

RH CAL

Portable Relative Humidity Calibrator

The RH CAL is a microprocessor based, programmable humidity calibration system that is at home in the metrology lab or in the field performing on-site, NIST traceable humidity calibrations. The system offers the highest accuracy available for both relative humidity and temperature. Unlike other calibration systems, RH CAL is entirely self-sufficient. It does not need compressed air or a water connection to operate, which allows the system to be truly portable.

With the RH CAL, temperature and relative humidity are controlled independently. The user is not limited to performing calibrations at the surrounding ambient temperature, which may not be appropriate for his unique calibration protocol. Using Edgetech Instruments' chilled mirror, primary method dew/frost point measurement technique for traceability and feedback control, RH CAL is a standalone, portable humidity calibration system.

Contributing to RH CAL's ease of use are features such as maintenance-reducing Automatic Balance Control (ABC), plus an integral temperature probe and a D2, primary method chilled mirror sensor which are located in the sample chamber, providing not only superior accuracy but the fastest response.

The RH CAL employs a unique control scheme for maintaining very precise RH control. The system incorporates volumetric proportional control valves. By independently modulating the dry and wet valves from full-open to full-close, and all points between, any desired humidity can be quickly generated and stabilized upon.

Additionally, because the RH CAL is continuously monitoring the sample chamber conditions via its integral chilled mirror sensor, it is able to instantaneously react to changes in humidity and maintain control stability.

All Edgetech Instruments calibration products and systems are manufactured and supported in the USA in a modern, ISO 9001:2015 registered facility with ISO/IEC 17025:2005 accredited calibration laboratory. The RH Cal is delivered with a multi-point NIST traceable ISO/IEC 17025:2005 accredited calibration certificate as standard.



**The Edgetech Instruments RH CAL
Portable Relative Humidity Calibrator**

Features:

- Completely self-sufficient and portable humidity calibration system
- Field proven, primary method chilled mirror technology
- Portable validation of dew/frost point and temperature sensors
- Highest accuracy available for both relative humidity and temperature
- Relative humidity accuracy: $\pm 0.5\%$
- Relative humidity range: 5% to 95%
- Temperature accuracy: $\pm 0.1^\circ\text{C}$
- Temperature range: 10°C to 50°C
- Temperature and relative humidity are controlled independently
- Automatic correction for mirror contaminants
- Certified against NIST traceable standards
- Standard features, where others charge extra



 **Edgetech Instruments**

ISO/IEC 17025:2005 Accredited
ISO 9001:2015 Registered

Technical Specifications

Measurement Ranges:

Relative humidity:

5 to 95%

Temperature:

10°C to 50°C

Dew/Frost Point:

-40°C to 60°C with D2 sensor

Accuracy:

Relative humidity: $\pm 0.5\%$

Temperature: $\pm 0.1^\circ\text{C}$

Dew/Frost Point: $\pm 0.2^\circ\text{C}$ nominal

Chilled Mirror Temperature Sensors:

3-wire platinum resistance thermometer (PRT),

100 ohms at 0°C , nominal

Depression:

60°C (113°F), nominal with D2 sensor

Slew Rate:

1.0°C (1.8°F)/second max., above 0°C

Repeatability:

$\pm 0.05^\circ\text{C}$

Hysteresis:

Negligible

Power Requirements:

100 to 240 Vac, 50-60 Hz, 150 W maximum

Sample Flow Rate:

1 liter/minute (2.0 SCFH) nominal

Operating Temperature:

Control Unit: 0°C to $+50^\circ\text{C}$ ($+32^\circ$ to $+122^\circ\text{F}$)

Outputs:

Analog (0 to 5 Vdc or 4 to 20 mA)

RS232C serial port

Display:

Multi-line graphical LCD



RH CAL with Probe Inserted for Calibration Through Port Into Sample Chamber

Sample Chamber Probe Port Diameters:

Standard port sizes for RH probes:

10, 12, 18 mm, 1/2, 3/4 in. diameter

Standard port sizes for dew/frost point probes:

1/2 to 1 1/4 in. diameter

Custom port sizes available

Weight:

15.4 kg (34 pounds)

Dimensions:

20 5/8 W x 17 3/16 D x 8 9/16 H in
(52.4W x 43.7D x 21.7H cm)

Sensor Materials:

Chromium, glass, epoxy, anodized aluminum

Enclosure:

Ultra high impact structural copolymer carrying case