The Thermo Scientific Pycnomatic is the ultimate development in density measurement of solid materials. Based on the technique of gas displacement to measure real density of solid and powders, Pycnomatic delivers unrivalled fast and accurate results.

Pycnomatic ATC
Automatic Temperature Control

Pycnomatic ATC

For solids and powders real density

Density measurement is a fundamental parameter required for a full characterization of the properties of solids. It is applicable in a wide array of technological fields such as ceramics, mineralogy, geology, pharmaceuticals, metallurgy, pigments, building materials, foams, plastics, abrasives and catalysts, just to name a few.

The first multi-volume gas pycnometer with integrated automatic temperature control

Temperature constancy is very important in static volumetric systems like a gas pycnometer. Calibration of the reference and sample cell and the actual measurement are all performed in a closed environment. The sample volume is determined by a mass balance of helium, measuring the gas expansion pressure. Temperature constancy is fundamental in achieving accurate results, especially when the cell volume in use (and thus the sample volume) is very small. The innovative and powerful Thermo Scientific Pycnomatic Automatic Temperature Control (ATC) is based on a built-in Peltier device that dramatically reduces the time necessary to achieve thermal stability of the sample. This enables the user to obtain a very high level of precision in a matter of minutes. Temperature of the manifold is controlled with a precision of +/- 0.01 °C in a range between 18 and 35 °C.

Product Specifications

Sample Volume Capacity	Approximately 20, 40 and 60 cc. (indicative maximum sample cup volumes)
Optional sample volume capacity	Extra Small (approximately 4 cc) and Extra Large (approximately 100 cc)
Reference chamber volumes	Approximately 20, 40 and 60 cc (indicative calibrated reference chambers)
Temperature control range	From 18 to 35 °C by an integrated Peltier Device, selectable by steps of 0.01 °C
Temperature resolution	Displayed resolution of 0.01 °C
Temperature sensor number	Three
Temperature control stability	+/- 0.01 °C (in the above temperature control range)
Pressure transducer range	From vacuum up to 250 kPa absolute reading
Pressure transducer type	Absolute, piezo-resistive sensor, temperature compensated, linearized
Pressure displayed resolution	0.001 kPa
Pressure transducer stability	+/- 0.002 kPa
Purging procedures	By continuous flow, gas pulses or vacuum
Maximum cycles number per run	100 (user's selectable)
Calibration procedure	Integrated, storing up to three set of calibrated volumes
Calibration method	By certified stainless-steel spheres
Internal memory capacity	Up to two complete runs made of up to 100 cycles each
Typical reproducibility	Better than 0.01 % at 20 °C on sample volume (evaluation on dry and thermally equilibrated samples, sample real volume filling at about 66 % of nominal vessel volume)
Typical accuracy	Better than 0.01 % at 20 °C on sample volume (evaluation on dry and thermally equilibrated samples, sample real volume filling at about 66 % of nominal vessel volume)
Communication ports	Serial port to computer, parallel port to printer for reporting, serial port to balance
External gas connections	Gas-in port (research grade helium or nitrogen), direct gas-out port and gas-out through restriction.
User's interface	Large backlit display, 40 characters x 4 lines, alphanumeric keyboard
Environment conditions	Temperature: 15 to 30°C, Humidity: 20 to 80% Rh
Power supply	85 - 264 VAC, 47 – 63 Hz
Dimensions	Width: 25 cm , Height 33 cm, Depth: 45 cm
Weight	17 kg

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ISO 9001 DNV-CERT-00203-94-AQ *Thermo Electron S.p.A, Milan, Italy is ISO Certified.*

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