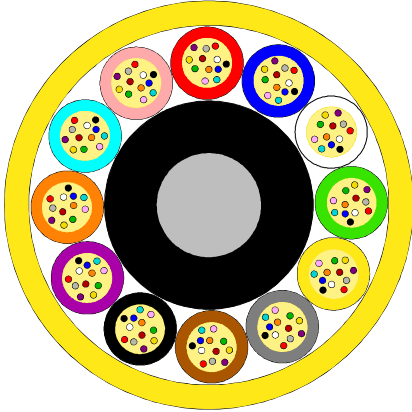


## Stranded loose tube micro cables for use in ducts

### 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.
- **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

<b>No. of Fibres</b>		<b>144</b>
Design		12 x 12
Loose Tube- Ø	mm	1.35
Sheath thickness	mm	0.4
Cable Diameter	mm	7.8
Cable Weight	kg / km	52
Tensile performance	N	1250

### Main characteristics

Test	Standard	Specified value	Acceptance Criteria**
Tensile performance	IEC 60794-1-2-E1	See table 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	$\Delta\alpha \leq 0.05$ dB, no damage
Kink	IEC 60794-1-2-E10	Min diameter=100mm	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=1m, 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 10 x Cable-Ø	Under Maximum Tension 20 x Cable-Ø
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Temperature range	°C	Installation -15 to +50	Transport. & Storage -40 to +70	Operation -40 to +70
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### 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	9	10	11	12
Colour	Red	Blue	White	Green	Yellow	Grey	Brown	Black	Violet	Orange	Turquoise	Pink

#### Sheath Colour

The colour is yellow for single mode fibres.

#### Sheath Marking:

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

RALA DRAKA(DL) JN-SM-LRE xs78 / GAGLDV [fibre count] x [fibre type] 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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