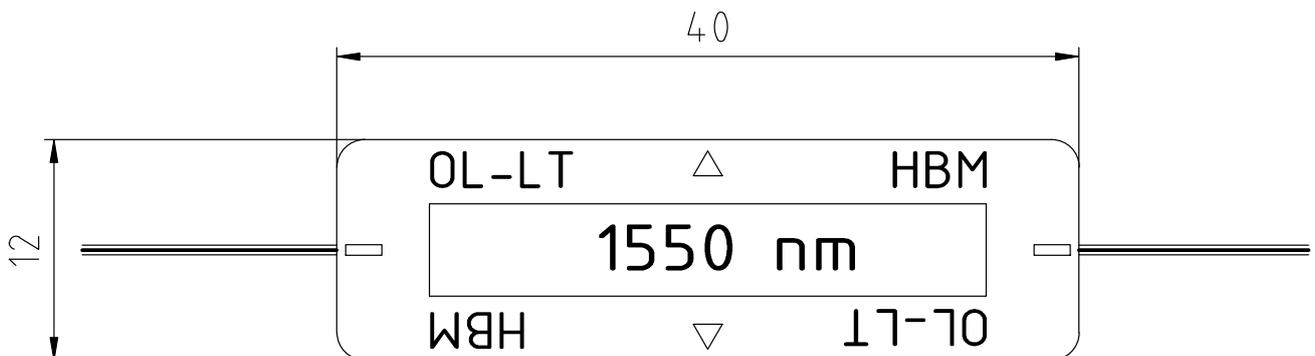


OL-LT

Optical strain gauge (SG)
with extended temperature
range

Special features

- Optical strain gauge - based on fiber Bragg grating
- Installation as for electrical strain gauges, or as for OL
- Can be used in extended temperature range from -40°C to 100°C
- Suited for high strain applications ($\pm 2\%$ deformation)
- Measurement on curved surfaces possible
- Insensitive to electromagnetic interferences
- Application in Ex-areas possible
- Lower glass fiber mass compared to standard connecting cables



Dimensions in mm (1 mm = 0.03937 inches)

Specifications OL-LT

Design		Optimet-OMF glass fiber with Bragg grating symmetrically embedded in modified acrylic resin, 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 of cladding, approx.	mm	1.5
Dimensions		
Length	mm	40.0 ±0.5
Width	mm	12.0 ±0.5
Height	mm	2.0 ±0.5
Connection (plug) ¹⁾		FC/APC
Available Bragg wavelengths		1520, 1525, 1530, 1535, 1540, 1545, 1550, 1555, 1560, 1565, 1570, 1575, 1580
Bragg wavelength tolerance	nm	±1
Gauge factor		0.76
Gauge factor tolerance	%	±4
Maximum degree of reflection	%	15
Transverse sensitivity ²⁾	%	0
Reference temperature	°C	23
Operating temperature range	°C	-40...+100
Storage temperature range	°C	-40...+100
Thermal cross sensitivity (TCS) thermal contribution of the sensor to strain signal	µm/m/°C	6.7
Tolerance of thermal cross sensitivity (TCS)	µm/m/°C	±1
Maximum elongation at reference temperature when using Z70 adhesive		
Absolute strain value for positive direction	µm/m	20,000 (2%)
Absolute strain value for negative direction	µm/m	20,000 (2%)
Fatigue life at reference temperature when using Z70 adhesive		
Achieved no. of load cycles L_W on steel measuring body at alternating strain $\epsilon_W = \pm 1000$ µm/m and variation of zero point < 30 µm/m		>>10 ⁷ (aborted after 10 ⁷ load cycles)
Minimum radius of curvature, longitudinal and transverse, at reference temperature		25
Applicable bonding material		Z70, X60, X280 ³⁾
Cold curing adhesives		

¹⁾ A spliced fiber optic cable with plug 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⁾ Contact pressure when using X280: 1 N/cm².

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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