

# FREEDM® One Tight-Buffered Cable, Plenum

CORNING

Corning FREEDM® One plenum cables are flame-retardant, UV-resistant, indoor/outdoor cables designed for aerial and duct applications with no need for a transition splice when entering the building. The tight-buffered construction facilitates easier termination for low-fiber-count applications in the local area network (LAN) and eliminates the need for fan-out kits. The design features TIA-598 color-coded 900 µm buffered fibers for easy identification, consistent stripping and direct termination. The small diameter and bend radius of the cable allow for easy installation in space-constrained areas while the innovative waterblocking technology is ideal for outside plant (OSP) applications. The all-dielectric cable construction requires no grounding or bonding, and the UV-resistant, flame-retardant jacket is rugged, durable and easy to strip. 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

### **Waterblocking technology**

OSP (outdoor) applications

### **Small diameter and bend radius**

Easy installation in space-constrained areas

### **Color-coded fibers**

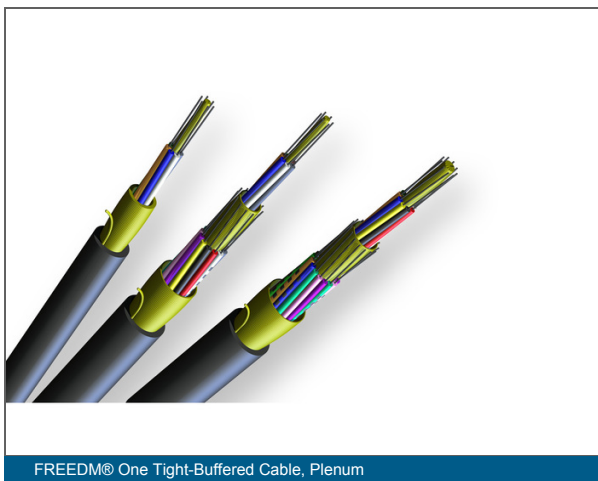
Quick and easy identification

### **All-dielectric construction**

Requires no grounding or bonding

### **UV-resistant, flame-retardant jacket**

Rugged, durable and easy to strip



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## Standards

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

## Specifications

### General Specifications

|              |                |
|--------------|----------------|
| Environment  | Indoor/Outdoor |
| Product Type | Dielectric     |
| Cable Type   | Tight-Buffered |
| Flame Rating | Plenum (OFNP)  |

### Temperature Range

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

### Design Characteristics Cable

|             |
|-------------|
| Fiber Count |
| 2 - 24      |

### Mechanical Characteristics Cable

| Fiber Count | Nominal Outer Diameter | Min. Bend Radius Installation | Min. Bend Radius Operation | Max. Tensile Strength, Short-Term | Max. Tensile Strength, Long-Term | Cable Weight                   |
|-------------|------------------------|-------------------------------|----------------------------|-----------------------------------|----------------------------------|--------------------------------|
| 2           | 5 mm (0.2 in)          | 75 mm (2.95 in)               | 50 mm (1.97 in)            | 675 N (151.75 lbf)                | 200 N (44.96 lbf)                | 21.94 kg/km (14.74 lb/1000 ft) |

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## Mechanical Characteristics Cable

| Fiber Count | Nominal Outer Diameter | Min. Bend Radius Installation | Min. Bend Radius Operation | Max. Tensile Strength, Short-Term | Max. Tensile Strength, Long-Term | Cable Weight                      |
|-------------|------------------------|-------------------------------|----------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| 4           | 5.3 mm (0.21 in)       | 79.5 mm (3.13 in)             | 53 mm (2.09 in)            | 675 N (151.75 lbf)                | 200 N (44.96 lbf)                | 25.18 kg/km<br>(16.92 lb/1000 ft) |
| 4           | 5.3 mm (0.21 in)       | 79.5 mm (3.13 in)             | 53 mm (2.09 in)            | 675 N (151.75 lbf)                | 200 N (44.96 lbf)                | 24.7 kg/km<br>(16.6 lb/1000 ft)   |
| 4           | 5.3 mm (0.21 in)       | 79.5 mm (3.13 in)             | 53 mm (2.09 in)            | 675 N (151.75 lbf)                | 200 N (44.96 lbf)                | 25.18 kg/km<br>(16.92 lb/1000 ft) |
| 6           | 5.3 mm (0.21 in)       | 79.5 mm (3.13 in)             | 53 mm (2.09 in)            | 675 N (151.75 lbf)                | 200 N (44.96 lbf)                | 27.21 kg/km<br>(18.28 lb/1000 ft) |
| 6           | 5.3 mm (0.21 in)       | 79.5 mm (3.13 in)             | 53 mm (2.09 in)            | 675 N (151.75 lbf)                | 200 N (44.96 lbf)                | 26.8 kg/km<br>(18.01 lb/1000 ft)  |
| 6           | 5.3 mm (0.21 in)       | 79.5 mm (3.13 in)             | 53 mm (2.09 in)            | 675 N (151.75 lbf)                | 200 N (44.96 lbf)                | 27.21 kg/km<br>(18.28 lb/1000 ft) |
| 12          | 6.3 mm (0.25 in)       | 94.5 mm (3.72 in)             | 63 mm (2.48 in)            | 675 N (151.75 lbf)                | 200 N (44.96 lbf)                | 36.9 kg/km<br>(24.8 lb/1000 ft)   |
| 12          | 6.3 mm (0.25 in)       | 94.5 mm (3.72 in)             | 63 mm (2.48 in)            | 675 N (151.75 lbf)                | 200 N (44.96 lbf)                | 37.57 kg/km<br>(25.25 lb/1000 ft) |
| 12          | 6.3 mm (0.25 in)       | 94.5 mm (3.72 in)             | 63 mm (2.48 in)            | 675 N (151.75 lbf)                | 200 N (44.96 lbf)                | 36.9 kg/km<br>(24.8 lb/1000 ft)   |
| 12          | 6.3 mm (0.25 in)       | 94.5 mm (3.72 in)             | 63 mm (2.48 in)            | 675 N (151.75 lbf)                | 200 N (44.96 lbf)                | 37.57 kg/km<br>(25.25 lb/1000 ft) |

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## Mechanical Characteristics Cable

| Fiber Count | Nominal Outer Diameter | Min. Bend Radius Installation | Min. Bend Radius Operation | Max. Tensile Strength, Short-Term | Max. Tensile Strength, Long-Term | Cable Weight                   |
|-------------|------------------------|-------------------------------|----------------------------|-----------------------------------|----------------------------------|--------------------------------|
| 18          | 7.4 mm (0.29 in)       | 111 mm (4.37 in)              | 74 mm (2.91 in)            | 1350 N (303.49 lbf)               | 400 N (89.92 lbf)                | 56.59 kg/km (38.03 lb/1000 ft) |
| 18          | 7.4 mm (0.29 in)       | 111 mm (4.37 in)              | 74 mm (2.91 in)            | 1350 N (303.49 lbf)               | 400 N (89.92 lbf)                | 55.9 kg/km (37.56 lb/1000 ft)  |
| 18          | 7.4 mm (0.29 in)       | 111 mm (4.37 in)              | 74 mm (2.91 in)            | 1350 N (303.49 lbf)               | 400 N (89.92 lbf)                | 56.59 kg/km (38.03 lb/1000 ft) |
| 24          | 8 mm (0.31 in)         | 120 mm (4.72 in)              | 80 mm (3.15 in)            | 1350 N (303.49 lbf)               | 400 N (89.92 lbf)                | 65 kg/km (43.68 lb/1000 ft)    |
| 24          | 8 mm (0.31 in)         | 120 mm (4.72 in)              | 80 mm (3.15 in)            | 1350 N (303.49 lbf)               | 400 N (89.92 lbf)                | 52.95 kg/km (35.58 lb/1000 ft) |
| 24          | 8 mm (0.31 in)         | 120 mm (4.72 in)              | 80 mm (3.15 in)            | 1350 N (303.49 lbf)               | 400 N (89.92 lbf)                | 65 kg/km (43.68 lb/1000 ft)    |

## Transmission Performance

### Multimode

| Fiber Category          | OM1              | OM2              | OM3              | OM4              | OM4 Extended Distance |
|-------------------------|------------------|------------------|------------------|------------------|-----------------------|
| Fiber Code              | K                | T                | T                | T                | T                     |
| Performance Option Code | 30               | 31               | 80               | 90               | 91                    |
| Fiber Core Diameter     | 62.5 µm          | 50 µm            | 50 µm            | 50 µm            | 50 µm                 |
| Wavelengths             | 850 nm / 1300 nm | 850 nm / 1300 nm | 850 nm / 1300 nm | 850 nm / 1300 nm | 850 nm / 1300 nm      |

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| Multimode                               |                         |                         |                          |                          |                          |
|-----------------------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|
| Maximum Attenuation                     | 3.4 dB/km / 1.0 dB/km   | 2.8 dB/km / 1.0 dB/km   | 2.8 dB/km / 1.0 dB/km    | 2.8 dB/km / 1.0 dB/km    | 2.8 dB/km / 1.0 dB/km    |
| Serial 1 Gigabit Ethernet               | 300 m / 550 m           | 750 m / 600 m           | 1000 m / 600 m           | 1000 m / 600 m           | 1100 m / 600 m           |
| Serial 10 Gigabit Ethernet              | 33 m / -                | 150 m / -               | 300 m / -                | 550 m / -                | 600 m / -                |
| Min. Overfilled Launch (OFL) Bandwidth  | 200 MHz*km / 500 MHz*km | 700 MHz*km / 500 MHz*km | 1500 MHz*km / 500 MHz*km | 3500 MHz*km / 500 MHz*km | 3500 MHz*km / 500 MHz*km |
| Minimum Effective Modal Bandwidth (EMB) | 220 MHz*km / -          | 950 MHz*km / -          | 2000 MHz*km / -          | 4700 MHz*km / -          | 5350 MHz*km / -          |

## Transmission Performance

| Single-mode             |                                   |
|-------------------------|-----------------------------------|
| Fiber Name              | Single-mode (OS2)                 |
| Performance Option Code | 31                                |
| Fiber Category          | OS2                               |
| Wavelengths             | 1310 nm / 1383 nm / 1550 nm       |
| Fiber Code              | E                                 |
| Maximum Attenuation     | 0.4 dB/km / 0.4 dB/km / 0.4 dB/km |

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## 1 Select fiber count.

Standard offerings:

002 006 018  
004 012 024

## 2 Select fiber code.

K = 62.5  $\mu$ m multimode (OM1)  
T = 50  $\mu$ m multimode  
(OM2/OM3/OM4/OM4+)  
E = Single-mode (OS2)  
SMF-28e®  
Z = Single-mode (OS2)  
SMF-28® Ultra fiber

## 3 Defines cable type.

8 = FREEDM® One cable

## 4 Defines outer jacket.

P = Indoor/outdoor plenum

## 5 Defines fiber placement.

3 = Standard for FREEDM  
One plenum cable

## 6 Defines length markings.

1 = Markings in ft (standard)  
for single-layer design.

## 7 Defines tensile strength.

1 = See specifications.

## 8 Select performance option code.

30 = 62.5  $\mu$ m multimode (OM1)  
31 = 50  $\mu$ m multimode (OM2)  
80 = 50  $\mu$ m multimode (OM3)  
90 = 50  $\mu$ m multimode (OM4)  
91 = 50  $\mu$ m multimode (OM4+)  
31 = Single-mode (OS2)  
(Max. attenuation .65 / .65 / 0.5 dB/km)

## 9 Defines cable type.

- = FREEDM One cable

## 10 Defines special requirements.

29 = No special requirements



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