

HumiPyc Model 2 Specifications:

Analytical techniques: **GAS (Helium) PYCNOMETER** - Volume measurements from under 1cc to over 100 cc (true density) of solids (fine powders, foams), optionally at precise RH conditions.

OPTIONAL TECHNIQUES: **Filter integrity testing** using Bubble Point and Pressure Decay Methods; **Permeation** testing using pressure gradient method

Operational mode: Fully automatic operation via PC control (Windows® based software from 95 to Windows 7 is included) and Manual Mode via front panel controls.

Maximum number of cycles per run: 1000 (with a single mouse click to continue another experiment)

Data handling: Printable reports, all data are recorded and transferable to spreadsheets

Number of reference chambers: 2 (small and large)

Sample chamber: Typical chamber volume is over 130 cc, larger volumes available, several adapters for reducing volume are supplied.

Sample containers: Several containers of different sizes are supplied, no special containers are required. Commonly available containers that can fit inside can be used.

Sample treatment: Sample treatment to specified criteria; programmable and continuous pressurization/depressurization cycles or vacuum. Optional **true purge** with flow through the sample, (not around the sample container like in other pycnometers), is available.

Volume calibration: Using certified metal spheres, Calibration kit is included (Set of Large spheres (0.5" -2"), Set of micro spheres (1 – 6mm), handling tools)

Typical Accuracy: Better than $\pm 0.03\%$

Typical Reproducibility: Better than $\pm 0.015\%$

Resolution of data acquisition: 24-bits

Volume resolution: Better than 0.0001 cc

Flow/Evacuation rate: Progressive, user programmable, (Fine powder sample is not blown out as proportional valves are used instead of ON/OFF valves for critical operations).

Pressure range: (transducer dependent), typically 344.7 kPa (50 psia), absolute

Displayed pressure resolution: 0.0001kPa

Transducer selection: Absolute, Gauge, Barometric, (common ranges)

Transducer accuracy: (transducer dependent), typically $\pm 0.11\%FS$, $\pm 0.073\%FS$ optional

Temperature: ambient

- Temperature probe (RTD) accuracy:** ± 0.1 °C
- RH probe range:** 0 to 100 %
- Pressure regulation:** Built-in low pressure regulator (up to 20 bar (300 psig) input limit) and pressure gauge at the back panel
- Gas Type:** Helium, Nitrogen, Argon, air, etc
- Gas Inlet Port:** 1/8" tube compression tubing (Swagelok® type bulkhead)
- Vacuum port:** 1/4"NPT Female (standard), flexible vacuum hose from the instrument to a vacuum pump (e.g. small rotary vane) with KF16 flange can be supplied.
- Auxiliary hardware:** Specific to an optional technique or customized version.
- Communication link with a PC:** USB or Serial port (RS232)
- Dimensions:** (W x H x D) (22 x 28 x 35cm) (8.7" x 11.4" x 13.7")
(Not including protrusions at the back)
- Instrument Weight (option dependent, w/o accessories):** About 7 kg (15 lb)
- Typical power requirements: (Depending on specific model):**
110-240 VAC universal input, 50/60 Hz, 75VA

These specifications are subject to change at any time and are dependent on specific versions.

Note: Performance of pycnometers varies with selected experimental conditions and hardware, (please review the posted application note)