

C20: Properties of cabled TeraLight® NZDS optical fibre

For high bit rate DWDM systems in the long-haul and Metro environment To minimize your chromatic dispersion compensation CAPEX

General and application

Teralight® Non-Zero Dispersion Shifted Fibre (NZDSF) has set the standard for high bit-rate, multi-wavelength transmission. Its unique optimization of effective area, chromatic dispersion and dispersion slope enables excellent distortion management, cost-effective operation at 10 and 40 Gbps, tight channel spacing in C and L bands, compatibility with future S band and provides full compliance with the new ITU G.656 recommendation.

TeraLigh® is further optimized for long-haul applications. It supports 10 Gbps transmission without dispersion compensation for distances of about 200 km, resulting in cost savings compared to standard single mode fibre. For longer distances or 40 Gbps operation, commercially available compensating devices can be used. The same fibre also supports short-length metro systems, providing additional cost savings.

Standards and Norms

IEC 60793-2-50 Category B4 and B5	ITU Recommendation G.655.C and E
EN 60793-2-50: Class B4 and B5	ITU Recommendation G. 656

Attenuation (of cable with fibres)

IEC 60793-1-40

1310 nm	≤ 0.40 dB/km
1550 nm	≤ 0.25 dB/km
1625 nm	≤ 0.28 dB/km
Max. attenuation change in the interval 1525 - 1575 nm	≤ 0.03 dB/km
Max. attenuation change in the interval 1550 - 1625 nm	≤ 0.05 dB/km
Inhomogeneity of OTDR trace for any two 1000 metre fibre lengths	Max. 0.1 dB/km

Group index of refraction

IEC 60793-1-22

Effective group index at 1310 nm	1.4682
Effective group index at 1550 nm	1.4683
Effective group index at 1625 nm	1.4685

Other properties

IEC 60793-1-xx

Cladding diameter	IEC / EN 60793-1-20	µm	125.0 ± 1.0
Cladding non-circularity	IEC / EN 60793-1-20	%	≤ 1.0
Core non-circularity	IEC / EN 60793-1-20	%	≤ 6
Core - cladding concentricity error	IEC / EN 60793-1-20	µm	≤ 0.6
Primary coating diameter – ColorLock™ and natural	IEC / EN 60793-1-21	µm	242 ± 7
Primary coating non-circularity	IEC / EN 60793-1-21	%	≤ 5
Primary coating - cladding concentricity error	IEC / EN 60793-1-21	µm	≤ 12
Chromatic dispersion coefficient:	IEC / EN 60793-1-42	ps/(nm•km)	
At 1440 nm			> 0.1
Interval 1530 nm – 1565 nm			5.5 to 10.0
Interval 1565 nm – 1625 nm			7.5 to 13.4
Interval 1285 nm – 1330 nm			-10.0 to -3.0
Zero dispersion wavelength, λ_0		nm	≤ 1440
Dispersion slope at 1550 nm		ps/(nm ² •km)	0.052 (typ.)
Cable Cut-off wavelength	IEC / EN 60793-1-44	λ_{ccf} nm	≤ 1300
Mode field diameter at 1550 nm	IEC / EN 60793-1-45	µm	9.2 ± 0.5
Macrobending loss	IEC / EN 60793-1-47	dB	
100 turns on a \varnothing 50 mm mandrel at 1550 nm and 1625 nm			≤ 0.05
Polarisation mode dispersion (PMD) coefficient, max. uncabled	IEC / EN 60793-1-48	ps/√km	≤ 0.20
PMD _Q Link Design Value (calculated with Q=0.01%)	IEC / EN 60794-3	ps/√km	≤ 0.06
Proof stress level	IEC / EN 60793-1-30	Gpa	≥ 0.7 (≈ 1 % strain)
Strip force (peak)	IEC / EN 60793-1-32	N	1.2 ≤ F _{peak.strip} ≤ 8.9
Dynamic fatigue resistance aged and unaged (N _d)	IEC / EN 60793-1-33		≥ 20
Static fatigue resistance (N _s)	IEC / EN 60793-1-33		≥ 23

Note: The Draka policy of continuous improvement may cause in changed specifications without prior notice