

Humidity & Temperature Calibration Products

Global Service and Support Offering
with Accredited Calibration Labs

Humidity and Temperature Calibration

Michell Instruments and Rotronic offer a comprehensive suite of humidity and temperature calibration systems and components. These range from full-function systems suitable for use in national metrology laboratories to transportable humidity generators for quick field verifications. They are all designed to calibrate probes from any manufacturer and can be used in combination with chilled mirror reference hygrometers to produce traceable humidity calibrations.



Automated humidity calibrations

Extra large chamber capacity



HygroGen2-S – Humidity Calibrator

- Chamber volume: 2 litres; Working volume 1.5 litres
- Humidity changes (5...95 %RH, 0.1 %RH stability): <5 minutes
- Temperature changes (23...50 °C, 0.01 °C stability): < 5 minutes

HygroGen2-XL – Large Capacity Humidity Calibrator

- Chamber volume: 20 litres; Working volume 17 litres
- Humidity changes (5...95 %RH, 0.1 %RH stability): <15 minutes
- Temperature changes (23...50 °C, 0.01 °C stability): < 15 minutes
- Calibrate probes, data loggers, hand helds and chart recorders

Optional Features

- **Autocal:** Automated calibration, adjustment and certificate generation for HC2-S probes.
- **Remote API:** Allows users to integrate the HygroGen2 into their own or third party systems.



Integral chilled mirror reference, Self-contained and transportable

OptiCal – Precision Relative Humidity and Temperature Calibrator

- Generate 10 to 90 %RH over +10 to +50 °C (+50 to +122 °F) temperature
- UKAS accredited calibration, as standard
- Humidity and temperature profile generation for unattended verification of sensors

HygroCal100 – Humidity Validator

- Combine with Optidew 401 chilled mirror hygrometer for cost-effective traceable calibrations
- Intuitive UI makes automating probe verification simple
- Automated validation procedures for hands-off probe verification
- Internal calibration correction cycle ensures continued confidence

S904 – Relative Humidity and Temperature Calibrator

- Generate 10 to 90 %RH over +10 to +50 °C temperature
- Excellent chamber stability and uniformity
- Manual control or optional straightforward automated set point programming



Portable and self-contained

Humidity Standards

Rotronic's humidity standards are hermetically sealed ampoules of calibration salts, for inexpensive on-site calibrations. They are supplied with a Swiss Calibration Services (SCS) certificate, guaranteeing the traceability and accuracy.

- Simple and safe to use
- Unlimited lifetime
- Practical packs of 5 ampoules of the same humidity value (approx. 0.8 ml per ampoule)

Humidity Values

0.5 %RH, 10 %RH, 11 %RH, 20 %RH, 35 %RH, 50 %RH, 60 %RH, 65 %RH, 75 %RH, 80 %RH, 95 %RH

Calibration Devices

There is a suitable calibration device for every Rotronic sensor. These small, airtight containers enclose the humidity sensor exactly. The lower screw-on part is filled with the humidity standard material. After an approx. 60 min. settling period, the desired humidity value is reached and the device can now be adjusted to match the reference humidity value.



Chilled Mirror Reference Hygrometers

Michell Instruments' chilled mirror reference hygrometers provide fundamental measurements of dew point with excellent long-term stability. They are all designed to operate as standalone devices but can also be used in combination with humidity generators to provide highly accurate humidity calibrations.

Optidew 401 – Cost-effective Chilled Mirror Hygrometer

- New chilled mirror hybrid sensor gives fast dynamic response to changes in humidity
- Accurate to $\pm 0.15^\circ\text{C}$ dew-point, $\pm 0.1^\circ\text{C}$ temperature
- Wide measurement range from -40 to $+120^\circ\text{C}$ dew-point

S8000 and S8000 RS – High Precision Chilled Mirror Hygrometer

- Accuracy of $\pm 0.1^\circ\text{C}$
- Precision measurement to -90°Cdp (100 ppb) with no need for additional cooling
- Sensor head optimised for fast response to low moisture levels
- Compact 19" x 4U package

S8000 Remote – High Precision Chilled Mirror with Remote Sensor

- -40 to $+120^\circ\text{C}$ dew-point range with $\pm 0.1^\circ\text{C}$ dew-point accuracy
- Small, compact design
- Easy integration with HygroGen2



Dew-Point Calibration

DCS-80, DCS-100 – Dew-Point Calibration System

- Complete dew-point calibration solution with optional compressor, dryer, dew-point generator, reference instrument and optional manifold
- Generated output responds quickly to a change of set point
- Simple operation through manual flow mixing or push-button switching of set points



Complete calibration system

Custom Humidity and Temperature Calibration Systems

Where a standard product doesn't meet the specific needs of an application, Michell's team of design engineers will work with you to develop a custom solution. Michell offers a sophisticated range of humidity/dew-point generators, pressure swing dryers and chilled mirror reference hygrometers – coupled with four decades of experience in working with national standards laboratories to provide humidity calibration equipment around the world.



Computer-controlled automation

Process Sensing Technologies

Process Sensing Technologies (PST) provides an unmatched suite of instruments, analyzers and sensors for precision measurements and monitoring in highly demanding end markets. These range from pharmaceutical/ life sciences, speciality gases, semiconductors, O&G, petrochemicals and power to gas detection, food and beverage and building automation.

Using our products, customers save millions of dollars each year through increased energy efficiency in their processes and reduced process disruptions.

The quality of food, medicines, semi-conductors and thousands of manufactured goods depends on reliable measurements of critical parameters such as humidity, oxygen, CO, N₂, H₂, hydrocarbons, pressure or CO₂ during production, storage and transport. Our products directly improve the profitability of our customers and help them to stay compliant with stringent industry regulations. We own and manufacture the sensing technologies used in the majority of our products. This allows us to remain in a strong leadership position and pass on the benefits of our innovation to our customers.

PST Leading Brands

- **Analytical Industries** – Electrochemical oxygen sensors and gas-analysis
- **Dynamant** – Infrared gas sensors
- **LDetek** – Ultra low range online analyser
- **Michell Instruments** – Moisture and oxygen sensing and instrumentation
- **Ntron** – Oxygen sensors and analysers
- **Rotronic** – Humidity and temperature instruments, monitoring systems
- **SST Sensing** – Oxygen sensors and liquid level switches

Group Facts

- Expertise in the calibration of humidity, dew-point and temperature
- 22 Service and sales subsidiaries
- 8 global engineering and manufacturing locations
- 100+ authorized distributors
- 14 proprietary technologies



Humidity



Temperature



Dew Point



Water Activity



Differential Pressure



Oxygen



CO₂



Impurities



Flammable Gases



Level