



Humidity Calibration Systems

From the Calibration Range

A range of complete, integrated calibration systems providing traceable calibration of humidity sensors in your own laboratory



DCS Dew-Point Calibration System

All of our modular systems are designed to your specific requirements, providing everything from dry gas source to transfer standard dew-point meter. Systems can comprise:

- Compressed air supply
- Air dryer
- Dew-point generator
- Precision transfer standard dew-point meter
- Manifold and/or temperature controlled test chamber
- Rack mounting unit

The Importance of Calibration

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). UKAS is the United Kingdom member of European Co-operation on Accreditation (EA), the International Laboratory Accreditation Cooperation (ILAC) and the International Accreditation Forum (IAF).

DCS Dew-Point Calibration System

The Dew-Point Calibration System* is a fully automatic unit capable of producing a flow of air at a range of dew points from as low as -100 and up to +20 °C. Contained within a floor standing 19" rack unit, the DCS comprises an oil-free compressor feeding a high specification air dryer that delivers dry air at either -80 or -100 °C dew point, depending upon your needs. The dry air supply is delivered to a dew-point generator - either manual or automatic, that can produce either a selection of pre-set dew point values or, in the case of the VDS system variant, can produce a calibration air stream of infinitely variable dew point under computer control. A reference cooled mirror dew-point hygrometer from the S4000 range provides the traceable, calibrated element of the system. The final component is a calibration sample housing, designed to customer specification to house the

HG-1 Humidity Calibrator

The HG-1* is a self-contained system which, by means of an internal suction pump, draws a sample of ambient air through a dryer column, humidifier and into a test chamber in which the sensors under test and a reference dew-point sensor (Optidew) are located. The sensors under test are then calibrated at a range of humidities against the reference instrument. Operating range <2 to 90 % rh, or -30 to +20 °C dew point.



HG-1 Humidity Calibrator



The Dew Point Specialists

* See individual datasheet for further details



Opti-Cal Humidity Calibrator

Opti-Cal is a portable, fully self-contained humidity/temperature calibrator. The system comprises a humidity/temperature controlled chamber that can house up to six or more humidity sensors, depending on their physical dimensions. Temperature and humidity within the chamber are closed-loop controlled and continuously monitored by a precision chilled mirror reference hygrometer. Opti-Cal works by time proportioning the flows of dry and saturated air according to the pre-selected relative humidity value. The chamber temperature is controlled by a four-zone Peltier heat pump arrangement for maximum stability and minimum temperature gradient. The saturator assembly can be filled easily with distilled water at the front of the unit and the easily accessible desiccator can be re-charged by heating when required. No other maintenance is necessary. The only external service required is a single phase power supply.



Opti-Cal Humidity Calibrator

HG-10 Humidity Calibrator

The HG-10* is a completely automatic temperature and humidity calibration system that can be used to calibrate humidity sensors over a wide range of temperatures and humidities. PC control allows start, end values, ramp speeds and dwell times to be selected following which the system automatically tracks the desired humidity/temperature profile and records the measured and reference values. Sensors under test may be placed in the large volume environmental cabinet for complete temperature and humidity profiling.



HG-10 Humidity Calibrator

* See individual datasheet for further details

Technical Specifications

Humidity range:	Dew point °C	DCS	HG-1	OPTI-CAL	HG-10
		-100 to +20	-30 to +20	-20 to 45	-50 to +50
	% relative	n/a	2 to 90	10 to 90	1 to 95
humidity					
Temperature range (for sensors) °C		Laboratory temp	Laboratory temp	(T _{amb} -10) to 50	-10 to +50
Maximum flow rate Nl/min		510	5	Re-circulating	2
Operating temperature (system) °C		10 to 30	0 to 40	10 to 30	0 to 40
Typical accuracy °C (% rh)		±0.1	±0.2 (±0.5)	±0.2 (0.5)	±0.1 (±0.3)
Set point accuracy		±0.5 °C dew point	±1 % rh	±1 %rh	±0.5 % rh
Reference instrument		S4000	Optidew	Optidew	S4000
Traceability		NPL, NIST	NPL, NIST	NPL, NIST	NPL, NIST

Michell Instruments Ltd
 Nuffield Close, Cambridge CB4 1SS UK
 Tel: +44 (0)1223 434800 Fax: +44 (0)1223 434895
 e-mail: info@michell.co.uk
 www.michell-instruments.com



The Dew Point Specialists



Q6284 (UK)



0179 (UK)

