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Product Datasheet MHT 2669

Generic Specification Blown Fibre
24f Fibre Units, G657 A1, A2 and B3

FibreFlow™

Product Description

Fibre Unit (FU) with twenty four fibres set in an encapsulating layer providing excellent dimensional and thermal stability. A low friction outer thermoplastic layer provides properties necessary for installation. 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 or B3)

The 24f Fibre Unit is designed to provide an option to customers where total fibre count cannot be met with traditional fibre units 2f to 12f. As such the design is compromised towards fibre density and outer diameter. The traditional 2f to 12f fibre units offer greater blowing distances and speeds, and better performance in tortuous routes than the 24f Fibre Unit.

The ideal installation for 24f Fibre Unit is up to 500m straight routes with small number of bends (radius 500mm minimum). It is recommended that the 24 fibre bundle is not pulled in or pushed into microducts.

Product Benefits

TESTED & APPROVED

BLOWING DISTANCE Nx100 = 2000 m

EM-LINER

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

Installation and Handling

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

Designed for installation into microducts by blowing, internal diameter from 3.5mm upwards. Standard installation equipment may be used (eg Emtelle Fusion, Plummett EM25, PRM-196).

Care must be taken when handling to avoid kinking

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).

Identification

Fibres 1-12
blue, orange, green, red, grey, yellow, brown, violet, black, aqua, pink, white

Fibres 13-24 ring marked (black x 1)
blue, orange, green, red, grey, yellow, brown, violet, natural, aqua, pink, white

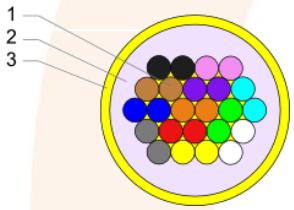
Sheath coloured yellow with black print, marked every 1m with
Emtelle – Year – Fibre Count – Fibre Type – Product Code – Batch ID – Meter Mark

Properties for G657 Fibre (individual stripped out fibres)

Parameter	Type A1		Type A2			Type B3		
Radius	15	10	15	10	7.5	15	10	7.5
Number of turns	10	1	10	1	1	10	1	1
Max. at 1550 nm (dB)	0.25	0.75	0.03	0.1	0.5	0.03	0.08	0.15
Max at 1625 nm (dB)	1.0	1.5	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)		

Fibre Unit Properties

Construction
1: Optical fibre
2: Encapsulation
3: Low friction sheath



Number of fibres	24
Outer diameter (nominal)	2.05 mm
Mass (nominal)	2.8 g/m
Min bend radius	100 mm, 90 degree bend. 170mm for greater than 90 degree bend
Maximum installation tension	10 N
Fibre types available	Singlemode compliant with G.657A1,2,B3 (ITU-T)
Temperatures Storage Installation Lifetime	-20°C to +50°C -10°C to +50°C -20°C to +50°C
Attenuation at 20ºC (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 water peak
PMD_Q (M= 20, Q=0.01%)	≤0.2 ps / $(km)^{0.5}$

Mechanical Performance (all optical measurements at 1550nm)

Test	Test Method	Test Parameters	Product Specification
Tensile Performance	EN 187000 A1/ 501 IEC60 794-12-E1	30N Duration 10 min	Fibre strain ≤0.1% at max. force Attenuation increment ≤0.1dB and fibre strain ≤0.05% after test.
Tensile Service Load		Maximum 10N 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 160mm x 3 turns 5 cycles at 20°C	Attenuation ≤0.1dB 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.

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, –45°C, +65°C	Attenuation to be ≤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 ≤0.1dB/km change during and after test