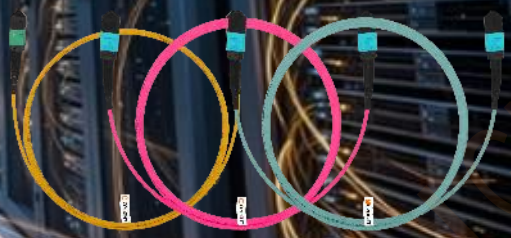
Product Specification

MPO-12 / MPO-16 Fiber Optic Trunk Cables

OS2 Single-Mode / OM3 & OM4 Multimode
12-Fiber / 16-Fiber | APC / UPC | Type B Polarity



Features

- MPO connectors for high-density multi-fiber connectivity
- Corning SMF-28® Ultra single-mode fiber
- Corning ClearCurve® OM3/OM4 multimode fiber
- Available in 12-fiber and 16-fiber configurations
- APC and UPC connector polish options
- Type B polarity for consistent fiber mapping
- Low insertion loss and high return loss
- Factory terminated and individually tested
- OFNP Plenum-rated cable jacket

Compliance

- RoHS Directive 2011/65/EU and (EU) 2015/863
- ANSI/TIA-568.3-E
- ANSI/TIA-604-5-F (FOCIS 5) for MPO-12
- ANSI/TIA-604-18-A (FOCIS 18) for MPO-16
- IEC 61754-7-1 for single-row MPO connector interfaces
- OFNP Plenum Rating (UL 1651 / NFPA 262)

Applications

- Data Center Fiber Backbone Cabling
- AI and HPC Cluster Networks
- High-Speed Ethernet and InfiniBand Networks
- High-Density Parallel Optical Interconnections

Description

AICPLIGHT MPO-12 and MPO-16 Fiber Optic Trunk Cables are designed to provide reliable, high-density optical connectivity for modern data centers, AI computing clusters, and high-performance networking environments.

The product family is available in 12-fiber MPO-12 and 16-fiber MPO-16 configurations, supporting OS2 single-mode and OM3/OM4 multimode fiber types. Both ends are terminated with female MPO connectors, offering APC or UPC polish options and Type B polarity for consistent fiber mapping.

The 12-fiber configurations support high-speed parallel optical interconnections and structured fiber backbone cabling, while the 16-fiber OM4 configuration is designed for high-density multimode applications, including next-generation 400G and 800G optical networks.

Featuring low insertion loss, factory termination, and an OFNP Plenum-rated jacket, these trunk cables provide efficient fiber connectivity, simplify cable management, and support scalable network infrastructure in high-density data center environments.

Product Performance Specifications

1、Model Configuration

Parameter	S2-12FB-MPOA-MPOA	M4-12FB-MPOA-MPOA	M4-12FB-MPOU-MPOU	M3-12FB-MPOU-MPOU	M4-16F-MPOA-MPOA
Fiber Mode	Single-mode	Multimode	Multimode	Multimode	Multimode
Fiber Type	OS2	OM4	OM4	OM3	OM4
Fiber Count	12 Fibers	12 Fibers	12 Fibers	12 Fibers	16 Fibers
Connector A	MPO-12 Female	MPO-12 Female	MPO-12 Female	MPO-12 Female	MPO-16 Female
Connector B	MPO-12 Female	MPO-12 Female	MPO-12 Female	MPO-12 Female	MPO-16 Female
Connector A Polish	APC	APC	UPC	UPC	APC
Connector B Polish	APC	APC	UPC	UPC	APC
Connector Gender	Female	Female	Female	Female	Female
Polarity	Type B	Type B	Type B	Type B	Type B
Cable Jacket	OFNP	OFNP	OFNP	OFNP	OFNP
Cable Color	Yellow	Magenta	Magenta	Aqua	Magenta
Available Length	1–100 m	1–50 m	1–100 m	1–100 m	1–100 m

2、Optical Fiber Characteristics

Parameter	OS2 Single-mode	OM3 Multimode	OM4 Multimode

Fiber Brand	Corning SMF-28® Ultra	Corning ClearCurve®	Corning ClearCurve®
Core / Cladding Diameter	9/125 μm	50/125 μm	50/125 μm
Operating Wavelength	1310/1550 nm	850/1300 nm	850/1300 nm
Maximum Attenuation	≤0.32 dB/km @1310 nm; ≤0.18 dB/km @1550 nm	≤2.3 dB/km @850 nm; ≤0.6 dB/km @1300 nm	≤2.3 dB/km @850 nm; ≤0.6 dB/km @1300 nm
Minimum Overfilled Launch (OFL) Bandwidth		≥1500 MHz·km @850 nm; ≥500 MHz·km @1300 nm	≥3500 MHz·km @850 nm; ≥500 MHz·km @1300 nm

3、Connector Optical Performance

Parameter	OS2 Single-mode	OM3 Multimode	OM4 Multimode
Maximum Insertion Loss (dB)	≤0.75	≤0.35	≤0.35
Minimum Return Loss (dB)	≥50	≥20	≥20

4、Physical and Mechanical Characteristics

Parameter	Specification
Cable Construction	Round Cable
Cable Diameter	3.0 mm
Minimum Bend Radius (Optical Fiber)	OS2: 10 mm; OM3/OM4: 7.5 mm
Minimum Bend Radius (Fiber Cable)	OS2: 10/5D (Dynamic/Static); OM3/OM4: 20/10D (Dynamic/Static)

5、Environmental Characteristics

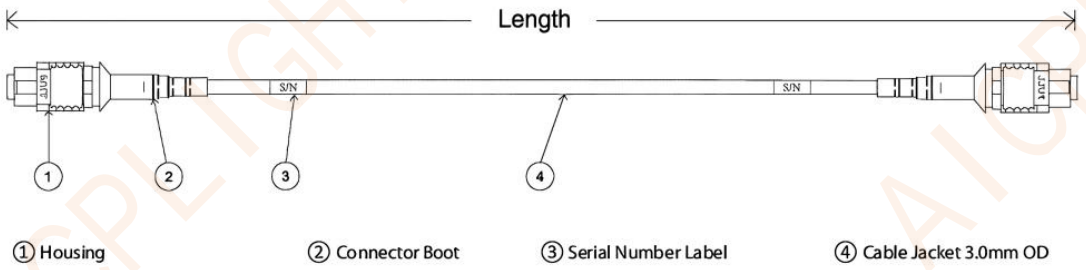
Parameter	Specification
Cable Jacket Rating	OFNP (Plenum)
Operating Temperature	-10°C to +60°C (14°F to 140°F)
Storage Temperature	-10°C to +70°C (14°F to 158°F)

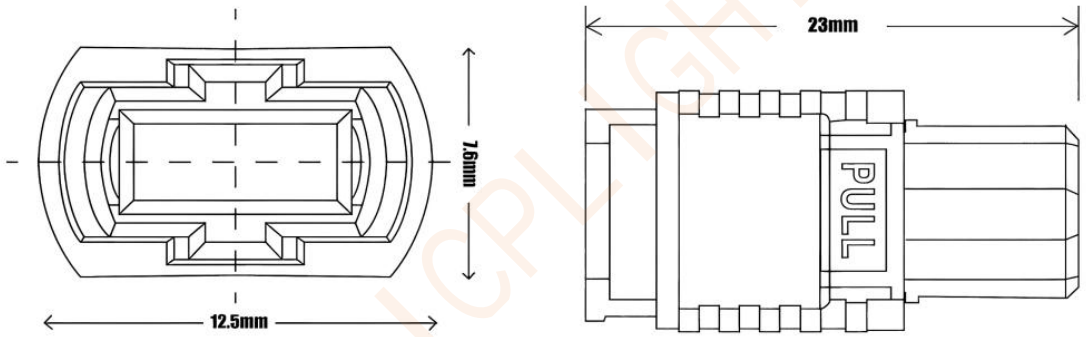
6、Color Characteristics

Parameter	Specification
OS2 Cable Jacket	Yellow

OM3 Cable Jacket	Aqua
OM4 Cable Jacket	Magenta

Mechanical Dimension





Note:

Length tolerance: L ≤ 1 m: ±0.05 m; 1 m < L < 20 m: ±0.10 m; L ≥ 20 m: ±1% of the nominal length. Overall length is measured from the front mating face of Connector A to the front mating face of.

Handling and Safety Precautions:

- **Bend Radius:** Do not bend the cable below the specified minimum bend radius. Avoid sharp bends, tight loops, or excessive bending during installation and operation.
- **Cable Handling:** Avoid excessive pulling, twisting, crushing, stretching, or other mechanical stress that may damage the optical fibers or cable structure.
- **Installation and Removal:** Handle connectors by their housings. Do not pull directly on the cable or apply excessive force when mating or unmating connectors. Ensure proper connector key alignment before connection.
- **Connector Protection:** Keep connector endfaces clean and protected with dust caps when not in use. Avoid touching the fiber endfaces or exposing them to dust, oil, moisture, or other contaminants.
- **Cleaning and Inspection:** Inspect and clean connector endfaces using appropriate fiber optic cleaning tools before mating. Always verify connector cleanliness to minimize insertion loss and prevent endface damage.
- **Optical Safety:** Never look directly into fiber connector endfaces or exposed optical fibers, especially when connected to active

optical equipment. Invisible laser radiation may be present and can cause eye injury

Ordering Information

PN	Description
S2-12FB-MPOA-MPOA	MPO-12 APC Female to MPO-12 APC Female OS2 Single-Mode Fiber Optic Trunk Cable, 12 Fibers, Type B, Plenum (OFNP), Yellow
M4-12FB-MPOA-MPOA	MPO-12 APC Female to MPO-12 APC Female OM4 Multimode Fiber Optic Trunk Cable, 12 Fibers, Type B, Plenum (OFNP), Magenta
M4-12FB-MPOU-MPOU	MPO-12 UPC Female to MPO-12 UPC Female OM4 Multimode Fiber Optic Trunk Cable, 12 Fibers, Type B, Plenum (OFNP), Magenta
M3-12FB-MPOU-MPOU	MPO-12 UPC Female to MPO-12 UPC Female OM3 Multimode Fiber Optic Trunk Cable, 12 Fibers, Type B, Plenum (OFNP), Aqua
M4-16F-MPOA-MPOA	MPO-16 APC Female to MPO-16 APC Female OM4 Multimode Fiber Optic Trunk Cable, 16 Fibers, Type B, Plenum (OFNP), Magenta

Note：

Standard lengths are available in 1 m, 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, and 50 m.

Custom lengths are available upon request. Non-standard lengths are generally not held in stock and are