

General Description

The PDR G652D Single Mode Optical Fiber Spool is manufactured to comply with and exceed the ITU-T Recommendation G.652D specification, making it the benchmark choice for long-haul telecommunications, FTTH deployments, and high-bandwidth data infrastructure. Constructed with a Germanium-doped silica core and pure silica cladding, the fiber delivers ultra-low attenuation across the full 1310 nm to 1625 nm operating wavelength range. A dual-layer UV-curable resin primary coating provides exceptional mechanical durability and resistance to environmental stresses, ensuring long-term reliability in both indoor and outdoor installations. Each reel is precision-wound, individually tested, and clearly labeled with a unique ID, barcode, attenuation values, and fiber length for complete traceability.



Key Features

- ITU-T G.652D compliant - meets and exceeds international single-mode fiber standards
- Ultra-low attenuation of < 0.200 dB/km at 1550 nm for superior long-haul signal integrity
- Wide operating wavelength range - optimized performance from 1310 nm to 1625 nm
- Dual-layer UV-curable resin coating for outstanding mechanical and environmental protection
- Tight geometrical tolerances - cladding diameter 125 ± 0.7 μ m ensures reliable splicing
- Low polarization mode dispersion - individual fiber < 0.15 ps/sqrt(km)
- High proof test level $> 1\%$ ensures consistent mechanical strength across each reel
- Available in standard reel lengths: 2 km, 3 km, 5 km, 10 km, or custom per order
- ISO 9001:2015 certified manufacturing with 100% optical performance testing on every reel
- Each reel labeled with unique ID, barcode, attenuation data, product code, and fiber length

PDR VIDEOTRONICS (INDIA) PRIVATE LIMITED

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Technical Specifications

Parameter	Specification
Fiber Type	Single Mode - ITU-T G.652D
Glass Composition	Core: Germania (GeO_2) doped Silica (SiO_2) Cladding: Pure Silica (SiO_2) Primary Coating: 2 layers of UV curable resin
Attenuation Coefficient	At 1310 nm: < 0.340 dB/km At 1383 nm: < 0.320 dB/km At 1550 nm: < 0.200 dB/km At 1625 nm: < 0.230 dB/km
Attenuation vs. Wavelength	1285-1330 nm: < 0.36 dB/km 1525-1625 nm: < 0.23 dB/km
Point Discontinuity	< 0.05 dB
Cable Cutoff Wavelength	< 1260 nm
Mode Field Diameter	At 1310 nm: 9.2 +/- 0.4 μm At 1550 nm: 10.4 +/- 0.5 μm
Chromatic Dispersion	1270-1340 nm band: < 5.3 ps/nm.km 1285-1330 nm band: < 3.5 ps/nm.km At 1550 nm: < 18.0 ps/nm.km At 1625 nm: < 22.0 ps/nm.km
Zero Dispersion Wavelength	1302-1324 nm
Zero Dispersion Slope	< 0.092 ps/(nm ² .km)
Polarization Mode Dispersion	Individual Fiber: < 0.15 ps/sqrt(km) Link Design Value: < 0.10 ps/sqrt(km)
Cladding Diameter	125 +/- 0.7 μm
Core-Clad Concentricity Error	< 0.5 μm
Cladding Non-Circularity	< 0.8%
Fiber Coating Diameter	245 +/- 7 μm
Coating-Cladding Concentricity	< 10 μm
Fiber Curl	> 4 m radius of curvature
Numerical Aperture (NA)	0.14
Effective Group Index of Refraction	At 1310 nm: 1.4670 At 1550 nm: 1.4675
Proof Test	> 1%
Coating Strip Force	1.3 N < F < 5.0 N
Dynamic Fatigue Parameter	> 20
Dynamic Tensile Strength	Unaged: > 550 Kpsi (3.8 GPa) Aged (85 deg C, 95% RH, 30 days): > 440 Kpsi (3.0 GPa)
Macro Bending Loss	16 mm / 1 turn / 1550 nm: max 0.10 dB 16 mm / 1 turn / 1625 nm: max 0.10 dB 25 mm / 100 turns / 1310 nm: max 0.05 dB 30 mm / 100 turns / 1550 nm: max 0.05 dB 30 mm / 100 turns / 1625 nm: max 0.10 dB
Environmental Performance (Induced Attenuation at 1310 & 1550 nm)	Temperature Dependence (-60 deg C to +85 deg C): < 0.05 dB/km Temp-Humidity Cycling (-10 to +85 deg C, 95% RH): < 0.05 dB/km Water Immersion (23 +/- 2 deg C): < 0.05 dB/km Heat Aging (85 +/- 2 deg C): < 0.05 dB/km Damp Heat (85 deg C, 85% RH): < 0.05 dB/km
Available Reel Lengths	2 km, 3 km, 5 km, 10 km Custom lengths available as per purchase order

* All specifications comply with or exceed ITU-T G.652D, IEC 60793-2-50, and Telcordia GR-20-CORE requirements. Every reel is 100% optically tested prior to dispatch.

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Applications

- Fiber-to-the-Home (FTTH) and Fiber-to-the-Building (FTTB) access network deployments
- Long-haul and metro telecommunications trunk and backbone infrastructure
- ISP backbone, CATV, and broadband network construction and upgrades
- Data center interconnects and enterprise high-speed cabling
- Military, defense, and secure government communication networks
- OTDR testing references, field measurement, and emergency fiber restoration

Ordering Information

Available Configurations

Order Code	Description	Reel Length
G652D-SM-FIBER-02K	G652D Single Mode Optical Fiber Spool	2 km
G652D-SM-FIBER-03K	G652D Single Mode Optical Fiber Spool	3 km
G652D-SM-FIBER-05K	G652D Single Mode Optical Fiber Spool	5 km
G652D-SM-FIBER-10K	G652D Single Mode Optical Fiber Spool	10 km
G652D-SM-FIBER-CUS	G652D Single Mode Optical Fiber Spool	Custom (as per PO)

Standard Package Contents

Item	Quantity
G652D Single Mode Optical Fiber Spool (length per order code)	1 Reel
Reel Identification Label (unique ID, barcode, attenuation, length)	1
Quality Test Report / Compliance Certificate	1
Protective Reel Packaging	1

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