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## Product Datasheet MHT2185

### Generic Specification Fibre Units, G657 A1, A2, B2 and B3

Emtelle FibreFlow blown fibre bundle in general is the subject of United Kingdom patents GB2409908C & GB2409909C. Protection outside the UK is by European patents EP1600801B1 & EP3073305B1, European patent application EP3270203A1 and corresponding patents in other countries.



#### 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)

#### Product Benefits



Fibre units are tested according to IEC 60794-5	Blowing track: 2000 m Performance confirmed	Em-Liner outer sheath for Low Friction and best blowing performance
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#### 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 <sub>Q</sub> (M= 20, Q=0.01%)		≤0.2 ps / (km) <sup>0.5</sup>			

OFNP RATED (USA): The 2, 4, 8 and 12<sup>(see note)</sup> 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

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**Mechanical Performance (all optical measurements at 1550nm)**

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

**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)

**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).

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