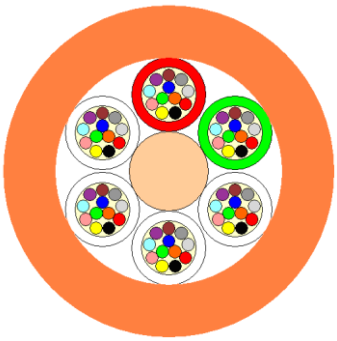
Optical Microcables for Indoor/Outdoor Applications

Cable Design

IEC/EN 60794



- not to scale -

- **Central Strength Member (CSM):** glass fibre reinforced plastic rod (FRP).
- **Loose Tube:** thermoplastic material, containing up to 12 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.
- **1 Ripcord.**
- **Outer Sheath:** HFFR.

Technical data

No. of Fibres		**24**	**48**	**96**
Design		2 x 12	4 x 12	8 x 12
Loose Tube / Filler - Ø	mm	1.5		
CSM – Ø	mm	1.6		1.8
CSM Oversheathing – Ø	mm	-		2.6
Outer Sheath Thickness	mm	1.0		
Cable Diameter (max.)	mm	7.5		8.5
Cable Weight	kg / km	45		60
Suggested Inner Duct - Ø	mm	10.0 (min)		12.0 (min)
Minimum Bending Radius	mm	Without Tension 10 x Cable-Ø	Under Maximum Tension 20 x Cable-Ø	
Temperature Range	ºC	Installation - 30 to + 60	Transport & Storage - 40 to + 70	Operation - 30 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	750 N	$\Delta\alpha$ reversible, fibre strain ≤ 0.3 %
Crush	IEC 60794–1–2-E3	1000 N / 100 mm, max. 15 min	$\Delta\alpha \leq 0.05$ dB after test ,no damage
Impact	IEC 60794–1–2-E4	1 Nm, 3 impacts, R= 10 mm	$\Delta\alpha \leq 0.05$ dB after the test
Torsion	IEC 60794–1–2-E7	45 N, +/- 180°, 10 cycles	$\Delta\alpha \leq 0.05$ dB, no damage
Repeated Bending	IEC 60794–1–2-E6	150 mm, 10 N, 100 cycles	no damage
Cable Bend	IEC 60794–1–2-E11	150 mm, 6 turns, 10 cycles	$\Delta\alpha \leq 0.05$ dB, no damage
Temperature Cycling	IEC 60794–1–2-F1	-40°C to +75°C	$\Delta\alpha \leq 0.05$ dB/km after test $\Delta\alpha \leq 0.10$ dB/km during test
Water Penetration	IEC 60794–1–2-F5B	sample=3 m, water column=1 m	no water leakage in 24 h

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
Smoke emission	IEC 61034-2	light transmittance	> 50 %
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/mm

Identification

Fibre Colours

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

Buffer Tube Colours

Tube	1	2	3	4	5	6	7	8
Colour	red	green	white	white	white	white	white	white

Filler Elements Colours

All filler elements are uncoloured (natural).

Sheath Colour

The outer sheath colour is orange or black.

Sheath Marking

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

COMMSCOPE LT <no. of fibre> LSZH FR (01) G657A1 <year of manufacture> <batch no.>
CAUTION GLASS FIBRE/LASER LIGHT <length marking in meter>

Logistic

Packing

Plastic or plywood drums with protection.

Delivery Lengths

Standard delivery lengths are 2 km, 4 km, 6 km with a tolerance of -1% / +3%