

# Industrial LSZH™ Tray-Rated, Loose Tube, Gel-Free, Corrugated Armored Cable

192 F, 50 µm multimode (OM4)

CORNING

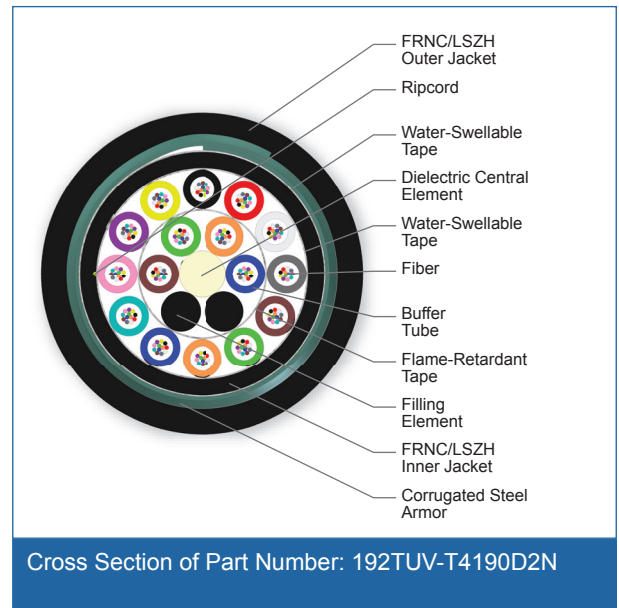
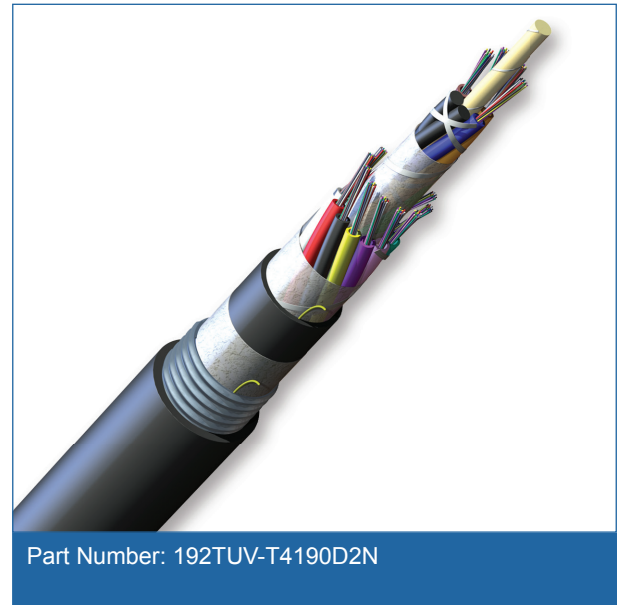
Corning Industrial LSZH™ fiber optic cables are designed for industrial building backbones and harsh environments atypical of traditional datacom systems. Based on proven stranded loose tube cable designs, these industrial cables are flame-retardant and have been tested to meet mechanical/environmental conditions exceeding the requirements set for traditional datacom cables. The 250 µm color-coded individual fibers offer quick and easy identification during installation.

Corning Industrial LSZH™ cables provide life-safety benefits for industrial applications through the cables' construction. Many traditional data communication cables contain halogens in the jacket compound, which pose little risk in the controlled and protected environment of typical building air spaces, such as behind walls, under floors and in conduit. However, cables deployed in industrial applications, particularly on the plant floor, are typically exposed to greater risk of fire, extreme temperatures or chemical exposure. This often makes halogen cables inappropriate for industrial environments.

Corning Industrial LSZH™ cables eliminate these risks in the event of a fire in the industrial environment. In addition, the LSZH compound does not drip when superheated; the material burns to ash, eliminating the onset of secondary fires.

When cables containing halogens ignite, they emit highly reactive gases that can be harmful if inhaled. When halogens combine with water, acids are formed. These acids damage both living tissue and inorganic materials, such as metal and electronic equipment. Corning industrial LSZH cables eliminate these risks in the event of a fire in the industrial environment. In addition, the LSZH compound does not drip when superheated; the material burns to ash, eliminating the onset of secondary fires.

*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

**Low-smoke, zero-halogen sheath**  
Key life-safety benefit

**Meets cyclic impact and chemical resistance test**  
Superior performance

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## Features and Benefits

### Corrugated armor

Mechanical protection

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### Common installations

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

## Standards

### Listings

National Electrical Code® (NEC®) OFCR-LS/Riser; Sunlight Resistant (SUN RES); IEEE-383/IEEE-1202 flame test; Suitable for Direct Burial (DIR BUR); IEC 60332-3, IEC 60754-2, IEC 61034

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### Design and Test Criteria

ANSI/ICEA S-104-696; UL 13; UL 444; UL 1277; UL 1666; CSA C22.2 No. 230 and No. 232; CSA OFC (FT-4-S1)

## Specifications

General Specifications	
Environment	Indoor/Outdoor
Application	Aerial, Direct Buried, Duct, Tray Rated, (General Purpose Horizontal, Vertical Riser)
Cable Type	Loose Tube
Product Type	Corrugated Steel Armor
Flame Rating	LSZH™ (OFCR-LS)
Fiber Category	50 μm MM (OM4)

Temperature Range	
Storage	-40 °C to 70 °C (-40 °F to 158 °F)
Installation	-30 °C to 60 °C (-22 °F to 140 °F)
Operation	-40 °C to 70 °C (-40 °F to 158 °F)

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Cable Design	
Central Element	Dielectric
Fiber Count	192
Fiber Coloring	Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua
Fibers per Tube	12
Number of Tube Positions	18
Number of Active Tubes	16
Buffer Tube Color Coding, Layer 1	Blue, Orange, Green, Brown
Buffer Tube Diameter	2.5 mm (0.1 in)
Number of Filling Elements	2
Tape	Water-swellable
Buffer Tube Color Coding, Layer 2	Slate, White, Red, Black, Yellow, Violet, Rose, Aqua, Blue*, Orange*, Green*, Brown*
Tape, Layer 2	Water-swellable
Inner Jacket Material	Flame-retardant, non-corrosive/low-smoke, zero-halogen (FRNC/LSZH) material
Tape, Layer 3	Flame-retardant tape
Tensile Strength Elements and/or Armoring - Layer 1	Corrugated steel tape armor
Number of Ripcords	3
Outer Jacket Material	Flame-retardant, non-corrosive/low-smoke, zero-halogen (FRNC/LSZH) material
Outer Jacket Color	Black

Mechanical Characteristics Cable	
Max. Tensile Strength, Short-Term	2700 N (600 lbf)
Max. Tensile Strength, Long-Term	810 N (180 lbf)
Nominal Outer Diameter	20.3 mm (0.80 in)
Min. Bend Radius Installation	305 mm (12.0 in)
Min. Bend Radius Operation	203 mm (8.0 in)
Weight	381 kg/km (256 lb/1000 ft)

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

# Industrial LSZH™ Tray-Rated, Loose Tube, Gel-Free, Corrugated Armored Cable

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## Fiber Specifications

Optical Characteristics (cabled)	
Fiber Core Diameter	50 µm
Fiber Category	OM4
Fiber Code	T
Performance Option Code	90
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	550 m / -
Min. Overfilled Launch (OFL) Bandwidth	3500 MHz*km / 500 MHz*km
Minimum Effective Modal Bandwidth (EMB)	4700 MHz*km / -

\* Assumes 1.0 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.

## Ordering Information

Part Number	192TUV-T4190D2N
Product Description	Industrial LSZH™ Tray-Rated, Loose Tube, Gel-Free, Corrugated Armored Cable, 192 F, 50 µm multimode (OM4)



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