

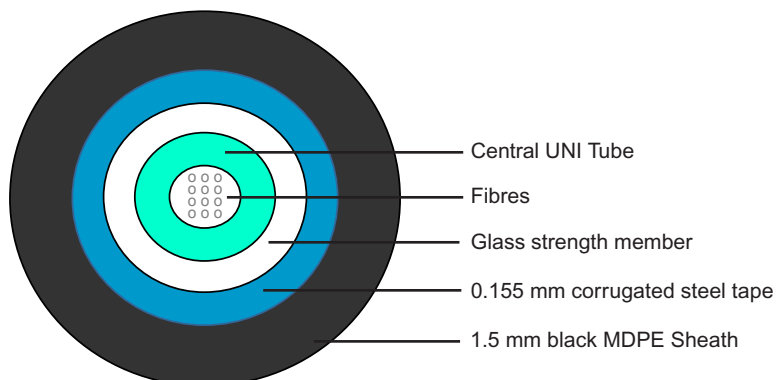
Optic fibre cable OS 1/OS 2 - loose tube outdoor/corrugated steel tape

- 6 fibres

Cat. No(s): 325 13

- 12 fibres

Cat. No(s): 325 15



1. USE

- Lan backbones
- Outdoor direct burial
- Tunnels
- Conduits

2. GENERAL

This specification covers an optical cable with 2 - 24 optical fibres of UNI tube construction. The cable is armoured thus making it suitable for installation outdoors in harsh environments. The armouring does also make the cable rodent proof.

This enhanced Singlemode fibre provides improved performance across the entire 1 260 nm to 1 625 nm wavelength spectrum due to its low attenuation in 1 383 nm the waterpeak region. The fibre design is matched cladding.

3. CABLE TECHNICAL SPECIFICATIONS

3.1 Standards

ISO 11801 2nd edition
EN 50173-1:2002
IEC 60794-1

3.2 Construction

Loose tube	ø2.8 mm jelly filled loose tube with 2-16 fibres; ø3.5 mm loose tube with 24 fibres	
Strength member	E-Glass yarns	
Armouring	0.15 mm corrugated steel tape	
Sheath	1.5 mm black MDPE sheath, IEC 60811, IEC 60708	

3.3 Physical properties - IEC 60794-1

Nominal outer diameter	-	8.5 mm
Nominal weight	-	75 kg/km
Tensile strength (dynamic)	E1	1000 N
Tensile strength (permanent)	E1	500 N
Compressive strength (crush)	E3	2000N
Impact	E4	10 Nm
Torsion	E7	5 cycles ± 1 turn
Kink	E10	The cables do not form a kink when a loop is drawn

Min. Bending radius, unloaded	E11	R = 55 mm
Min. Bending radius, loaded	-	R = 110 mm
Temperature range	F1	Storage and installation: - 40°C to + 70°C
		Operation: - 40°C to + 70°C.
The max. attenuation variation in the operational temperature range is:		For M6 and M5 fibres: 0.5 dB/km
		For SM fibres: 0.2 dB/km.

Optic fibre cable OS 1/OS 2 - loose tube outdoor/corrugated steel tape**- 6 fibres****Cat. No(s).: 325 13****- 12 fibres****Cat. No(s).: 325 15****4. FIBRES TECHNICAL SPECIFICATIONS****4.1 Standards and Norms**

IEC 60793-2-50 class B1.3

EN 60793-2-50: class B1.3

ITU Recommendation G.652.D - the other ITU designations A, B and C are also fulfilled.

EN 50 173-1:2007, cat. OS2; also OS1 requirements are fulfilled

ISO/IEC 11801:2002 cat. OS1.

ISO/IEC 24702:2006, cat. OS2; also OS1 requirements are fulfilled

IEEE 802.3 - 2002 incl. 802.3ae

4.2 Attenuation (of cable with fibres) - IEC 60793-1-40

1310 nm – 1625 nm	≤ 0.39 dB/km
1550 nm	≤ 0.25 dB/km
Inhomogeneity of OTDR trace for any two 1000 meter fibre lengths	Max. 0.1 dB/km

4.3 Bandwidth - IEC 60793-1-41

Group index of refraction at 1310 nm	1.467
Group index of refraction at 1550 nm	1.468
Group index of refraction at 1625 nm	1.468

4.4 Fibre properties according to IEC - IEC 60793-1

Attribute	Measurement method	Units	Limits
Cladding diameter	IEC/EN 60793-1-20	µm	125 ± 0.7
Cladding non-circularity	IEC/EN 60793-1-20	%	≤ 0.7
Core (MFD) non-circularity	IEC/EN 60793-1-20	%	≤ 6
Core (MFD) - cladding concentricity error	IEC/EN 60793-1-20	µm	≤ 0.5
Primary coating diameter - uncoloured	IEC/EN 60793-1-21	µm	242 ± 7
Primary coating diameter - coloured	IEC/EN 60793-1-21	µm	250 ± 15
Primary coating non-circularity	IEC/EN 60793-1-21	%	≤ 5
Primary coating-cladding concentricity error	IEC/EN 60793-1-21	µm	≤ 12
Proof stress level	IEC/EN 60793-1-30	GPa	≥ 0.7 (≈1%)
Strip force (peak)	IEC/EN 60793-1-32	N	1.0 ≤ F _{peak.strip} ≤ 8.9
Chromatic dispersion coefficient:	IEC/EN 60793-1-42		
In the interval 1285 nm – 1330 nm		ps/km • nm	≤ 3
At 1550 nm		ps/km • nm	≤ 18
At 1625 nm		ps/km • nm	≤ 22
Zero dispersion wavelength, λ ₀		nm	1311 ± 11
Zero dispersion slope		ps/(nm ² • km)	≤ 0.090
Cut-off wavelength	IEC/EN 60793-1-44	λ _c nm	1034 - 1330
		λ _{cc} nm	≤ 1260
Mode field diameter at 1310 nm	IEC/EN 60793-1-45	µm	9 ± 0.4
Mode field diameter at 1550 nm		µm	10.1 ± 0.5
Macrobending loss at 1550 nm, 100 turns on a ø 60 mm mandrel	IEC/EN 60793-1-47	dB	≤ 0.05
Polarisation mode dispersion (PMD) coefficient, cabled	IEC/EN 60793-1-48	ps/√km	≤ 0.5
PMDQ Link Design Value	IEC/EN 60794-3	ps/√km	≤ 0.2