Optical Cables for Indoor/Outdoor Installation (KT)

Cable Design

IEC/EN 60794

128 fibre 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:** aramid yarns.
- **Outer Sheath:** HFFR, 2 ripcords beneath.

Technical data

No. of Fibres		**8**	**16**	**48**	**64**	**128**
No. of tubes x no. fibres/tube	1st layer	4 x 2	4 x 4	6 x 8	8 x 8	4 x 8
No. of tubes x no. fibres/tube	2nd layer	-	-	-	-	12 x 8
Loose Tube / Filler - Ø	mm	2.3	2.3	2.3	2.3	2.3
CSM – Ø	mm	2.4	2.4	2.4	2.6	2.4
CSM-Oversheathing - Ø	mm	-	-	-	3.9	-
Outer Sheath Thickness	mm			1.5		
Cable Diameter	mm	10.2	10.2	10.2	11.7	14.8
Cable Weight	kg / km	95	100	100	130	195

Minimum Bending Radius	mm	Without Tension 15 x Cable-Ø		Under Maximum Tension 20 x Cable-Ø
Temperature Range	°C	Installation -10 to +60	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	2200 N	$\Delta\alpha \leq 0.05$ dB after the test
Crush	IEC 60794–1–2-E3	1200 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= 300 mm	$\Delta\alpha \leq 0.05$ dB
Repeated Bending	IEC 60794–1–2-E6	R=15x D, 100 N, 100 cycles	$\Delta\alpha \leq 0.05$ dB
Torsion	IEC 60794–1–2-E7	100N, +/- 1 turn per cycle, 5 cycles	$\Delta\alpha \leq 0.05$ dB, no damage
Cable Bend	IEC 60794–1–2-E11	R=10 x D, 5 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.

Fire Performance

Test	**Test Standard**	**Specified Value**	**Acceptance Criteria**
Single Cable Test	IEC 60332-1	unburnt cable length	> 50 mm
Halogen Content	IEC 60754-1	halogen content	< 0.5 %
Corrosivity of Smoke Gases	IEC 60754-2	pH-value	≥ 4.3
Conductivity of Smoke Gases	IEC 60754-2	conductivity	≤ 10 µS

Identification

Fibre Colours

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

Buffer Tube Colours

8,16 -fibre cables

No.	1	2	x	3	4	x
Colour	white	red	filler	blue	green	filler

48-fibre cable

Nº	1	2	3	4	5	6
Colour	white	white	red	red	blue	blue

64-fibre cable

Nº	1	2	3	4	5	6	7	8
Colour	white	white	red	red	blue	blue	green	green

128-fibre cable

No.	1	2	x	3	4	x
Colour	white	red	filler	blue	green	filler

Nº	5	6	7	8	9	10	11	12	13	14	15	16
Colour	white	white	white	red	red	red	blue	blue	blue	green	green	green

Sheath Colour

The outer sheath colour is black.

Sheath Marking

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

<customer name> <no. of fibre> KT < fibre type> <week of manufacture> <year of manufacture> <Manufacturer> <ID number> <length marking in meter>

Logistic

Packing

Wooden drums with protection.

Delivery Lengths

Standard delivery lengths are 4 km with a tolerance of -1% / +3%