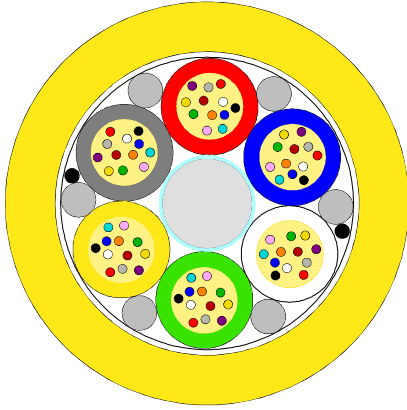


Stranded loose tube micro cables for use in ducts

Cable Design



- not to scale -

- **Optical fibre:** see specification CFS090011 for G.657.A1
- **Secondary coating:** The fibres are, uniquely identified by a different colour, placed inside 'loose tubes' made of high tensile strength thermoplastic compound.
- **Gel compound:** The tubes are fully filled with a non-toxic and dermatological safe gel compound.
- **Central Strength Member (CSM):** The central element consists of FRP (Fibre Reinforced Plastic), with a water-swellable layer.
- **Cable core:** The required number of tubes (and dummy elements) are stranded (SZ method) around the central element.
- **Strength members:** Under the outer sheath 2 aramid yarns are applied, serving as ripcord and as strengthening yarns
- **Fillers:** between stranded tubes and sheath to improve mechanical characteristics.
- **Outer sheath:** HDPE

This loose tube dielectric optical cable is designed for outdoor installation in ducts and micro ducts by blowing or pulling techniques.

Technical data

No. of Fibres		12	24	48
Design		1 x 12	2 x 12	4 x 12
Loose Tube- Ø	mm		1.35	
Sheath thickness	mm		0.4	
Cable Diameter	mm		4.9	
Cable Weight	kg / km		22	
Tensile performance	N		400	

Main characteristics

Test	Standard	Specified value	Acceptance Criteria**
Tensile performance	IEC 60794-1-2-E1	See table above	$\Delta\alpha \leq 0.05\text{dB}$
Crush	IEC 60794-1-2-E3	500N, 100mm plate/plate 1min. 1000N, 100mm plate/plate 5min.	$\Delta\alpha \leq 0.05\text{ dB}$, during test, no damage $\Delta\alpha \leq 0.05\text{ dB}$, after test, no damage
Impact	IEC 60794-1-2-E4	5 Nm, R=300mm, 3 impacts	No damage
Torsion	IEC 60794-1-2-E7	$\pm 180^\circ$, L=1m, 10 cycles, 40N	No damage
Kink	IEC 60794-1-2-E10	Min diameter=100mm	$\Delta\alpha \leq 0.05\text{ dB}$, no damage
Repeated bending	IEC 60794-1-2-E6	R= 15x cable Ø, 100 cycles, 20N	No damage
Cable bend	IEC 60794-1-2-E11	D=250mm, 5 turns, 3 cycles, -10°C	$\Delta\alpha \leq 0.05\text{ dB}$, no damage
Temperature range	IEC 60794-1-2-F1	-30 to +60°C -40 to +70°C	$\Delta\alpha \leq 0.05\text{ dB}$ $\Delta\alpha \leq 0.15\text{ dB}$
Water Penetration	IEC 60794-1-2-F5B	sample=3m, water=1m	No water leakage after 24 hour

** values for single-mode fibres, all optical measurements performed at 1550 nm






Test	Standard	Without Tension		Under Maximum Tension	
		15 x Cable-Ø		25 x Cable-Ø	
Min. bending radius	mm				
Temperature range	°C	Installation -15 to +40	Transport. & Storage -40 to +70	Operation -40 to +60	

Optical Characteristics









See the attached cabled optical fibre data sheet.

Identification

Fibre Colours

No.	1	2	3	4	5	6	7	8	9	10	11	12
Colour	Red	Blue	White	Green	Yellow	Grey	Brown	Black	Violet	Orange	Turquoise	Pink
												

Tube Colours

No.	1	2	3	4	5	6	7	8
Colour	Red	Blue	White	Green	Yellow	Grey	Brown	Black
								

Sheath Marking:

The outer sheath is marked in 1 meter intervals as follows:

RALA DRAKA(DL) JN-SM-Versa XS49/GRHLDV (fibre count) x G657A1 S12 Idno.[xxxxxx] [Year] [length marking]m

Logistic

Packing:

Plastic or Plywood Drums with protection.

Delivery Lengths:

Standard delivery length is 4km with a tolerance of - 1% / + 3%

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