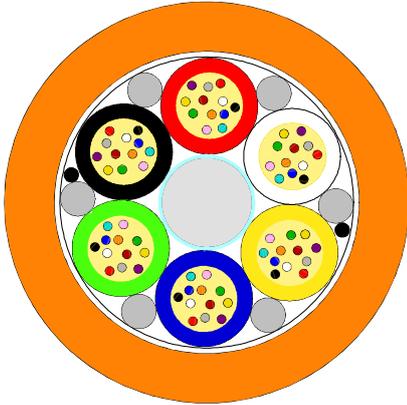


## stranded loose tube mini cables for use in ducts

### Cable Design



- not to scale -

- **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.
- **Fillers:** between stranded tubes and sheath to improve mechanical characteristics.
- **Outer sheath:** HDPE, with 2 ripcords underneath.

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	72	96
Design		1 x 12	2 x 12	4 x 12	6 x 12	8x12
Loose Tube- Ø	mm				1.35	
Sheath thickness	mm				0.4	
Cable Diameter	mm				4.9	
Cable Weight	kg / km				22	
Tensile performance	N				250	
					5.8	
					31	
					500	

### 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	1000N, 100mm plate/plate 5min.	$\Delta\alpha \leq 0.05 \text{ dB}$ , 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	$\Delta\alpha \leq 0.05 \text{ dB}$ , 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	R= 10x cable Ø, 5 turns, 3 cycles*	$\Delta\alpha \leq 0.05 \text{ dB}$ , No damage
Temperature range	IEC 60794-1-2-F1	-30 to +60°C -40 to +70°C	$\Delta\alpha \leq 0.05 \text{ dB}$ $\Delta\alpha \leq 0.10 \text{ dB}$
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, \* At room temperature 23°C ± 2°C

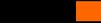
Min. bending radius	mm	Without Tension 15 x Cable-Ø	Under Maximum Tension 25 x Cable-Ø
Temperature range	°C	Installation -10 to +40	Transport. & Storage -40 to +70
			Operation -30 to +60

## Optical Characteristics

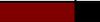
See the attached cabled optical fibre data sheet C17 for fibre G.657.A1.

## Identification

### Fibre Colours

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

### Tube colouring

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

### Sheath Colour

The colour is orange.

### Sheath Marking

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

**[n]v GVK G.657.A1 DRAKA(DL) - [Prod. Length No.] - [length]m**

Where n = fibre count

(DL) = factory code Delfzijl

## Logistic

### Packing:

Plastic or Plywood Drums with protection.

### Delivery Lengths:

Standard delivery length is 4km, 6 km with a tolerance of - 1% / + 3%

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