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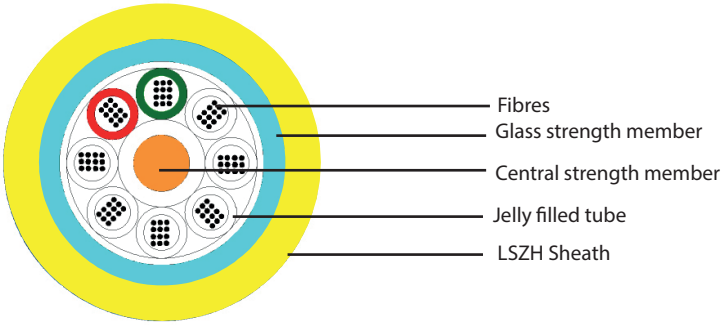
Optic fibre cable OS2 - Stranded loose tube 48-96 fibres indoor/outdoor LSZH

- 48 fibres Cat. No(s).: 0 322 95
- 72 fibres Cat. No(s).: 0 322 97 - 96 fibres Cat. No(s).: 0 322 98



1. APPLICATION AND INSTALLATION

Universal indoor/outdoor cable for LAN, MAN and WAN backbones. Ideal for mixed indoor and limited outdoor installation. It is equally suited for installation in ducts and on trays.
Rodent protection, effective in many cases.

2. CABLE TECHNICAL SPECIFICATIONS

2.1 Standards

ISO 11801-1, IEC 60794-2, EN 50173-1, IEC 60794-1, EN 50575

2.2 Construction

Central strength member	Ø 2,5 mm FRP rod
Loose tube	Ø 2,3 mm gel filled loose tubes with 12 fibres each for fibres ≤ 144 Ø 2,8 mm gel filled loose tubes with 24 fibres each for fibres >144
Water blocking	The core is water blocked using swellable tape and tread
Wrapping	Polyester nonwoven
Strength member	Layer of glass fibre yarns as reinforcement and rodent protection
Ripcord	Polyester ripcord for easy slitting of the sheath
Sheath	1,5 mm sheath, halogen free, flame retardant, IEC 50290-2-27, UV stabilised Cable with OS2 fibres : Yellow

2.3 Flame resistance

LSHF (FRNC) IEC 60332-1-2, IEC 60754-1, IEC 60754-2 ; IEC 61034 ; IEC 60332-3-24 ; EN 50399 Class Dca s_1, d_1, a_1 ; Class Eca

2.4 Physical properties

Attribute	IEC 60794-1-21/22 Method	Limits							
Fibre count	-	12	24	36	48	72	96	144	288
Fibre distribution	-	1x12 fibres	2x12 fibres	3x12 fibres	4x12 fibres	6x12 fibres	8x12 fibres	12x12 fibres	12x24 fibres
Nominal diameter (mm)	-	11.2	11.2	11.2	11.2	11.2	12.8	15.6	18.5
Nominal weight (kg/km)	-	117	120	125	127	137	167	257	
Short term Tensile strength (some days) (N)	E1	5000 (fibre strain ≤ 0.6%)							
Tensile strength (permanent) (N)	E1	1800 (fibre strain ≤ 0.2%)							
Crush (compressive strength) (N/100 mm)	E3	2500							
Impact (J)	E4	15							
Torsion	E7	5 cycles ± 1 turn							
Kink	E10	The cables do not form a kink when a loop is drawn together to a diameter 12 times the cable nominal diameter							
Minimum bending radius (mm) - Installation	E18a	224	224	224	224	224	256	312	370
Minimum bending radius (mm) - permanent	E11	112	112	112	112	112	128	156	185
Temperature range	F1	Installation -40 ° C to 70 ° C Operation -40 ° C to 70 ° C Storage -40 ° C to 70 ° C							
Water penetration	F5	No water on free end							

2.5 Marking and packaging

Marking of the cable :
- Legrand
- Part number
- Description
- Date code
- Batch number
- Measurement
(remaining length in meters)

Catalogue number	0 322 95	0 322 97	0 322 98
Description	48 fibres OS2 In/Out LSZH	72 fibres OS2 In/Out LSZH	96 fibres OS2 In/Out LSZH
Colour	Yellow Ral 1018	Yellow Ral 1018	Yellow Ral 1018
Puck (m)	1000	1000	1000
Packaging	Reel	Reel	Reel

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3. FIBRES TECHNICAL SPECIFICATIONS

This enhanced low macro bending sensitive, low water peak fibre, gives very good bending performance. The preferred use of this low macro bend-insensitive fibre is in access networks.. The low macro bend -insensitive fibre, offers reduced bending radii for many cables types ; The fibre fulfils the new ITU G.657 A1 specification, as well as G. 652 D. The low macro bending sensitivity further guarantees that the 1625 nm window (L-band) will be available for future use in this bandwidth hungry environment.

3.1 Standards and Norms

IEC/EN 60793-2-50 Category B-657.A1 and B-652.D
ITU Recommendation G657.A1 and G.652.D
EN 50 173-1 Category OS2 and OS1a
ISO/IEC 11801 Category OS2 and OS1a

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

Maximum attenuation value of cable in the interval 1310nm-1625nm*	≤ 0.39 dB/km
Maximum attenuation value of cable at 1550 nm	≤ 0.22 dB/km
Local discontinuity at 1310 and 1550 nm	Max. 0.1 dB

* Including H2-ageing according to IEC 60793-2-50, type B.1.3 @ 1383 nm

3.3 Attenuation variation vs bending

Attribute	Measurement method	Units	Limits
Macro bending loss 100 turns on a mandrel R = 30 mm, @1625 nm 10 turns on a mandrel R = 15 mm, @1550 nm 10 turns on a mandrel R = 15 mm, @1625 nm 1 turn on a mandrel R = 10 mm, @1550 nm 1 turn on a mandrel R = 10 mm, @1625 nm	IEC/EN 60793-1-47	dB	≤ 0,05 ≤ 0,25 ≤ 1 ≤ 0,75 ≤ 1,5

3.4 Optical properties

Attribute	Measurement method	Units	Limits
Chromatic dispersion coefficient : In the interval 1285 nm – 1330 nm	IEC/EN 60793-1-42	ps/km • nm	≤ |3|
At 1550 nm			≤ 18
At 1625 nm			≤ 22.0
Zero dispersion wavelength, λ0		nm	1300 - 1324
Zero dispersion slope		ps/(nm² • km)	≤ 0.092
Cut-off wavelength	IEC/EN 60793-1-44	λ_{cc} nm	≤ 1260 *
Mode field diameter at 1310 nm	IEC/EN 60793-1-45	µm	9.0 ± 0.4
Mode field diameter at 1550 nm		µm	10.1 ± 0.5
Polarisation mode dispersion (PMD) coefficient, cabled	IEC/EN 60793-1-48	ps/√km	≤ 0.1
PMD_Q Link Design Value (calculated with Q=0,01%)	IEC/EN 60794-3	ps/√km	≤ 0.06

* guaranteed value according to the ITU-T (ATM G650) method

3.5 Group index of refraction - IEC 60793-1-22

Effective group index at 1310 nm	1.467
Effective group index at 1550 nm	1.467
Effective group index at 1625 nm	1.468

3.6 Rayleigh Backscatter

Attribute	Measurement method	Units	Values
1310 nm	-	dB	- 79.4
1550 nm	-		- 81.7
1625 nm	-		- 82.5

3.7 Geometrical properties

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 - cladding concentricity error	IEC/EN 60793-1-20	µm	≤ 0.5
Primary coating diameter - ColorLock® XS and natural	IEC/EN 60793-1-21	µm	245 ± 10
Primary coating non-circularity	IEC/EN 60793-1-21	%	≤ 5
Primary coating-cladding concentricity error	IEC/EN 60793-1-21	µm	≤ 12

3.8 Mechanical properties

Attribute	Measurement method	Units	Limits
Proof stress level	IEC/EN 60793-1-30	GPa	≥ 0.7 (≈ 1%)
Strip force (average)	IEC/EN 60793-1-32	N	$1 \leq F_{average.strip} \leq 3$
Strip force (peak)	IEC/EN 60793-1-32	N	$1.2 \leq F_{peak.\ strip} \leq 8.9$
Dynamic fatigue resistance aged and unaged	IEC/EN 60793-1-33		Nd ≥ 20