

# 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:  $\pm 0.1^{\circ}\text{C}$
  - AT Range:  $10^{\circ}\text{C}$  to  $50^{\circ}\text{C}$
- Temperature and RH controlled independently
- Automatic correction for mirror contaminant's
- 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 water 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, the user is not limited to performing calibrations at the surrounding ambient temperature, which may not be appropriate for their calibration protocol. Using EdgeTech's Optical Chilled Mirror (OCM) primary measurement technique for traceability and feedback control, RH CAL is a stand-alone, portable humidity calibration system.

Contributing to RH CAL's ease of use are features such as parameter averaging, maintenance reducing Automatic Balance Cycle (ABC), and integral ambient temperature probe and D2 chilled mirror sensor which are both are located in the sample chamber providing not only superior accuracy but the fastest response.



## MEASUREMENT PERFORMANCE

### Temperature and RH Ranges

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

### Accuracy

RH:  $\pm 0.5\%$   
 AT:  $\pm 0.1^\circ\text{C}$   
 Dew/Frost Point:  $\pm 0.1^\circ\text{C}$  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  
 75 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 LED Display

### Weight

14.55kg (32 pounds)

### Dimensions

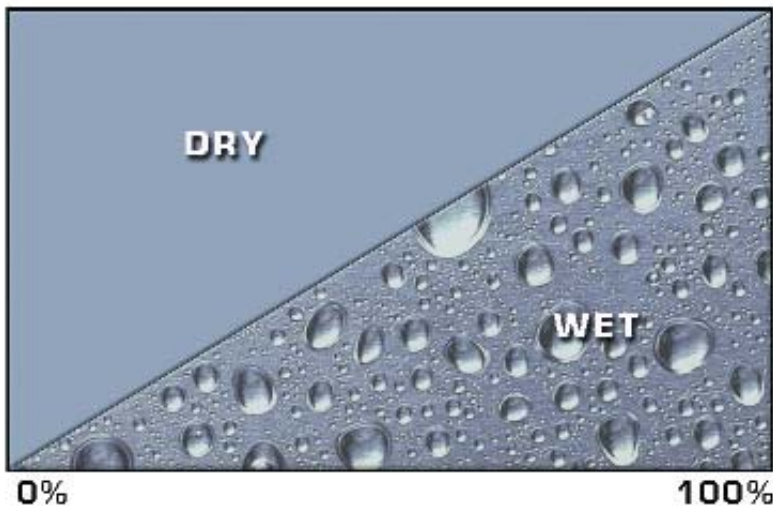
52W x 20.3H x 43.1D cm  
 (20.5W x 8H x 17D in)

### Sensor Materials

Chromium, glass, epoxy, anodized aluminum

### Enclosure

Plastic carrying case



The RH CAL employs a unique control scheme for maintaining such precise RH control. The system incorporates a pair of finely matched 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.