

AFFORDABLE SMALL SYSTEM CALIBRATION & TVAC TESTING

Ensure that your sensor will perform correctly during operation by validating image quality, radiometric performance, and operation temperature performance!

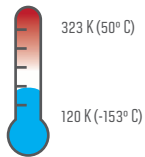
The Space Dynamics Laboratory (SDL) has been calibrating electro-optical sensors for over 50 years. During this time, SDL has designed and developed a collection of specialized equipment that is available for calibrating smaller optical systems, which can be very affordable.

SAMPLE COST SAVINGS

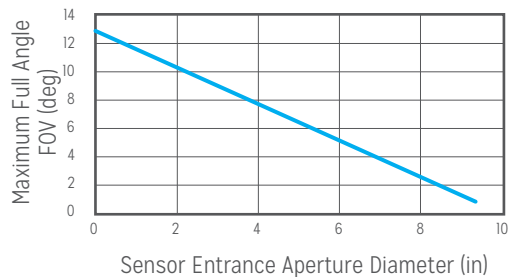
On a recent program, SDL was able to build a basic mechanical interface, perform a vacuum bakeout, and perform focus/image quality testing at multiple sensor temperatures on a 8-inch class imaging sensor for < \$100K.

SENSOR SPECIFICATIONS

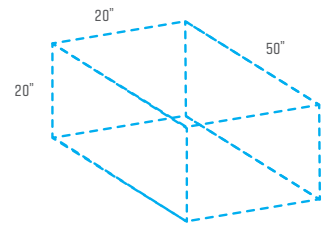
Sensor Operating Temperature Range



Sensor Aperture vs FOV



Maximum Sensor Volume



TESTS & EQUIPMENT

NOTIONAL TEST EXAMPLES AND BENEFITS

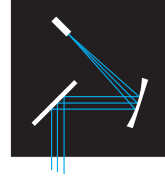
SDL has specialized equipment that is ideal for simulating the space environment and accounting for temperature extremes for smaller electro-optical sensors and spacecraft.

+ VALIDATE YOUR SENSOR'S INSTRUMENT FOCUS & IMAGE

QUALITY: Using a point-source configuration, SDL verifies image quality, performance, and the imaging capability of your instrument on the ground prior to launch. Point source tests include focus, imaging, and irradiance testing. The focus testing setup provides:

- Collimator configuration PRF or MTF source target
- 13" off-axis parabola to collimate target entry into payload
- 24" pointing mirror to steer collimated beam into payload FOV

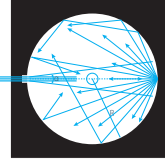
Point Source Test Setup



+ VERIFY YOUR SENSOR'S RESPONSIVITY/NOISE/RADIOMETRIC PERFORMANCE

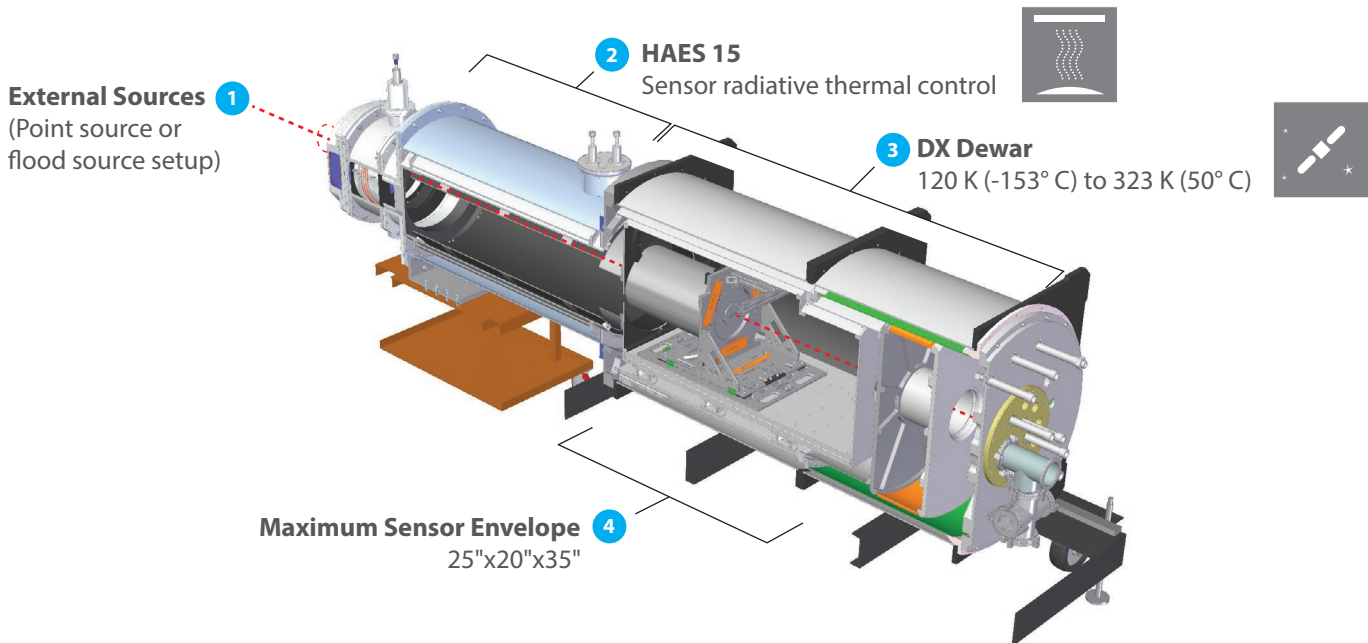
PERFORMANCE: Using a flood-source configuration, SDL verifies that the sensor can see the sources and meets on-orbit mission requirements, which is particularly important when sensing dim objects. For infrared sensors, SDL uses flood source tests to verify the target temperature signatures and performance. For visible sensors, SDL uses flood testing to verify color balance, uniformity, and performance. Radiometric tests can include flat field, non-uniformity correction, linearity, and many more. SDL can verify radiometric accuracy to ensure accurate data when on orbit.

Flood Source Test Setup



+ TEST YOUR SENSOR'S SPECTRAL PERFORMANCE:

SDL can characterize the payload spectral response by adding a spectrometer to the flood source or point source configuration. SDL also tests both in-band and out-of-band spectral response throughout the sensor's dynamic range.



Space Dynamics
LABORATORY