

DUCT OPTICAL MINICABLE

Cable Design

IEC/EN 60794-3-10



-288F version illustrated not to scale -

- **Central Strength Member (CSM):** glass fibres reinforced plastic material (FRP).
- **Loose Tubes:** thermoplastic material containing 12 optical fibres and filled with a suitable water tightness compound.
- **Stranding:** loose tubes, SZ stranded around the CSM.
- **Longitudinal Water Tightness:** water swellable materials (dry core).
- **Inner Sheath:** special plastic compound (Yellow).
- **Strength members:** under booth sheaths aramid yarns are applied, serving as ripcord and as strengthening yarns.
- **Outer Sheath:** HDPE (Yellow).

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

Technical data

No. of Fibres		288		
Design	-	8x12 + 16x12		
Tube diameter - \varnothing	mm	1.55		
CSM - \varnothing	mm	2.6		
Inner sheath thickness	mm	0.4		
Diameter over the inner sheath	mm	6.5		
Outer sheath thickness	mm	0.4		
Cable diameter	mm	10.5		
Cable weight	Kg/Km	90		
Min. bending radius	mm	Under Maximum Tension: 25 x Cable- \varnothing	Without Tension: 15 x Cable- \varnothing	
Temperature range	°C	Transport & Storage: -30 -> +70	Installation: -10 -> +50	Operation: -30 -> +70

Main characteristics

Test	Standard	Value	Requirement*
Tensile performance	IEC 60794-1-2-E1	500N, long term 1500N, short term	$\Delta l/l$ fibre \leq 0.05% $\Delta\alpha$ reversible
Crush	IEC 60794-1-2-E3	1000N/100mm, 1min	$\Delta\alpha \leq$ 0.05 dB, no damage
Impact	IEC 60794-1-2-E4	1 Nm, 3 impacts, R=200 mm	$\Delta\alpha \leq$ 0.05 dB after the test
Repeated Bending	IEC 60794-1-2-E6	R=25 x OD, 100 cycles, 20 N	$\Delta\alpha \leq$ 0.05 dB after the test
Cable Torsion	IEC 60794-1-2-E7	100 N, \pm 180°, 1 m, 10 cycles	no damage
Cable Bend	IEC 60794-1-2-E11	R=20xOD, 3 cycles, 5 turns	$\Delta\alpha \leq$ 0.05 dB after the test
Temperature Cycling	IEC 60794-1-2-F1	-30 -> +60 °C	$\Delta\alpha \leq$ 0.05 dB
Water Penetration	IEC 60794-1-2-F5B	3 m sample, water column=1m	no water penetration in 24 h

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

Optical Characteristics

See the attached cabled optical fibre data sheet.

Identification

Fiber colors:

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 Colors:

Fiber Count		Elements															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
288	1 st layer	RD12T	BL12T	WH12T	GN12T	YE12T	GY12T	BN12T	BK12T	-	-	-	-	-	-	-	-
	2 nd layer	VI12T	OR12T	TQ12T	PK12T	RD12T#	BU12T#	WH12T#	GN12T#	YE12T#	GY12T#	BN12T#	BK12T#	VI12T#	OR12T#	TQ12T#	PK12T#

Where: # = black ring marking (for black tube the ring will be white)

Inner Sheath Color:

The inner sheath color is natural.

Outer Sheath Color:

The outer sheath color is yellow.

Sheath Marking:

The outer sheath is marked in 1 meter intervals by ink jet method as follows:

RALA DRAKA(SL) JN-SM-Mini XS105/GRHLDV 288 x G657A1 S12 Idno.[xxxxxx] yyyy mmmm

where: yyyy = year of production, xxxxx = length identification, mmmm = Sequential Length Mark

Logistic

Packing:

Wooden drums with protection.

Delivery Lengths:

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

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