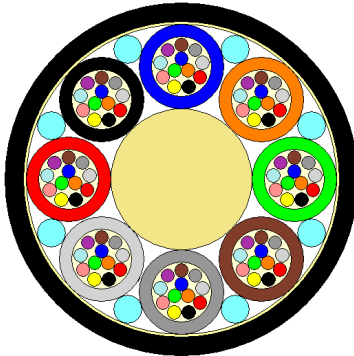


Loose Tube Optical Minicables for use in Ducts

Cable Design



- not to scale -

- **Central Strength Member (CSM):** glass fibre reinforced plastic rod (FRP).
- **Loose Tube:** thermoplastic material, containing optical 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:** PE, one ripcord beneath.

This loose tube dielectric optical cable is designed for outdoor installation in ducts and microducts by blowing or pulling techniques.

Technical data

No. of Fibres		12	24	48	72	96	144	192
Design		1 x 12	2 x 12	4 x 12	6 x 12	8 x 12	12 x 12	8 x 24
Cable Diameter	mm	4.9				5.8	7.8	7.9
Cable Weight	kg / km	22				31	52	56
Tensile Strength	N	500				1000	1000	1000
Minimum Bending Radius	mm	Without Tension 15 x Cable-Ø				Under Maximum Tension 25 x Cable-Ø		
Temperature Range	°C	Installation -15 to +50		Transport & Storage -40 to +70		Operation -40 to +60		

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

Main characteristics

Test	Test Standard	Specified Value	Acceptance Criteria
Tensile strength	IEC 60794-1-2-E1	See table above	$\Delta\alpha$ reversible
Crush	IEC 60794-1-2-E3	1000 N / 100 mm, 1 min.	$\Delta\alpha \leq 0.05$ dB after test, no damage
Impact	IEC 60794-1-2-E4	5 Nm, 3 impacts, R= 300 mm	no damage
Repeated Bending	IEC 60794-1-2-E6	R=20xD, 20 N, 100 cycles	no damage
Torsion	IEC 60794-1-2-E7	$\pm 180^\circ$, L=1m, 10 cycles	no damage
Kink	IEC 60794-1-2-E10	Min. diameter = 100mm	$\Delta\alpha \leq 0.05$ dB, no damage
Cable Bend	IEC 60794-1-2-E11	R=20xD, 5 turns, 3 cycles	$\Delta\alpha \leq 0.1$ dB
Temperature Cycling	IEC 60794-1-2-F1	-30°C to +60°C -40°C to +70°C	$\Delta\alpha \leq 0.05$ dB/km $\Delta\alpha \leq 0.15$ dB/km
Water Penetration	IEC 60794-1-2-F5B	sample=3m, water column=1m	no water leakage in 24h













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	9	10	11	12
Colour	blue	orange	green	brown	grey	white	red	black	yellow	violet	pink	aqua
												

No.	13	14	15	16	17	18	19	20	21	22	23	24
Colour	blue ¹	orange ¹	green ¹	brown ¹	grey ¹	white ¹	red ¹	white ²	yellow ¹	violet ¹	pink ¹	aqua ¹
												

<colour>¹ with evenly spaced black ring marks

<colour>² with evenly spaced double black ring marks

Buffer Tube Colours

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

Sheath Colour:

The outer sheath colour is black.

Sheath Marking:

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

<Optional: customer name> <Manufacturer> <year of manufacture>
JN-SM-LRE XS <no. and type of fibre> <length marking in meter>

Logistic

Packing:

Plastic or plywood drums with protection.

Delivery Length:

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

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