

C02: General purpose 62.5 µm fibre

Properties of cabled OM1 fibre for use at 850 nm and at 1300 nm

General and application

This fibre is a graded-index multimode fibre suitable for transmission speeds of up to 10 Gb/s (33m 10GBASE-SX). It has a 62.5 µm core diameter and a 125 µm cladding diameter. The fibre is designed for use at 850 nm and/or 1300 nm.

This fibre is suitable for use in premises wiring application like LAN's with video, data and or voice services using LED, VCSEL and Fabry-Perot laser sources.

Standards

| | |
|------------------------------|---|
| IEC 60793-2-10 Category A1b | ISO/IEC 11801 category OM1. |
| EN 60793-2-10: type A1b | IEEE 802.3 - 2002. with amendment 802.3ae - 2002. |
| TIA/EIA-492 AAAA | ANSI/TIA/EIA-568.B.3 – 2000 |
| EN 50173-1:2007 category OM1 | IBM™ Fibre Optic Channel Links; ESCON™ |

Optical properties

| <i>Attribute</i> | <i>Measurement method</i> | <i>Units</i> | <i>Limits</i> |
|--|---------------------------|--------------|---------------|
| Attenuation limit according to IEC 60793-2-10, 850 nm | IEC 60793-1-40 | dB/km | ≤ 3.5 |
| Attenuation limit according to IEC 60793-2-10, 1300 nm | IEC 60793-1-40 | dB/km | ≤ 1.5 |
| Inhomogeneity of OTDR trace for any two 1000 metre fibre lengths | IEC 60793-1-40 | dB/km | Max. 0.1 |

Cable attenuation

| | | | |
|---|----------------|-------|-------|
| Maximum attenuation value of cable at 850 nm | IEC 60793-1-40 | dB/km | ≤ 3.2 |
| Maximum attenuation value of cable at 1300 nm | IEC 60793-1-40 | dB/km | ≤ 1.0 |

Bandwidth

| | | | |
|---|----------------|----------|-------|
| Overfilled (OFL) modal bandwidth at 850 nm | IEC 60793-1-41 | MHz • km | ≥ 200 |
| Overfilled (OFL) modal bandwidth at 1300 nm | IEC 60793-1-41 | MHz • km | ≥ 600 |
| Effective Modal Bandwidth (EMB) at 850 nm | IEC 60793-1-49 | MHz • km | - |

Group index of refraction

| | | | |
|--------------------------------------|----------------|---|-------|
| Group index of refraction at 850 nm | IEC 60793-1-22 | - | 1.496 |
| Group index of refraction at 1300 nm | IEC 60793-1-22 | - | 1.491 |

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Geometrical properties

| Attribute | Measurement method | Units | Limits |
|--|--------------------|---------------|-----------------|
| Core diameter | IEC 60793-1-20 | μm | 62.5 ± 2.5 |
| Cladding diameter | IEC 60793-1-20 | μm | 125.0 ± 1.0 |
| Cladding non-circularity | IEC 60793-1-20 | % | ≤ 1.0 |
| Core non-circularity | IEC 60793-1-20 | % | ≤ 5 |
| Core-cladding concentricity error | IEC 60793-1-20 | μm | ≤ 1.5 |
| Primary coating diameter – uncoloured | IEC 60793-1-21 | μm | 242 ± 7 |
| Primary coating diameter - coloured | IEC 60793-1-21 | μm | 250 ± 15 |
| Primary coating non-circularity | IEC 60793-1-21 | % | ≤ 5 |
| Primary coating-cladding concentricity error | IEC 60793-1-21 | μm | ≤ 6 |

Mechanical properties

| Attribute | Measurement method | Units | Limits |
|-----------------------------|--------------------|-------|---|
| Proof stress level | IEC 60793-1-30 | GPa | ≥ 0.7 ($\approx 1\%$) |
| Typical average strip force | IEC 60793-1-32 | N | 1.7 |
| Strip force (peak) | IEC 60793-1-32 | N | $1.3 \leq F_{\text{peak.strip}} \leq 8.9$ |

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