

ON-SITE SERVICE AND CALIBRATION



PREFACE

We calibrate and adjust every pyrometer before it leaves our production facility. The respective inspection certificate is appended to the pyrometer. To ensure accurate long term measurement results, pyrometers should be calibrated regularly. If deviations are outside acceptable limits, these pyrometers need to be adjusted (VDE/VDI 3511 4.2 recommends calibration intervals of 2 years - for unfavorable environmental conditions, the period should be reduced). For this reason, we offer calibration and adjustment services for your pyrometers on site.

SPECIFICATION OF SERVICE

The following services are part of our on-site service*:

1. Status Appraisal

- ✦ Visual inspection (general check of functionality)
- ✦ Read-out and documentation of pyrometer settings
- ✦ Check and documentation (on customer request) of measuring accuracy
 - Temperature / analog values - at least 3 measuring points (more on request)

2. Calibration and Adjustment

- ✦ Cleaning of pyrometers
- ✦ Test process / adjustment of settings
- ✦ Check of temperature range including analog values
- ✦ Re-import of pyrometer settings

3. Preparation of Certificates

- ✦ Preparation of documentation and printout of factory settings and works certificate with at least three measuring points (more on request)
- ✦ Preparation of before/after-certificate (on request)
 - This certification is used for long-term documentation of a measuring device. Therefore, you get a reliable indicator of whether measurement errors are primarily caused by environmental influences and / or aging of the measuring system.

The aging process of the pyrometer in the plant is documented, so that possible deviations can be corrected by analysing the before/after-certificate, if necessary.

DEFINITIONS

- ✦ **Adjustment:** Process of professionally adjusting a system so the measurements most accurately reflect a known standard.
- ✦ **Calibration:** Process of determining the deviation from a standard so as to find the proper correction factors. This allows for reliable, reproducible appraisal and documentation of the status of the device.

COURSE OF ACTION - ONSITE

After arrival, our service technicians will need approximately 1 hour to set up calibration equipment (calibration bench, black bodies). The first batch of pyrometers should be ready prior to the service technician's arrival, as they will need to warm up to working temperature.

Additionally, an electrician should be present to support the calibration / adjustment process. Depending on the type of pyrometer, 20 minutes to 2 hours will be needed for each pyrometer.

For each pyrometer, you will receive an inspection certificate with three measurement points (to be defined by the customer) and a printout of the factory settings.

Additional Information

To guarantee traceability to the international temperature scale (ITS90) a normal (reference) pyrometer with traceability certificate from a national standard institute is needed. Typically PTB (Physikalisch-Technische Bundesanstalt) or an accredited laboratory.

Examples for normal:

- Temperature probe inside a blackbody
- Spectral lamp
- Pyrometer that uses the same spectral range as the pyrometer in question. For this setup, a gray body is sufficient

Blackbodies are difficult to transport and sometimes need a couple of hours before their temperature value stabilizes. At the same time, most industrially used blackbodies are not "black" in the entire spectrum and therefore cannot be used without correction values. Additionally, blackbodies require cooling time before they can be transported again.

In comparison, our mobile calibration bench* (gray body) is easy to transport, requires almost no cooling time, and stabilizes its temperature within seconds. This makes a complete adjustment process possible, comparing and measuring multiple temperature points distributed throughout the entire temperature range.

*Mobile calibration bench available in Germany and select locations in Europe on prior notice and agreement.



For international contact information, visit advancedenergy.com.

sales.support@aei.com
+1 970 221 0108

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