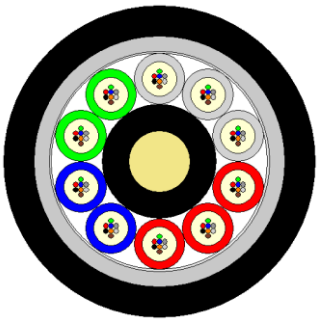
Optical Cables with Dielectric Rodent Protection (VP)

Cable Design

IEC/EN 60794



80 fo cable- not to scale -

- **Central Strength Member (CSM):** glass fibre reinforced plastic rod (FRP), with plastic oversheathing when needed.
- **Loose Tube:** thermoplastic material, containing fibres and filled with a suitable water tightness compound.
- **Filler Elements:** thermoplastic rods, where needed.
- **Stranding:** loose tubes (and fillers), SZ stranded around the CSM.
- **Longitudinal Water Tightness:** dry core with water swellable elements.
- **Peripheral Strength Elements and Non Metallic Armour as Rodent Protection:** glass yarns. (≥30.000 tex)
- **Outer Sheath:** LDPE, 2 ripcords beneath.

Technical data

No. of Fibres		**8**	**16**	**24**	**32**	**48**	**64**	**80**	**96**	**128**	**144**
No. tubes x fibres/tube		2 x 4	4 x 4	6 x 4	4 x 8	6 x 8	8 x 8	10 x 8	12 x 8	(4+12)x8	(6+12)x8
Loose Tube / Filler - Ø	mm	2.0	2.0	2.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3
CSM – Ø	mm	2.1	2.1	2.1	2.4	2.4	2.6	3.0	3.0	2.4	2.4
CSM-Oversheathing - Ø	mm	-	-	-	-	-	3.9	5.4	6.9	-	-
Outer Sheath Thickness	mm	1.5									
Cable Diameter	mm	10.6	10.6	10.6	11.5	11.5	13.0	14.3	15.8	15.9	15.9
Cable Weight	kg/km	100	100	100	115	115	140	165	200	195	195

Minimum Bending Radius	mm	Without Tension 15 x Cable-Ø		Under Maximum Tension 20 x Cable-Ø
Temperature Range	ºC	Installation -10 to +50	Transport & Storage -40 to +70	Operation -20 to +70

Please refer to our General Installation, Safety & Handling recommendations before handling.

Main characteristics

Test	**Test Standard**	**Specified Value**	**Acceptance Criteria**
Max. Installation Tension	IEC 60794–1–2-E1	2500 N	$\Delta\alpha$ reversible, fibre strain ≤ 0.33%
Crush	IEC 60794–1–2-E3	2000 N / 100 mm max. 15 min	$\Delta\alpha \leq 0.05$ dB, no damage
Impact	IEC 60794–1–2-E4	5 Nm, 3 impacts, R= 10 mm	$\Delta\alpha \leq 0.05$ dB
Torsion	IEC 60794–1–2-E7	50N, +/- 180°, 5 cycles	$\Delta\alpha \leq 0.05$ dB, no damage
Cable Bend	IEC 60794–1–2-E11	R=15 x D, 3 turns, 3 cycles	$\Delta\alpha \leq 0.05$ dB
Temperature Cycling	IEC 60794–1–2-F1	-20°C to +70°C	$\Delta\alpha \leq 0.05$ dB/km
Water Penetration	IEC 60794–1–2-F5B	sample=1m, water column=1m, 24h	no water leakage

All optical measurements at 1550 nm

Optical Characteristics

See the attached cabled optical fibre data sheet.

Identification

Fibre Colours

No.	1	2	3	4	5	6	7	8
Colour	green	red	blue	yellow	grey	violet	brown	orange

Buffer Tube Colours

Nº tubes in layer	Position of tubes and fillers in layer											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
2	white	filler	filler	red	filler	filler						
4	white	red	filler	blue	green	filler						
6	white	white	red	red	blue	blue						
8	white	white	red	red	blue	blue	green	green				
10	white	white	white	red	red	red	blue	blue	green	green		
12	white	white	white	red	red	red	blue	blue	blue	green	green	green

All filler elements are black.

Sheath Colour

The outer sheath colour is black.

Sheath Marking

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

<customer name> <manufacturer> <year of manufacture> VP <no. and type of fibre> <length marking in meter>

Logistic

Packing

Wooden drums with protection.

Delivery Length

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