

fibreflow™ Fibre Units SM G652d



PRODUCT DESCRIPTION: Various **G652d** 'no waterpeak' single mode fibres to specification MHT 1401, set in a buffer layer providing excellent dimensional and thermal stability. The outer thermoplastic layer provides a high level of protection and excellent installation properties. The units are designed for blowing into fibreflow™ microducts and tube bundles. The fibres are dry, not coated with gel, thus permitting fast and contamination-free connections.

COMMON DATA (all fibre counts):

Bend Radius: See table below.
 Keep FU in supplied containers until deployment. NB: The MBR of deployed fibre units requires that they are stored as circular coils, or deployed inside Emtelle-approved carrier tube, or tube with fibre inside can be wound around a smooth former of suitable material and diameter.

Temperatures: Storage: -20°C to +70°C
 Installation: -5°C to +50°C
 Lifetime: -20°C to +50°C

Fibre colours: blue, orange, green, red, grey, yellow, brown, violet, black, aqua, pink, white.

Breakout: 1. Remove sheath with Emtelle tool #7299 using a rotary motion. 2. Gently crush the end to separate fibres. 3. Pull apart the fibres in groups. This finally leaves 12 loose fibres that require no cleaning with solvent. 4. Use Miller strippers (Emtelle #7335) to strip fibres. Document MHT 1337 describes this process in more detail.

INDIVIDUAL PROPERTIES	2 fibre unit	4 fibre unit	8 fibre unit	12 fibre unit
Outer diameter (nom)	1.1mm	1.1mm	1.5mm	1.6mm
Mass 'w' (nominal) g/m = kg/km	1.0 g/m	1.0 g/m	1.8 g/m	2.2 g/m
Min bend radius (MBR) during handling	50mm	50mm	80mm	80mm
Fibre Colours (see sequence above)	blue, orange	1 st 4 colours	1 st 8 colours	all 12 colours

Optical Parameters

(Fibre unit)
 Fibre type: Single mode to G652d (ITU-T) and MHT 1401
 Attenuation typical: 0.4dB/km max at 1310nm (at room temp)
 0.3dB/km max at 1550nm (at room temp)
 Waterpeak: 0.34dB/km max at 1383nm
 PMD: Any fibre $\leq 0.2ps / (km)^{0.5}$

Mechanical Performance (all optical measurements at 1550 nm)

Test	Test Method	Test Parameters	Requirements
Tensile Performance	(EN 187000 A1/ 501 IEC60 794-12-E1) Change @ 1550nm	• Load is 1x w (in kg) (eg 12fu is 2.2kg) • 10 min	• Fibre strain $\leq 0.4\%$ at max. force • Attenuation increment $\leq 0.05dB$ and fibre strain $\leq 0.05\%$ after test
Flexing	IEC 60794-1-2-E11A Change @ 1550nm	Diam 40mm x 3 turns • 5 cycles at 20°C	• Attenuation $\leq 0.05dB$ increment after test
Crush I	IEC 60794-1-2-E3 Change @ 1550nm	100 mm plate, 100N, 1 min, 2 tests at different places	$\leq 0.05dB$ increment after test
Crush II	IEC 60794-1-2-E3 Change @ 1550nm	100 mm plate, 500N, 1 min, 2 tests at different places	No fibres broken

Environmental Performance

Test	Test Method	Test Parameters	Requirements
Temperature Cycle	IEC 60794-1-2-F1 (3 cycles)	+20°C, -40°C, +60°C	<ul style="list-style-type: none">• Absolute attenuation during test to be ≤ 0.5dB/km (1550nm and 1310nm)• < 0.1dB/km change during and after test compared to start value.
Water Soak	IEC 60794-5	1000 hours in water, 18°C/22°C	(Test after temp cycle) ≤ 0.07 dB/km change compared to start value. (1550 nm)
Damp Heat Cycle	IEC 60068-2-38 (10 cycles)	25°C, 65°C, 25°C, 65°C, 25°C, -10°C, 25°C	<ul style="list-style-type: none">• Absolute attenuation during test to be ≤ 0.5dB/km (1550nm and 1310nm)• < 0.1dB/km change during and after test compared to start value.

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