

PULP AND PAPER

L&W Sheffield Tester

Lorentzen & Wettre Products | Paper testing



L&W Sheffield Tester combines rapid routine measuring with high precision, in accordance with established TAPPI and ISO test standards. It measures surface roughness according to the Sheffield method, which has long been a well known method for measuring roughness of paper grades, from newsprint to liner.

L&W Sheffield Tester enables accurate measurement of the surface roughness according to the Sheffield method. The automatic and precise alignment of the measuring head on the sample ensures correct and reliable results. The compact design effectively protects the measuring head and the glass surface. L&W Sheffield Tester comes with a strip feeder which makes testing even easier.

Operator friendly

When the instrument arrives it 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 merely chooses appropriate testing sequence and places the test piece in the measuring gap and the instrument begins measuring automatically. An auto cycling function permits the continuous cycling of the measuring head to facilitate repetitive and continuous measurements.

Benefits

- Compact design protecting the measuring head and the glass surface
- Superior precision due to automatic measuring process
- Barometric pressure compensation for improved precision
- Measurement air inlet for lab conditioned measurement air
- Touch screen for ease of use
- Integrated strip feeder

Testing procedure

The sample is placed in the measuring gap. The measurement starts when a photocell detects the presence of a sample or the start button is pushed in manual mode. The measuring head is automatically lowered against the sample so that it rests against the paper sample with the specified standard contact 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

Sheffield roughness [ml/min] or Sheffield units [SU] are presented on the colour touch screen, either tabular or graphic form. The result can also be printed on the built-in printer, on a network printer or exported via Ethernet.

Strip feeder

Extensive measurements are facilitated with a 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.



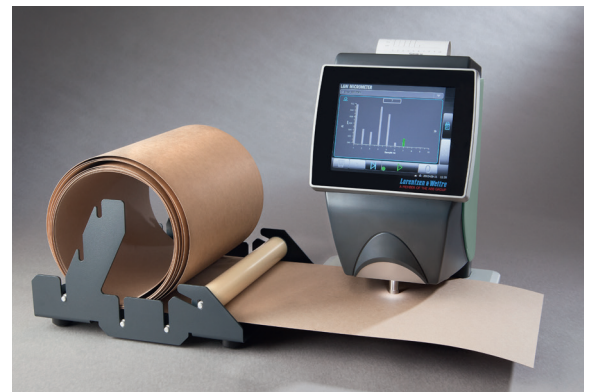
Integrated strip feeder.



Touch screen for ease of use.



Built-in thermo printer.

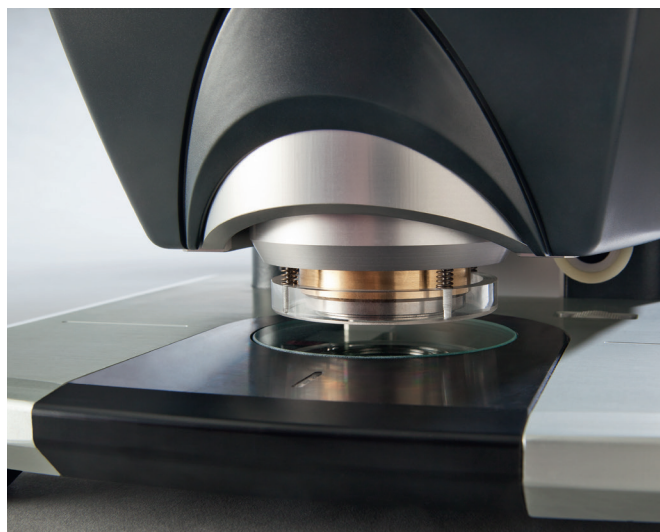


Optional strip holder here with L&W Micrometer.

DEFINITION

Sheffield surface roughness is calculated from the airflow in the contact surface between two flat, circular measurement lands and a paper or board test piece.

The test piece is held between a glass disc and two concentric, circular measurement lands. Air is passed through the space between the two measurement lands to the contact surface between the measurement land and the test piece. The air-flow, measured in ml/min or Sheffield units (SU) is a measure of the test piece's surface roughness.



The measuring head and glass plate are well protected.

Technical specifications – L&W Sheffield Tester, code 262

Inclusive	Check equipment comprising of two check nozzles and one adaptor.
Measurement range	50–3350 ml/min 7–400 SU

Instrument

Presentation	8.4 in colour touch screen
Max throat depth	112 mm (4.4 in) (from sample edge to centre of measuring head)
Dwell time	Adjustable: 2–10 s
Repetitive measurement	Adjustable: 1–10 s
Measuring head weight	1640 ± 5 g (57.85 ± 0.176 oz)
Test air pressure	9.85 ± 0.2 kPa (1.43 ± 0.03 psi)

Results

Measurement values	- roughness, Sheffield units (SU) - roughness, Sheffield (ml/min)
Statistics	- mean value - standard deviation - coefficient of variation - maximum and minimum values of the series

Connections

Data	Ethernet The instrument acts as a FTP-server. Test results can be retrieved by a FTP-client.
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Installation requirements

Power	100 W
Instrument air	Instrument air: >0.2 MPa (30 psi). Good quality instrument air can also be used as measurement air. If separate measurement air is used; Measurement air: 0.01-0.1 MPa (1.45-14.5 psi).

Options

	Foot switch Strip holder, for guiding long strips
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Dimensions	0.3 × 0.3 × 0.4 m 12 × 12 × 16 in	Volume	0.12 m ³ 4.3 ft ³
Net weight	19 kg 42 lb	Gross weight	28 kg 62 lb

Applicable standards

APPITA 1301.441, PAPTAC D.29, ISO 8791-3, TAPPI 538

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