

RH CAL

Portable Relative Humidity Calibrator



Benefits

- EdgeTech field proven Optical Chilled Mirror (OCM) technology
- Completely self-sufficient and portable humidity calibration system
- Highest accuracy available for both RH and temperature (AT):
 - RH Accuracy: $\pm 0.5\%$
 - RH Range: 5% to 95%
 - AT Accuracy: $\pm 0.2^{\circ}\text{C}$
 - AT Range: 10°C to 50°C
- Temperature and RH controlled independently
- Automatic correction for mirror contaminants
- Certified measurements against NIST traceable standards
- Standard features, where others charge extra

RH CAL

Unlike other comparative systems RH CAL is entirely self-sufficient. It does not need compressed air or a water connection to operate, which allows this system to be truly portable.

RH CAL is a microprocessor based, programmable humidity calibration system that is at home in the metrology lab or out in the field performing on site NIST traceable humidity calibrations. The system offers the highest accuracy available for both relative humidity and ambient temperature.

With RH CAL, temperature and relative humidity are controlled independently; therefore, you are not limited to performing calibrations at the surrounding ambient temperature, which may not be appropriate for your unique calibration protocol. Using EdgeTech's Optical Chilled Mirror (OCM) primary 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 Cycle (ABC), an integral ambient temperature probe and D2 chilled mirror sensor which are located in the sample chamber providing not only superior accuracy but the fastest response.



Model RH CAL Specifications

MEASUREMENT PERFORMANCE

Temperature and RH Ranges

RH: 5 to 95%
AT: 10 to 50 °C
Dew/Frost Point: -40 to 60°C, D2 Sensor

Accuracy

RH: $\pm 0.5\%$
AT: $\pm 0.2^\circ\text{C}$
Dew/Frost Point: $\pm 0.2^\circ\text{C}$ nominal

Dew/Frost Point and Temperature Sensors

3-wire Platinum Resistance Thermometer (PRT),
100 ohms at 0°C, nominal

Depression

60°C (113°F), nominal, D2 sensor

Slew Rate

1.0°C (1.8°F)/second max., above 0°C

Repeatability

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

Hysteresis

Negligible

FUNCTIONALITY

Power Requirements

100 to 240 VAC, 50-60 Hz
150 Watts Maximum

Sample Flow Rate

1 liter/minute (2.0 SCFH)

Operating Temperature

Control Unit: 0 to +50°C (+32 to +122°F)

Outputs

Analog (0-5 VDC or 4-20 mA) and RS232C
serial port

PACKAGING

Display

Multi-Line Graphical LCD Display

Weight

15.4kg (34 pounds)

Dimensions

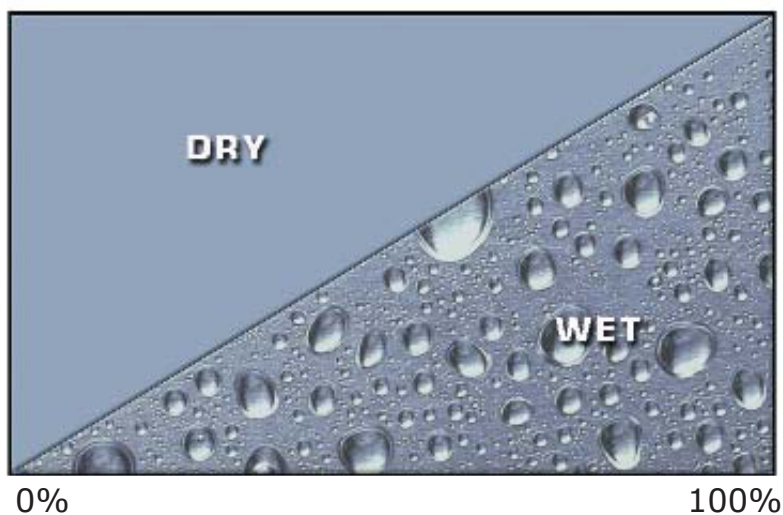
52.4W x 43.7D x 21.7H cm
(20^{5/8}W x 17^{3/16}D x 8^{9/16}H in)

Sensor Materials

Chromium, glass, epoxy, anodized
aluminum

Enclosure

Ultra high-impact structural copolymer
carrying case



The RH CAL employs a unique control scheme for maintaining such 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, it is able to instantaneously react to changes in humidity and maintain control stability.

