

Calibration Devices: Humidity & Dew Point, Precipitation



A

A. Humidity and Dew Point Calibration

The Model 5150-A calibration chamber is designed specifically for calibration of All Weather Inc.'s humidity probes. It is a solidly constructed metal box which holds two bottles of saturated salt. The probe is inserted through a hole in the top of one bottle so that the humidity element is directly above the salt solution. The probe is allowed to stabilize, and the output signal is adjusted to correspond to the known humidity value produced by the saturated solution. The process is then repeated using the second solution, resulting in a two-point calibration.

The chamber ensures a stable atmosphere for the calibration process. A thermometer is mounted in the chamber cover to provide an accurate measurement of internal temperature. Humidity vs. temperature scales for the

solutions are printed on the cover. Calibration chemicals are not included.

Salts are used to mix saturated solutions which produce known relative humidity values for calibration purposes. Lithium chloride produces 11% RH; sodium chloride produces 75% RH; potassium sulfate produces 97% RH. Each of these salts is provided in a 3.5 ounce package, which is sufficient to mix one calibration solution. The solutions can be stored in the calibration chamber and reused for up to 1 year.

B. Precipitation Calibration

The Model 60103 Precipitation Gauge Calibrator is designed for easy field checks on the calibration of tipping bucket gauges, but it can be used for laboratory calibration procedures as well. The calibrator consists of a plastic bottle to hold water, a stand to set the bottle in the gauge funnel, and a constant head orifice assembly. A measured



B

amount of water, equal to 100 tips of the bucket assembly, is directed into the gauge at a constant rate of 2 inches/hour. If the readout device attached to the gauge records more or less than 100 tips, recalibration should be considered.

This calibration method provides the greatest accuracy and repeatability possible because it is based on an average over 100 tips. In addition, the 60103 is unbreakable and therefore better suited to field use than fragile pipettes or graduated cylinders. A fill line is indicated on the water bottle for ease of use. However, for maximum accuracy the amount of water added to the bottle can be determined using a laboratory balance.

Ordering Information

Humidity, Dew Point Calibration

5150-A Humidity Calibration Chamber, less chemicals

5135 Lithium Chloride, 3.5 oz.

5136 Potassium Sulfate, 3.5 oz.

5137 Sodium Chloride, 3.5 oz.

Precipitation Calibration

60103 Precipitation Gauge Calibrator

