

PULP AND PAPER

L&W Air Permeance Tester Lorentzen & Wettre Products | Paper testing



L&W Air Permeance Tester uses the latest technology to measure air permeance in accordance with the most common measuring methods. It is a single bench top instrument with a measuring range covering $0.003-100 \ \mu m/Pa s$, which makes it suitable for most paper grades.

Traditional methods of measuring air permeance can be slow and laborious, but with L&W Air Permeance Tester measuring is fast and automatic. The pre-set measuring time is usually 5 seconds for all kinds of samples, thereby saving considerable time when measuring paper grades with low levels of air permeance. Automatic measurements minimize errors and poor reproducibility, which can be caused by differences in instrument handling. The instrument can be delivered with an optional strip feeder which makes testing even easier.

Operator friendly

At delivery the instrument is ready to use. The easy to use colour touch screen has intuitive menus and large easily accessible buttons. The capacitive colour touch screen has a protective surface for easy cleaning and durability with fast response and high resolution. The operator only chooses appropriate testing sequence and places the test piece in the measuring gap and the instrument begins measuring automatically. An auto cycling function of the measuring head facilitates repetitive and continuous measurements.

Benefits

- Four different reporting units
- Compact design for convenient use
- Time saving with the automatic clamping of the sample and preset measuring time
- The automation also prevents any errors, or poor reproducibility caused by differences in instrument handling
- High level of reproducibility with traceable calibration of the pressure transmitter and flow meter
- Barometric pressure compensation for improved precision
- Measurement air inlet for lab conditioned measurement air
- Touch screen for ease of use
- Integrated strip feeder (optional)

Testing procedure

The sample is placed in the measuring gap, and measurement starts when a photocell detects the presence of a sample or the start button is pushed in manual mode. The sample is automatically clamped against the measuring head with a 1 MPa clamping pressure. The air flow measurement is performed during a predefined testing time. The sample is then released and can be moved to next measuring position. The automatic measuring process prevents handling errors.

Measurement results

The air permeance is presented on the colour touch screen, either in tabular or in graphic form. The result can also be printed on the optional built-in printer, with a network printer or exported via Ethernet.

Excellent precision

The traceable calibration of the pressure transmitter and flow meter ensures a very high level of reproducibility. The easy check functions of the instrument, guarantees fast and reliable routine measurements with the highest possible precision.

Strip feeder

Extensive measurements are facilitated with an optional strip feeder. With the strip feeder each position is measured at a fixed interval and continues until the strip ends. To speed up the strip measurement, the strip feeder can be set to measure more frequent at certain positions and less on others. Defined position measurement ensures repeatable testing.

DEFINITION

Air permeance is the mean airflow through a paper sample of given area divided by the pressure difference across the test piece. It is expressed in the units, μ m/Pas.

A test piece is clamped to form a dividing wall between two circular washers. The washer's inner diameter provides the known measurement area. One side of the test piece has a constant overpressure and the other side is in contact with atmospheric pressure. The airflow through the test piece relative to the pressure difference across the test piece is measured, and from that the air permeance is calculated.

The measurement value can be converted to air permeance according to the Bendtsen, Gurley or Sheffield method.



Touch screen for ease of use.



Integrated strip feeder (optional).



Built-in thermo printer.



Optional strip holder, here with L&W Micrometer.

Technical specifications – L	&W Air Permeance Te	ster, code 266		
Inclusive	Check equipment comprising two check nozzles and an adaptor			
Measurement range	0.003–100 µm/Pa s approx. corresponding to:			
	2–40000 Gurley seconds (100 cm³)			
	0.3–8800 Bendtsen ml/min			
	0.03–3600 Sheffield units			
Instrument				
Presentation	8.4 in colour touch screen			
Max throat depth	112 mm (4.4 inch)			
	(from sample edge to centre of measuring head)			
Dwell time	Adjustable 2–10 s			
Repetitive measurement	Adjustable 1–10 s			
Contact pressure	1 MPa (145 psi)			
Test air pressure	20 kPa (2.9 psi)			
Test area	50 cm2			
Results				
Measurement values	- air permeance			
Statistics	- mean value			
	- standard deviation			
	- coefficient of variation			
	- maximum and minimum values of the series			
Connections				
Data	Ethernet			
	The instrument a	The instrument acts as a FTP-server.		
	Test results can b	e retrieved by a F	TP-client.	
Installation requirements				
Power	100 W			
Instrument air	- Instrument air: >0.4 MPa (58 psi). Good quality instrument air can			
	also be used as	also be used as measurement air		
	- If separate measurement air is used;			
	Measurement air: >0.08 MPa (11.6 psi).			
Air consumption	$0.2 \text{ m}^3/\text{b} (0.1 \text{ ft}^3/\text{min}) \text{ NTR}$			
Ontion	0.2 11 / 11 (0.1 11 / 1111) NTP			
	Internal strip fee			
	Built-in thermo printer			
	Eoot switch	Foot switch		
	Strip holder for auiding long strips			
	Strip Holder, for g	Julaing long strips		
Dimensions	0.3 × 0.3 × 0.4 m	Volume	0.12 m³	
	12 × 12 × 16 in		4,3 ft ³	
Net weight	16 kg	Gross weight	26 kg	
	35 lb		57 lb	
Related standards				
APPITA 1301.440, APPITA 13	01.420, DIN 53 120, IS	O 5636/3, ISO 563	36/4, ISO 5636/5, ISO 11 004,	
NF Q03-076, NF Q03-078, SC	CAN P26, SCAN P53, S	CAN P60, SCAN P8	5, TAPPI T460, TAPPI T547	

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