

TECHNICAL NOTE

CALIBRATION: FOR MEASUREMENTS YOU CAN COUNT ON

The fundamental reason for calibrating any instrument is to test it and ensure that it is measuring correctly.

Like most metrology instruments, laser power and energy meters go through a calibration process to allow accurate readings of power or energy parameters.

Wrong measurements could have costly impacts, so it is important to trust a laser detector that can maintain its accuracy for a long time and meet your need for high-precision measurements



1. WHY CALIBRATE?

In broad terms, the calibration process consists of verifying the accuracy of a measurement by comparing it to a reference standard.

The reasons to calibrate are simple. Calibration of your measurement instruments ensures that your measurements are accurate and reliable.

Day-to-day, real-life examples of benefits obtained from a traceable calibration include:

- **Make valid comparisons** of measurements taken by other instruments inside and outside your organization and over time
- **Comply with regulations** or conform to industry standards
- **Avoid costly measurement mistakes** in your operations
- **Improve customer confidence** in your laser systems
- **Ensure laboratory experiment validity**
- **Demonstrate measurement accuracy** easily with the calibration certificate we provide

2. THE RISKS OF NOT CALIBRATING

A proper risk analysis should be performed when determining the calibration period of instruments.

One thing to consider when deciding on a calibration period is the cost and consequences if the calibration fails. It is to find a good balance between the costs of the calibration program versus the costs of not calibrating enough. You should ask yourself "What will happen if this instrument fails the recalibration?"

Consequences of bad calibration or neglecting to maintain the calibration could include:

- Failure to meet the quality system
- Safety risks for employees and customers
- Poor product quality and loss of reputation
- Product recalls
- Failure to meet the regulations, causing the loss of the license to operate
- Unexpected downtime

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3. HOW OFTEN SHOULD YOU RECALIBRATE?

First, you need to understand that there is no mandatory recalibration period. There is no international standard related to this and you can decide what your calibration interval will be. However, the industry standard is that a detector should be recalibrated every 12 months and that the calibration on new units is valid for 18 months.

If you are working in an industry such as the medical laser industry, calibration validity is critical for the success of your operation, and regular, traceable calibration is often required to comply with certifications.

Many other aspects will influence the calibration period, such as:

- **Workload:** if the instrument is used a lot, it should be calibrated more often than a seldom-used one.
- **Environmental conditions:** an instrument used in extreme environmental conditions such as varying temperature, humidity, and contaminants should be calibrated more often than one kept in stable and clean conditions.
- **Accidental drop/shock:** if you drop or otherwise damage an instrument, it may be wise to calibrate it afterward.
- **Stability history:** if your instrument shows very little drift after a few recalibration periods, you could consider making the period longer.

Generally, you can follow the industry standard and consider that the initial calibration validity is 18 months from the first day you put the detector under a laser. After these 18 months, we recommend that calibration be performed once every 12 months.

4. HOW TO ORDER A RECALIBRATION

Our service department is happy to repair and/or recalibrate your instrument at any time. We can also help you meet any ISO and/or quality requirements. In every case, you will get the same accurate calibration and detailed certificate as when your instrument was new. In addition, we perform an “As Received” or “Before” verification to let you know how your product was performing before service.

To send an RMA request:

BY PHONE

1-418-651-8003, ext. 302

BY E-MAIL

service@gentec-eo.com

ONLINE

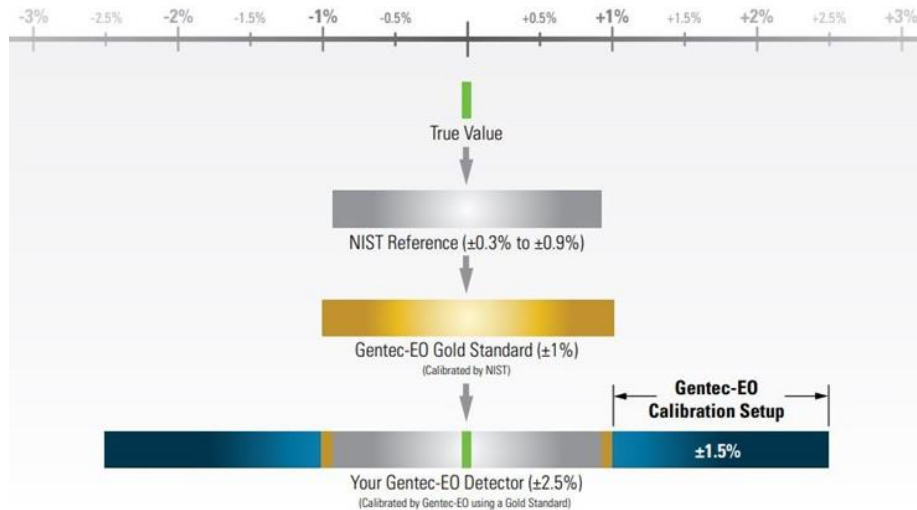
<https://www.gentec-eo.com/contact-us/support-rma-request>
Fill out the online form and click “SUBMIT”

If you have any questions about your calibration certificate, please get in touch with us at service@gentec-eo.com.

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5. THE GENTEC-EO ADVANTAGE

Gentec-EO calibrates every detector individually with the highest-level standards. Unlike some other laser detector manufacturers, Gentec-EO uses **Gold Standard** references instead of Silver Standard ones, which assures the lowest calibration uncertainty.



Gentec-EO also provides the best wavelength correction in the market. Our calibration process includes a traceable wavelength correction measured for each detector over its complete calibrated spectral range. The only thing left is to select your laser wavelength and enjoy the benefits of reading the most accurate measurement.

LEADER IN LASER BEAM MEASUREMENT SINCE 1972

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