S904
Humidity Calibrator

Air Source	Dryer	Generator	Reference

The S904 is a completely stand-alone and transportable calibrator for humidity sensors, requiring no external services other than mains power. The calibration chamber features 5 interchangeable ports to accommodate virtually any brand, type or model of sensor. This calibrator is ideal for companies or organizations looking to calibrate large numbers of probes in a laboratory or field setting.

The environment within the insulated calibration chamber is temperature controlled using a 4-zone fan-assisted Peltier arrangement for maximum stability, and minimum temperature gradient. The humidity of the circulating air is precisely regulated using a closed-loop control system that functions by proportionally mixing flows of dry and saturated air.

Two highly visible LED panels on the front of the S904 display the current humidity and temperature within the calibration chamber. The response time to a humidity or temperature step change is typically less than 10 minutes, so a simple 3-point calibration can be carried out in under an hour.

With the S904D version, the humidity and temperature set points of the chamber can be controlled with the supplied PC application software, enabling the operator to create completely automated calibration profiles for unattended laboratory operation. The software also gives the ability to monitor, chart and log data from the connected probes and calibration reference on a PC for later analysis. Alternatively, the set points can be controlled manually with the front panel controls - making the S904 ideal for field calibrations where a PC is not available.

The S904 is easy to maintain. The desiccant changes color to indicate when it needs to be recharged and this is visible through a clear window on the front of the unit. Recharging the desiccant is simply a matter of heating it in a conventional oven at +150°C (+302°F) for 3 hours. The water reservoir at the front of the unit shows the current saturator fill level, and makes it easy to top-up with distilled water when required. The only external service required is a single phase power supply.
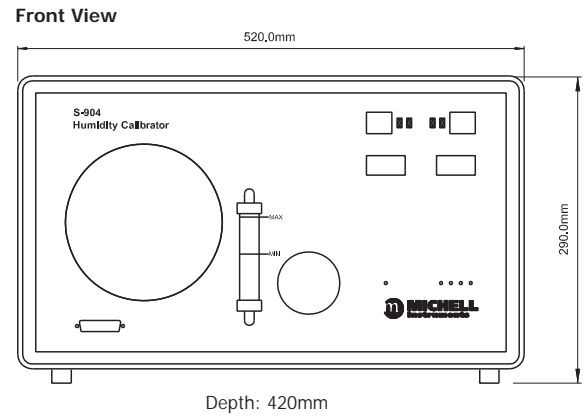
Highlights

- Simple operation and maintenance
- Excellent chamber stability and uniformity
- Manual control or optional straightforward automated set point programming
- Optional in-built data-logging for reference probe and probes under calibration
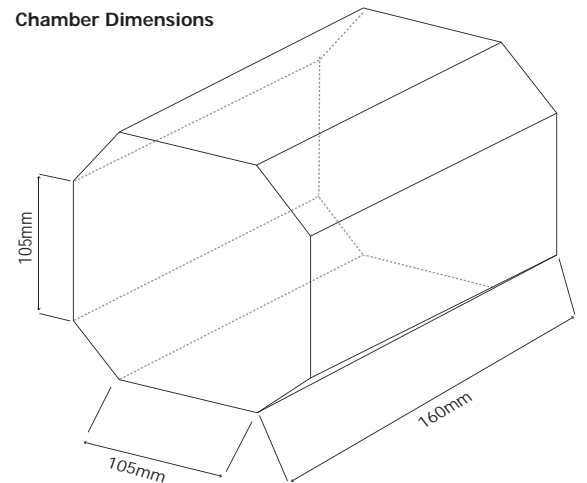
![MICHELL Instruments logo]

S904

Technical Specifications

Humidity

Generation range	10–90% RH
Accuracy control element	≤±1% RH (10–70% RH) ≤±1.5% RH (70–90% RH)
Stability	±0.2% RH (20–80% RH)

Temperature

Generated range	+10 to +50°C (+50 to +122°F) (lowest T set point = 10°C (18°F) below ambient)
Accuracy	±0.1°C (±0.2°F)
Stability	±0.1°C (±0.2°F)

Chamber

Ramp rate from +20 to +40°C (+68 to +104°F) +40 to +20°C (+104 to +68°F)	1.5°C / minute (2.7°F / minute) 0.7°C / minute (1.2°F / minute)
Control element	Removable relative humidity sensor

General

Probe ports	up to 5 – sensor body diameters 5 to 25mm (0.2 to 0.98") accommodated by port adapters
Chamber volume	2000cm^3 (122.1in^3)
Chamber dimensions	105 x 105 x 160mm (4.13 x 4.13 x 6.3") (h x w x d)
Instrument dimensions	290 x 520 x 420mm (11.4 x 20.5 x 16.5") (h x w x d)
Set point resolution	0.1 for humidity and temperature
Displays	3 digit LED, 10mm (0.39") characters
Supply	85 to 264 V AC, 47/63 Hz, 150 VA
Weight	20kg (44lbs)

Dimensions

Front View

520.0mm

290.0mm

S-904 Humidity Calibrator

MAX MIN

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Depth: 420mm

Chamber Dimensions

105mm

105mm

160mm

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