

Properties of tight buffered multimode fibre Ø900 µm

Multimode OM3 fibre to be used at 850 nm and 1300 nm

General and application

Tight buffered fibre consist of a 1% proof tested fibre, a dual acrylate primary coating to nominally 245µm and a secondary LSOH or PVC buffer to 900µm. The buffer is extruded around the primary coating in order to make a versatile, and robust buffering system.

Where required to facilitate splicing or termination, all fibre coatings may be easily removed simultaneously to a length of at least 60mm, typically using three stripping actions 15 – 25 mm each, with commercially available mechanical stripping tools.

The intended use of this tightly buffed fibre is pigtailed. The buffered fibre may also be manufactured to patch-cords and be used as an element in cables (Riser and Breakout). The buffer may be coloured to any colour of IEC 60304.

Graded index multimode fibre suitable for transmission speeds of up to 10 Gb/s. It has a 50µm core diameter and a 125µm cladding diameter.

Standards and Norms

| | | |
|------------------------------|------------------------------|---------------|
| IEC 60793-2-10 Category A1_a | ISO / IEC 11801 Category OM3 | AS / NZS 3080 |
|------------------------------|------------------------------|---------------|

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 | 1.0 |
| Inhomogeneity of OTDR trace for any two 1000 m fibre lengths | | dB/km | Max. 0.2 |

Bandwidth

| Attribute | Measurement method | Units | Values |
|-----------------------------------|--------------------|--------|--------|
| 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 | Values |
|---|--------------------|--------|
| 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

| <u>Attribute</u> | <u>Measurement method</u> | <u>Units</u> | <u>Limits</u> |
|--|---------------------------|--------------|---------------|
| 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 | IEC 60793-1-22 | 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

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