

GeoPyc 1360

Envelope Density Analyzer

Features

- *Highly accurate and reproducible results*
- *Fast operation*
- *Small table-top unit*
- *Fully automated data acquisition and reporting*
- *Uses nonhazardous microspheres*
- *Nondestructive to samples*
- *Multiple operation modes*
- *Multiple sample chambers available*
- *Multiple language capability*



The GeoPyc™ 1360 Envelope Density Analyzer is a revolutionary instrument for rapidly measuring the envelope density of porous objects of irregular size and shape. Particle Size should exceed 2 mm for best results. Envelope density, or bulk density as it is sometimes called, is the mass of an object divided by its volume where the volume includes that of its pore and small cavities. Envelope density information is useful in characterizing catalysts, structural foams, insulators, ceramics, powder metallurgy objects, and other manufactured goods.

The GeoPyc follows a unique displacement measurement technique that uses a quasi-fluid composed of small, rigid spheres having a

high degree of flowability; we call this medium *DryFlo*. The sample is placed in a bed of *DryFlo*, and the *DryFlo* is agitated and gently consolidated about the sample. The GeoPyc collects the displacement data, performs the calculations, and displays or prints the results. The unit also reports percentage porosity and specific pore volume when absolute density information (density excluding pore and small cavity volume obtained from a Micromeritics AccuPyc helium pycnometer) is entered.

The analyzer is operated from a full character-set keypad. Data acquisition and reporting are fully automated for convenient incorporation in LIMS or other data concentrating systems.

A variety of sample chambers is available to accommodate a wide range of sample sizes. After the analysis, a light shaking or dusting completely removes the *DryFlo* so the samples can be reused or retested. The GeoPyc has multiple operating modes including full blank, computed blank, and reference solid calibration with variance, which allows you to optimize speed and accuracy for your individual needs. During analysis, indications of progress and preliminary results make it possible to track what is occurring. Sample-specific information can be entered and the report generated in English, German, Italian, or Spanish.

T.A.P.™ DENSITY OPTION

When equipped with the T.A.P. Density option, the GeoPyc measures the packing volume and calculates the bulk density of granular and powdered samples under a wide range of compaction conditions.

To determine T.A.P. density, the sample chamber is rotated and agitated while a precise specified force is applied to the sample. A force transducer measures the consolidation force in Newtons and the distance over which the consolidation piston and plunger travel

is measured in steps. The user specifies the force applied and the number of consolidations per analysis. The GeoPyc averages the measurements from each consolidation and automatically calculates volume and density, and reports the results in cm^3 and g/cm^3 . The GeoPyc T.A.P. density option obtains precise results comparable to conventional tap density analyzers, only it does it faster, quieter, and with greater reproducibility.

SPECIFICATIONS

Reproducibility:

When sample volume is at least 25% of sample holder volume: Typically $\pm 1.1\%$

(GeoPyc 1360 T.A.P.: When sample depth is approximately equal to chamber diameter: Typically $\pm 1.1\%$)

Sample Chambers:

12.7 mm (0.50 in.) ID: sample volumes between 0.3 cm^3 and 0.8 cm^3

19.1 mm (0.75 in.) ID: sample volumes between 0.8 cm^3 and 2.4 cm^3

25.4 mm (1.00 in.) ID: sample volumes between 2.4 cm^3 and 5.3 cm^3

38.1 mm (1.50 in.) ID: sample volumes between 5.3 cm^3 and 13 cm^3

50.8 mm (2.00 in.) ID: sample volumes between 13 cm^3 and 25 cm^3

Physical:

Width: 56 cm (22 in.)

Height: 29 cm (11.42 in.)

Depth: 39 cm (15.34 in.)

Weight: 19 kg (42 lbs)

Electrical:

Power: 95 VA

Voltage: 85 to 265 VAC

Frequency: 47 to 63 Hz

Environment:

Temperature: 15°C to 35°C

Humidity: 20% to 80% non-condensing

Altitude: 5,000 m or below

Miscellaneous:

ISO 9001 manufacturer

CE certified

In keeping with a policy of ongoing improvements, specifications are subject to change without notice. GeoPyc and DryFlo are trademarks of Micromeritics Instrument Corporation.

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