Ultra-Low Loss Enhanced Backreflecting (ULEB) Optical Fibre

Product description

ULEB fibre is an optical fibre engineered for enhanced vibration sensitivity in distributed acoustic sensing (DAS) systems. Its broadband performance is achieved through proprietary optical processing, enabling the integration of localised reflectors into commercial optical fibres. The resulting flat spectral response across a broad wavelength range minimises thermal sensitivity and ensures compatibility with various interrogation techniques. The enhanced reflected signal can reach levels as high as −50 dB relative to the probe pulse peak power, significantly extending the monitoring range, eliminating blind spots, and improving signal quality. These features make ULEB fibre highly effective for a broad spectrum of acoustic sensing applications.

Specifications

Optical Fibre	
Fibre Type [1]	G.652
Core	Germanium-doped silica
Cladding	Silica, step index and matched clad type
Operating Window	1300 nm – 1600 nm
Operating Temperature	-190 to 350 °C *
Proof Test Level	≥ 100 kpsi (1.0% strain)
Dynamic Tensile Strength	3.5 GPa
Reflectors	
Reflector Reflectance [2]	-63 dB to -50 dB (Re pulse peak power)
Reflector Spacing [2]	1 cm or more
Reflector Attenuation	1 dB per 10,000 reflectors

Notes

1. Reflectors can be inscribed in any optical fibre with a transparent coating. This includes, but is not limited to, polyamide-coated fibre, multi-core fibre, PM fibre, and fibre with single-mode operation at a different wavelength window, such as HI1060. For more information, contact info@sensiphi.co.uk.
2. Both the location and reflectivity of the reflectors are fully customisable. Our reel-to-reel writing system can be programmed to inscribe reflectors only in specific sections of the fibre where enhanced sensitivity is required, leaving other sections reflector-free where such enhancement is not needed.

* For Polyamide coated fibre.

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