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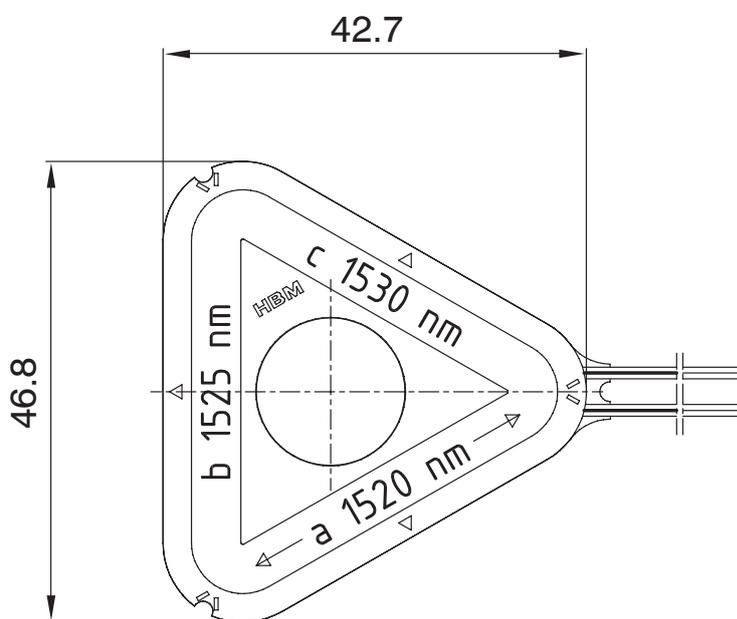
Optical rosette



Special features

- Optical rosette 0°/60°/120° based on fiber Bragg grating
- Installation and evaluation like electrical strain gauges
- All relevant data determined and provided, e.g. gauge factor
- 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

Dimensions (in mm; 1 mm = 0.03937 inches)



Specifications

Design		OptiMet-OMF-Fiberglass symmetrically embedded in modified acrylic resin, with a Bragg grating; potted in plastic material
Core diameter of glass fiber, approx.	μm	6
Diameter of fiber cladding, approx.	μm	125
Outer diameter of coating, approx.	μm	195
Diameter with jacket, approx.	mm	1.5
Dimensions		
Length	mm	42.7 ± 1
Width	mm	46.8 ± 1
Thickness	mm	2.0 ± 0.5
Connector (plug) ¹⁾		FC/APC
Available Bragg wavelengths	nm	Rosette 1: 1520, 1525, 1530 Rosette 2: 1535, 1540, 1545 Rosette 3: 1550, 1555, 1560 Rosette 4: 1565, 1570, 1575
Bragg wavelength tolerance	nm	± 1
Gauge factor		Approx. 0.78 (stated on the packaging)
Gauge factor tolerance	%	± 2
Maximum degree of reflection	%	15
Transverse sensitivity ²⁾	%	0
Reference temperature	°C	23
Operating temperature range	°C	-10 ... +80
Storage temperature range	°C	-20 ... +100
Temperature response (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	7.0 5.5
Tolerance of temperature response	μm/m/K	± 1
Maximum elongation³⁾ at reference temperature when using Z70 adhesive		
Strain in positive direction	μm/m	10.000 (1%)
Strain in negative direction	μm/m	10.000 (1%)
Fatigue life ³⁾ at reference temperature when using Z70 adhesive		
Achieved no. of load cycles L_w at Alternating strain $\epsilon_w = \pm 1000 \mu\text{m/m}$ and variation of zero point $\epsilon_m\Delta \leq 30 \mu\text{m/m}$		>>10 ⁷ (aborted after 10 ⁷ load cycles)
Alternating strain $\epsilon_w = \pm 3000 \mu\text{m/m}$ and variation of zero point $\epsilon_m\Delta \leq 60 \mu\text{m/m}$		>>10 ⁷ (aborted after 10 ⁷ load cycles)
Fatigue life at reference temperature when using X280 adhesive ⁴⁾		
Achieved no. of load cycles L_w at Alternating strain $\epsilon_w = \pm 5000 \mu\text{m/m}$ and variation of zero point $\epsilon_m\Delta \leq 100 \mu\text{m/m}$		>>10 ⁷ (aborted after 10 ⁷ load cycles)
Minimum radius of curvature, longitudinal and transverse, at reference temperature	mm	25
Applicable bonding materials Cold curing adhesives		Z70, X60, X280

¹⁾ Spliced fiber optic cable with plug and protective cover is available as an option (length as requested by customer).

²⁾ As per VDI/VDE/GESA 2635. A tolerance cannot be given as the transverse sensitivity is 0.

³⁾ Determined per fiber Bragg grating.

⁴⁾ Contact pressure when using X280 with optical strain gauge: 1 N/cm²

The achievable number of load cycles is dependent on the quality of installation and fatigue life of component under investigation.

Subject to modifications.

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

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