

**System Burn-In Recommendation for TE Cooled PbS/PbSe Detectors.**

1. Final calibration of an instrument should not be performed until a detector burn-in operation is completed. The following procedure is typical and only a recommendation. The actual procedure needed will be dependent on the detector installation procedure and the instrument operation criteria. This burn-in process will generally eliminate the normal settling that occurs after installing PbS/PbSe detectors into instruments.

2. A ten day burn-in of the detector is recommended for all PbS/PbSe detectors, however, in most cases a much shorter burn-in period will be sufficient. This burn-in should be at system voltage bias and system load resistance. The detector temperature should be 23°C or warmer, but not in excess of recommended operating temperature (See detector data sheet). Operating the TE cooler and reducing the detector

temperature will increase the time required for the device to settle.

3. After such a burn-in, detector resistance, responsivity, and  $D^*$  will not reduce by greater than 10% during the balance of the warranty period.

Note 1:

PbS is subject to change due to exposure to ultraviolet light. This is a temporary change and complete recovery will occur by extended storage under no light conditions.

Note 2:

The dark resistance of PbS and PbSe detectors drops at a rate of approx. 4% per degree Celsius as the element temperature is increased. A resulting drop in responsivity will also be seen under a constant bias voltage. Therefore, in order to properly compare test data, the temperature of the element must remain constant.