

Micron Optics, Inc.

os4200 Series Temperature Probe

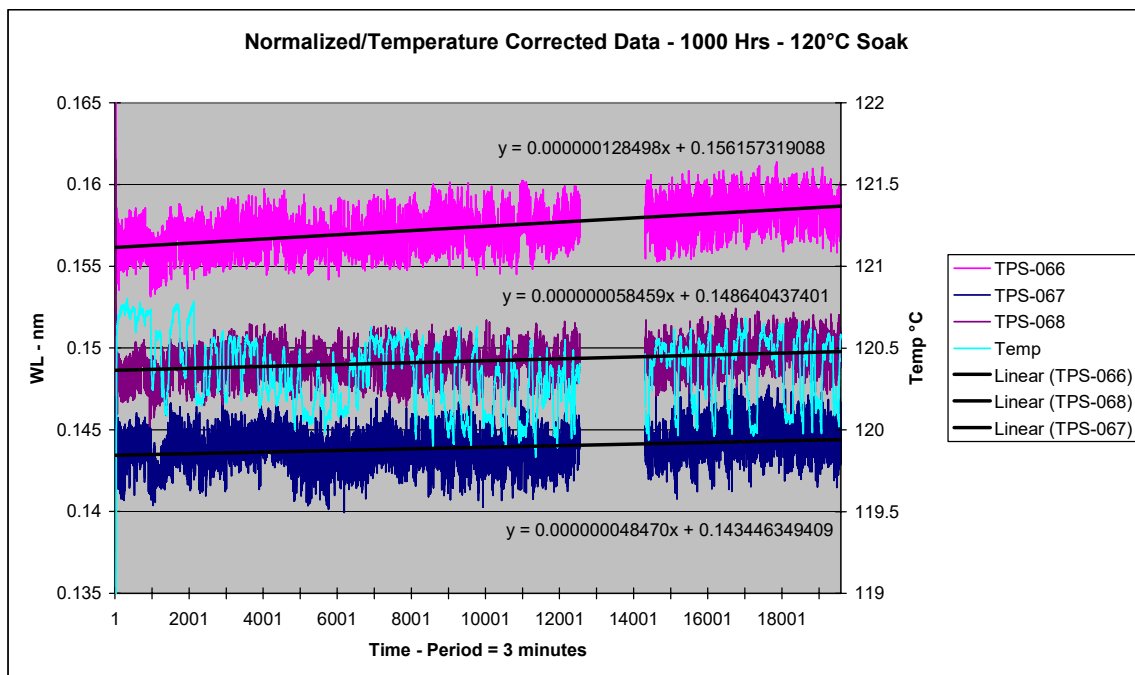
Long Term Test Summary

Preliminary

The following tests have been performed on the os4200 series temperature probe to confirm the long term reliability of the product under extreme environmental conditions. The tests include long term high temperature soak and vibration.

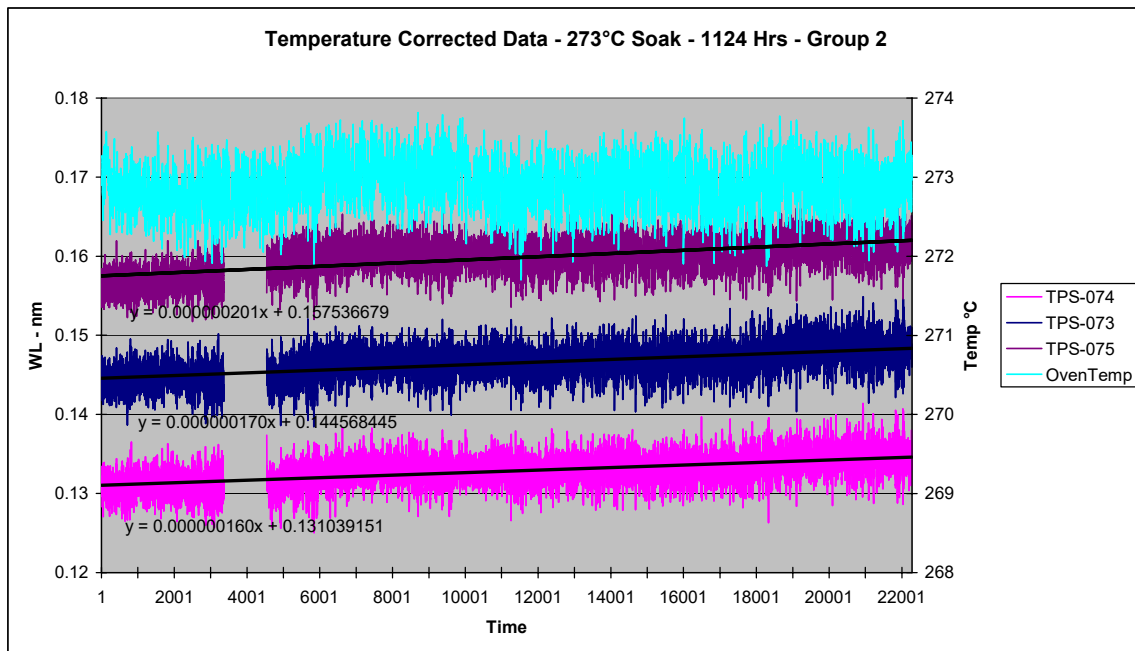
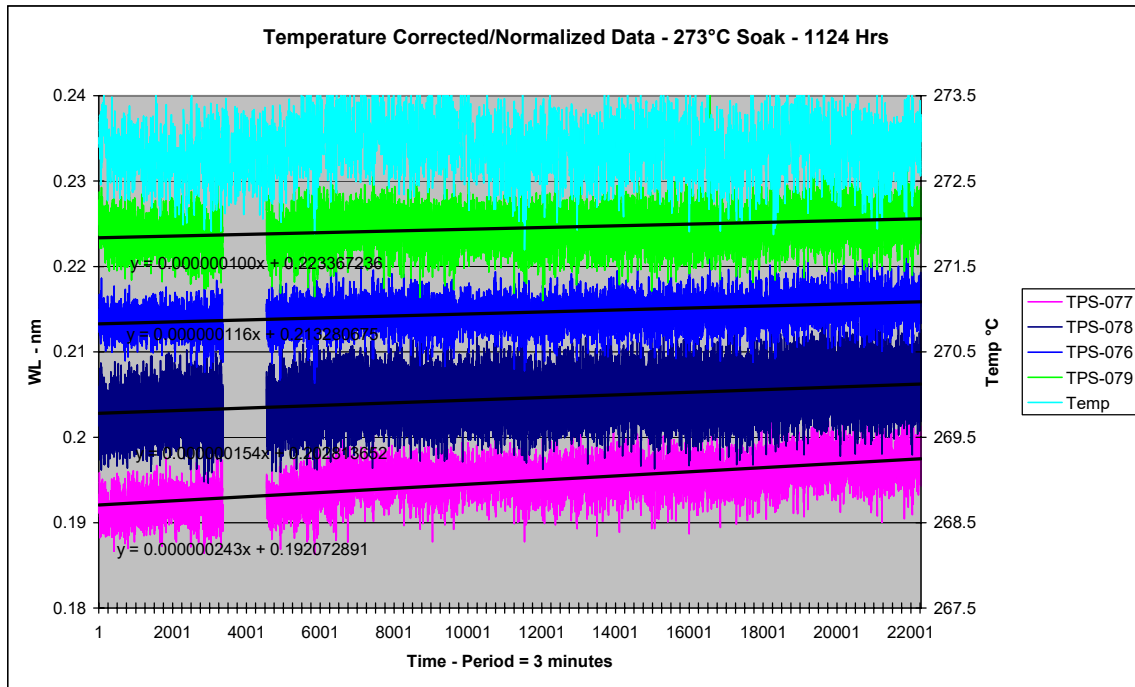
Long Term High Temperature Soak:

Three sensors were tested and monitored at 120°C for 1000 hours. Wavelength was monitored using a Micron Optics si720 Optical Sensing Interrogator. Temperature was monitored using a Hart Scientific 1521 digital readout and a 5615 platinum resistance thermometer. The maximum drift observed over the duration of the test was 0.22°C with a mean drift of 0.14°C. The graph below shows a summary of the test data.



Seven sensors were tested and monitored at 273°C for 1124 hours. Wavelength was monitored using a Micron Optics si425 Optical Sensing Interrogator. Temperature was monitored using a Hart Scientific 1521 digital readout and a 5615 platinum resistance thermometer. The maximum drift observed over the duration of the test was 0.41°C with a mean drift of 0.27°C. Two graphs below show a summary of the data. (It should be

noted that the tested temperature the specifications for the Hart PRT allow for 0.1°C drift over 1000 hours.)



Vibration:

Four sensors were monitored for the effects of vibration up to 2.0 g force for 100 hours. The sensors were mounted on a Model 25 Vibration Fatigue Testing Machine by All American Tool and Mfg. Co. Three sensors were mounted perpendicular to the direction

of the table travel and one mounted parallel to the direction of table travel. The table was swept from 10 to 100 Hz with displacement amplitude of 0.005 inches yielding a force of 0.02g to 2.0g. The sensors were monitored with a Micron Optics si425 Optical Sensing Interrogator. There was no change in the noise level of the wavelength readings during table operation vs. the shaker table not running. Graph below shows data from sensor mounted perpendicular to amplitude axis. There is no change in the noise level vs. frequency. Wavelength follows temperature of shaker table platform.

