

Micron Optics, Inc.
os3200 Strain Sensor
Test Summary

Preliminary

The following tests have been performed on the os3200 optical strain sensor to determine the performance of this product in various environmental conditions. The tests include thermal cycling and humidity soak.

Thermal Cycling:

In this test 4 os3200 sensors were mounted to a 4140 alloy steel beam. The steel beam was clamped in a fixture resulting in +1,200 microstrain tension at the gage location. The fixture was placed in an environmental chamber. The chamber was programmed to cycle from -40°C to 60°C at a rate of 0.5°C per minute. The temperature was allowed to stabilize during each cycle at -40°C, 20°C and 60°C and the center wavelength of each sensor was recorded with a sm125. The chamber completed 40 cycles while wavelength was monitored for drift. The results are listed below:

Sensor	Max Drift (Microstrain)
1	6
2	37
3	4
4	12

Humidity Soak:

In this test 4 os3200 sensors were mounted to a 4140 alloy steel beam. The steel beam was clamped in a fixture resulting in +1,200 microstrain tension at the gage location. The fixture was placed in an environmental chamber at room temperature. The chamber temperature was increased to 50°C and allowed to stabilize. At this point data collection was started and the chamber humidity was raised to 85% RH. Center wavelength was monitored with a sm125.

