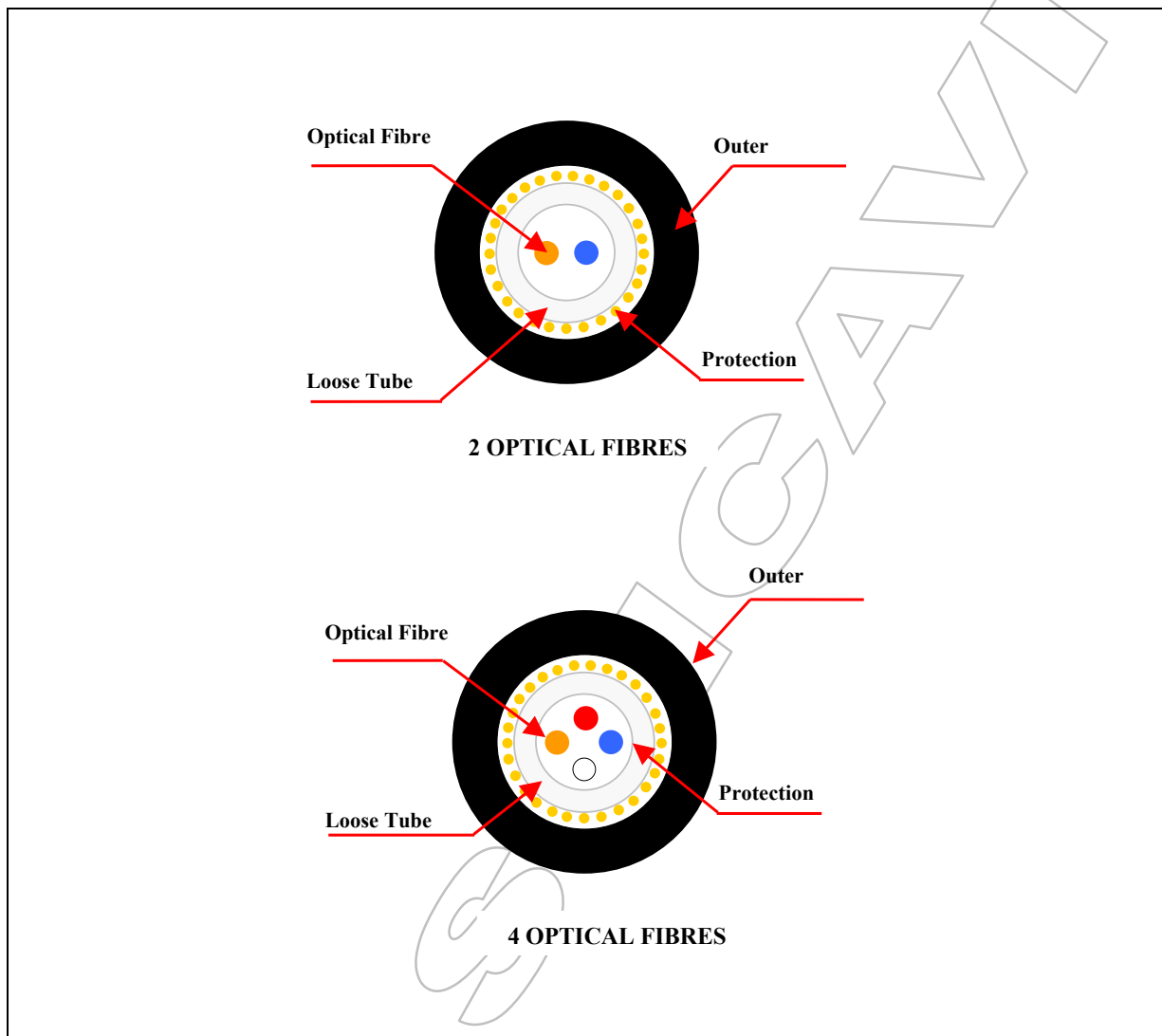


INDOOR / OUTDOOR OPTICAL CABLE -LOOSE



OPTICAL CORE

• Colour code of fibres:	1 - Orange 2 - Blue	3 - Natural 4 - Red
• Loose Tube:	PBTP filled with Jelly Nominal external diameter 1,60mm	
• Protection:	Longitudinal aramidic yarns	
• Outer Sheath:	Black UV-R LSZH material jacket Nominal Ø 3,0mm	

INDOOR / OUTDOOR OPTICAL CABLE -LOOSE

PHYSICAL CHARACTERISTICS

• Nominal weight:	10kg/km
• Minimum bending radius:	- Dynamic: 15 x lower dimension of cable - Static: 10 x lower dimension of cable
• Storage Temperature:	-30°C ÷ +70°C
• Operating Temperature:	-30°C ÷ +70°C ($\Delta\alpha$ reversible)
• Installation Temperature:	-20°C ÷ +50°C

FIRE PERFORMANCES

• Flame retardant:	IEC 60332-1
• Fire retardant:	IEC 60332-3D
• Smoke emission characteristics: - Cable: low smoke opacity - Outer sheath: toxicity of gases - corrosivity of gases - amount of halogen acid gases	IEC 754-1 IEC 754-2 IEC 1034-2

MECHANICAL CHARACTERISTICS

• Tensile performance:	- 300N	➤ $\Delta\alpha$ reversible ➤ Fibre elongation: $\leq 0,33\%$	IEC 60794-1-2-E1 EN 187000-501
• Crush:	- 900N/10cm	➤ $\Delta\alpha$ reversible	IEC 60794-1-2-E3 EN 187000-504

INDOOR / OUTDOOR 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 μ m
Cladding diameter:	125 \pm 3 μ m
Core non-circularity:	6 % Max
Cladding non-circularity:	2 % Max
Core/Cladding Offset:	3 μ m 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 μ m
Cladding diameter:	125 \pm 3 μ m
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 μ m
Cladding diameter:	125 \pm 3 μ m
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

INDOOR / OUTDOOR OPTICAL CABLE -LOOSE

Singlemode fibre 9,6/125/250 μm	Fibre type: SMR
Mode field diameter:	$8.8 \pm 9.6 \mu\text{m}$
Cladding diameter:	$125 \pm 1 \mu\text{m}$
Coating diameter:	$245 \pm 5 \mu\text{m}$
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	$\leq 1260 \text{ nm}$
• Attenuation @ 1310 nm	$\leq 0.38 \text{ dB/km}$
• Attenuation @ 1550 nm	$\leq 0.25 \text{ dB/km}$
• Zero dispersion wavelength (λ_0)	1300 - 1322 nm
• Dispersion slope (S_0) @ (λ_0)	$\leq 0.092 \text{ ps/nm}^2 \cdot \text{km}$
• Chromatic dispersion @ 1285 – 1330 nm	$\leq 3.5 \text{ ps/nm} \cdot \text{km}$
• Chromatic dispersion @ 1550 nm	$\leq 18 \text{ ps/nm} \cdot \text{km}$
Non-zero dispersion	Fibre type: NZDF
Mode field diameter @ 1550 nm:	$8 \div 11 \mu\text{m}$
Cladding diameter:	$125 \pm 2 \mu\text{m}$
Coating diameter (uncolored):	$245 \pm 10 \mu\text{m}$
Cladding non-circularity:	2 % Max
Core/Cladding concentricity error:	0.8 μm Max
Coating/Cladding concentricity error:	12.0 μm Max
• Cut off wavelength	$\leq 1480 \text{ nm}$
• Attenuation @ 1550 nm	$\leq 0.27 \text{ dB/km}$
• Attenuation vs. wavelength @ 1525 to 1625 nm	$\leq 0.05 \text{ dB/km}$ greater than the attenuation at 1550 nm
• Chromatic dispersion @ 1530 – 1565 nm	0.1 to 10 $\text{ps/nm} \cdot \text{km}$
• Dispersion slope @ 1550 nm	$\leq 0.05 \text{ ps/nm}^2 \cdot \text{km}$
• PMD @ 1550 nm	$\leq 0.50 \text{ ps/km}^{1/2}$

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)

INDOOR / OUTDOOR OPTICAL CABLE -LOOSE

Singlemode Low Water Peak fibres 9,6/125/250 μm	Fibre type: SMR LWP
Mode field diameter @ 1310nm:	9.2 \pm 0.4 μ m
Mode field diameter @ 1550nm:	10.4 \pm 0.5 μ m
Cladding diameter :	125 \pm 0.7 μ m
Coating diameter :	245 \pm 5 μ m
Cladding non-circularity :	1% Max
Core/Cladding concentricity error :	0.8 μ m Max
Coating/Cladding concentricity error :	12.0 μ m Max
• Cut off wavelength	\leq 1260 nm
• Attenuation @ 1310 nm	\leq 0.35 dB/km
• Attenuation @ 1383 nm	\leq 0.35 dB/km
• Attenuation @ 1550 nm	\leq 0.21 dB/km
• Attenuation @ 1625 nm	\leq 0.23 dB/km
• Chromatic dispersion @ 1285 - 1330 nm	\leq 3.5 ps/nm*km
• Chromatic dispersion @ 1550 nm	\leq 18 ps/nm*km

IEC 60793-2-50

• ITU-T: G652.D (S.I. 9,6/125/250 μ m) (LWP)