

os4100 | Temperature Compensation Sensor

Part # os4100-wwww-1xx-1yy  
 Serial # [REDACTED]  
 Nominal Wavelength,  $\lambda_0$  (nm) @22°C 0000.0  
 Certified by: \_\_\_\_\_

Variable	Description	Value	Units
$\Delta\lambda$	Wavelength Shift	Interrogated	nm
$S_T$	Temperature Sensitivity	28.9	pm/°C

Temperature Change,  $\Delta T$  (°C):  $\Delta T = (1 \times 10^3)(\Delta\lambda / S_T)$

**Thermal Output and Temperature Compensation**

Fiber Bragg grating (FBG) based strain gages respond to both strain and temperature. Temperature induced strain results from a combination of two factors.

- 1) Thermal expansion of the substrate on which the gage is mounted.
- 2) Thermally induced index of refraction changes in the FBG.

Both factors affect the FBG’s center wavelength.

The os4100 temperature compensation gage is packaged such that it is isolated from mechanically induced strain when properly mounted to a specimen. This makes the os4100 ideal for temperature compensation of optical strain gages.

For additional information about temperature compensation techniques and converting wavelength values to strain and temperature, see:

[http://www.micronoptics.com/support\\_downloads/Sensors/](http://www.micronoptics.com/support_downloads/Sensors/)



Products displaying the “Micron Optics Tuned” logo include Micron Optics tunable technologies thus ensuring high quality and performance. Certified sensors have been tested and qualified for use with Micron Optics Sensing Instruments.

**Qualification Statement**



This sensor has been manufactured using procedures and materials documented under Micron Optics, Inc’s ISO 9001:2000 qualification process. This Sensor Information Sheet is verification of conformance.

**Patent Certification**

Micron Optics sensors and sensor interrogation instruments are covered under a US and International Patent Licensing Agreement between Micron Optics, Inc. and United Technologies Corporation. This license transfers to the users of Micron Optics sensor products and ensures that Micron Optics products are authorized for use in sensing applications. Certificates are available upon request.

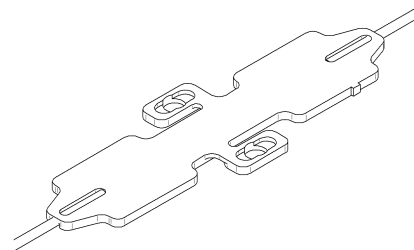


**Installation Information**

An os4100 temperature compensation sensor may be attached to a variety of surfaces using screws, spot welding, or epoxy bonding. For all mounting methods, the mounting surface should be clean and flat. If the mounting surface is not smooth and flat, strain may be applied to the sensor frame during the mounting process negatively impacting sensor performance. Surface preparation and cleaning is especially important when epoxy is used to mount the sensor.

Installation instructions are available at:

[http://www.micronoptics.com/support\\_downloads/Sensors/](http://www.micronoptics.com/support_downloads/Sensors/)



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