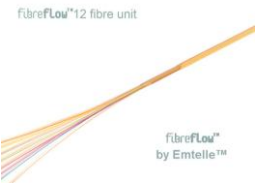


fibreflow™ Blown Fibre Fibre Units, G657 A1, A2, B2 and B3 Reduced Bend sensitivity singlemode



Product Description

Fibre Unit (FU) with up to twelve fibres set in an encapsulating layer providing excellent dimensional and thermal stability. An outer thermoplastic layer provides a high level of protection and excellent installation properties. The FU is designed for blowing into fibreflow™ microducts and tube bundles. The fibres are dry, not coated with gel, thus permitting fast and contamination –free connections.

The FU contain various single mode fibres meeting the ITU-T recommendation G.657 (A1, A2, B2 or B3)

Features

- Designed to be installed by blowing
- Low weight
- Small diameter
- All dielectric design
- Ultra low friction sheath
- Best in class blowing performance
- Low coil set

Identification

Sheath Colour: Yellow with black print every 1 metre
 Fibre colours: blue, orange, green, red, grey, yellow, brown, violet, black, aqua, pink, white
 Fillers: natural (mechanical fibre)

Fibre Unit Properties

| Construction 1: Optical Fibre 2: Filler (mechanical fibre) 3: Encapsulation 4: Low friction sheath | | Fibre Unit FU | | | | |
|--|------------------|--|---------|---------|---------|---------|
| | | 2f | 4f | 6f | 8f | 12f |
| Outer diameter (nominal) | | 1.1 mm | 1.1 mm | 1.3 mm | 1.5 mm | 1.6 mm |
| Mass (nominal) | | 1.0 g/m | 1.0 g/m | 1.6 g/m | 1.8 g/m | 2.2 g/m |
| Min bend radius | | 50 mm | 50 mm | 65 mm | 80 mm | 80mm |
| Fibre type | | Singlemode compliant with G657 (ITU-T) and MHT 2050 | | | | |
| Temperatures | Storage | -20°C to +70°C | | | | |
| | Installation | -10°C to +50°C | | | | |
| | Lifetime | -20°C to +60°C | | | | |
| Attenuation at 20°C (dB/km) | | 0.40 dB/km max at 1310nm to 1625nm 0.30 dB/km max at 1550nm 0.34 dB/km max at 1383nm waterpeak | | | | |
| PMD _Q | (M= 20, Q=0.01%) | ≤0.2 ps / (km) ^{0.5} | | | | |

OFNP RATED (USA): The 2, 4, 8 and 12^(see note) fibre units described here are UL approved for use in plenum zones when deployed inside plenum-rated tube bundles to Emtelle specification MHT 1748.

Note: Approved 12fu has a reduced mass of 2.0g/m

This document is intended as a guide only. Whilst the information it contains is believed to be correct, Emtelle can take no responsibility for actions taken based on the information contained in this document. Emtelle reserves the right to make changes to this document without notice. All sales of product are subject to Emtelle's terms and conditions of sale only, which can be found on Emtelle's website.

This document is protected by copyright (c) Emtelle UK Limited [2012]. The products depicted are protected by intellectual property rights. Any unauthorized copying of this document or of our products is prohibited and Emtelle UK Limited will take action to prevent any infringement of its rights and to claim damages for the loss that it suffers.

www.emtelle.com

Properties for G657 Fibre (Individual stripped out fibres)

| Parameter | Type A1 | | | Type A2 | | | Type B2 | | | Type B3 | | |
|--|-----------------------------------|------|------|---------|-----|------|----------------------------------|-----|------|---------|------|--|
| | 15 | 10 | 15 | 10 | 7.5 | 15 | 10 | 7.5 | 15 | 10 | 7.5 | |
| Radius | 15 | 10 | 15 | 10 | 7.5 | 15 | 10 | 7.5 | 15 | 10 | 7.5 | |
| Number of turns | 10 | 1 | 10 | 1 | 1 | 10 | 1 | 1 | 10 | 1 | 1 | |
| Max. at 1550 nm (dB) | 0.25 | 0.75 | 0.03 | 0.1 | 0.5 | 0.03 | 0.1 | 0.5 | 0.03 | 0.08 | 0.15 | |
| Max at 1625 nm (dB) | 1.0 | 1.5 | 0.1 | 0.2 | 1.0 | 0.1 | 0.2 | 1.0 | 0.1 | 0.25 | 0.45 | |
| Mode Field Diameter Nominal Value (at 1310nm) | 8.6 to 9.5µm (0.4µm tolerance) | | | | | | 6.3 to 9.5µm 0.4µm tolerance) | | | | | |

Mechanical Performance (all optical measurements at 1550 nm)

| Test | Test Method | Test Parameters | Product Specification |
|----------------------|---------------------------------------|--|---|
| Tensile Performance | EN 187000 A1/ 501 IEC60 794-12-E1 | Load is 1km mass (1W) Duration 10 min | Fibre strain ≤0.4% at max. force Attenuation increment ≤0.05dB and fibre strain ≤0.05% after test. |
| Tensile Service Load | | Maximum W/3 Duration of product lifetime | Given tensile performance above, product lifetime loading as per industry best practice. |
| Flexing | IEC 60794-1-2-E11A Change @ 1550nm | Diam 40mm x 3 turns 5 cycles at 20°C | Attenuation ≤0.05dB increment after test. |
| Crush I | IEC 60794-1-2-E3 Change @ 1550nm | 100 mm plate, 100N, 1 min, 3 tests at different places | ≤0.05dB increment after test. |
| Crush II | IEC 60794-1-2-E3 Change @ 1550nm | 100 mm plate, 500N, 15 min, 3 tests at different places | No fibres broken. |

Environmental Performance (all optical measurements at 1310nm and 1550nm)

| Test | Test Method | Test Parameters | Product Specification |
|-------------------|--------------------------------|--|--|
| Water Soak | IEC 60794-5 | 1000 hours in water, 18°C/22°C | Test after temp cycle ≤0.07 dB/km change during and after test |
| Temperature Cycle | IEC 60794-1-2-F1 (3 cycles) | +20°C, -40°C, +60°C | Attenuation to be ≤0.5dB/km during test ≤0.1dB/km change during and after test |
| Damp Heat Cycle | IEC 60068-2-38 (10 cycles) | 25°C, 65°C, 25°C, 65°C, 25°C, -10°C, 25°C | Attenuation to be ≤0.5dB/km during test ≤0.1dB/km change during and after test |

Installation and Handling

Store FUs in supplied containers under dry and damp free conditions, until time of deployment.

Designed for installation into microducts, internal diameter from 3.0mm upwards (2.1mm upwards for 2 and 4 fibre counts). Standard installation equipment may be used (eg Emtelle Fusion, Plummett EM25, PRM-196, and BT 2A).

Breakout: remove outer sheath using a tool with pre-set blade depth to suit (eg. Microcable FU Stripper (code 9719). Remove a short length of inner sheath using a stripping tool (eg. 7562) to enable removal of fibres by peeling apart in groups.

Follow up-to-date installation and handling recommendations as defined in MHT2380 (a copy is provided with every pan of fibre).