TRANSCAT®
Better By Every Measure

Humilab™

NIST Traceable Humidity Calibration Chamber

Chilled Mirror Primary Humidity Reference Standard

GE Infrastructur
Sensing

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imagination at work

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HumiLab™ Portable & Precise

- Primary Standard: Integrated Chilled Mirror & Platinum RTD Constantly Measure Test Conditions
- Precise: ±0.2% RH Stability
- Accurate: ±1% RH from 10 to 70% RH & ±1.5% RH from 70 to 90% RH
- Versatile: 10 to 90% RH & 20 to 30°C
- Self-Contained Operation: Equipped with Dessicant and Water Reservoir
- Connects to External Temperature Bath/Circulator to Standardize Test Conditions
- Connects to External Dry Compressed Air to Extend Dessicant Life Indefinitely
- Record & Document: 0 to 5 VDC, 4 to 20mA Analog Outputs & RS-232 Digital Data Stream
- Fast Response: 10 Minutes for 63% Step Change & 30 Minutes to Full Stability
- Quality Design: Stainless Steel Chamber
- Instant on Fittings for External Dry Air, Circulation of Temperature Controlled Water & Reservoir Drain
- Cost Effective: Ability to Calibrate Several % RH Instruments at Once
- Ease of Operation: Set to Value You Need by the Front Panel or via PROSTEP Software for Ramp & Soak Profiles
- Bright Easy to Read Control Panel
- Transportable: Optional Carrying Case

HumiLab Repeatable & Economical

GE General Eastern's Humilab is a NIST-traceable relative humidity generator and calibration chamber that is continuously monitored and controlled by a chilled mirror hygrometer and precision RTD. The system is water jacketed for thermal stability and facilitates cost-effective calibrations of relative humidity sensors, probes, transmitters, recorders and data loggers.

Since the volumetric mixing ratio is a time based control, the system is highly repeatable. The chamber is sufficiently sized to test several test articles at once. The Humilab has an inlet for dry compressed air which extends the life of the desiccant indefinitely. The water jacket may be connected to a temperature controlled water bath/circulator to provide standardized test conditions. The test chamber has been thermally mapped to confirm temperature uniformity of better than 0.2°C. Humilab provides analog and digital outputs (RS-232) to facilitate data logging and recordings. The %RH set point can be selected from the front panel or ramp & soak profiles may be uploaded to the HumiLab using Prostep software. Prostep also provides data logging via the RS-232 data port. Test data may be saved to a PC as ASCII data, which may be imported in the standard spreadsheet programs such as Excel.

PROSTEP Software enables "ramp & soak" humidity and temperature profiles to be loaded into the Humilab. Prostep also features data logging. The chamber conditions are recorded as time based ASCII data which may be opened in spreadsheet programs such as Excel.

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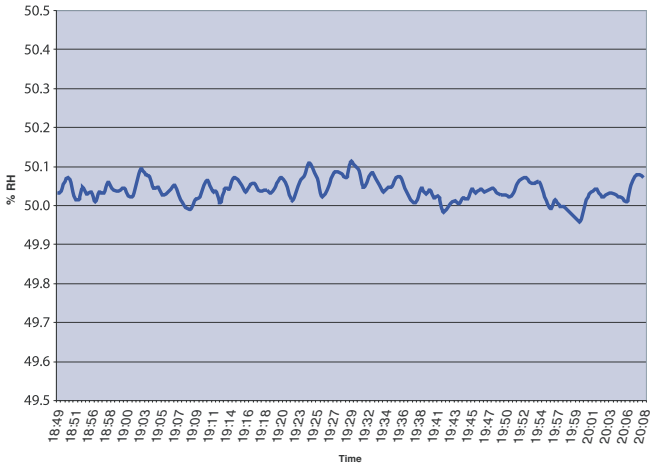
HumiLab Document & Standardize

- Calibration Labs
- HVAC & BAS Transmitters
- Pharmaceutical Instruments
- % RH Data Loggers
- % RH Recorders
- Industrial Humidity Probes
- Test Humidity Sensors
- Metrological & RadioSonde Sensors

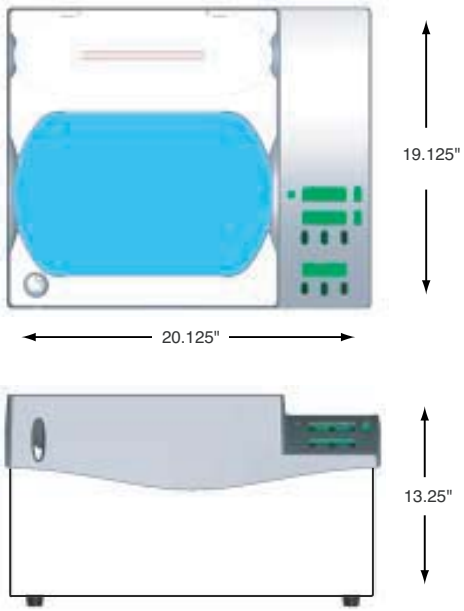
Humilab employs the time-proportioned divided flow method to generate relative humidity values from 10 to 90% RH. Unlike other humidity chambers which use secondary % RH sensors, pressure transducers or wet/dry bulb temperature sensors, the Humilab has a built-in primary humidity reference standard. % RH is calculated from the fundamental chilled mirror dew point and Platinum RTD temperature measurements. The chilled mirror sensor and RTD are in the same environment as the devices under test. The relative humidity is controlled regulating a fraction of wet air through a saturator. The dry air is produced with an internal pump and desiccant cartridge. The air streams are temperature conditioned and mixed to maintain the desired RH level in the test chamber.

Primary NIST Traceable Calibration

The system is supplied with a certificate of calibration and functional test data.



The graph above was produced with data from the HumiLab.
The calibration systems provides stability better than ±0.2% RH.



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SPECIFICATIONS

% RH Range	10 to 90% RH at 77°F (25°C)
Temperature Range	68 to 86°F (20 to 30°C) May be used with Temperature Controlled Water Bath/Circulator. Humidity Limited by Surface Temperature of Internal Walls and Cover (Dew Point in Chamber Must be Less Than Interior Surface Temperature to Avoid Condensation)
Response Time	10 Minutes for 63% Step Change. 30-40 Minutes to Full Stability
Accuracy	±1% RH From 10 to 70% RH & ±1.5% RH From 70 to 90% RH ±0.3°F (0.15°C) Dew Point & ±0.3°F (0.15°C) Dry Bulb at 77°F (25ºC)
Analog Output	Two User Scalable 4-20mA/0-5VDC Signals for Temperature, Humidity & Temperature
Power	115 or 230 VAC ±10%, 50/60Hz. Single Phase
Digital Interface	(2) RS-232 Ports. Reference & Generator Interface
Prostep Software	Windows 95/98 and Above Required. Supplied on CD ROM with Operation Manual (PDF), and HCON Humidity Conversion Software
Approvals	CE Approved
Certifications	Supplied Certificate of NIST Traceability & Functional Test Data
Display	(3) LEDs, 0.5" (1.3cm) High 7 Segment. Displays of Set Point (%RH), Actual % RH and Temperature. 0.1% RH/ºC/ºF Resolution
Workspace Dimensions	11 x 9 x 6.5" (28 x 23 x 16.5 cm) Approximately 644 in^3 (10.6 Liters)
Overall Dimensions	23L x 19W x 13H" (58 x 48 x 33 cm)
Chamber Material	Stainless Steel with Aluminum I/O Block
Water Jacket	Stainless Steel. Water Capacity 2.2 Gallons (8.3 Liters)
Mechanical I/Os	Fill Port. 1/4" OD Tubing Instant on Fittings for Water Circulation (Inlet & Outlet), Water Drain (Enables Water to be Gravity Drained) and Dry Air Inlet (Compressed Dry air to be Regulated to <5 PSI)
Weight	66 lbs. (30 kg) Dry Weight
Electrical I/Os	Power – IEC Receptacle. Sub-DB-15 for Analog Outputs. Sub-DB-9 for RS-232 Interface
Water Capacity Indicator	Liquid Sight Glass - Color Keyed Indicator
Desiccant	Indicating Type. Bright Blue when Dry. Pink When Saturated. Chamber runs 24 Hours at 50% RH and 77°F (25°C) on a New Charge of Desiccant. Dry Compressed (-40°F /-40°C Dew Point or Drier) Extends Desiccant Life Indefinitely

ORDERING INFORMATION

HUMILAB-115	115 VAC, 50 to 60 Hz
HUMILAB-230	230 VAC, 50 to 60 Hz
CAL-3	Prepaid Three Year Annual Calibration Service. 20% Savings Over Standard Recertification Costs.

ACCESSORIES

HTC	HUMILAB Transportation Case
RTE	Temperature Controlled Refrigerated & Heating Bath Circulator
DES-CAR	Spare Desiccant Cartridge
B-DES	Bulk Desiccant, 5 lb (2.27kg)
HLAB-CVR	Spare Lexan Cover (May be drilled to accommodate various probes)

DES-CAR Spare Desiccant Cartridge

HTC Tranportation Case

RTE Temperature Bath/Circulator

GE has united the technological innovation and experience of industry leaders in the design and manufacture of advanced sensing and measurement solutions into one world-class business - GE Infrastructure Sensing. This new multi-million dollar company, with operations around the world, offers a broad range of products and services that help customers solve challenges and drive productivity.

GE Infrastructure Sensing's precision instruments and systems measure temperature, pressure, humidity, gas concentration and flow for applications ranging from environmental, medical and pharmaceutical to automotive, aerospace, chemical and petrochemical. Using technologies such as thermal validation, infrared detection and ultrasonics, GE Infrastructure Sensing helps customers monitor, protect, control and validate their critical processes and applications.

GE General Eastern has joined other GE high-technology sensing businesses under a new name –

GE Infrastructure
Sensing

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