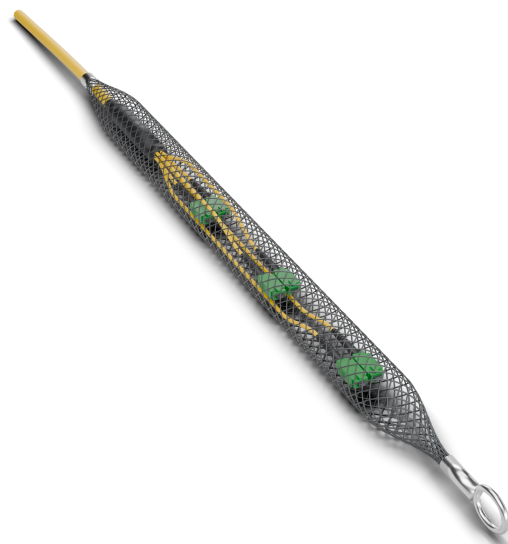


MPO Trunk Cables

12-288F · MPO-12 / MPO-24 · Corning SMF-28 Ultra APC · OM4 / OM5 UPC · Built to length



Shown: 72F singlemode trunk, 6 x MPO-12 APC unpinned legs each end, yellow round trunk. End A has a braided pulling grip over staggered connector pairs (right, close-up); End B is fanned out for patching.

OVERVIEW

Pre-terminated MPO backbone, cut to your run

One Optics MPO trunk cables carry 12 to 288 fibers between MPO panels, cassettes and enclosures in one factory-terminated assembly. Each trunk is built to the length you order, with the fiber count, MPO leg type, pinning, polarity, jacket rating and pulling grip chosen per order.

Singlemode trunks use Corning SMF-28 Ultra fiber (G.652.D and G.657.A1 compliant, bend-insensitive) with APC polished US Conec MTP connectors. OM4 and OM5 multimode trunks use 50/125 μ m laser-optimized fiber with UPC (flat) US Conec MTP connectors for 40G to 400G parallel-optic links. Every connector is 100% tested for end-face cleanliness and end-face geometry before the trunk ships.

12-288

FIBERS PER TRUNK

A / B / C

POLARITY TYPES

0.35 dBLOW-LOSS MPO IL
MAX**100%**

END FACES TESTED

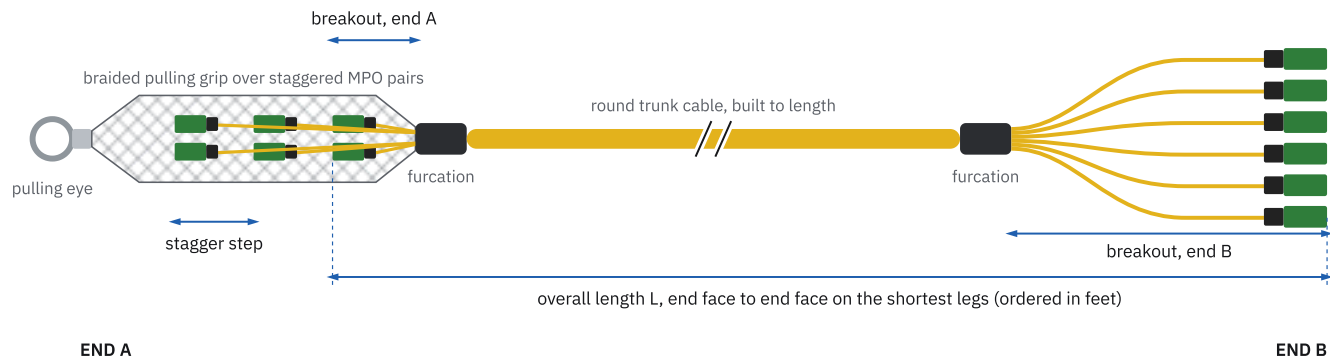
FEATURES & APPLICATIONS

- ✓ **12 to 288 fibers** in MPO-12 or MPO-24 legs
- ✓ **Built to length**, ordered in feet
- ✓ **Corning SMF-28 Ultra**, G.657.A1 bend-insensitive
- ✓ **OM4 or OM5 multimode**, UPC (flat); singlemode APC
- ✓ **Pinned or unpinned** at each end, key up
- ✓ **All polarity types**: Type A, B or C (see page 3)
- ✓ **Braided pulling grip** with eye: End A, End B, both or none
- ✓ **Staggered legs** under the grip for a slim pull
- ✓ **Jacket**: plenum (OFNP) standard; LSZH or riser (OFNR) on request
- ✓ **Labeled** End A and End B, legs numbered
- ✓ **Applications**: data center and building backbone links, row-to-row and room-to-room MPO runs

MATCHED TO ONE OPTICS MPO HARDWARE

The MPC-24-LC-A (Type A) and MPC-24-LC-U (Method B / Universal) MPO pass-through cassettes have two pinned (male) MTP-12 APC singlemode ports at the rear. Use a trunk with unpinned (female) MPO-12 APC legs at that end, polarity matched to the cassette: Type A or C for -A, Type B for -U. Patch on from the panel with One Optics MPO jumpers.

ASSEMBLY LAYOUT



Schematic, not to scale. Breakout length, staggering and grip end are set per order. Staggered legs are longer than the shortest leg by the stagger step.

SPECIFICATIONS

Fiber, singlemode	Corning SMF-28 Ultra, G.652.D / G.657.A1	Trunk cable	Indoor plenum (OFNP) ribbon cable, round; LSZH or OFNR on request
Fiber, multimode	OM4 or OM5 50/125 μ m laser-optimized; OM5 wideband (WBMMF)	Color code	Singlemode: yellow jacket and legs, green connectors; OM4: aqua jacket, violet connectors; OM5: lime green jacket, aqua connectors
Fiber count	12 to 288; see builds on page 4	Legs	0.12 in [3.0 mm] round
Connector	MPO-12 or MPO-24 (US Conec MTP), pinned or unpinned, key up	Breakout length	36 in [914 mm] standard, custom on request
Polish	APC (singlemode); UPC, flat (multimode)	Pulling grip	Braided grip with eye; End A, End B, both or none. 100 lbf [440 N] max pull on the grip
Polarity	Type A, B or C, leg to leg	Length tolerance	+4 in / -0 up to 33 ft; +1% / -0 over 33 ft
Insertion loss, standard MPO	0.75 dB singlemode, 0.60 dB multimode max per mated pair	Min. bend radius, trunk	See Trunk Cable table below
Insertion loss, low-loss MPO	0.35 dB max per mated pair	Min. bend radius, legs	0.39 in [10 mm]
Return loss	Singlemode APC 60 dB min; multimode 20 dB min	Operating temperature	14 to 158 °F [-10 to 70 °C]
Testing	100% end-face cleanliness and end-face geometry		

TRUNK CABLE

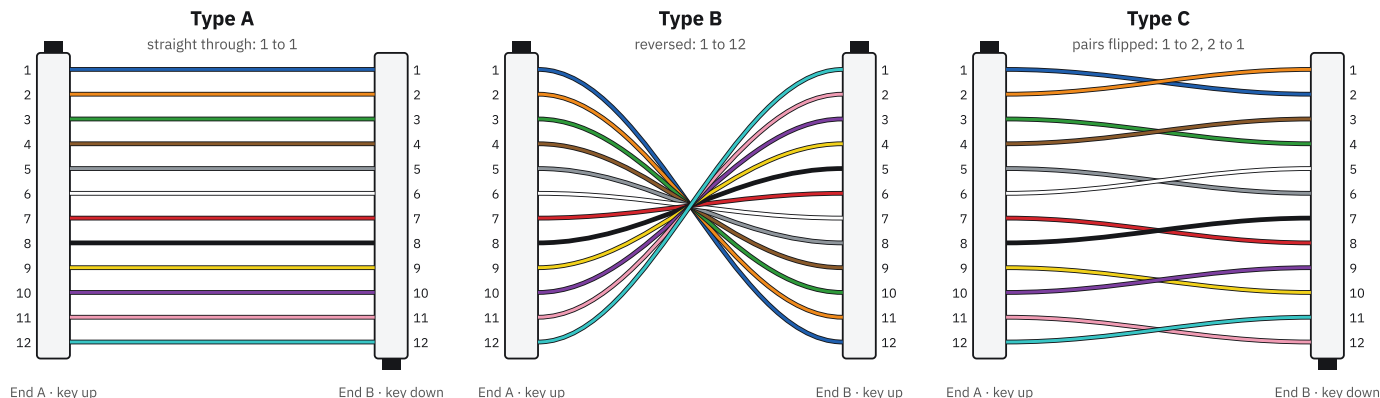
Standard cable is singlemode indoor plenum (OFNP) ribbon cable with a yellow jacket and Corning SMF-28 Ultra fiber. 12F to 144F trunks use 12-fiber ribbons in a single central tube, one ribbon per MPO-12 leg. 192F and 288F trunks use 24-fiber ribbon plenum cable; each ribbon is split to 2 x 12F for MPO-12 legs or kept whole for MPO-24 legs. OM4 and OM5 multimode trunks use OM4 or OM5 ribbon cable (aqua or lime green jacket); cable data on request. Multimode reach: 40G-SR4 150 m; 100G-SR4 and 400G-SR8 100 m; 400G-SR4.2 100 m on OM4, 150 m on OM5.

FIBER COUNT	CABLE	NOMINAL OD	MIN. BEND RADIUS, INSTALL / INSTALLED	GRIP OD, NOMINAL	MIN. CONDUIT
12, 24, 36, 48F	12F ribbon, central tube	0.38 in [9.7 mm]	7.6 / 3.8 in [194 / 97 mm]	1.0 in [25 mm]	2 in
72, 96F	12F ribbon, central tube	0.49 in [12.4 mm]	9.8 / 4.9 in [248 / 124 mm]	1.25 in [32 mm]	2 in
144F	12F ribbon, central tube	0.61 in [15.5 mm]	12.2 / 6.1 in [310 / 155 mm]	1.5 in [38 mm]	2 in
192, 288F	24F ribbon, split to 12F	0.78 in [19.8 mm]	11.7 / 7.8 in [297 / 198 mm]	up to 2.0 in [51 mm]	2 in; 3 in recommended

All values nominal, for the standard OFNP cable; LSZH and OFNR cables can differ. 192F uses the 288F cable, so its OD is nominal. Bend radius: during installation (under pulling load) / installed (long-term), per the cable manufacturer's published values. Grip OD depends on leg count and stagger. Max pulling load 100 lbf [440 N] on the grip.

POLARITY EXPLAINED

Every fiber link has to carry each transmitter (Tx) to a receiver (Rx) at the far end. In an MPO link the **polarity type** sets which fiber position at End A lands on which position at End B. All three types are available on One Optics MPO jumpers and trunks: **Type A, Type B and Type C**.



Type A, straight through. Key up at End A, key down at End B. Position 1 stays position 1, so the order is unchanged. Pair it with MPC-24-LC-A cassettes and a crossed cord at one end.

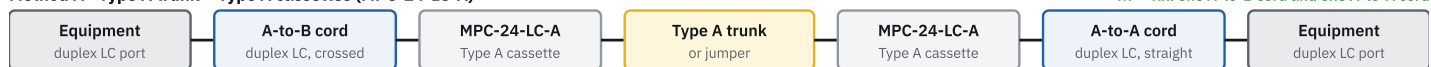
Type B, reversed. Key up at both ends. Position 1 lands on 12, 2 on 11, and so on. It is the type used end to end for parallel-optic transceivers and with Method B / Universal cassettes (MPC-24-LC-U).

Type C, pairs flipped. Key up at End A, key down at End B, with each pair swapped: 1 to 2, 2 to 1, 3 to 4. The trunk does the Tx/Rx crossover, so standard A-to-B cords work at both ends.

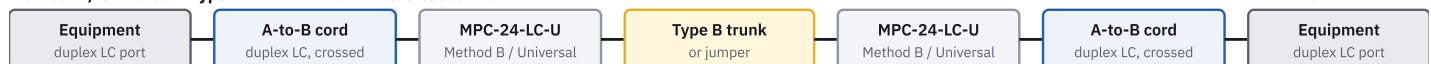
Fiber positions as seen at each end, key up or down as marked. TIA-598 colors. Schematic, not to scale.

BUILDING A CHANNEL THAT WORKS

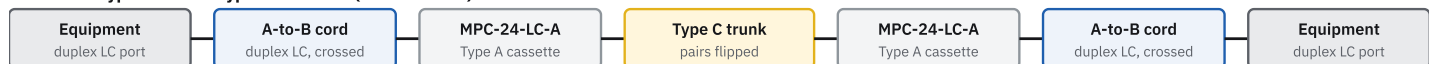
Method A · Type A trunk + Type A cassettes (MPC-24-LC-A)



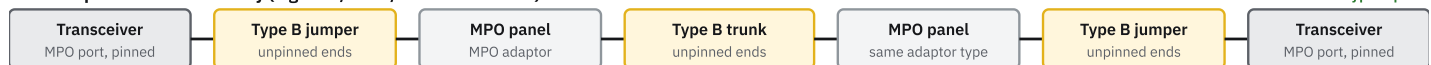
Method B / Universal · Type B trunk + MPC-24-LC-U cassettes



Method C · Type C trunk + Type A cassettes (MPC-24-LC-A)



Parallel optics · MPO all the way (e.g. 40G/100G/400G SR4 or DR4)



One Optics pass-through cassettes: MPC-24-LC-A (Type A) and MPC-24-LC-U (Polarity Method B / Universal, for Type B trunks). The industry also calls Method B cassettes "Universal". Each row is one complete link; keep every part in the link from the same row. "A-to-B" is the common crossed duplex LC cord; "A-to-A" is straight.

WHEN TO USE EACH

- Method B / Universal for new builds that will run parallel optics now or later: the same Type B trunk works for duplex and MPO transceivers. Use the One Optics MPC-24-LC-U Method B / Universal cassette at both ends.
- Method A to match existing Type A cassettes such as the One Optics MPC-24-LC-A. Mark the A-to-A cord end so it is not swapped.
- Method C for duplex-only links on Type A cassettes where you want A-to-B cords everywhere. Not for parallel optics.

TWO QUICK CHECKS

- Count the flips.** Between two MPO transceivers, count the Type B jumpers and trunks in the link: the total must be odd (1 or 3), with the same adaptor type in both panels. Singlemode APC panels use key-up to key-down adaptors. A single Type B jumper works on its own.
- Pinned meets unpinned.** Every mated MPO pair is one pinned and one unpinned connector. Transceivers and the rear MPO ports of our cassettes are pinned, so the trunk or jumper going into them is unpinned.
- Not sure? Send us both ends of the link and we will specify the polarity.

On a trunk, the polarity type applies leg to leg: leg 1 at End A runs to leg 1 at End B, each leg wired to the type ordered.

FIBER COUNT BUILDS

TOTAL FIBERS	MPO-12 LEGS PER END	MPO-24 LEGS PER END
12	1	–
24	2	1
36	3	–
48	4	2
72	6	3
96	8	4
144	12	6
192	16	8
288	24	12

Cable OD, bend radius and grip size for each fiber count are in the Trunk Cable table on page 2. 192F and 288F trunks take a grip up to 2.0 in [51 mm]; use 3 in conduit where possible.

SPECIFY WITH YOUR ORDER

ITEM	OPTIONS	YOUR SELECTION
Fiber count	12 to 288, see builds	
Leg type	MPO-12 or MPO-24	
Fiber type	Singlemode (OS2), OM4 or OM5; OM3 on request	
Ends	Pinned or unpinned, each end	
Polarity	Type A, B or C	
Jacket	OFNP standard; LSZH, OFNR on request	
Pulling grip	End A, End B, both or none	
Breakout	36 in standard, or custom; stagger	
Length	Feet, end face to end face	
Quantity		

ORDERING

Part number format **MPOT-[legs]X[fibers]-[ends]-[polarity]-[fiber]-[jacket]-[grip]-[NNN]F**

LEGS X FIBERS

Legs per end x MPO type: **1X12** ... **24X12**, **1X24** ... **12X24**
e.g. **6X12** = 72F

ENDS

FF unpinned both · **MF** pinned End A, unpinned End B · **MM** pinned both

POLARITY · FIBER

A · **B** · **C**
SM singlemode APC · **OM4** · **OM5** multimode UPC

JACKET · GRIP · LENGTH

Z LSZH · **R** OFNR · **P** OFNP
GA End A · **GB** End B · **G2** both · **G0** none
NNN = feet

Standard: 36 in breakout both ends, legs under a grip staggered in pairs. Custom breakout or stagger is noted on the quote. Example:
MPOT-6X12-FF-B-SM-P-GA-150F.

EXAMPLE CONFIGURATIONS

PART NUMBER	DESCRIPTION
MPOT-2X12-FF-A-SM-P-G0-030F	24F singlemode, 2 x MPO-12 APC unpinned each end, Type A, plenum, no grip, 30 ft
MPOT-6X12-FF-B-SM-P-GA-150F	72F singlemode, 6 x MPO-12 APC unpinned each end, Type B, plenum, grip on End A, 150 ft
MPOT-12X12-FF-B-SM-R-GA-200F	144F singlemode, 12 x MPO-12 APC unpinned each end, Type B, riser, grip on End A, 200 ft
MPOT-12X12-FF-B-OM4-P-GA-100F	144F OM4 multimode, 12 x MPO-12 UPC unpinned each end, Type B, plenum, grip on End A, 100 ft
MPOT-3X24-MF-A-SM-Z-G2-100F	72F singlemode, 3 x MPO-24 APC, pinned End A to unpinned End B, Type A, LSZH, grips both ends, 100 ft
MPOT-24X12-FF-C-SM-P-GA-250F	288F singlemode, 24 x MPO-12 APC unpinned each end, Type C, plenum, grip on End A, 250 ft
MPOT-12X24-FF-B-OM5-R-G2-300F	288F OM5 multimode, 12 x MPO-24 UPC unpinned each end, Type B, riser, grips both ends, 300 ft

INSTALLATION NOTES

- ✓ Pull by the **pulling eye only**, never by the legs or connectors
 - ✓ Keep dust caps on until the trunk is in place
 - ✓ Pull **100 lbf [440 N] max** on the grip; hold the bend radius in the cable table
- ✓ Remove the grip, then dress legs into the panel; clean and inspect before mating
 - ✓ Order length end face to end face; allow for slack, rises and drops
 - ✓ Confirm pinning and polarity against the cassettes at each end

Contact sales for pricing. Test data and certificate of conformance available on request. Specifications subject to change. Rev A · 2026-10.