



## "GURLEY" HIGH PRESSURE DENSOMETERS



For measuring the porosity, air-permeability or air-resistance of materials having low permeability. Typical materials include coated papers, plastics and membranes. High Pressure units are recommended whenever a standard unit would yield excessive measurement times.

## “GURLEY” HIGH PRESSURE DENSOMETERS

### APPLICABLE STANDARDS

TAPPI T-536-88 and ASTM D-726-58, Method B.

### GENERAL INFORMATION

High Pressure Densometers are the accepted standard for measuring the porosity, air-permeability or air-resistance of materials having low permeability. Typical materials include coated papers, plastics and membranes. High Pressure units are recommended whenever a standard unit would yield excessive measurement times. Manual and automatic units available.

### SPECIFICATIONS

The densometer test measures the time required for a specific volume of air (2.5cc to 30cc), at a constant pressure of 12.33 inches W.C., to flow through a standard area of the material being tested. The air pressure is supplied by a weighted inner cylinder floating freely within an outer cylinder which is partially filled with oil to act as a seal. The sample material is held between clamping plates having a circular orifice area of 1.0 square inch (standard).

High pressure units are recommended whenever a standard unit would yield excessive measurement times. Porosity readings with the high pressure densometer are much faster than those taken with a regular densometer. This difference can be as great as twenty-five times faster since higher air pressure is used and air volumes are one-tenth those measured with a standard densometer. Readings also can be affected by using different adapter plates with smaller orifices on all models.

### Conversion of Models Containing Mercury to Oil

The new oil-filled high pressure densometers replace older mercury-filled models yet feature identical performance, continued reliability and accuracy. The only difference is the physical height of the unit (27" with inner cylinder down).

Obsolete Models 4120 & 4200 contain mercury which may pose personal safety hazards. These instruments can be converted to oil by replacing the entire upper cylinder assembly. The conversion must be performed at our Troy, NY factory and includes packaging for and disposal of the mercury. Please refer to No. 4050-C Product Bulletin for details.

**NOTE: If the Densometer is equipped with the 4320 Digital Module (OPTIONAL),** it allows to control with great accuracy the time in seconds of the air passage through the sample and also to be able to connect the Digital Module 4320 to the **LYNX** System (Comprehensive Computerized Laboratory Management).



#### **Model 4150N - High Pressure Densometer:**

**This model measures porosity and air-permeability of materials.** It includes a **1.0 square inch** clamping plate, adapter and porosity calibration plate. The inner cylinder is graduated to 2.5cc for the first two spaces and thereafter each 5cc for a total of 30cc. Clamping pressure is supplied by turning a knob which raises and locks the lower clamping plate. Order the automatic digital timing attachment and instrument leveling base separately.

#### **Model 4250N - H-P-S Tester:**

**The No. 4250 was originally developed to test the printing quality of paper.** In more recent years, its use has spread to other industries in testing or checking other material surfaces for smoothness or porosity. In dealing with the printability of paper, it has been found that smoothness is the most important factor in printing quality.

The Gurley No. 4250 H-P-S Tester measures a given air flow through the sample for porosity tests and leakage across its surface(s) for smoothness tests. This is accomplished by changing a variety of adapter and clamping plates. This model is identical to the No. 4150 and 4240 for porosity tests and their components. Additionally, it includes a 0.34 lb. weight, smoothness test clamping plate, punch and accessory storage box. Both the automatic digital timer and instrument base are recommended and should be ordered separately.

#### **Model 4240N - High Pressure Densometer with Weighted Arm Assembly:**

This model is identical in function to No. 4150 and includes the weighted arm assembly found on No. 4250. Uniform dead-weight clamping pressure for tests is supplied by the unweighted lever arm or by the addition of either 0.34 lb. (optional) or **2.0 lb.** (standard) weights. These combinations produce clamping pressures of **3.2 psi, 9.6 psi and 40.5 psi** respectively. With the addition of the smoothness test plate, a paper punches. 0.34 lb. weight and storage box, the No. 4240 becomes a no. 4250. Order the digital timer and base separately.

**POWER SUPPLY:** 110V/60 Hz or 220/50 Hz single-phase (corresponds to 4320 digital module)

**TEST EQUIPMENT DIMENSIONS:** 200 x 215 x 700 mm (W x D x H.)

**NET WEIGHT:** 7 Kg

**TRANSPORT PACKAGING DIMENSIONS:** 500 x 500 x 850 mm (W x D x H.)

**GROSS WEIGHT APROX.:** 20 Kg

#### **CONTENTS OF THE STANDARD SUPPLY:**

- \* The Densometer model selected