MPO/MTP Cable Selection Reference Card

Data center architects, installers, and procurement teams

BWNFiber
Business Intelligence Excellence
www.bwnfiber.com/mpo-mtp-fiber-cable-guide

1. Speed → Fiber Count

Speed	Fibers	Lanes
40G SR4	8-fiber	4 Tx + 4 Rx
100G SR4	8-fiber	4 Tx + 4 Rx
100G SR10	24-fiber	12 Tx + 12 Rx
200G SR4	16-fiber	8 Tx + 8 Rx
400G SR16	16-fiber	8 Tx + 8 Rx
400G SR8 / DR4	32-fiber	16 Tx + 16 Rx
800G SR8	32-fiber	16 Tx + 16 Rx

2. Distance → Fiber Mode

Distance	Mode	Color
< 100 m inside DC	OM4 multimode	Aqua
100 m – 2 km	OS2 single-mode	Yellow
> 2 km / DCI	OS2 APC	Yellow / green boot

Rule: Choose OS2 for any link leaving the building.

3. Gender Rules

Device	Port gender	Cable end
QSFP/OSFP transceiver	Male (pinned)	Female
Cassette rear / panel	Female (holes)	Male
Cable-to-cable join	—	M-M + F/F adapter

Never mate male-to-male. Pins will collide and damage the ferrule.

4. Polarity Method

Method	Mapping	Use case
A	1→1, key-up to key-down	OS2, cassette infra
B	1→12, key-up to key-up	40G-800G SR trunks
C	1↔2, 3↔4 pairs	Duplex / legacy breakout

Site standard: Pick one method per facility. Never mix A and B in the same link.

5. Ordering Checklist

1. Fiber count matches transceiver lanes
2. Gender correct at every mate
3. Polarity method documented
4. Fiber mode matches distance
5. APC or UPC standardized
6. IL/RL test reports per trunk
7. Add 10–15% spare length

6. Sample Spec Format

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8-fiber OM4 MPO trunk cable,
Method B, female-to-male,
10 m, OFNP jacket,
IL/RL + polarity test report
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Send this description to BWNFiber for an RFQ. We match switch-vendor polarity specs and ship samples in 5 days.

AI / HPC Note

400G SR8 → 16-fiber OM4. 800G SR8 → 32-fiber OM4. DCI front-end → OS2 APC Method A.

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