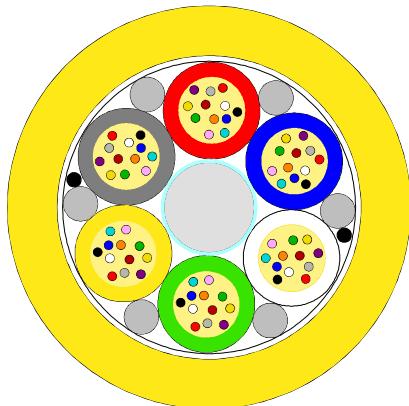


## Stranded loose tube micro cables for use in ducts

## 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		24	48
Design		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			
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

### 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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