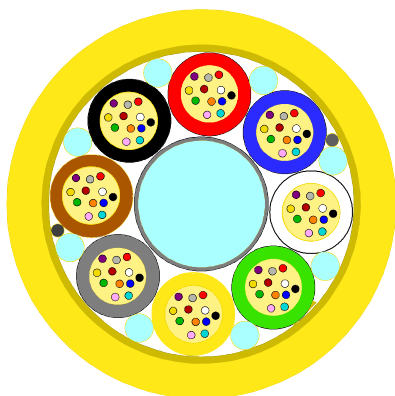


Stranded loose tube micro cables for use in ducts

Cable Design



- not to scale -

- **Optical fibre:** see specification CFS099011 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-swellaable 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		192
Design		8 x 24
Loose Tube- Ø	mm	1.9
Sheath thickness	mm	0.4
Cable Diameter	mm	7.9
Cable Weight	kg / km	56
Tensile performance	N	1000

Main characteristics

Test	Standard	Specified value	Acceptance Criteria**
Tensile performance	IEC 60794-1-2-E1	See above	$\Delta\alpha \leq 0.05$ dB, fibre strain $\leq 0.33\%$
Crush	IEC 60794-1-2-E3	500N, 100mm plate/plate 1min. 1000N, 100mm plate/plate 1min.	$\Delta\alpha \leq 0.05$ dB, during test, no damage $\Delta\alpha \leq 0.05$ 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	No damage
Kink	IEC 60794-1-2-E10	Min diameter=100mm	$\Delta\alpha \leq 0.05$ 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	$\Delta\alpha \leq 0.05$ dB, no damage
Temperature range	IEC 60794-1-2-F1	-30 to +60°C -40 to +70°C	$\Delta\alpha \leq 0.05$ dB $\Delta\alpha \leq 0.15$ 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.









Min. bending radius	mm	Without Tension 15 x Cable-Ø	Under Maximum Tension 25 x Cable-Ø
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
								

Yarn Colours (6x24 and 8x24)

No.	1	2
Colour	Red	Blue
		

Sheath Marking:

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

RALA DRAKA(DL) JN-SM-Versa XS/GRHLDV 192 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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