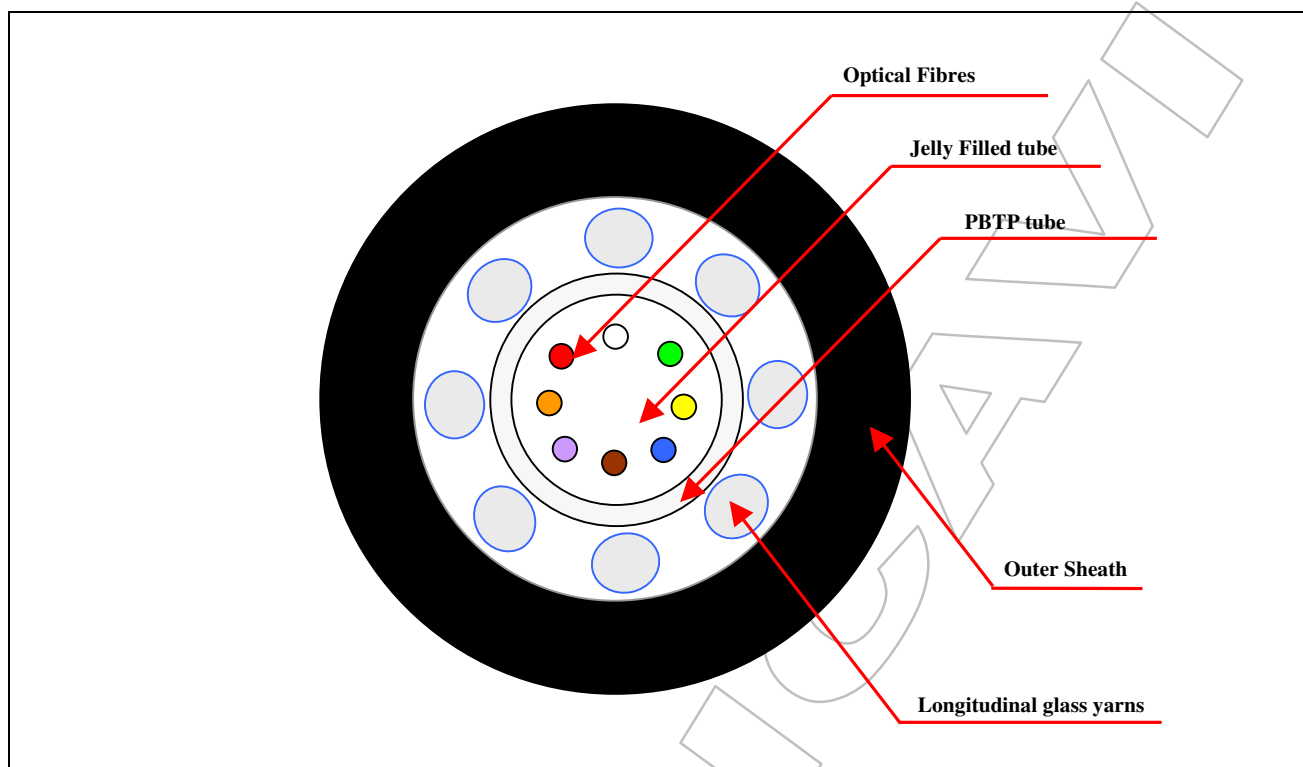


OUTDOOR or INDOOR OPTICAL CABLE – LOOSE



OPTICAL CORE

<ul style="list-style-type: none"> Standard Colour code of fibres: 	<ul style="list-style-type: none"> 1 – Natural 2 – Red 3 – Green 4 – Yellow 5 – Brown 6 – Blue 7 – Violet 8 – Orange 9 – Grey 10 – White 11 – Black 12 – Pink 13 – Turquoise 14 – Red / Black 15 – Green / Black 16 – Yellow / Black 17 – Brown / Black 18 – Blue / Black 19 – Violet / Black 20 – Orange / Black 21 – Grey / Black 22 – White / Black 23 – Pink / Black 24 – Turquoise / Black
<ul style="list-style-type: none"> Loose Tube: 	<ul style="list-style-type: none"> PBTP filled with Jelly - External nominal \varnothing 2,8 mm (Containg up to 12 Fibres) - External nominal \varnothing 3,5 mm (Containg more 12 up to 24 Fibres)
<ul style="list-style-type: none"> Protection: 	<ul style="list-style-type: none"> Longitudinal glass yarns (rodent protection)
<ul style="list-style-type: none"> Outer sheath: (standard colours) 	<ul style="list-style-type: none"> - Outdoor cable: Black PE jacket - Indoor cable: Orange LSZH jacket - Indoor/Outdoor cable: Grey LSZH UV-R jacket - Nominal thickness 1,0mm - Nominal \varnothing 7,0mm (Containg up to 12 Fibres) - Nominal \varnothing 8,0mm (Containg more 12 up to 24 Fibres)
<ul style="list-style-type: none"> Manufacturer Marking: (PE version only) 	<ul style="list-style-type: none"> PLASTICAVI - month/year - OPTICAL CABLE "cable description" - + metric
<ul style="list-style-type: none"> Manufacturer Marking: (LSZH version only) 	<ul style="list-style-type: none"> PLASTICAVI - month/year - OPTICAL CABLE "cable description" - LSZH IEC 60332-3C + metric
<ul style="list-style-type: none"> Manufacturer Marking: (LSZH UV-R version only) 	<ul style="list-style-type: none"> PLASTICAVI - month/year - OPTICAL CABLE "cable description" - LSZH UV-R IEC 60332-3C + metric

OUTDOOR or INDOOR OPTICAL CABLE – LOOSE

PHYSICAL CHARACTERISTICS

• Nominal Weight:	PE version: 42kg/km (Containing up to 12 Fibres) 55kg/km (Containing more 12 up to 24 Fibres)	LSZH version: 55kg/km (Containing up to 12 Fibres) 70kg/km (Containing more 12 up to 24 Fibres)
• Min. Bending Radius:	- Dynamic: 15 x cable outer diameter - Static: 10 x cable outer diameter	
• Storage Temperature:	PE version: -30°C ÷ +70°C	LSZH version: -20°C ÷ +60°C
• Operating Temperature:	PE version: -30°C ÷ +60°C	LSZH version: -20°C ÷ +60°C
• Installation Temperature:	PE version: 0°C ÷ +50°C	LSZH version: 0°C ÷ +50°C

FIRE PERFORMANCES (LSZH version only)

• Flame retardant:	IEC 60332-1 (CEI 20-35 --- CEI EN 50265)
• Fire retardant:	IEC 60332-3-24 Category C (CEI 20-22/3-4 --- CEI EN 50266-2-4)
• Low smoke opacity:	IEC 1034 1/2 (CEI 20-37)
• Halogen free:	IEC 754-1/2 (CEI 20-37)
• For fire behaviour values only:	CEI 20-38

MECHANICAL TESTS

• Tensile performance:	2000N (Containing up to 12 Fibres) 2500N (Containing more 12 up to 24 fibres)	➤ Δα reversible ➤ Fibre elongation: ≤0,33%	IEC 60794-1-2-E1 EN 187000-501
• Crush:	- 2000N/100mm	➤ Δα reversible	IEC 60794-1-2-E3 EN 187000-504
• Impact:	- Impact Energy: 5J - N° impacts: 3 in different places	➤ Δα reversible ➤ No outer sheath breakage	IEC 60794-1-2-E4 EN 187000-505
• Temperature cycling:	➤ <i>PE version</i> Ta ₁ : -15°C /// Ta ₂ : -30°C Tb ₁ : +60°C /// Tb ₂ : +70°C - t ₁ : 6h - Cycles: 2 <hr/> ➤ <i>LSZH version</i> Ta ₁ : -10°C /// Ta ₂ : -20°C Tb ₁ : +50°C /// Tb ₂ : +60°C - t ₁ : 6h - Cycles: 2	SMR - NZDF - MM62.5 - MM50 ➤ For Ta ₁ to Tb ₁ , there shall be no change in attenuation <hr/> SMR – NZDF ➤ For (Ta ₂ to Ta ₁) and (Tb ₁ to Tb ₂) Δα ≤0.1dB/km and reversible (@1550nm) <hr/> MM62.5 – MM50 ➤ For (Ta ₂ to Ta ₁) and (Tb ₁ to Tb ₂) Δα reversible	IEC 60794-1-2-F1 EN 187000-601

OUTDOOR or INDOOR OPTICAL CABLE – LOOSE

FIBRES PROPERTIES

Multimode fibre 62,5/125/250 μm	Fibre type: MM62,5
Numerical aperture:	0.275 \pm 0.015
Core diameter:	62.5 \pm 3 μm
Cladding diameter:	125 \pm 3 μm
Core non-circularity:	6 % Max
Cladding non-circularity:	2 % Max
Core/Cladding Offset:	3 μm Max
• Attenuation @ 850 nm	\leq 3.5 dB/km
• Attenuation @ 1300 nm	\leq 1.5 dB/km
• Bandwidth @ 850 nm	\geq 200 MHz*km
• Bandwidth @ 1300 nm	\geq 500 MHz*km
Multimode fibre 50/125/250 μm	Fibre type: MM50
Numerical aperture:	0.20 \pm 0.02
Core diameter:	50 \pm 3 μm
Cladding diameter:	125 \pm 3 μm
Core non-circularity:	6 % Max
Cladding non-circularity:	2 % Max
Core/Cladding concentricity error:	6 % Max
• Attenuation @ 850 nm	\leq 2.8 dB/km
• Attenuation @ 1300 nm	\leq 0.8 dB/km
• Bandwidth @ 850 nm	\geq 500 MHz*km
• Bandwidth @ 1300 nm	\geq 500 MHz*km
Multimode fibre 50/125/250 μm	Fibre type: OM3
Numerical aperture:	0.20 \pm 0.02
Core diameter:	50 \pm 3 μm
Cladding diameter:	125 \pm 3 μm
Core non-circularity:	6 % Max
Cladding non-circularity:	2 % Max
Core/Cladding concentricity error:	6 % Max
• Attenuation @ 850 nm	\leq 2.8 dB/km
• Attenuation @ 1300 nm	\leq 0.8 dB/km
• Bandwidth @ 850 nm	\geq 1500 MHz*km
• Bandwidth @ 1300 nm	\geq 500 MHz*km
• Bandwidth @ 850 nm (ELL)	\geq 2000 MHz*km

OUTDOOR or INDOOR OPTICAL CABLE – LOOSE

Singlemode fibre 9,6/125/250 µm	Fibre type: SMR
Mode field diameter:	8.8÷9.6 µm
Cladding diameter:	125±1 µm
Coating diameter:	245±5 µm
Mode field non-circularity:	6 % Max
Cladding non-circularity:	2 % Max
Core/Cladding concentricity error:	1 µm Max
Coating/Cladding concentricity error:	12.0 µm Max
• Cut off wavelength	≤ 1260 nm
• Attenuation @ 1310 nm	≤ 0.38 dB/km
• Attenuation @ 1550 nm	≤ 0.25 dB/km
• Zero dispersion wavelength (λ ₀)	1300 - 1322nm
• Dispersion slope (S ₀) @ (λ ₀)	≤ 0.092ps/nm ² *km
• Chromatic dispersion @ 1285 – 1330 nm	≤ 3.5ps/nm*km
• Chromatic dispersion @ 1550 nm	≤ 18ps/nm*km

Non-zero dispersion	Fibre type: NZDF
Mode field diameter @ 1550 nm:	8÷11 µm
Cladding diameter:	125±2 µm
Coating diameter (uncolored):	245±10 µm
Cladding non-circularity:	2 % Max
Core/Cladding concentricity error:	0.8 µm Max
Coating/Cladding concentricity error:	12.0 µm Max
• Cut off wavelength	≤ 1480 nm
• Attenuation @ 1550 nm	≤ 0.27 dB/km
• Attenuation vs. wavelength @ 1525 to 1625 nm	≤ 0.05 dB/km greater than the attenuation at 1550nm
• Chromatic dispersion @ 1530 – 1565 nm	0.1 to 10 ps/nm*km
• Dispersion slope @ 1550 nm	≤ 0.05 ps/nm ² *km
• PMD @ 1550 nm	≤ 0.50 ps/km ^{1/2}

STANDARDS REFERENCE

IEC 60793	
IEC 60794	
EN 187000	
• ITU-T: G655	(NZDF)
• ITU-T: G652	(S.I. 9,6/125/250 µm)
• ITU-T: G651	(G.I. 50/125/250 µm)
• IEC 60793-2	(G.I. 62,5/125/250 µm)
• ISO/IEC 11801	(G.I. 50/125/250 µm, type OM3)