



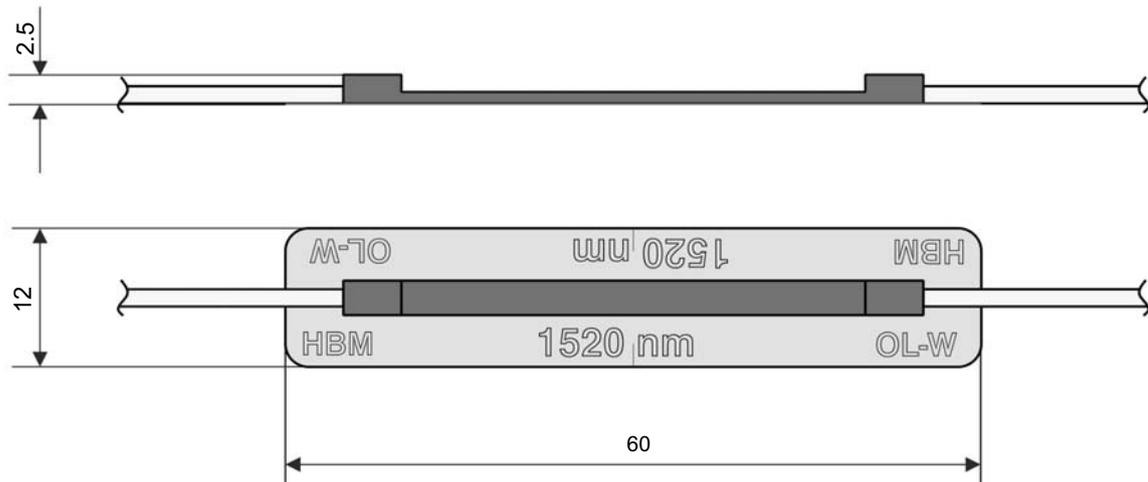
## OL-W

### Weldable Optical Strain Gauge

#### Special features

- Optical strain gauge, based on fiber Bragg grating
- Installation by spot welding method
- Application to curved surfaces possible
- High robustness of Bragg signal against mechanical disturbances
- Insensitive to electromagnetic interferences
- Application in Ex-areas possible

Dimensions (in mm; 1mm = 0.03937 inches)



## Specifications OL-W

<b>Construction</b>		OptiMet-OMF glass fiber with Bragg grating installed on stainless steel with X120 adhesive
<b>Core diameter of glass fiber, ca.</b>	µm	6
<b>Diameter of cladding, ca.</b>	µm	125
<b>Outer diameter of coating, ca.</b>	µm	195
<b>Diameter of jacket, ca.</b>	mm	1.5
<b>Thickness steel plate (material X8Cr17 , 1.4016)</b>	mm	0.1
<b>Dimensions</b>		
Length	mm	60±0.1
Width	mm	12±0.1
Height	mm	2.5±0.3
<b>Connector 1)</b>		FC/APC
<b>Available Bragg wavelengths</b>	nm	1520,1525,1530,1535,1540,1545,1550,1555,1560,1565,1570,1575, 1580
<b>Tolerance of Bragg wavelength</b>	nm	±1
<b>k factor</b>		0.76
<b>k factor tolerance</b>	%	±3
<b>Maximal reflectivity</b>	%	15
<b>Cross sensitivity 2)</b>	%	0
<b>Reference temperature</b>	°C	23
<b>Application temperature</b>	°C	-40...+100
<b>Storage temperature</b>	°C	-40...+100
<b>Thermal cross sensitivity (TCS) 3)</b> Thermal contribution of the sensor to strain signal	µm/m/°C	7.5
<b>Tolerance of thermal cross sensitivity (TCS)</b>	µm/m/°C	±1
<b>Maximal Strain at reference temperature</b>		
<b>Strain in positive direction</b>	µm/m	10,000 (1%)
<b>Strain in negative direction</b>	µm/m	10,000 (1%)
<b>Minimal bending radius at room temperature 4)</b>	cm	30
<b>Bonding method</b>		Spot welding method 5)
<b>Strain-related restoring force</b>	$\frac{N (lbf)}{1,000 \mu m/m}$	< 400 (<90)

1) Spliced fiber cable with connector optionally available (Length on customer request).

2) Specified VDI/VDE/GESA 2635.

3) Thermal expansion coefficient of specimen to be added

4) Bragg wavelength may change at maximal bending radius about ±1nm.

For higher Bragg wavelength changes, a bending radius up to 10cm is acceptable.

5) Recommended spot welding device: c30 from Walter Heller GmbH ([www.heller-schweisstechnik.de](http://www.heller-schweisstechnik.de))

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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