



# HG-10 Humidity Calibrator

A fully automated, turnkey humidity and temperature test and calibration system with profiling capability

- Automatic System with Reference Hygrometer
- Traceable to National Standards
- Temperature and Humidity Profiling
- Wide Range
- Operates under Windows™ environment

Calibration integrity in the field of humidity has never been more important than today. Product quality, process effectiveness, system maintenance and even human safety are all dependent on the knowledge that humidity is measured correctly - whether you are using low cost relative humidity probes to monitor manufacturing or storage facilities, or providing a high level trace moisture calibration service to a nationally accredited level. Our history of traceability goes back to 1982 when our systems were first compared with the NIST standard in Washington USA, and to 1986 when we became the first laboratory to be granted accreditation by the National Physical Laboratory, London under the United Kingdom Accreditation Service (UKAS). European traceability is achieved through EAL.

The Michell HG-10 Humidity Calibration System is a computer controlled, automatic rh calibration system. It is capable of repeatable generation of humidity levels over the range 1 to 95 % rh (-50 to +50 °C dew point) with excellent stability and traceability directly to National Standards, and is suitable for use in high level calibration laboratories.

The HG-10 comprises three main components - humidity generator, test chamber and reference hygrometer. Each perform a critical function in allowing the user to calibrate a wide range of humidity sensors and instruments.

## Humidity Generator

The Automatic Humidity Generator operates by dividing a



source of dry air or inert gas into two streams, each of which is regulated by mass flow controllers. One gas stream is saturated to 100 % relative humidity by passing through a high efficiency water saturator unit. The two gas streams are then re-combined to give an output flow at a stable and precisely controlled humidity. The generated sample gas can then be passed from the generator to the test chamber, using a heated sample line, directly to hygrometers under test.

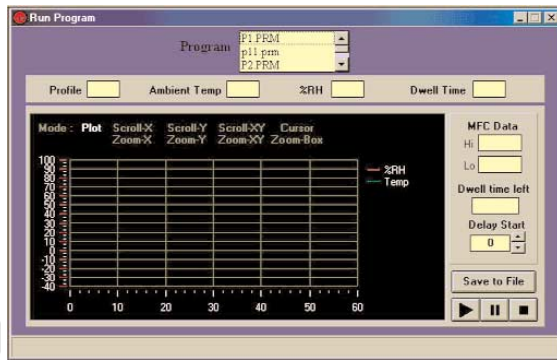
Selection of different humidity levels and temperature control is made using a sophisticated, yet easy to use PC-based control software package. Three digital displays are available on the front panel of the generator for local setpoint indication of the generator chamber temperature, heat traced sample line temperature and % rh setpoints.

## Test Chamber

We will specify and supply a test chamber suited to your specific needs, whatever the type and size of hygrometer you wish to test and calibrate. The standard HG-10 chamber has internal dimensions of 550 x 550 x 320 mm, W x H x D and can be controlled and operated at temperatures from -10 to +50 °C. Consult Michell's Technical Sales department for details on other chamber options.

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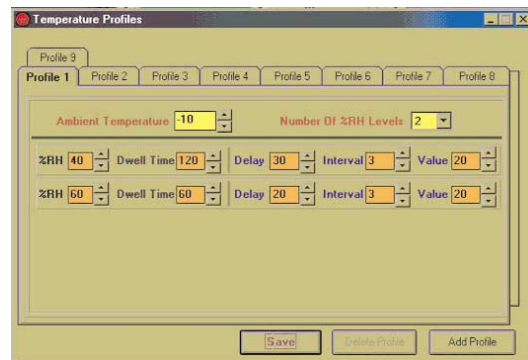
Real time display of chamber conditions

## Reference Hygrometer

No calibration has validity unless it provides traceability to a recognised Standard. For this reason, the HG-10 includes an S4000 Precision Dewpointmeter for monitoring precisely the dew point being generated. The S4000 is calibrated in our UKAS laboratory, providing direct traceability to the UK National Standard held by the National Physical Laboratory. We also maintain a traceable path directly to the NIST Humidity Standard in Washington, USA. In addition to providing the calibration traceability required in such a system, the S4000 gives the closed loop control necessary for operating the generator effectively.

## Automated Operation

The HG-10 is supplied with a sophisticated yet easy to use control system, developed by our own engineers and drawing on years of experience in the manufacture and use of humidity calibration equipment. The control software, including closed loop control capability, allows the user to set individual fixed humidity and temperature test levels or to set up more complex profile programs for evaluating the performance of humidity sensors over a range of operating conditions. Performance data for the instruments under test can be logged and displayed on the optional data acquisition software that operates alongside the control and profiling package.



Temperature profiling facility

## Technical Specifications

Range:	Humidity	1 to 95 % rh (-50 to +50 °C dew point).
	Temperature	-10 to +50 °C
Accuracy		± 0.5 % rh - displayed.
Inlet Gas Supply		Air 10 L/min @ 0.7 barg max. & 1 ppm <sub>v</sub> , (-76 °C dew point). Available as an option
Generated Gas Output		Air 2 L/min. @ 0.5 barg via heat traced line.
Saturator		High efficiency sintered glass.

Power Supply	220/240 V 50 Hz
Power Consumption	550 V-A maximum.
Operating Temp	+5 to +40 °C. 10 to 90 % rh.
Enclosure: Generator	19" Rack System, 2.1 m high
Chamber	Floor standing, 800W x 700D x 1600H mm



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