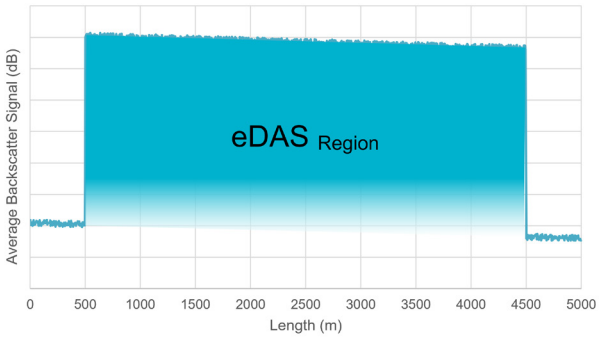
ENHANCED DISTRIBUTED ACOUSTIC SENSING FIBER (eDAS™)

Enhanced Distributed Acoustic Sensing Fiber (eDAS™) provides continuously distributed reflection points along the length of an optical fiber to improve the level of back scattered signal, substantially above the Rayleigh noise floor.



Depending on the pulse length and reflector spacing, this enables a pseudo-continuous enhancement of the signal to noise ratio (SNR) of distributed sensing techniques, such as distributed acoustic sensing (DAS), to allow longer length deployments and improve sensitivity. The eDAS™ fiber can be utilized to enable higher fidelity data with standard deployment methods or allow lower energy seismic vibrators to be used to save costs whilst achieving the same historic data fidelity. This acoustic enhancement is particularly beneficial for low acoustic signal applications such as flow monitoring, microseismic and event detection and borehole seismic sensing.

The enhancement technique, sometimes referred to as engineered fiber, can be applied to any type of optical fiber with an acrylate, high temperature acrylate or polyimide coating, enabling access to applications at up to 85°C, 150°C or 300°C respectively. The technique is applicable to standard single-mode (SM) telecoms fibers, such as G.652 and G.657, as well as specialty optical fibers including pure silica core fibers. eDAS™ is thermally stable, providing a consistent broadband spectral response at temperatures up to 300°C.

For hydrogen rich environments, such as downhole sensing within oil and gas applications and infrastructure monitoring within the hydrogen fuel industry, pure silica core fibers provide reduced sensitivity to hydrogen darkening.

FEATURES

Advantages

- Enhanced SNR for distributed sensing techniques
- Thermally stable to 300°C
- Compatible with pure silica core fiber
- Enables reduced seismic vibrator costs
- Longer fiber sensing lengths
- Higher data fidelity
- Faster acquisition times

Typical Applications:

- Oil & Gas sensing: flow monitoring, microseismic & event detection and borehole seismic
- Distributed acoustic sensing (DAS)
- Pipeline monitoring
- Structural health monitoring (SHM)

Product Variants

- Low Temperature eDAS
  Ideal for -55°C to +85°C and long-range applications
- Mid Temperature eDAS
  Suitable for applications up to +150°C
- High Temperature eDAS

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SPECIFICATIONS

	LOW TEMPERATURE eDAS	MID TEMPERATURE eDAS	HIGH TEMPERATURE eDAS
Enhancement (dB) [above Rayleigh scatter level]	3 - 15		
Fiber Types	G.652 / G.657 (others upon request)	SM1250(10.4/125)HT SM1250SC(9/125)HT (others upon request)	SM1250SC(9/125)P (others upon request)
Reflector Spacing (m)	0.5, 1, 5 (others upon request)		
Cladding Diameter (µm)	125 (80µm on request)		
Coating Diameter (µm)	245		155
Coating Type	Acrylate	High Temperature Acrylate	Polyimide
Operating Temperature (°C)	85	150	300

RELATED PRODUCTS

- SM Fiber For Visible RGB Through To Near IR
- Ultra-Thin SM Fiber
- High Temperature Acrylate Coated SM Fiber
- Polyimide Coated SM Fiber
- Dual Band Bend Insensitive Fiber
- Pure Silica Core SM Fiber
- Fiber Optic Cables
- Fiber Bragg Gratings (FBGs)

Fibercore House I Southampton Science Park
United Kingdom I SO16 7QQ
T +44 (0)23 8076 9893 I **E** info@fibercore.com

fibercore.com

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