



# Calibration of Relative Humidity Probes

Application Notes



Examples of rh probes

## Reference Users

Deutsche Wetterdienst, DNMI (Norwegian Meteorological Institute), Hungarian Meteorological Service, KNMI (Royal Dutch Meteorological Institute, Meteorological Office Research Centre UK, National Weather Service Washington DC

## Background

Meteorological offices, Standards Laboratories, large manufacturing plant ...

## Measurement Technique

The Michell Optidew provides a transfer standard performance for calibrations of rh probes from 1 to 99 % rh and with an accuracy of  $\pm 0.2$  °C dew point. These measurements can be carried out within a climatic chamber or via a discrete sampling arrangement using a dewpoint generator and manifold block.

For lower cost calibrations we offer the HG-1 Humidity Calibrator. The HG-1 is totally self contained within a bench top design allowing calibrations to be made in the field for up to 6 rh probes at any one time. Range 2 to 90 % rh (-30 to +20 °C dew point).

Our premier cooled mirror dew-point hygrometer, the S4000 Integrale, is used by standards laboratories worldwide as a reference instrument. Supplied in a rack mounting housing the unit is fully self contained. The S4000 Integrale offers a measurement accuracy of  $\pm 0.1$  °C dew point from saturation to ppb levels.

Michell Instruments can also provide fully automated, custom build calibration systems for precise measurements over a wide temperature and humidity range. Systems can comprise: compressed air supply, air dryer, dew-point generator, precision transfer standard hygrometer, manifold and/or temperature controlled chamber, rack mounting unit.



Examples of rh probes

For the user of relative humidity sensors there is always a question over the calibration accuracy and stability of the instruments in use. Opti-Cal offers the opportunity to provide local calibration of such RH sensors, without the need to send them away to a traceable laboratory or incur the additional cost of contracted on-site calibration services. Opti-Cal will also provide calibrations that are directly traceable to International Standards over a wide relative humidity range, and at any set temperature from 10 to 50°C.

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.

**Michell Instruments Ltd**  
Unit 48 Lancaster Way Business Park  
Ely, Cambs, CB6 3NW, UK  
Tel: +44 (0)1353 658000 Fax: +44 (0)1353 658199  
e-mail: [info@michell.co.uk](mailto:info@michell.co.uk)  
[www.michell-instruments.com](http://www.michell-instruments.com)

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