

ITU-T G.657 A1 Reduced Bend Sensitivity Singlemode Optical Fibre

Optronics specification for standard 9/125 ITU-T G.657.A1 reduced bend sensitivity (RBS) singlemode optical fibre. Optronics ITU-T G.657.A1 optical fibre is fully compatible with ITU-T G.652D optical fibre. Cabled values are given where appropriate. All fibre parameters meet or exceed the following requirements:

- ITU-T G.652D
- IEC 60793-2-50 type B1.3 and B6.a
- Telcordia GR-20-CORE
- ISO/IEC 11801 OS-1
- ITU-T G.657.A1
- ANSI/ICEA S-87-2-50

Features

- ▶ The fibre is ideal for installation under tight bend conditions in CATV and FTTH networks
- ▶ Incorporates all the features of ITU-T G.652D optical fibre including Low Water Peak (LWP) benefits, 1 Gb/s up to an indicative 5 km in data networks and supports ATM, SONET and WDM technologies
- ▶ All ITU-T G.657A Optronics cable constructions including FTTH tight buffered, loose tube and ribbon
- ▶ Supports high speed multi channel video, data and voice services in metropolitan and access networks

Technical Specification

Parameter	Unit	Value
General Characteristics		
Low bend sensitivity Singlemode optical fibre with doped silica core and silica cladding. Dual layer UV cured acrylic resin primary coatings.		
Geometrical Characteristics		
Mode field diameter at 1310 nm	µm	9.0 ± 0.4
Mode field diameter at 1550 nm	µm	10.1 ± 0.5
Cladding non circularity	%	≤ 0.7
Cladding diameter	µm	124.8 ± 0.9
Cladding non circularity	%	≤ 0.7
Coating non circularity	%	≤ 6.0
Core/cladding concentricity error	µm	≤ 0.5
Coating/cladding concentricity error	µm	≤ 12
External diameter (uncoloured)	µm	242 ± 10
Fibre curl radius	m	≥ 4
Transmission Characteristics		
Maximum attenuation fibre @ 1310 nm	dB/km	≤ 0.35
Maximum attenuation fibre @ 1383 nm	dB/km	≤ 0.35
Maximum attenuation fibre @ 1550 nm	dB/km	≤ 0.21
Maximum attenuation fibre @ 1625 nm	dB/km	≤ 0.23
Maximum attenuation cabled @ 1310 nm#	dB/km	≤ 0.38
Maximum attenuation cabled @ 1550 nm#	dB/km	≤ 0.25
Maximum attenuation cabled @ 1625 nm [□]	dB/km	≤ 0.28
Typical attenuation cabled @ 1310 nm#	dB/km	≤ 0.34
Typical attenuation cabled @ 1550 nm#	dB/km	≤ 0.19
Typical attenuation cabled @ 1625 nm [□]	dB/km	≤ 0.25



Parameter	Unit	Value
Chromatic dispersion @ 1310 nm	(ps/nm·km)	≤ 3.0
Chromatic dispersion @ 1550nm	(ps/nm·km)	≤ 18.0
Chromatic dispersion @ 1625nm	(ps/nm·km)	≤ 22.0
Cabled cut off wavelength λ_{cutoff}	nm	≤ 1260
Zero dispersion wavelength λ_0	nm	≥ 1300 ≤ 1322
Zero dispersion slope S0 at λ_0	ps/(km ² ·km)	≤ 0.090
Polarisation mode dispersion (PMD)	(ps/√km)	≤ 0.2
Fibre irregularities point and whole length @ 1310 nm & 1550 nm	dB	≤ 0.05
Group refractive index @ 1310 nm		1.466-1.467
Group refractive index @ 1550 nm & 1625 nm		1.467-1.468
Environmental Characteristics		
Fibre temperature dependence -60°C to +85°C	dB/km	≤ 0.05
Fibre temperature and humidity cycling -10°C to +85°C, 98% R.H.	dB/km	≤ 0.05
Fibre watersoak dependence 23°C for 30 days	dB/km	≤ 0.05
Mechanical Characteristics		
Proof test fibre strain for 1 second equivalent	%	1
Bending dependence 1 turn 10mm radius 1550 nm	dB	≤ 0.75
Bending dependence 1 turn 10mm radius 1625 nm	dB	≤ 1.5
Bending dependence 10 turn 15mm radius 1550 nm	dB	≤ 0.25
Bending dependence 10 turn 10mm radius 1625 nm	dB	≤ 1.0
Typical mean coating strip force	N	1.0 to 3.0

Standard OTDR testing wavelengths

□ Testing at 1625nm on request