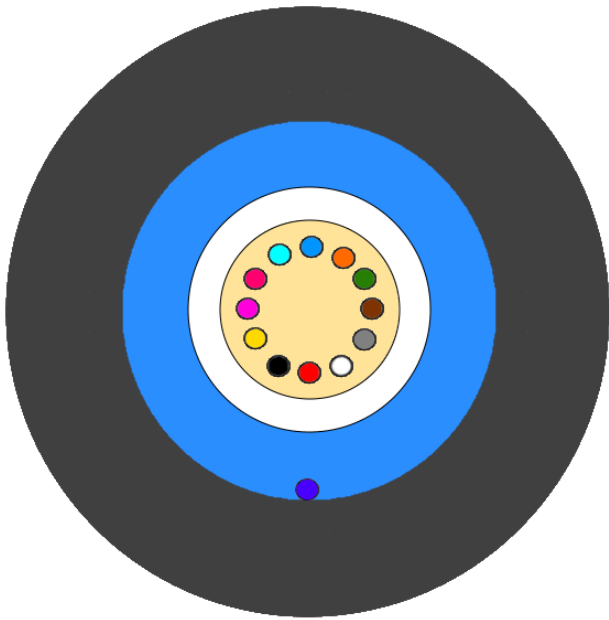


Indoor/outdoor optical cable – Unitube loose LSZH, UV Resistant 4-24 Single mode and Multimode fibers



Design

- All Dielectric Cable
- PBTP Gel-filled Loose Tube
- Ripcords
- Low smoke/zero halogen (LSZH) UV-R

Features

- Central Loose Tube
- Individual colored Fibers
- UV Resistant up to 10 years
- Meets the requirements of IEC 60332-1-2
- Meets CPR Euro Class CPR according to 305/2011: Cca-s1b,d1,a1

Version illustrated is the 12 Fiber Cable

IDENTIFICATION

Tube and Fiber Color Code:

1	Natural	2	Red	3	Green	4	Yellow	5	Brown	6	Blue
7	Violet	8	Orange	9	Grey	10	White	11	Pink	12	Black
13	Turquoise	14	Red (black ring)	15	Green (black ring)	16	Yellow (black ring)	17	Brown (black ring)	18	Blue (black ring)
19	Violet (black ring)	20	Orange (black ring)	21	Grey (black ring)	22	White (black ring)	23	Pink (black ring)	24	Turquoise (black ring)

Alternative tube and fiber color code available on request

Outer sheath: (standard colours)	Indoor/Outdoor cable, LSZH, UV Resistant up to 10 years - Outer sheath nominal thickness 1,5 mm - External nominal Ø 7,5 mm (Containing 4-24 Fibers)
Loose Tube:	PBTP Jacket, Gel-filled Loose Tube - External nominal Ø 2,5 mm (Containing up to 4-12 Fibers per tube) - External nominal Ø 3,5 mm (Containing up to 13-24 Fibers per tube)
Strength Members	Water blocking Glass yarn
Country of origin	Italy



MECHANICAL TESTS

MAIN FEATURES GLASS YARNS + LSZH SHEATH

	Requirement	Value
Tensile performance: IEC 60794-1-2-E1	- Tensile performance - Max pulling Force (N)	2000 N ($\Delta\alpha$ reversible) 2500 N ($\Delta\alpha$ reversible)
Crush Performance: IEC 60794-1-21-E3 IEC 60794-1-21-E4	Max Crush (N/dm) Impact (J)	3000N/100mm ($\Delta\alpha$ reversible) 20 J ($\Delta\alpha$ reversible)
Bending Performance: IEC 60794-1-21-E11	- No attenuation increase - No changes in attenuation before versus after load	Bend radius: 10 x Diameter Bend radius: 15 x Diameter
Temperatures: IEC 60794-1-22-F1	Operation Installation Storage/Shipping	-40 to +70°C -10 to +50°C -40 to +70°C

SHIPPING INFORMATION

Cable Length (kg/Km)	2-12 Fibers	13-24 Fibers
	55	65

MULTI MODE FIBER PROPERTIES

Product Specifications	OM1 62.5 μm Graded-Index (OM1)	50/125 μm OM2	50/125 μm OM3	50/125 OM4
Physical Characteristics				
Core diameter	62.5 \pm 2.5 μm	50 \pm 2.5 μm	50 \pm 2.5 μm	50 \pm 2.5 μm
Cladding diameter	125 \pm 1 μm	125 \pm 1 μm	125 \pm 1 μm	125 \pm 1 μm
Core non-circularity	\leq 5 %	\leq 5 %	\leq 5 %	\leq 5 %
Cladding non-circularity	\leq 0.7 %	\leq 0,7 %	\leq 0,7 %	\leq 0,7 %
Core/cladding concentricity error	\leq 1 μm	\leq 1 μm	\leq 1 μm	\leq 1 μm
Coating Diameter	242 \pm 5 μm	242 \pm 5 μm	242 \pm 5 μm	242 \pm 5 μm
Tensile Proof Test	\geq 0.7 GPa	\geq 0.7 GPa	\geq 0.7 GPa	\geq 0.7 GPa
Optical Characteristics				
Attenuation @ 850 nm @ 1300 nm	\leq 3.5 dB/km \leq 1.00 dB/km	\leq 2.8 dB/km \leq 0.8 dB/km	\leq 2.8 dB/km \leq 0.8 dB/km	\leq 2.8 dB/km \leq 0.8 dB/km
Overfilled Bandwidth @ 850 nm @ 1300 nm	\geq 200 MHz-km \geq 500 MHz-km	\geq 500 MHz-km \geq 500 MHz-km	\geq 1500 MHz-km \geq 500 MHz-km	\geq 3500 MHz-km \geq 500 MHz-km
Laser Bandwidth/EMB 10GBASE-SR 1000GBASE-Sx 40GBASE-SR4/100GBASE-SR10	33m 274m	83m 600m	300m 1000m 140 m	550m 1100m 170m
Numerical Aperture	0.275 \pm 0.015	0.200 \pm 0.015	0.200 \pm 0.015	0.200 \pm 0.015



SINGLE MODE FIBER PROPERTIES

Product Specifications		
Physical Characteristics	SM-LWP – ITU-T G.652.D	SM- ITU-T G.657.A1
Cladding diameter	125.0 ± 0.7 μm	125.0 ± 0.7 μm
Cladding Non-Circularity	≤ 0.7 %	≤ 0.7 %
Core/Cladding Concentricity Error	≤ 0.5 μm	≤ 0.5 μm
Coating Diameter (Uncolored)	242 ± 7 μm	242 ± 7 μm
Coating/Cladding Concentricity Error	≤ 12 μm	≤ 12 μm
Tensile Proof Test	≥ 0.7 GPa	≥ 0.7 GPa
Optical Characteristics		
Attenuation	Maximum	
@ 1310 nm	≤ 0.36 dB/km	≤ 0.36 dB/km
@ 1385 nm	≤ 0.36 dB/km	≤ 0.36 dB/km
@ 1550 nm	≤ 0.25 dB/km	≤ 0.25 dB/km
@ 1625 nm	≤ 0.28 dB/km	≤ 0.28 dB/km
Macrobending Attenuation: The maximum attenuation with bending does not exceed the specified values under the following deployment conditions:		
Deployment Condition	Wavelength	Induced Attenuation
1 turn on a 10 mm radius mandrel	1550 nm	≤ 0.75 dB
	1625 nm	≤ 1.5 dB
10 turns on a 15 mm radius mandrel	1550 nm	≤ 0.25 dB
	1625 nm	≤ 1.0 dB
Chromatic Dispersion		
Zero Dispersion Wavelength (λ ₀)	1300 - 1324 nm	1300 - 1324 nm
Zero Dispersion Slope (S ₀)	≤ 0.090 ps/nm ² -km	≤ 0.090 ps/nm ² -km