

TEMPERATURE

HUMIDITY

AIR SPEED

ISO/IEC 17025

PHOTO-RADIOMETRY

PRESSURE

ACOUSTIC

# Calibration Centre LAT N° 124



LAT N° 124

OUR PRECISION  
AT YOUR SERVICE



The LAT 124 Calibration Centre has been established to guarantee its customers that the instruments used for their daily measuring activities give safe and accurate results.

The regular use of measuring instruments subjects them to a natural ageing process due to wear, application, environmental conditions, which over time leads to measurement inaccuracy. The consequences can be a damaging factor for the company, and in some cases there is also the risk of incurring real penalties.

Through the Calibration Service, the user is able to know exactly how his instruments behave, the possible error compared to superior samples, and is therefore able to perform measurements in a safe and reliable manner, in compliance with the specific regulations of the application in which he operates.

# The key words of accreditation

## EXPERTISE AND IMPARTIALITY

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### Accredia & Accreditation

Accredia is the body designated by the Italian government to certify the competence, independence and impartiality of bodies and laboratories that verify the conformity of goods and services to standards.

Accredia is a member of the worldwide and European accreditation networks EA-IAF-ILAC and is a signatory of the relevant International Mutual Recognition Agreements.

### Ilac - MRA

ILAC stands for "International Laboratory Accreditation Cooperation".

Through ILAC MRA - Mutual Recognition Arrangement - it is guaranteed that calibration certificates are recognized by all the signatory members, regardless of country.

### Calibration & Traceability

The calibration is an operation that allows to determine the characteristics of a measuring instrument in order to guarantee precise and reliable results. The traceability is assured by the calibration carried out in Senseca laboratories, accredited according to ISO/IEC 17025.

The Calibration Certificate contains all information related to the instrument, such as: calibration date and serial number, measurement result, uncertainties, reference standards, instrumentation used, environmental conditions during measurements.

# ACCREDIA in the world

## INTERNATIONAL MUTUAL RECOGNITION AGREEMENTS

ACCREDIA, the Italian Accreditation Body, participates in the ILAC MRA (International Laboratory Accreditation Cooperation - Mutual Recognition Arrangement), which is an international mutual recognition agreement between accreditation organisations. The ILAC MRA aims to facilitate the mutual recognition of competences and accreditations between members, thus helping to promote the free movement of goods and services globally.

Through its participation in the ILAC MRA, ACCREDIA commits its efforts to ensure that its accreditation activities are in line with accepted international standards. This means that calibration laboratories, testing laboratories, certification bodies and inspection bodies accredited by ACCREDIA are recognised internationally, helping to facilitate trade and ensure the quality and safety of products and services.

Joining the ILAC MRA is an important step for national accreditation bodies, as it contributes to a globally harmonised and recognised accreditation system, providing confidence in the results of conformity assessment activities.





**NEW**

**Spectral irradiance  
sensitivity  
uncertainty  
1.7 %**



## Photo-radiometry Laboratory

Our Photo-Radiometry laboratory was the first in Italy to be accredited for photo-radiometric quantities and still is the only one for some of these. Our laboratory instrumentation includes a state-of-the-art double monochromator mounted on an optical table, optical benches and a variety of sources (lamps and integrating spheres) with appropriate stabilised power supplies.

This allows us to perform calibrations for classical quantities such as illuminance (luxmeters), luminance (luminance meters) and irradiance in different spectral bands (UVA, UVB and UVC radiometers). We also perform calibrations in other quantities such as solar irradiance sensitivity (pyranometers), spectral irradiance in the range 200 nm – 800 nm, spectral sensitivity in the band 200 nm – 1100 nm, luminous intensity, colour temperature K and angular response or cosine response.

For other radiometric quantities, where the laboratory is not covered by accreditation, it is possible to verify the alternative calibration by issuing an ISO 9001 Report.



## Air Speed Laboratory

The Air Speed laboratory is equipped with two wind tunnels that allow the calibration of the most common anemometers such as: hot wire anemometer, Pitot or Darcy tubes, wind vane, ultrasonic anemometer, cup anemometer. Both wind tunnels are of the Göttinger type, in order to ensure the best metrological performance (stability, uniformity). Each tunnel is equipped with an LDA (laser Doppler anemometer) to ensure the best available reference standard.

In the GV1 wind tunnel it is possible to perform calibrations in a range from 1 to 60 m/s. The tunnel has a 600 mm circular test section, is driven by a 50 KW DC motor and is suitable for the calibration of biaxial and triaxial ultrasonic anemometers, cup anemometers, Pitot and Darcy tubes and all vane probes with a cross sectional area larger than 60 mm in diameter.

GV3 wind tunnel, with circular test section of 320 mm, can carry out calibrations in the range from 0.1 to 35 m/s, suitable for hot-wire anemometers and vane probe with diameter up to 60 mm.

The laboratory also offers the possibility of carrying out Calibration Reports for measuring the wind direction of wind vanes and biaxial and triaxial ultrasonic anemometers.

## Temperature Laboratory

Our temperature laboratory has been the first laboratory in our Calibration Centre to achieve accreditation. More than 20 years of activity and experience have allowed our laboratory to reach a very high standard of expertise and work organisation, very often also acting as a driving force for the development of some of our product lines.

Over the years, particular attention has been paid to investment in instrumentation, which is constantly being updated and kept up to date with technological developments.

Today, the laboratory is equipped with high-level instrumentation including baths, ovens, multimeters, resistors and reference and working probes (noble metal thermocouples and platinum resistance thermometers). Calibration is carried out by comparing the customer's instrument with our working samples by immersing the probes in the specific comparator media for each temperature range. Our baths and ovens cover a temperature range from -196 °C to 1064 °C.



## Humidity Laboratory

In our laboratory, calibration is carried out by comparing the customer's instrument with our reference standard.

Our instrumentation, which includes Thunder Scientific and Weiss Technik humidity generators, MBW mirror hygrometers and temperature samples, allows us to perform measurements of relative humidity, dew point and air temperature.

Our laboratory is accredited for dew temperature in the range of -20 °C to +60 °C, relative humidity in the range of 10% to 92 %RH and air temperature in the range of -20 °C to 120 °C.



## Pressure Laboratory

In our Pressure laboratory, calibration is performed by comparing the customer's instrument with our reference standards.

Our reference instrumentation includes various standards such as pressure balances, pressure calibrators and pressure transducers in liquid or gaseous media, which provide high accuracy, repeatability and stability over time, ensuring performance that fulfils a wide range of calibration needs.

Our measuring range extends from -1 bar to 1000 bar, thus covering the calibration needs of a large variety of applications.



## Acoustic Laboratory

Our Electroacoustics laboratory is accredited for the calibration of sound level meters, integrating sound level meters, single frequency acoustic calibrators, multi-frequency acoustic calibrators, pistonphones, third octave band filters, octave band filters and LS (Laboratory standard) and WS (Working standard) microphones. Thanks to decades of activity, the high quality of the measurement equipment used and the high competence of the staff, the laboratory can provide calibration services at the highest levels of quality, reliability, and rapidity. Calibration services are available for instruments from all the world's leading manufacturers. The test methods adopted by the laboratory are based on current standards for the following instrumentation:

- Sound level meters, integrating sound level meters
- Single-frequency sound calibrators
- Multi-frequency sound calibrators
- Pistonphones
- Third octave band filters, octave band filters
- LS (Laboratory standard) and WS (Working standard) microphone and Calibration for comparison in coupler.





# A connection with our territory

## METROLOGY IN THE CITY SQUARES

Our Calibration Center, located close to the city centre, shares an intrinsic bond with Padua's rich history.

It is a hidden secret known to just a handful: the intricate detail carved into the walls of one of the city's most prestigious buildings - a reference to the ancient unit of measure and a whimsical inception point for our calibration center.

Despite the centuries that separate us, metrology remains as crucial and pertinent as ever.

Today, as then, we emphasise the importance of referring to universally recognised standards, guaranteeing our customers the reliability and precision they deserve in their measuring instruments.



13<sup>th</sup>-century engraving commissioned by the city's municipal authorities to enable the control of quantities and measurements of goods.

- the '*copo*' - a tile for measuring flour
- the '*staro*' - for measuring grain
- the '*quarelo*' - for measuring the size of bricks
- the '*brazzo*' or '*brazzolaro*' - for measuring cloth



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