

COMPOSITE DUCT OPTICAL CABLE

Cable Design

IEC/EN 60794-3-10



-12F version illustrated, not to scale -

- **Central Strength Member (CSM):** glass fibres reinforced plastic material (GRP) over-sheating when needed.
- **Loose Tubes:** thermoplastic material containing 12 optical fibres and filled with a suitable water tightness compound.
- **Power Conductor:** insulated annealed copper wire, section 0.75 mm².
- **Stranding:** the required number of elements (tubes, copper conductors or fillers) are SZ stranded around the CSM.
- **Longitudinal Water Tightness:** water swellable materials (dry core).
- **Outer Sheath:** HDPE, 2 ripcords beneath.

This composite optical cable is designed for duct installation technique.

Technical data

No. of Fibres			12
Design	-		1x12
Tube/filler diameter – ø	mm		2.3
Number of fillers	-		1
CSM/ Enlargement – ø	mm		2.4/-
Nom. sheath thickness – ø	mm		0.7
Cable diameter – ø	mm		8.6
Cable weight	Kg/km		84
Max. tension	N		1600
Min. bending radius	mm	Dynamic: 20xCable-ø	Static: 15xCable-ø
Temperature range	°C	Transport & Storage: -40 -> +70	Installation: -5 -> +40 Operation: -30 -> +60

Main characteristics

Test	Standard	Value	Requirement*
Max. Installation Tension	IEC 60794-1-2-E1	See above	Δα reversible
Crush	IEC 60794-1-2-E3	2200N/100mm, max. 15 min.	Δα ≤ 0.1 dB
Impact	IEC 60794-1-2-E4	5 J, 3 impacts, R=300 mm	Δα reversible
Temperature Cycling	IEC 60794-1-2-F1	-30 -> +60 °C, 2 cycles	Δα ≤ 0.1dB/Km, reversible
Water Penetration	IEC 60794-1-2-F5B	3 m sample, 24 h	No water penetration

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

Optical Characteristics

See the attached cabled optical fibre data sheet.

Optical Characteristics

Electrical resistance: 24.5 Ω/km at 20°C, per wire.

Feeding tension: max. 60 Volts.

Identification

Fiber colors (acc. to VDE0888 part 3)

No.	1	2	3	4	5	6	7	8	9	10	11	12
Color	blue	orange	green	brown	grey	white	red	black	yellow	violet	pink	turquoise

Tube Colours:

Fiber Count	Elements					
	1	2	3	4	5	6
12	Rd12T	BICC	BICC	NF	BkCC	BkCC

Where: Rd12T=red tube with 12 fibres, BICC=blue copper conductor, NF = Natural filler, BkCC=black copper conductor.

Sheath Colour:

The outer sheath colour is black.

Sheath Marking:

The outer sheath is marked in 1 meter intervals by hot print foil method as follows:

PRYSMIAN SA	12 G.657A1	65 VOLTS	4x0.75mm²	mmmm
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where: mmmm = Sequential Length Mark

Logistic

Packing:

Wooden drums with protection.

Delivery Lengths: 2000 ± 100 m; 4000 ± 200 m.

Other lengths available upon agreement, up to a maximum of 10% of the total number of cable lengths could be shorter than nominal values.

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