

# Precision Humidity & Temperature Calibration System

**FEATURES:**

Digital control for better stability of RH and temperature

Chamber stabilization in less than 5 minutes over 50%RH step @ 23°C

Lightweight and transportable for in-plant or laboratory calibration of probes

Sample ports enable use chilled-mirror as a reference

Recommended calibration interval for chamber control probe 12 months

Chamber doors designed to accept probes from all manufacturers



## Model 2000SP RH Generator

A Low Cost, Fast Response RH Generator/Calibrator with Digital Control

The Model 2000SP is a low cost, high accuracy alternative to the 2-pressure or chilled-mirror humidity calibrations. The Model 2000SP is a state-of-the-art calibration system using digital control for fast response in order to maintain chamber stability. Chamber RH and temperature uniformity is maintained by mixing the internal chamber environment at a high rate of air flow.

The response time for chamber RH equilibrium is typically within 3-5 minutes, for a 50%RH step change, after reaching temperature equilibrium. The RH/temperature range of operation meets most requirements for full range calibration, 5°-60°C and 3-97%RH.

Control probes of the Model 2000SP are calibrated by an NVLAP Accredited laboratory using methodology traceable to NIST. Provision is made to use a chilled-mirror instrument (optional) as the reference to monitor chamber conditions and thereby generate the RH indicated value.

The Model 2000SP can satisfy your calibration needs without a high cost.

**PERFORMANCE SPECIFICATIONS:**

Humidity Accuracy:	+/- 1.0%RH
Temperature Accuracy:	+/- 0.2°C
Chamber RH Uniformity:	+/- 0.2%
Chamber RH Stability:	+/- 0.1%
Chamber Temp Uniformity:	+/- 0.2°C
Chamber Temp Stability:	+/- 0.1°C

**Various External Chambers options available****Features:**

- Accurate and stable over the entire range of interest.
- Increased chamber area for larger instruments and greater quantities during tests.
- Chamber will accommodate one 6" chart recorder.
- Chamber will accommodate up to 10 portable data loggers
- Chamber will accommodate HVAC RT/T transmitters.



## Kaymont Humidity Calibrator includes;

RH Generator conforming to specifications: 2000SP  
 The Certificates of Calibration and documentation of control probes and secondary transfer standards using NIST traceable 2-pressure methodology is provided by NVLAP Accredited Laboratory

System includes 1 insulated 4 door port for probe dimensions as provided by customer at time of order, 1 desiccant tube, 1 water refill syringe, -1vdc/0-5vdc analog output connectors, RS232 output (no cable) and KAYCAL Auto Ramp/Soak Software

### Additional Doors Available

Clear Door, Ambient Temp, No Fittings	CD000
4 Port Door, Compression Fitting for 12mm	CD41 2INS**
4 Port Door, Compression Fitting for 15mm	CD41 5INS**
4 Port Door, Compression Fitting for 18mm	CD41 8INS**
4 Port Door, Compression Fitting for 25mm	CD425INS**

- \* No charge for 1 door with basic system at time of purchase.
- \*\* Insulated doors for full temperature range operation.

### For Additional options and accessories:

(Non-insulated doors for operation at or near ambient temperatures)

	<b>DOORS</b>
4-Port door for Probes to be Specified By Purchaser	CD4XX
Clear Door, No Fittings (Modified by Purchaser)	CD000

- Calibration doors can be provided for most configurations.
- These are special doors and will be quoted on an as required basis.
- Contact us if you have questions.

	<b>ACCESSORIES</b>
Hard Carrying Case w/Wheels, (cushioned for transportation)	HCC2000SP
Hard Carrying Case w/Wheels, (cushioned for transportation)	HCC2000SPW
RH/T Indicator with Probe* NVLAP Calibration at 10%, 35% and 80%RH @ 23°C±2°C, (w/Certificate of Calibration)	KPPRHT-1

External Chamber w/Clear Cover, (250 x 200 x 150 mm) **	CHEXT-10084
External Chamber w/Clear Cover, (300 x 250 x 150 mm) **	CHEXT-12106
External Chamber w/Clear Cover, (350 x 300 x 150 mm) **	CHEXT-14126
External Chamber, w/Clear Cover, (400 x 350 x 200 mm) **	CHEXT-16148

\* Total instrument (indicator and probe) calibrated by NVLAP Accredited laboratory using NIST traceable 2-pressure system. Values of KPPRHT-1 NVLAP calibration with probe at 3 specific RH values supplied with calibration documentation. Calibration is done at 23°C, ±2°C. Note: The KPPRHT-1 can be used as a high accuracy portable instrument for in-plant RH/T measurements.

\*\* Inside dimensions are Height x Width x Depth. Refer to the Performance Specifications of the External Chamber to make sure chamber will satisfy the operational requirements. Performance of standard internal chamber is not affected.

	<b>SPARES</b>
Desiccant Tube, Standard, (provided with basic system)	DDS2000
Desiccant Tube, Molecular, (for lower RH than standard)	DDX2000
RS232 Output cable	RS232OUT
Software for automatic cycles, (multiple cycle programming)	KAYCAL
Water Refill Syringe	WRS2000

Kaymont Consolidated

## MODEL 2000SP HUMIDITY GENERATOR

### SPECIFICATIONS\*

Humidity Range @ 10-28°C	5-95%RH ±2%RH (controlled RH)
Humidity Range @ 30°C	5-90%RH ±2%RH (controlled RH)
Humidity Range @ 35°C	5-85%RH ±2%RH (controlled RH)
Humidity Range @ 40°C	5-75%RH ±2%RH (controlled RH)
Humidity Range @ 50°C	5-50%RH ±2%RH (controlled RH)
Temperature Range	5-55°C** (controlled range)
Dew Point Range	-25°C to 45°C (not displayed)**
Accuracy of NVLAP Calibration System	±0.3%RH and ±0.05°C****
System Accuracy, 10-80%RH @ 23°C	±1.0%RH*****
System Accuracy, 80-95%RH @ 23°C	±1.25%RH*****
Temperature Accuracy @ 23°C	±0.1°C or better (NVLAP adjusted)
Chamber Humidity Stability@23°C	±0.2%RH
Chamber Temperature Stability@23°C	±0.1°C
Chamber Humidity Uniformity@23°C	±0.2%RH
Chamber Temperature Uniformity@23°C	±0.1°C
Response Time @ 23°C	3-5 minutes (typical over range)*****
Temperature Rate of Change (<<< temp)	1.5°C/minute (typical)
Temperature Rate of Change (>>> temp)	5.0°C/minute (typical)
Power Requirements	110/220VAC, 50/60 cycle
Mechanical Weight	28# (14kg)
Weight	32# (16kg) (shipping)
Dimensions	18 W x 14.5 D x 8.5 H (45cm x 36cm x 21 cm)

### System Performance Verification

Chamber Probe Temp Compensated	-40 to 60°C
Calibration Certification	NVLAP*****
CE Conformance Testing	EN55022, EN55024, EN61000-4-2, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11)

### Standard Features

- 1) CE Conformance
- 2) Calibration of Control Probe at 23°C and 10%, 35%, 80%. Reference comparison @ 95%RH
- 3) Comparison readings @ 23C using Reference instrument that has been adjusted to readings of NVLAP 2-pressure settings (RH) and NIST traceable thermometer (temperature). Comparison readings are also available at 40°C/75%RH and at 5°C/10%RH at additional charge. Certificate of Calibrations from NVLAP Accredited Laboratory provided with documentation.

\* Typical performance specifications subject to small variations in maximum RH at high temp

\*\* Specified low temp is 5°C. but typically is 15°C below ambient.

Requires insulated door

\*\*\*Controlled Dew Point Range. Not displayed.

Requires DP reference or Table of DP Computations

\*\*\*\* Accuracy of NVLAP 2-pressure system used for calibration of control probes.

\*\*\*\*\* Adjustment of system using standard calibrated by NVLAP 2-pressure readings as reference.

\*\*\*\*\* After chamber reaches and maintains temperature equilibrium

\*\*\*\*\*Accredited NVLAP laboratory certificates of control probe calibration provided with system.