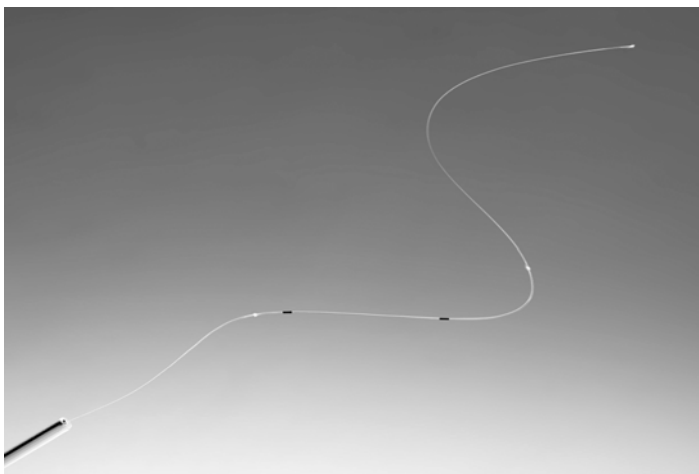


OptiMet-OMF

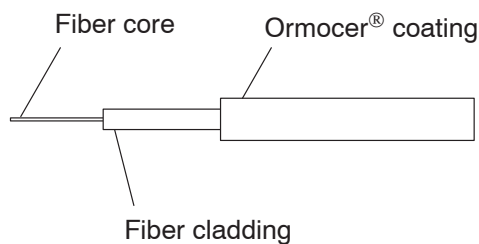
Ormocer®
strain measuring fiber



Characteristic features

- Optical fiber based on fiber Bragg grating
- Up to 13 Bragg gratings per fiber
- Standard version: 60cm distance between individual gratings, distance between Bragg wavelengths 5nm
- Suitable for laboratory applications
- Insensitive to electromagnetic interferences
- Application in Ex-areas possible
- Lower wiring outlay compared to electrical strain gauges
- Lower mass of glass fiber compared to standard connecting cables

Principal layout



Specifications

Design		Ormocer [®] -coated glass fiber with Bragg grating
Core diameter of glass fiber, approx.	μm	6
Diameter of fiber cladding, approx.	μm	125
Outer diameter with coating, approx.	μm	195
Bragg grating length	mm	6 ± 1
Connection (plug) ¹⁾		FC/APC
Available Bragg wavelengths ²⁾	nm	1520 ... 1580
Bragg wavelength tolerance	nm	± 0.4
Bragg signal width (FWHM)	nm	0.13 ± 0.02
Gage factor		Approx. 0.78 (stated on the packaging)
Gage factor tolerance	%	± 2
Degree of reflection	%	> 15
Damping at 1550nm (simple light path)	dB/km	8.6
Reference temperature	°C	23
Operating temperature range	°C [K]	-268.9 ... +200 [4.2 ... 473]
Storage temperature range	°C	-40 ... +80
Temperature response ³⁾ (thermal expansion coefficient of measurement object 0 μm/m/K) Temperature response as function of wavelength variation $\Delta\lambda/\lambda_0$ per K	μm/m/K ppm/K	8.3 6.5
Tolerance of temperature response	μm/m/K	± 1
Tensile load at break	N μm/m	> 50 50000 (5%)
Smallest bend radius at reference temperature ⁴⁾	mm	2.5
Applicable bonding materials		EP310S ⁵⁾ , X60, X120

¹⁾ 1.5 m Pigtail spliced on one end.

²⁾ Standard configuration with 13 Bragg gratings, grating to grating distance 60 cm, Bragg wavelength distance 5 nm, 1.5 m Pigtail spliced on one end; available ex stock. Customer-specific configurations on request.

³⁾ The temperature response was determined in the range 0 ... +70°C. The thermal expansion coefficient of the measurement object must be added after attaching the fiber.

⁴⁾ This radius of curvature applies outside the Bragg grating.

⁵⁾ Preferred adhesive

Subject to modifications.

All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability.

Hottinger Baldwin Messtechnik GmbH

Im Tiefen See 45 · 64293 Darmstadt · Germany
Tel. +49 6151 803-0 · Fax: +49 6151 803-9100
Email: info@hbm.com · www.hbm.com

measure and predict with confidence

