



- **Multi-fibre construction**
- **Fibre protection (secondary):** Low smoke and fumes zero halogen (LSOH)
- **Peripheral strength members:** High modulus aramid yarns
- **Longitudinal water tightness:** Water swellable elements (dry-core technology)
- **Sheath:** UV stabilised low smoke and fumes zero halogen (LSOH)

1. Application and Installation

This tight-buffered multi-fibre optical cable is suitable for applications in local area network (LAN) including FDDI cabling, Ethernet and Token ring

2. Cable Technical Specifications

Technical data

Number of Fibres		4	6	8	12	24
Tight buffer diametre	µm	900 ± 50				
Cable nominal diametre	mm	4.8	4.8	5.4	6.2	8.8
Cable nominal weight	kg/km	20	22	26	33	61
Max. installation tension	N	600				1100
Max. crush resistance	N/100 mm	1000 (Short term)				
Min. bending radius	mm	At full load 20 x Cable OD At full load 10 x Cable OD				
Temperature range	°C	Installation 0 -> +50 Transport & Storage -10 -> +60 Operation 0 -> +70				

Identification

Fibre Colours (Buffered fibre)

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	orange	green	brown	grey	white	red	black	yellow	violet	pink	aqua

Sheath Colour:

The outer sheath colour is aqua

Sheath Marking:

The outer sheath is marked in 1-metre intervals as follows^:

LEGRAND INDOOR/OUTDOOR RISMR <NFIB> FIBRE <TYPE> Part No. T/N #### MM/YY *****M >> | << *****M

Main mechanical characteristics

Parametre	Test method	Test conditions	Acceptance criteria*
Tensile strength	IEC 60794-1-21-E1	Load: As per cable maximum tensile strength in table above	After 30 minutes the maximum strain on the fibre should not exceed 0.5% and no attenuation increase greater than 0.1 dB occurs
Crush	IEC 60794-1-21-E3	Short time: 10min Load: As per maximum crush resistance in table above Number of positions: 3 adjacent sections (ensuring one over tube and one over lay reversal)	No damage to the sheath or to the core structure and no attenuation increase greater than 0.1 dB occurs
Torsion	IEC 60794-1-21-E7	Sample length: 1m Tension: 50N Rotation: a) 180°clockwise, b) return to starting position, c) 180° anticlockwise) return to starting position. Four movements constitute one cycle. Complete 10 cycles (a to d) in one minute maximum	During the final tenth cycle at a), c) and after completion (no rotation) check transmitting fibres. No fibre breaks, no damage to the sheath or to the core structure and no attenuation increase greater than 0.1 dB occurs
Bend	IEC 60794-1-21-E11	Mandrel radius: As per Min. bend radius at no load in table above. Bend: 360° (1 turn)	No attenuation increase greater than 0.1 dB occurs
Bend under tension	Concurrent to tensile test IEC 60794-1-21- E18A	Mandrel radius: As per Min. bend radius at full load in table above. Bend: 360° (1 turn)	After 1 minute no fibre breaks, no damage to the sheath or to the core structure and no attenuation increase greater than 0.1 dB occurs from no load to full load
Temperature cycling	IEC 60794-1-22-F1	Sample length: 1000 m (minimum) Temperature range: 0°C to + 70°C	There should be no average attenuation increase at the temperature extremes when compared to the attenuation at ambient temperatures. No individual fibre should measure an attenuation greater than 0.15 dB/km
Water penetration	IEC 60794-1-22-F5B	Sample length =3m, Water height= 1m	No water leakage after 24 hours

3. Fibres Technical Specifications

Standards and Norms

IEC 60793-2-10 Category A1_a	ISO/IEC 11801 Category OM3	AS / NZS 3080
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Attenuation of cabled fibre

Attribute	Measurement method	Units	Limits
Maximum attenuation value of cable @ 850 nm	IEC 60793-1-40	dB/km	3.5
Maximum attenuation value of cable @ 1300 nm		dB/km	1
Inhomogeneity of OTDR trace for any two 1000 m fibre lengths		dB/km	Max. 0.2

Bandwidth

Attribute	Measurement method	Units	Limits
850 nm	IEC 60793-1-41	MHz.km	1500
1300 nm		MHz.km	500
Effective laser bandwidth @850 nm		MHz.km	2000

Group index of refraction

Attribute	Measurement method	Limits
Effective group index at 1310 and 1383 nm	IEC 60793-1-22	1.482
Effective group index at 1550 and 1625 nm		1.477

Other properties

Attribute	Measurement method	Units	Limits
Core diameter	IEC 60793-1-22	µm	50 ± 2.5
Cladding diameter		µm	125 ± 1.0
Cladding non-circularity		%	≤ 1.0
Core non-circularity		%	≤ 5
Core cladding concentricity error		µm	≤ 1.5
Primary coating diameter		µm	245 ± 10
Primary coating non-circularity		%	≤ 5
Primary coating-cladding concentricity error		µm	≤ 10
Secondary coating diameter		µm	900 ± 50
Proof stress level	IEC 60793-1-30	Gpa	≥ 0.7 (≈ 1 %)
Typical average strip force	IEC 60793-1-32	N	1.7
Strip force peak (F)		N	1.2 ≤ F ≤ 8.9
Numerical aperture	IEC 60793-1-43	µm	0.200 ± 0.015

All measurements in accordance with ITU-T G650 recommendations