

# FREEDM<sup>®</sup> Loose Tube, Gel-Free, Interlocking Armored Cable, Plenum

48 F, 50  $\mu\text{m}$  multimode, extended 10G distance (OM4)

CORNING

Corning FREEDM<sup>®</sup> loose tube gel-free interlocking armored cables are flame-retardant, indoor/outdoor, plenum-rated cables for interbuilding and intrabuilding backbones in aerial, duct and riser applications. Encased in a spirally wrapped, aluminum interlocking armor for ruggedness and superior crush resistance, these cables are ideal for industrial and heavy traffic areas and installations requiring extra protection for optical cables and for high-fiber-count trunking applications in areas with limited conduit or vault space. The plenum rating precludes the need for a transition splice when entering the building.

These cables are available in fiber counts up to 72 fibers and are protected against water penetration by innovative waterblocking materials. These materials swell to absorb water without the use of messy gels to provide more efficient and craft-friendly cable preparation, making cable access easier and simplifies the use of buffer tube fan-out kits. The buffer tubes and fibers in each tube are color coded for quick, easy identification. The SZ-stranded, loose tube design isolates fibers from installation, environmental rigors and allows for easy midspan access. Available in 50  $\mu\text{m}$ , 62.5  $\mu\text{m}$ , single-mode and hybrid, the cable design is National Electrical Code<sup>®</sup> (NEC<sup>®</sup>) listed.

The armored design allows for easy one-step installation which reduces overall installation costs. The UV-resistant, flame-retardant jacket is rugged and easy to strip.

## Features and Benefits

### Gel-free waterblocking technology

Craft-friendly cable preparation

### Loose tube design

Mechanical ruggedness and environmental durability

### Color-coded tubes and fibers

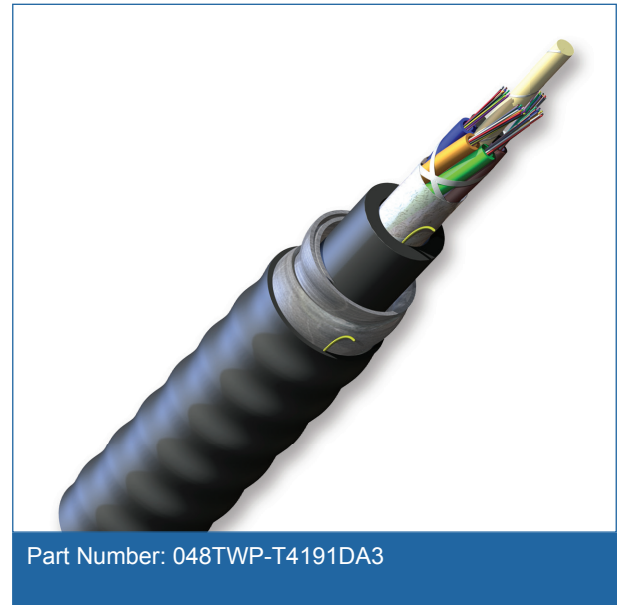
Quick and easy identification

### Flexible interlocking armor

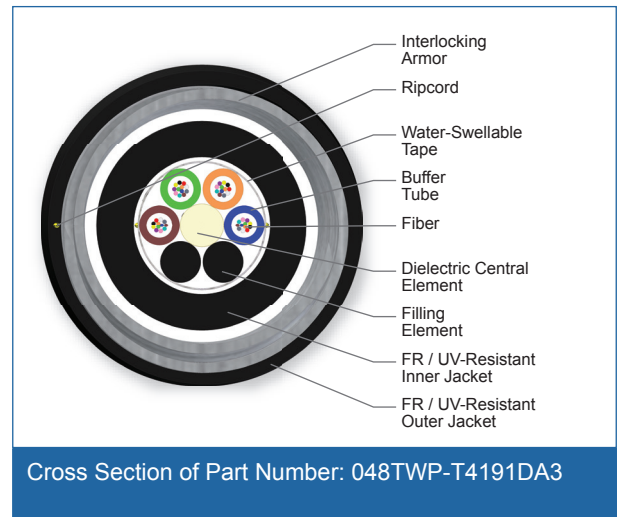
Up to seven times the crush protection compared to non-armored cables

### Common installations

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



Part Number: 048TWP-T4191DA3



Cross Section of Part Number: 048TWP-T4191DA3

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## Standards

<b>Listings</b>	National Electrical Code® (NEC®) OFNP
<b>Design and Test Criteria</b>	ANSI/ICEA S-104-696, CSA FT-6

## Specifications

General Specifications	
Environment	Indoor/Outdoor Cables
Application	Aerial, Direct Buried, Duct, General Purpose Horizontal, (Vertical Riser)
Cable Type	Loose Tube
Product Type	Interlocking armor
Flame Rating	Plenum (OFCP)
Fiber Category	50 µm MM (OM4+)

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)

Cable Design	
Central Element	Dielectric
Fiber Count	48
Fiber Coloring	Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua
Fibers per Tube	12
Number of Tube Positions	6
Number of Active Tubes	4
Buffer Tube Color Coding	Blue, Orange, Green, Brown
Buffer Tube Diameter	3.0 mm (0.12 in)
Number of Filling Elements	2
Tape	Water-swellable
Number of Ripcords	2
Inner Jacket Material	Flame-Retardant, UV-Resistant

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## Cable Design

Tensile Strength Elements and/or Armoring - Layer 1	Interlocking armor
Outer Jacket Material	Flame-Retardant, UV-Resistant
Outer Jacket Color	Black

## Mechanical Characteristics Cable

Min. Bend Radius Installation	299 mm (11.8 in)
Min. Bend Radius Operation	199 mm (7.8 in)
Nominal Inner Cable Diameter	11.1 mm (0.44 in)
Max. Tensile Strength, Short-Term	2700 N (600 lbf)
Max. Tensile Strength, Long-Term	810 N (180 lbf)
Nominal Outer Diameter	17.3 mm (0.68 in)
Weight	257 kg/km (172.6 lb/1000 ft)

## Chemical Characteristics

RoHS	Free of hazardous substances according to RoHS 2002/95/EG
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## Fiber Specifications

### Optical Characteristics (cabled)

Fiber Core Diameter	50 $\mu$ m
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<sup>™</sup>/EDGE<sup>™</sup> systems solutions.

- Notes:
- 1) 50  $\mu$ m multimode fiber macrobend loss  $\leq$  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	048TWP-T4191DA3
Product Description	FREEDM <sup>®</sup> Loose Tube, Gel-Free, Interlocking Armored Cable, Plenum, 48 F, 50 $\mu$ m multimode, extended 10G distance (OM4)
EAN Code	4056418149035



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