 88.90 mm<br>(3.50 in)      |
| 12   | 6                    | 240.14 kg/km<br>(161.37 lb/1000 ft) | 13.3 mm<br>(0.52 in)   | 198.12 mm<br>(7.80 in)        | 132.08 mm<br>(5.20 in)     |
| 24   | 4                    | 244.40 kg/km<br>(164.23 lb/1000 ft) | 12.5 mm<br>(0.49 in)   | 186.69 mm<br>(7.35 in)        | 124.46 mm<br>(4.90 in)     |
| 24   | 12                   | 544.70 kg/km<br>(366.02 lb/1000 ft) | 17.9 mm<br>(0.70 in)   | 266.70 mm<br>(10.50 in)       | 177.80 mm<br>(7.00 in)     |
| 24   | 6                    | 277.38 kg/km<br>(186.39 lb/1000 ft) | 14.8 mm<br>(0.58 in)   | 220.98 mm<br>(8.70 in)        | 147.32 mm<br>(5.80 in)     |

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|--|----------------------|-------------------------------------|------------------------|-------------------------------|----------------------------|
| <b>3.0 mm MIC<sup>®</sup> 250 2.0 with 14AWG</b> |                      |                                     |                        |                               |                            |
| 2 - 12   | 2                    | 56.55 kg/km<br>(38.00 lb/1000 ft)   | 7.5 mm<br>(0.30 in)    | 114.30 mm<br>(4.50 in)        | 76.20 mm<br>(3.00 in)      |
| 4 - 12   | 6                    | 219.89 kg/km<br>(147.76 lb/1000 ft) | 11.3 mm<br>(0.44 in)   | 167.64 mm<br>(6.60 in)        | 111.76 mm<br>(4.40 in)     |
| 4 - 12   | 4                    | 139.49 kg/km<br>(93.73 lb/1000 ft)  | 9.5 mm<br>(0.37 in)    | 140.97 mm<br>(5.55 in)        | 93.98 mm<br>(3.70 in)      |
| 6 - 24   | 12                   | 365.92 kg/km<br>(245.89 lb/1000 ft) | 14.2 mm<br>(0.56 in)   | 213.36 mm<br>(8.40 in)        | 142.24 mm<br>(5.60 in)     |
| 24   | 4                    | 148.99 kg/km<br>(100.12 lb/1000 ft) | 9.7 mm<br>(0.39 in)    | 148.59 mm<br>(5.85 in)        | 99.06 mm<br>(3.90 in)      |
| 24   | 2                    | 96.52 kg/km<br>(64.86 lb/1000 ft)   | 8.3 mm<br>(0.33 in)    | 125.73 mm<br>(4.95 in)        | 83.82 mm<br>(3.30 in)      |
| <b>MIC<sup>®</sup> 250 2.0 with 16AWG</b>        |                      |                                     |                        |                               |                            |
| 2 - 12   | 4                    | 88.90 kg/km<br>(59.74 lb/1000 ft)   | 7.4 mm<br>(0.29 in)    | 110.49 mm<br>(4.35 in)        | 73.66 mm<br>(2.90 in)      |
| 2 - 12   | 2                    | 55.00 kg/km<br>(36.96 lb/1000 ft)   | 6.1 mm<br>(0.24 in)    | 91.44 mm<br>(3.60 in)         | 60.96 mm<br>(2.40 in)      |
| 2 - 12   | 6                    | 132.58 kg/km<br>(89.09 lb/1000 ft)  | 8.7 mm<br>(0.34 in)    | 129.54 mm<br>(5.10 in)        | 86.36 mm<br>(3.40 in)      |
| 6 - 24   | 12                   | 224.92 kg/km<br>(151.14 lb/1000 ft) | 11.2 mm<br>(0.44 in)   | 167.64 mm<br>(6.60 in)        | 111.76 mm<br>(4.40 in)     |
| 24   | 2                    | 58.69 kg/km<br>(39.44 lb/1000 ft)   | 6.3 mm<br>(0.25 in)    | 95.25 mm<br>(3.75 in)         | 63.50 mm<br>(2.50 in)      |
| <b>MIC<sup>®</sup> 250 2.0 with 20AWG</b>        |                      |                                     |                        |                               |                            |
| 2 - 12   | 2                    | 32.93 kg/km<br>(22.13 lb/1000 ft)   | 5.3 mm<br>(0.21 in)    | 80.01 mm<br>(3.15 in)         | 53.34 mm<br>(2.10 in)      |
| 2 - 12   | 6                    | 68.23 kg/km<br>(45.85 lb/1000 ft)   | 6.9 mm<br>(0.27 in)    | 102.87 mm<br>(4.05 in)        | 68.58 mm<br>(2.70 in)      |
| 2 - 12   | 4                    | 50.84 kg/km<br>(34.16 lb/1000 ft)   | 6.0 mm<br>(0.24 in)    | 91.44 mm<br>(3.60 in)         | 60.96 mm<br>(2.40 in)      |
| 6 - 24   | 12                   | 122.10 kg/km<br>(82.05 lb/1000 ft)  | 9.0 mm<br>(0.35 in)    | 133.35 mm<br>(5.25 in)        | 88.90 mm<br>(3.50 in)      |

## Chemical Characteristics

RoHS

Free of hazardous substances according to RoHS 2011/65/EU

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## Transmission Performance

| Single-mode                  |                             |                                 |
|------------------------------|-----------------------------|---------------------------------|
| Fiber Name                   | ClearCurve <sup>®</sup> ZBL | SMF-28 <sup>®</sup> Ultra fiber |
| Fiber Category               | G.657.B3/G.652.D            | ITU-T G.657.A1                  |
| Fiber Code                   | U                           | Z                               |
| Performance Option Code      | 01                          | 01                              |
| Wavelengths (nm)             | 1310/1383/1550              | 1310/1383/1550                  |
| Maximum Attenuation (dB/km)  | 0.4/0.4/0.3                 | 0.4/0.4/0.3                     |
| Typical Attenuation* (dB/km) | 0.35/0.35/0.20              | 0.33/0.33/0.19                  |

\* For more information on typical attenuation please see the Corning whitepaper at [http://csmedia.corning.com/opcomm//Resource\\_Documents/whitepapers\\_rl/LAN-1863-AEN.pdf](http://csmedia.corning.com/opcomm//Resource_Documents/whitepapers_rl/LAN-1863-AEN.pdf)

\*\* SMF-28<sup>®</sup> Ultra fiber delivers up to 10x better macrobend loss performance compared to the G.652.D standard and up to 33 percent better macrobend loss performance than the G.657.A1 standard for 10mm radii bends.

## Ordering Information | Note: Contact Customer Care at 1-800-743-2675 for other options.

|                      |                      |                      |                      |                      |   |   |                      |                      |                      |   |   |   |   |   |
|----------------------|----------------------|----------------------|----------------------|----------------------|---|---|----------------------|----------------------|----------------------|---|---|---|---|---|
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | F | - | <input type="text"/> | <input type="text"/> | <input type="text"/> | 0 | 1 | M | 2 | 0 |
| 1                    | 2                    | 3                    | 4                    | 5                    | 6 | 7 | 8                    | 9                    | 10                   |   |   |   |   |   |

- 1** Select fiber count.  
 002 = 2 fiber    008 = 8 fiber  
 004 = 4 fiber    012 = 12 fiber  
 006 = 6 fiber    024 = 24 fiber

- 2** Select fiber type.  
 U = ClearCurve<sup>®</sup> ZBL (OS2)  
 Z = SMF28<sup>®</sup> Ultra fiber (OS2)

- 3** Select cable construction.  
 T = MIC<sup>®</sup> 250 2.0  
 D = 3.0 mm MIC<sup>®</sup> 250

- 4** Defines outer jacket.  
 F = Indoor/outdoor riser

- 5** Select number of copper conductors.  
 2 = 2 conductors  
 4 = 4 conductors  
 6 = 6 conductors  
 M = 12 conductors

- 6** Select unit of measure.  
 1 = Feet  
 2 = Meter

- 7** Select cable construction.  
 Z = MIC<sup>®</sup> 250 2.0 with 20 AWG  
 Y = MIC<sup>®</sup> 250 2.0 with 16 AWG  
 X = 3.0 mm MIC<sup>®</sup> 250 2.0 with 14 AWG  
 W = 3.0 mm MIC<sup>®</sup> 250 2.0 with 12 AWG

- 8** Defines performance option code.  
 01 = Single-mode, OS2  
 (Max. attenuation 0.4/0.4/0.3 dB/km)

- 9** Defines cable construction.  
 M = Hybrid (composite) cable

- 10** Defines print code.  
 20 = Non-armored

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## Notes



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