

Single-Mode Fiber Optic Cable — OS2

ITU-T G.652.D / G.657 | Bend-Insensitive | AI Data Center & Long-Haul Transmission

PRODUCT OVERVIEW

Mirabel Energy USA OS2 single-mode fiber is the dominant choice for AI cluster interconnects, hyperscale data center backbone runs, and utility transmission infrastructure requiring maximum reach with minimal signal attenuation. With a 9/125µm core/cladding geometry, OS2 fiber supports transmission distances exceeding 10km at 1310nm and 40km+ at 1550nm — making it the preferred medium for 400G, 800G, and the emerging 1.6T transceiver generation. Bend-insensitive OS2 variants (G.657.A1/A2) maintain signal integrity in high-density, tightly packed cable trays and tight-radius routing environments common in modern AI infrastructure. Analysts project that over 70% of AI data center connections will adopt MTP/MPO or MTP-LC hybrid OS2 systems by 2027.

≤0.4 dB/km Max Attenuation	1310 / 1550nm Wavelength	400G / 800G / 1.6T Speed Support	G.657 Rated Bend Radius
--------------------------------------	------------------------------------	--	-----------------------------------

APPLICATIONS

- AI cluster and GPU interconnects — hyperscale data centers
- Long-haul campus and inter-building backbone runs (10km–40km+)
- MTP/MPO trunk cable systems — 12, 24, 32-core parallel optics
- Utility substation and transmission fiber (OPGW/ADSS companion)
- Cloud data center spine-leaf architecture fiber backbone
- High-density cable trays and tight-radius routing (G.657 bend-insensitive)

KEY SPECIFICATIONS

- OS2 9/125µm — ITU-T G.652.D and G.657.A1/A2 bend-insensitive available
- Max attenuation ≤0.4 dB/km @ 1310nm / ≤0.4 dB/km @ 1550nm
- Supports 400G / 800G coherent and direct-detect optics; ready for 1.6T
- Compatible with MTP/MPO 12/16/24/32-core high-density connector systems
- Available in tight-buffered, loose-tube, ribbon, and ADSS constructions
- Zero-water-peak (ZWP) design — full E-band (1360–1460nm) compatibility
- Operating temperature: -40°C to 70°C (outdoor) / -20°C to 70°C (indoor)
- LSZH, plenum (OFNP), riser (OFNR), and armored jacket options

TECHNICAL SPECIFICATIONS

Parameter	OS2 Standard	G.657.A2 Bend-Ins.
Core / Cladding	9 / 125 µm	9 / 125 µm
Attenuation @ 1310nm	≤0.40 dB/km	≤0.40 dB/km
Attenuation @ 1550nm	≤0.40 dB/km	≤0.35 dB/km
Min Bend Radius	30 mm	7.5 mm (Class A2)
PMD Coefficient	≤0.20 ps/√km	≤0.20 ps/√km
Chromatic Dispersion	≤18 ps/nm-km	≤18 ps/nm-km
Fiber Count Options	12–256 strands	12–256 strands

PART / ORDER INFO 12 · 24 · 48 · 144 · 256 strand counts Standard & custom reel lengths	STOCKING LOCATIONS Reno, NV · Houston, TX Project-phased delivery available	OEM REPRESENTATIVE GCP Energy LLC — Salt Lake City, UT portal.gcpenergy.us
---	--	---