

# GURLEY SMOOTHNESS TESTER AND DENSOMETER



Densometers are the accepted standard for measuring the porosity, air-permeability or air-resistance of sheet-like materials such as papers, wovens, plastics and membranes. Certain models such as the S-P-S Tester are also used to measure surface smoothness and material softness. Manual and automatic units are available.

## Operation

The densometer test measures the time required for a given volume of air (25 to 300 cc) to flow through a standard area of material being tested, under light uniform pressure. The air pressure is supplied by an inner cylinder of specific diameter and standardized weight, floating freely within an outer cylinder partly filled with oil to act as an air-seal. The sample material is held between clamping plates having a circular orifice area of 1.0 (standard), 0.25 or 0.1 square inch (optional). Densometer readings may be evaluated on both a direct or indirect basis dependent upon the material and test purpose. They are a direct test of materials which are intended to either resist or permit the passage of air. Indirectly, they are used to measure other physical properties which affect the flow of air through a porous sheet.

## Models

### 4110N GURLEY™ Densometer

for measuring porosity and air permeability in materials of average values

### 4118N GURLEY™ Densometer

to test fabrics and other more permeable materials for porosity, permeability and air-resistance

### 4190N GURLEY™ S-P-S Tester

to measure smoothness, porosity and softness (or compressibility)

### 4140N GURLEY™ Densometer

with weighted arm assembly

### 4320DN Digital Timing Attachment

specifically designed for standard densometers and highpressure models. It increases the accuracy and productivity of these instruments and provides recording and computing capabilities that will absolutely minimize the possibility of operator error. Both RS-232 and Centronics output to a variety of devices, including most printers and PC's.

## Features

With electronic timer – easy to upgrade later  
Different measuring surfaces: 0.1, 0.25 or 1 inch  
Different volumes : 10, 100 or 300 cc

## Model 4320DN features include

- Automatic & manual program options
- Calculates mean & standard deviation
- Built-in calibration program
- Easy to read graphic display
- Fits all Gurley<sup>TM</sup> Densometers
- User Programmable
- Date/time stamp
- Automatic sensitivity calibration

## Physical specifications

### Dimensions

20 x 21.5 x 43 cm (WxLxH)

### Net Weight

varying from 5 to 10 kg

## Standards

TAPPI T-460, BS 5926, ISO 5636/5, D-202-77, ASTM D-726-58 & APPITA/AS 1301-420, SCAN P19 & P53, CPPA D-14

## Options

- different clamp & adapter plates
- different cylinders
- automatic digital timer and instrument base

## Applications

- In manufacturing and printing, to control the selection of materials affording the appropriate degree of liquid (ink, varnish, sizing) absorption
- To test filters, porous bags & materials where controlled porosity is essential
- To test insulating materials for air resistance
- To supplement other physical tests enabling regulation or strength of manufacturing process to give the desired formation, appearance or strength since there is a close correlation in a given material between air permeability and these other properties