

# HOW-TO GUIDE

## FAQ About Camera Recalibration

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When you drive a new car off the lot, you expect that it will require periodic maintenance throughout its lifetime to ensure it performs at its very best. Much like a car or other sophisticated piece of machinery, your Radiant ProMetric® Imaging Photometers and Colorimeters need regular recalibrations to keep functioning at their best.

Initially, all Radiant cameras receive several types of calibrations to ensure optimal performance, including a flat-field calibration performed at the factory, and a luminance (or luminance and color) calibration. Additionally, we recommend a final calibration performed by the user for the specific type of DUT (device under test). After a period of use, recalibration fine tunes the camera to ensure continued operation within product specifications and tolerances. Our imaging photometers and colorimeters are NIST-traceable; recalibrations help ensure they remain so.

Neglecting regular recalibration for long periods of time can result in debris and dust particles in the camera, dead pixels, or moisture retention. Any of these issues can affect the accuracy of your measurement results, causing out of spec performance.

### Recalibration FAQ

#### **Q1: How often do I need a new factory recalibration?**

We highly recommend annual factory calibrations to ensure peak performance. As with all precision instruments, Radiant Vision Systems imaging photometers and colorimeters require regular calibration to keep them performing within specifications and tolerances. Without calibration, values may “drift” and become less accurate depending on the use and environment of the colorimeter.

Recalibrations also help uphold standards, such as government and military specifications, to stay within compliance.

## **Q2. Where are recalibrations performed?**

Recalibrations are done in our factory headquarters in Redmond, WA in our Shanghai or Shenzhen, China service facilities, or in our support facility in Vietnam. Contact Radiant to determine which location you should use.

At our factory and in all our service facilities and labs, Radiant support engineers use unique, purpose-designed equipment to perform each calibration. This equipment can only be operated by specially trained individuals.

The investment we've made in capital equipment represents Radiant's significant commitment to ensure the continued high quality and performance of our products.

## **Q3. What is the full scope of work that is done when I send my camera in for recalibration?**

When cameras are sent to a Radiant service facility, they are recalibrated for all of the following functions, as applicable:

- i. Confirm cooling system is operational
- ii. Confirm camera-to-PC communications
- iii. Electronic settings adjustment
- iv. Dark frame calibration
- v. Confirm extremely low noise level
- vi. Medium-term repeatability
- vii. Linearity calibration of image sensor response over luminance range
- viii. Color shift calibration
- ix. Flat-field calibration
- x. Luminance and Illuminant A color calibration

**Q4. How long does recalibration take?**

Recalibration typically takes 1-2 weeks or less from when a camera arrives at our facility.

**Q5. I need to send my camera in for service but cannot stop production. How can I recalibrate my camera without stopping production?**

Contact Radiant customer service and we will work with you to find a viable solution that meets your needs.

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