

MTP/MPO High-Density Trunk Cable Systems

12 · 16 · 24 · 32-Core | OS2 / OM4 / OM5 | AI Data Center Parallel Optics Workhorse

PRODUCT OVERVIEW

MTP/MPO multi-fiber connectorized trunk cables are widely recognized as the 'workhorse' of modern AI data center cabling infrastructure. By enabling parallel optical transmission across 12, 16, 24, or 32 fibers through a single connector interface, MTP/MPO systems dramatically reduce installation time, improve airflow through less cable bulk, and provide the density required to support 400G and 800G parallel transceiver technology. Mirabel Energy USA pre-terminated MTP/MPO trunk assemblies are factory-tested and precision-polished — eliminating on-site splicing, reducing labor cost, and ensuring insertion loss performance that meets or exceeds TIA and IEC specifications. Available in OS2 single-mode and OM4/OM5 multi-mode, with Type A (straight), Type B (reversed), and Type C (pairs-flipped) polarity configurations to support all major switch and transceiver architectures.

12 / 16 / 24 / 32 Core Options	≤0.35 dB Insertion Loss	≥26 dB (APC: ≥65dB) Return Loss	400G / 800G Speed
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APPLICATIONS

- AI data center spine-leaf fabric — GPU cluster interconnects
- 400G / 800G parallel optic QSFP-DD and OSFP transceiver patching
- Pre-terminated plug-and-play data hall trunk infrastructure
- Structured cabling system backbone runs — ColoFacility and hyperscale
- Cross-connect and meet-me room high-density patching
- Migration path to 1.6T — future-proofed fiber infrastructure

KEY SPECIFICATIONS

- MTP Elite / MPO-16 / MPO-24 / MPO-32 connector options
- Type A, B, and C polarity — compatible with all major OEM switch platforms
- OS2 9/125µm (single-mode) and OM4/OM5 50/125µm (multi-mode) available
- Factory-terminated and 100% insertion loss tested — plug-and-play
- Insertion loss ≤0.35 dB per mated pair | Return loss ≥26 dB PC / ≥65 dB APC
- Available in 3m–100m standard lengths; custom lengths on request
- Low-smoke zero-halogen (LSZH) jacket — data center fire code compliant
- Compatible with VSFF (SN, MDC, MMC) breakout cassette systems

TECHNICAL SPECIFICATIONS

Parameter	OS2 (SM)	OM4/OM5 (MM)
Connector Type	MTP/MPO Elite	MTP/MPO Elite
Core Count	12 / 24 / 32	12 / 24 / 32
Insertion Loss	≤0.35 dB	≤0.35 dB
Return Loss (PC/UPC)	≥26 dB	≥20 dB
Return Loss (APC)	≥65 dB	N/A
Operating Wavelength	1310 / 1550nm	850 / 953nm
Standard Lengths	3–100m (custom)	3–100m (custom)

PART / ORDER INFO 12 · 16 · 24 · 32-core OS2 / OM4 / OM5 Type A/B/C polarity	STOCKING LOCATIONS Reno, NV · Houston, TX Project-phased delivery available	OEM REPRESENTATIVE GCP Energy LLC — Salt Lake City, UT portal.gcpenergy.us
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