



# HygroCal100

## Humidity Validator

A new, compact, portable system for simple automated validation of relative humidity probes.



### Highlights

- Truly portable at 3.2kg (7lbs), and completely self-contained
- Intuitive UI makes automating probe verification simple
- Integral battery pack means validation can be done without access to services
- Validate 7 probes simultaneously
- Automated validation procedures for complete hands-off probe verification
- Internal calibration correction cycle ensures continued confidence
- Optional chilled mirror reference hygrometer, allowing use as a calibrator
- Download logged verification data direct to USB memory

### Applications

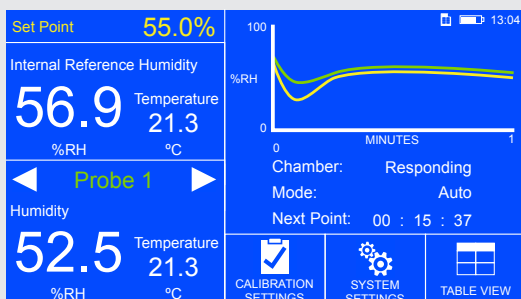
- On-site or in-lab verifications
- Validation of RH probes at pharmaceutical manufacturing facilities
- Validation of RH probes at meteorological offices
- Validation of RH probes in food manufacturing



## HygroCal100 Humidity Validator

### The all-in-one validation package for your humidity sensors

The HygroCal100 provides a stable test chamber to quickly evaluate the performance of relative humidity sensors across a wide range of 5 to 95% relative humidity. The intuitive design allows the probes under test to be fully integrated with the chamber and user interface (UI), so up to 7 probes with a variety of diameters and output signals can be powered, monitored and logged simultaneously by one self-contained unit.



A 4.3" LCD touch-screen runs a powerful UI, which displays all measured values from the reference and probes under test, along with a graphical trend indication of chamber stability. It is also capable of automating complete validation procedures with ease, and providing a complete logged output in csv format straight to your USB memory device, to minimize the time you spend taking readings.

	Reference	Probe 1	Probe 2	Probe 3
%RH	56.9%	52.5%	52.1%	52.8%
T	21.3°C	21.3°C	21.2°C	21.4°C
	Probe 4	Probe 5	Probe 6	Probe 7
%RH	52.1%	52.9%	52.6%	52.5%
T	20.9°C	21.5°C	21.7°C	21.3°C

### Chamber Integrity

The HygroCal100 has a test chamber milled from a solid piece of Acetal, with minimal sealing points, ensuring the integrity required to maintain <5% RH from laboratory ambient temperatures, and  $\pm 0.5\%$  RH uniformity across the chamber.



### Portability

The HygroCal100 can optionally be fitted with a high capacity battery pack, which can power the generator and 7 sensors under test for up to 8 hours. The unit can also run from mains power while charging the battery.

An optional hard carry case is also available with the unit. This has space for the HygroCal100 itself, in addition to the battery charger, spare water and desiccant.

### Integrate Your Own Reference

The HygroCal interface allows you to assign any hygrometer with an analog output as your reference device, giving you the flexibility to incorporate your traceable reference in your validation routine.

### Automated Validation

The HygroCal100's advanced UI allows you to define your own calibration procedure, point-by-point, assigning times to each condition to allow your probes under test to stabilize. The system always waits until the conditions in the chamber are completely stable before beginning the check.

### Correct Chamber Control To Your Own Reference

To ensure continual long term stability of the chamber, the in-built calibration correction system can compare the readings of your traceable reference to a range of pre-set generated conditions – making adjustments to the control sensor to ensure that your set point always matches your own reference.

## Technology: Divided Flow Mixing with HS3 Control

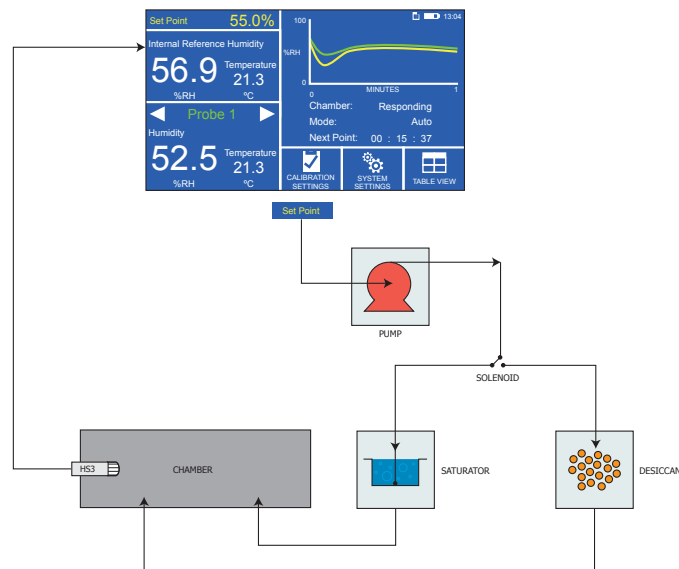
The simple, low maintenance system can transition between and stabilise on constant humidity conditions very quickly. It features a reservoir for saturation and a reservoir for desiccation. By driving ambient air through either one of these reservoirs and into the chamber, the conditions inside can be quickly altered.

## Reliable, Stable Control

The HygroSmart HS3 sensor uses the latest Michell H8000 capacitive polymer element, developed as a result of over 40 years experience in making challenging moisture measurements, to give outstanding accuracy across the complete RH range.

- Interchangeable sensor accuracy  $\pm 0.8\%$  RH
- $\pm 1\%$  RH long-term stability per year

The sensor stores its own unique calibration data within its integral electronics, ensuring 100% field interchangeability.



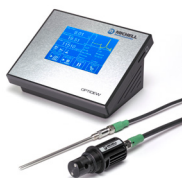
## Calibration Kits

The HygroCal100 can be supplied with several different combination packages, allowing you to begin making traceable calibration checks immediately.



### MDM25

The MDM25 is a portable, battery-operated hand-held hygrometer, which makes an ideal portable reference for use with the HygroCal100. The MDM25 is supplied with a standard probe, which is calibrated traceable to national standards. Also included is a port adaptor, to fit this probe, in the HygroCal100 chamber.



### Optidew 401

The Optidew is a fast-responding chilled mirror hygrometer, equally at home in both industrial humidity control and precision laboratory applications. It is available in bench top and wall mount configurations, and features an intuitive touch screen interface for easy local operation. Using the latest developments in chilled mirror technology, it has a response speed comparable to polymer relative humidity sensors, combined with the reliability of drift-free measurements common to all chilled mirror instruments.

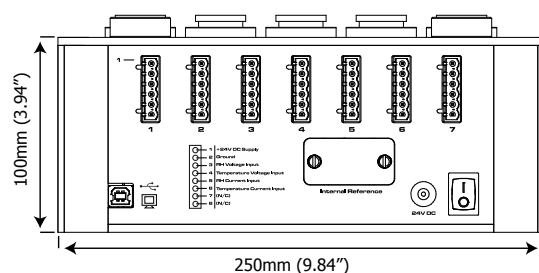
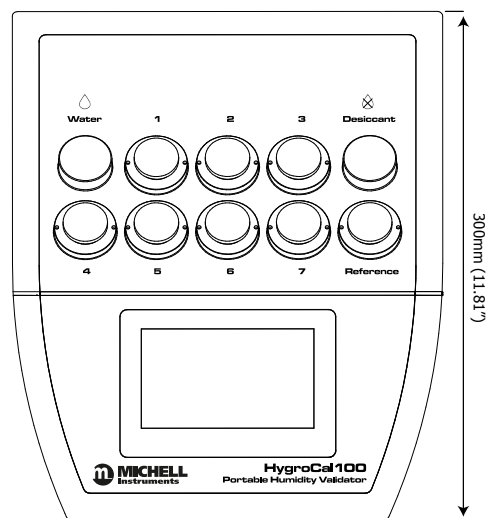


## Calibration Instruments

### Technical Specifications

Chamber	
Generation range	5 to 95% RH
RH stability	±0.5%
RH uniformity	±0.5%
Stabilization time	Typically <5 min for full stability from step changes of 10% RH
Control Probe	
RH accuracy	±0.8%
Temperature accuracy	±0.2°C (±0.36°F)
Long term stability	±1% per year
Electrical Specifications	
User interface	4.3" color LCD with touchscreen
Interface with probes	24V excitation voltage, accepts signals: 0–20 mA, 4–20 mA, 0–1 V, 0–5 V, 0–10 V
Measurement units	%RH, temperature in °C, °F
Displayed resolution	0.1
Data logging	2Gb internal memory available for log files; or 10.6yrs storage at 5s intervals
Battery (Optional)	1500 mAh
Power supply	24 V DC (100 to 240 V AC, 50/60 Hz adaptor included)
Mechanical Specifications	
Probe ports	8 - port adaptors to accommodate probes of diameters: 12mm, 13.5mm, 14mm, 15mm, 18.5mm, 19mm, 24mm, 25mm
Chamber volume	Approx 1050cm <sup>3</sup> (64.07in <sup>3</sup> )
Maximum probe insertion depth	60mm (2.36")
Desiccant reservoir capacity	25cm <sup>3</sup> (1.53in <sup>3</sup> )
Saturator reservoir capacity	25ml (0.85floz)
Environmental conditions	+5 to +40°C (+41 to +104°F)
Dimensions	100 x 250 x 300mm (3.94" x 9.84" x 11.81") (h x w x d)
Weight	3.2kg (7lbs)

### Dimensions



This HygroSmart symbol is used to identify any Michell RH product which has an interchangeable sensor.

### Related Products



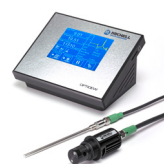
**HygroSmart HS3 Probe**  
Advanced Interchangeable Relative Humidity and Temperature Probe



**OptiCal**  
Humidity Calibrator



**MDM25**  
Hand-Held Hygrometer



**Optidew 401**  
Chilled Mirror Hygrometer



**S8000 Remote**  
High Precision Chilled Mirror Hygrometer

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Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.  
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