

## DUCT OPTICAL MINICABLE

### Cable Design

IEC/EN 60794-3-10



-72F version illustrated not to scale -

- **Central Strength Member (CSM):** glass fibres reinforced plastic material (FRP).
- **Loose Tubes:** thermoplastic material containing up to 12 optical fibres and filled with a suitable water tightness compound.
- **Filler Elements:** thermoplastic rods, where needed.
- **Stranding:** loose tubes, SZ stranded around the CSM.
- **Longitudinal Water Tightness:** water swellable materials (dry core).
- **Outer Sheath:** PE with minimum carbon black content 2.0 %.

This optical cable is designed for duct installation by blowing technique.

### Technical data

No. of Fibres		2	4	12	24	36	48	72	84	96	144	288	
Design	-	1x2	1x4	1x12	2x12	3x12	4x12	6x12	7x12	8x12	12x12	24x12	
Number of fillers	-	5			4	3	2	-	1	-			
Tube diameter - $\phi$	mm	1.55						2.6/-		3.0/4.8			
CSM/Enlargement - $\phi$	mm	1.6/-						2.6/-		3.0/4.8			
Sheath thickness, nom	mm	0.5											
Cable nom. diameter - $\phi$	mm	5.7						6.5		9.0		10.5	
Cable weight, nom	Kg/Km	30						42		70		90	
Min. bending radius	mm	Under Maximum Tension: 15 x Cable- $\phi$						Without Tension: 10 x Cable- $\phi$					
Temperature range	$^{\circ}\text{C}$	Transport & Storage : -40 -> +70				Installation: -15 -> +50				Operation: -25 -> +70			

### Main characteristics

Test	Standard	Value	Requirement*
Tensile strength - Installation	IEC 60794-1-2-E1	700N	$\Delta l/l$ fibre $\leq$ 0.5%, $\Delta\alpha$ reversible
Tensile strength - Operation	IEC 60794-1-2-E1	130N	$\Delta l/l$ fibre $\leq$ 0.05%, $\Delta\alpha \leq$ 0.05 dB during the test
Crush	IEC 60794-1-2-E3	700N/100mm, max. 15min	$\Delta\alpha \leq$ 0.05 dB, no damage
Impact	IEC 60794-1-2-E4	1 J, 3 impacts, R=300 mm	$\Delta\alpha \leq$ 0.05 dB after the test, no damage
Repeated Bending	IEC 60794-1-2-E6	R=20 x OD, 100 N, 35 cycles	no damage
Torsion	IEC 60794-1-2-E7	100 N, +/- 180 $^{\circ}$ , 10 cycles	$\Delta\alpha \leq$ 0.05 dB, no damage
Cable Bend	IEC 60794-1-2-E11	R=20xOD, 3 cycles, 4 turns	$\Delta\alpha \leq$ 0.05 dB, no damage
Temperature Cycling	IEC 60794-1-2-F1	-15 -> +50 $^{\circ}\text{C}$ -25 -> +70 $^{\circ}\text{C}$	$\Delta\alpha \leq$ 0.05 dB/Km $\Delta\alpha \leq$ 0.10 dB/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 1550nm

### 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
Color	blue	orange	green	brown	grey	white	red	black	yellow	violet	pink	aqua

### Tube Colours:

Fiber Count	Elements															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	blue	orange	green	brown	grey	white	red	black	yellow	violet	pink	tuquoise	blue#	orange#	green#	brown#
2, 4, 12	BLxT	NF	NF	NF	NF	NF	-	-	-	-	-	-	-	-	-	-
24	BLxT	ORxT	NF	NF	NF	NF	-	-	-	-	-	-	-	-	-	-
36	BLxT	ORxT	GRxT	NF	NF	NF	-	-	-	-	-	-	-	-	-	-
48	BLxT	ORxT	GRxT	BNxT	NF	NF	-	-	-	-	-	-	-	-	-	-
72	BLxT	ORxT	GRxT	BNxT	GYxT	WHxT	-	-	-	-	-	-	-	-	-	-
84	BLxT	ORxT	GRxT	BNxT	GYxT	WHxT	RDxT	NF	-	-	-	-	-	-	-	-
96	BLxT	ORxT	GRxT	BNxT	GYxT	WHxT	RDxT	BKxT	-	-	-	-	-	-	-	-
144	BLxT	ORxT	GRxT	BNxT	GYxT	WHxT	RDxT	BKxT	YExT	VIxT	PKxT	TQxT	-	-	-	-
288	1 <sup>st</sup> layer	BLxT	ORxT	GRxT	BNxT	GYxT	WHxT	RDxT	BKxT	-	-	-	-	-	-	-
	2 <sup>nd</sup> layer	BLxT	ORxT	GRxT	BNxT	GYxT	WHxT	RDxT	BKxT	YExT	VIxT	PKxT	TQxT	BLxT	ORxT	GNxT

Where: BLxT=Blue tube with x fibres, ORxT=Orange tube with x fibres, GRxT=Green tube with x fibres, BNxT=Brown tube with x fibres, GYxT=Grey tube with x fibres, WHxT=White tube with x fibres, RDxT=Red tube with x fibres, BKxT=Black tube with x fibres, YExT=Yellow tube with x fibres, VIxT=Violet tube with x fibres, PKxT=Pink tube with x fibres, TQxT=Turquoise tube with x fibres, NF = Natural Filler.

### Sheath Color:

The outer sheath color is black.

### Sheath Marking:

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

PRYSMIAN (S)	FMDN-nnFO	<fibre type>	yyyy	mmmm
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where: yyyy = year of production, nn = no. of fibers, mmmm = Sequential Length Mark, <fibre type> = i.e. G.652D, G.655C, G.657A1, etc.

## Logistic

### Packing:

Wooden drums with protection.

**Delivery Lengths:** 2000 ± 100 m, 4000 ± 200 m, 6000 ± 300 m.

Other lengths available upon agreement.

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