







Low-Attenuation ITU-T G.652.D Single-Mode Communication Fiber – Full-Spectrum Transmission for Metro, FTTx, and Long-Haul Networks

Product Overview

Winner G.652.D single-mode optical fiber is the industry-standard solution for metropolitan, access, and long-haul networks requiring cost-effective, high-capacity transmission. Engineered with a low water peak profile, it enables seamless full-spectrum operation from O- to L-band (1260–1625 nm), supporting CWDM, DWDM, and future-proof coherent transmission systems.

The fiber exhibits true zero chromatic dispersion near 1310 nm and ultra-low attenuation (\leq 0.33 dB/km @1310 nm, \leq 0.20 dB/km @1550 nm), significantly reducing the need for amplification or dispersion compensation over medium distances. With polarization mode dispersion (PMDQ) < 0.2 ps/ $\sqrt{}$ km and stringent geometric tolerances, it ensures signal integrity for 10G/25G/100G Ethernet, OTN, and 5G transport applications.

Technical Specifications

Brand Name	Winner
Model Number	G.652.D
Fiber Type	Single-Mode Communication Fiber (B1.3)





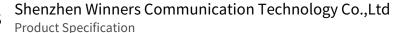




Compliance	ITU-T G.652.D, IEC 60793-2-50 B1.3, Telcordia GR-
Cladding Diameter	125 ± 1 μm
Coating Diameter	$245\pm5\mu m$
Attenuation	<0.33 dB/km @1310 nm <0.31 dB/km @1383 nm (low water peak) <0.20 dB/km @1550 nm <0.24 dB/km @1625 nm
Zero-Dispersion Wavelength	1300–1324 nm
Chromatic Dispersion	≈0 ps/(nm • km) @1310 nm 17–20 ps/(nm • km) @1550 nm
PMDQ (Link Design Value)	< 0.2 ps/√km
Tension Screening Level	≥100 kpsi
Operating Temperature Range	-40°C to +85°C

Applications

- FTTx deployments (FTTH, FTTB, FTTC) for broadband access networks
- Metro aggregation and core networks supporting multi-tenant services











- Long-haul backbone links with DWDM/CWDM channel stacking
- 5G mobile transport (fronthaul/midhaul/backhaul) infrastructure
- Data center interconnects (DCI) up to 80 km without amplification

Deployment Advantages

As the most widely deployed single-mode fiber globally, G.652.D offers unmatched compatibility with existing infrastructure, transceivers, and splicing equipment. Winner's version enhances this legacy with tighter attenuation control and reduced water peak, enabling efficient use of the 1383 nm window for additional CWDM channels—ideal for scalable, future-ready optical networks.