

DECADES OF EXPERIENCE
IN PRODUCING
QUALITY TESTING INSTRUMENTS
MADE IN GERMANY





StandAlone IN TWO CONVINCING VARIANTS

Consistent with our market position as full-range supplier of highly innovative and user-friendly laboratory measurement instruments for the pulp and paper industry, FRANK-PTI also covers all your requirements in the sector of StandAlone instruments. And it does so in a very generous way. Select between two categories of instruments!

MULTIRESULT INSTRUMENTS WITH GRAPHIC DISPLAY

MultiResult instruments do not only guarantee standards-compliant and very precise measurements, they also provide you with a number of accompanying parameters and a meaningful graphic data output on the integrated screen. By “meaningful” we mean that several measurements are displayed simultaneously in one graph. Corresponding software is available for saving the data on an external PC for opening and further processing.

SINGLERESULT INSTRUMENTS WITH DIGITAL DISPLAY

The instruments of this category also offer you the security of precise and standards-compliant measurements. The individual results are shown on the digital display. Further advantages: SingleResult instruments convince our customers with their compact dimension and competitive sales prices.

FOR STANDARDS-COMPLIANT MEASUREMENTS OF



✓ PULP



✓ PAPER



✓ BOARD



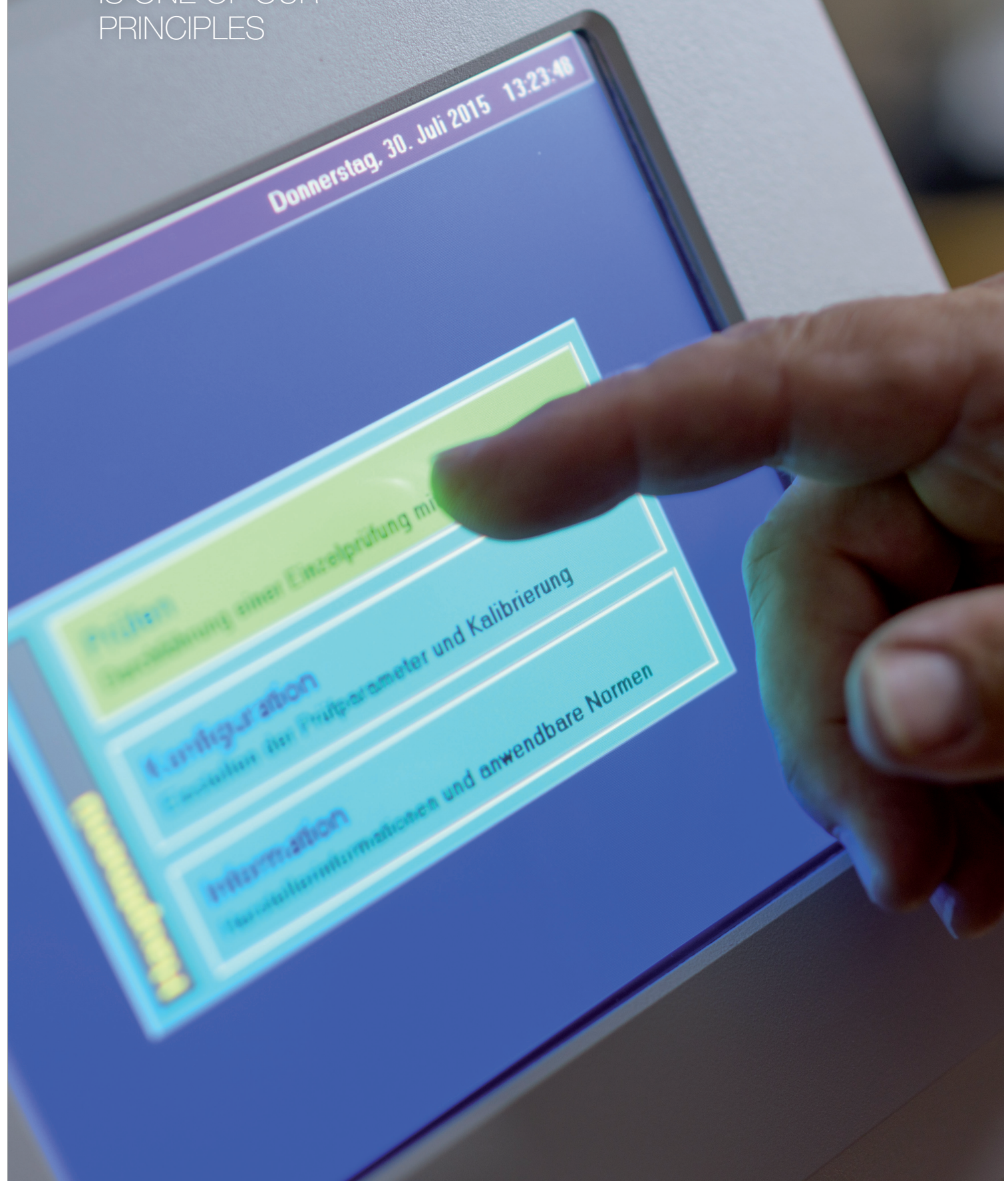
✓ TISSUE



✓ FOILS

Bear in mind that many of the instruments are available in a Multi and SingleResult version. Moreover, numerous models are also ModularLine-capable.

USER FRIENDLINESS
IS ONE OF OUR
PRINCIPLES



CONTENT

	FEATURES AND STANDARDS							6
S81502	TENSILE TESTER HORIZONTAL	•		•	•	•		8
S81838	UNIVERSAL TESTER			•	•	•		12
S63000	BURST TESTER	•		•	•			18
S16502	UNIVERSAL MICROMETER	•		•	•	•		20
S53984	ELMENDORF TEAR TESTER FULLY AUTOMATED			•	•	•		22
S58566	BENDING STIFFNESS TESTER			•	•	•		24
S62500	BEKK SMOOTHNESS TESTER	•		•	•			26
S62600	PPS - PRINT SURF ROUGHNESS TESTER	•		•	•			28
S62400	BENDTSEN	•		•	•			30
S40450	AIR PERMEABILITY TESTER ACC. TO GURLEY - AUTOMATIC			•	•			32
S40600.TS	BRIGHTNESS & COLOUR METER TS			•	•	•		34
S40600.PC	BRIGHTNESS & COLOUR METER PC-VERSION			•	•	•		36
S62800	GLOSS METER	•		•	•			38
S63100	SONIC SHEET TESTER	•		•	•	•		40
S63200	FORMATION TESTER	•		•	•	•		42
S24100	DOMAS SCANNER SYSTEM			•				44
S40530	INTERNAL BOND TESTER SYSTEM FRANK			•	•			46
S405301003	INTERNAL BOND SAMPLE PREPARATION STATION			•	•			48

ModularLine-capable

PULP

PAPER







BOARD

TISSUE

FOILS

PRECISION IN
THE DETAILS



S29010	STATIC FRICTION TESTER			•	•			50
S95333	COBB-UNGER OIL & WATER ABSORPTION TESTER			•	•			52
S13505	TWIN FOLDING TESTER			•	•			54
S18510	SCT - SHORT SPAN COMPRESSION TESTER	•		•	•			56
S18502	CRUSH TESTER SYSTEM FRANK-PTI				•			58
S53809	PUNCTURE TESTER DIGITAL				•			62
S18600 (?)	BCT-BOX COMPRESSION TESTER				•			64
S18010	TISSUE ABSORPTION TESTER					•		66
S62407	POROSITY TESTER "HIGH PORO"	•				•		68
S18622	AIRMATIC BURST TESTER FOR FILTER PAPERS AND FOILS					•	•	70
S41011	SUCTION SPEED TESTER DIGITAL			•	•	•		72
S41010	SUCTION HEIGHT TESTER "KLEMM" MANUAL		•	•	•	•		73
S63700	VERSEIDAG AIR PERMEABILITY TESTER	•	•	•	•	•		74
S89830	BRECHT-IMSET			•		•		76
S21020	KAPPA NUMBER ANALYSER		•	•	•	•		77
S40690	PROBENET							78
	SERVICE							82
	PRODUCT DIRECTORY							84
		 ModularLine-capable	 PULP	 PAPER	 BOARD	 TISSUE	 FOILS	



FEATURES AND STANDARDS

USER-FRIENDLY TOUCH-SCREEN OPERATION

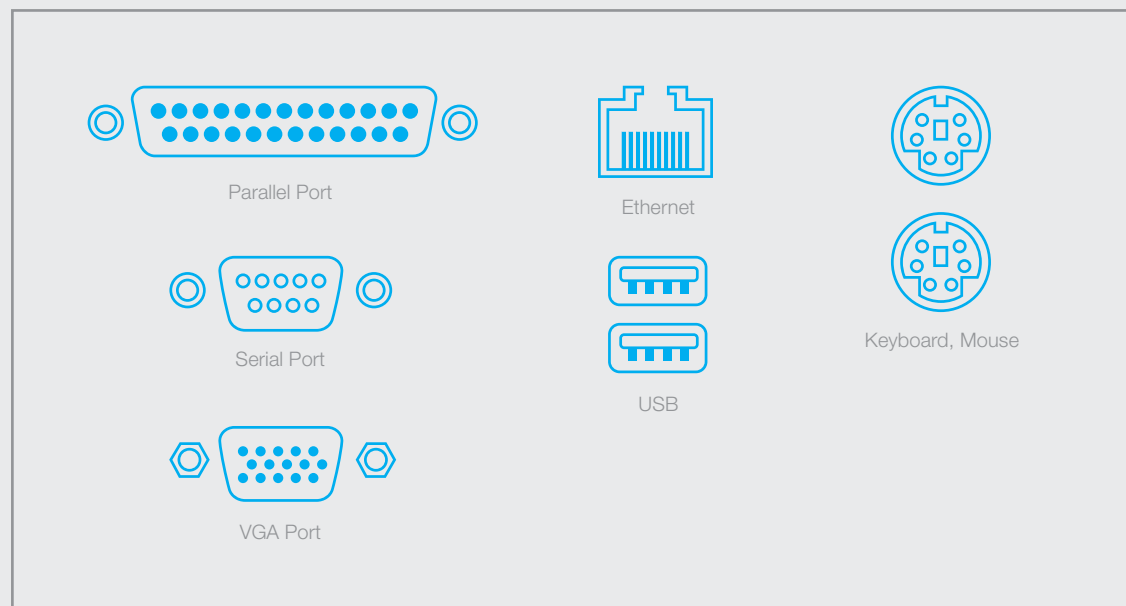
Through the use of an intuitive touchscreen-operated software, FRANK-PTI testing instruments offer simplicity of operation as well as the possibility of detailed settings. The software has a clear structure and intuitive controls. This allows the user to perform the actual test in a few steps only. Innovative ideas and customer experience help us to continually develop and optimize the software.



FRANK-PTI STANDARD-PORTS

Most of the FRANK-PTI testing instruments offer the following connections:

- LPT standard interface
- RS232 interface
- Ethernet interface
- USB interface
- PS/2 keyboard and mouse connection for service purposes



CALIBRATION STANDARDS FOR CALIBRATION OF TEST DEVICES

To guarantee problem free measurements, various test devices must be regularly calibrated and/or checked. These checks can easily be carried out without assistance, using the calibration standards.

Calibration standards available for:

- Brightness colour meter
- Gloss meter
- Bekk smoothness testing instrument
- Bendtsen roughness testing instrument
- Humidity meter
- etc.



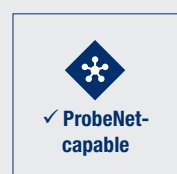


TENSILE TESTER HORIZONTAL

For:



For the determination of tensile strength, elongation, tensile stiffness, breaking length and tensile energy absorption of paper, board and tissue in dry or wet condition.



MOST IMPORTANT BENEFITS

- ✓ Plug and Play
- ✓ Automatic ratio calculation
- ✓ Automatic sample identification
- ✓ Pneumatic sample clamping
- ✓ Graphs showing the measuring process

PRODUCT DESCRIPTION

FRANK-PTI's horizontal tensile tester is one of the leading products of its kind. Its ergonomic design with touch-screen simplifies operation and reduces the testing time. The robust and reinforced construction helps to avoid falsifying influences like vibrations etc. This makes the results reliable even if measurements are repeated or done simultaneously. These optional features are available: tub for strength measurements with wet samples and a calibration device for performing self-tests of the load cell.

TEST DESCRIPTION

The measurement starts immediately because of the pre-installed measurement programmes. Select a test method and insert the sample support into the automatic sample clamps. Now the tester checks all the various sample parameters and determines whether the sample is an MD or CD strip. The tester identifies the test strip automatically when the sample is inserted. It starts the tensile test and completes it when the sample breaks. The sample clamps return to their initial position. The measurement results are displayed on the touchscreen. There is this practical feature: If you did various tests in MD and CD, you can compare the results in a statistics and display the ratios. It is possible to delete single measurements from the statistics.

TECHNICAL DATA

DEVICE/INSTRUMENT

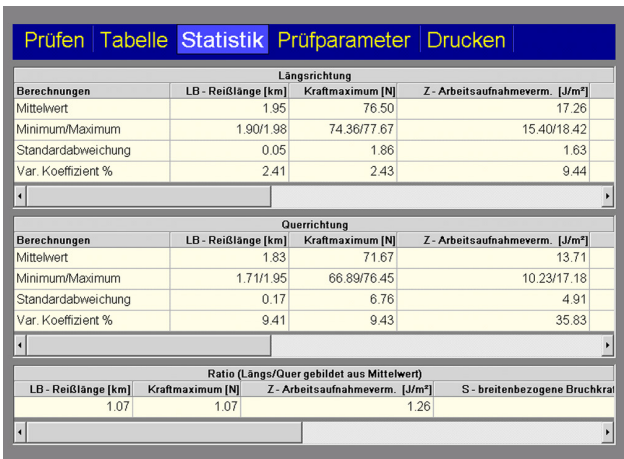
- Easy operation via the integrated touch screen
- 5 preset testing programs and applicable sample supports
- Test strips distinguishable into test series (e.g. MD/CD)
- Automatic ratio calculation
- Pneumatic sample clamps and automatic sample detection
- Additional start button - for transparent samples
- Sample width: 15, 25 and 50 mm
- Sample supports prevents sagging of the sample
- Maximum sample stroke: 300 mm
- Test speed adjustable between 1 and 300 mm/min
- Available force sensors: 50 to 1,500 N
- Automatic clamp return after test
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Also as ModularLine unit available
- Optional available:
 - Wet tensile test
 - Calibration tool (see page 7)

INSTALLATION REQUIREMENTS

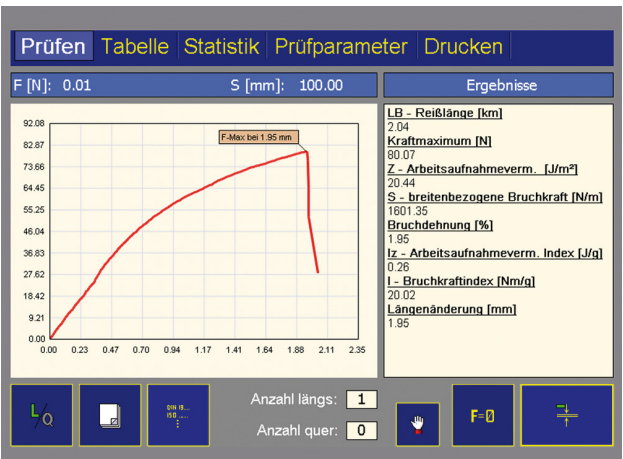
Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

- DIN ISO 1924-3
- ISO 1924-2
- EN 12625-4 | -5
- TAPPI T494 om-96



Statistic menu with MD and CD values as well as ratio



Display of curves and values

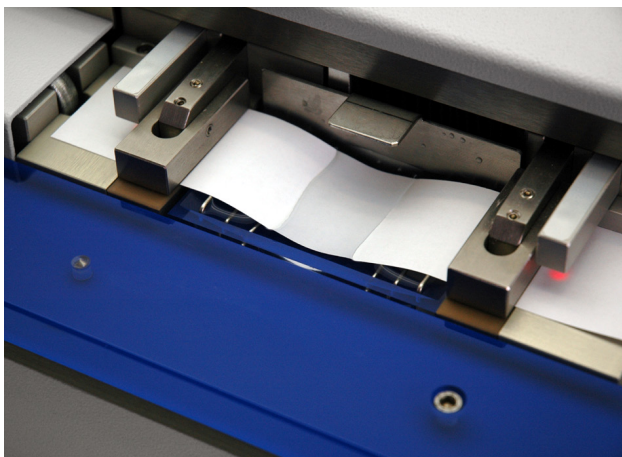
WET TENSILE TEST



The sample may not be touched on testing area

SAMPLE PREPARATION

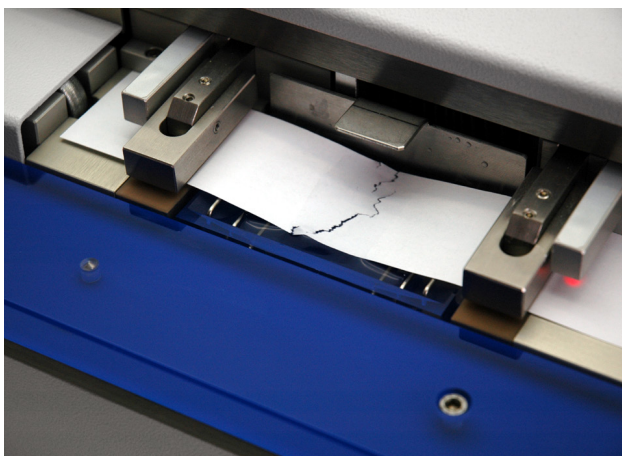
For the wet tensile test acc. to DIN EN ISO 12625-5 samples with a width of $50 \text{ mm} \pm 0.5 \text{ mm}$ and longer than 15 cm are used, to enable detection by the sample sensor. It is important to ensure that the cut edges are undamaged, straight, smooth and parallel. The test strips are created using the double blade sample cutter. To guarantee error-free test results, the sample should only be touched outside the test area.



The predetermined breaking point sinks into the water

TEST DESCRIPTION

The program for wet tensile testing is selected from the touch screen and the corresponding parameters are automatically set. Before the test begins, the immersion container for the wet tensile test is filled with water to the lowest wire holder and placed between the test clamps. Then the test strip is placed in the test area. The sensors detect the sample, the clamps close, and the test begins automatically. The test clamps move towards each other and the test strip sinks into the immersion container, where the predetermined breaking point sinks into the water. It is held there for 15 seconds before the test clamps move apart again. This lifts the sample out of the water, and stretches it till it breaks across the entire width of the strip.

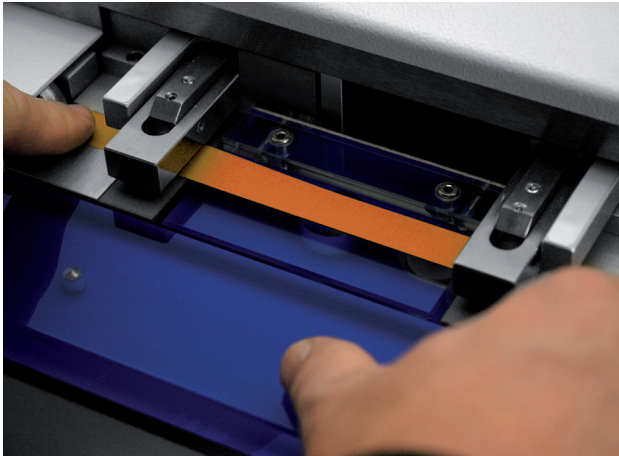


The sample is lifted out of the water and stretched till it breaks

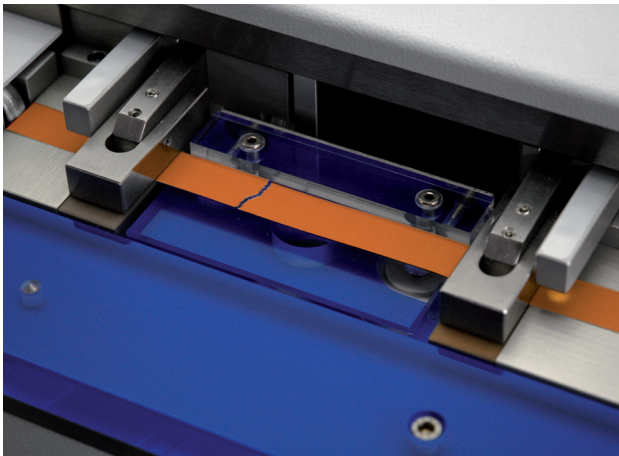
The test clamps move back to the start position and release the sample. The test results are displayed on the touch screen, with the individual measurements displayed numerically and additionally presented as a curve in real-time. The test can be carried out with further test strips, and the test results are recorded.

If a comparison of two test series (e.g. MD and CD) is desired, the tensile tester offers the option of selecting the test strips of one of the two test series, and the unit automatically calculates the relationship of individual results.

DRY TENSILE TEST



A sample with a width of 15 mm is placed between the test clamps



The sample is stretched till it breaks



Device with attached calibration tool

TEST DESCRIPTION

For the dry tensile test acc. to DIN ISO 1924-3, samples with a width of $15 \text{ mm} \pm 0.1 \text{ mm}$ and longer than 15 cm are used. It is important to ensure that the long edges of the test strip are straight and do not deviate from the parallel by more than $\pm 0.1 \text{ mm}$. This requirement can be satisfied by creating the test strips with the strip punch or strip cutters.

The program for dry tensile testing is selected from the touch screen and the corresponding parameters are automatically set. The test strip is placed in the test area. It is important to ensure the sample is only touched outside the test area, to guarantee error-free test results.

On insertion, the sensors detect the sample, clamp it securely and the test begins automatically. The test clamps move apart and stretch the test strip to such an extent that it breaks. Then the test clamps move back to the start position and release the sample. At the same time the individual measurements are displayed numerically and additionally presented as a curve in real time. The test can be carried out with further test strips, and the test results are recorded.

If a comparison of two test series (e.g. MD and CD) is desired, the tensile tester offers the option of selecting the test strips of one of the two test series, and the unit automatically calculates the relationship of individual results.

OPTIONAL: CALIBRATION TOOL

To guarantee accurate measurements it is recommended that the load cell is checked regularly. The optional calibration tool is used for this task.

The calibration tool is placed on the test clamp, and weights are added. The force values displayed on the touch screen are then compared with the values on the weights. It is simple, following this procedure, to determine if the load cell is providing accurate results.



UNIVERSAL TESTER

For various tensile and pressure tests.

For:



MODELS

AVAILABLE WORKING HEIGHTS

450 mm, 650 mm, 950 mm

AVAILABLE FORCE SENSORS

50 N, 100 N, 500 N, 1,000 N, 2,000 N

AVAILABLE SAMPLE DEVICES

Paper, board, tissue (see pages 14 – 16)



✓ ProbeNet-capable

MOST

- ✓ Robust construction with one frictionless spindle
- ✓ Easy operation via the touch screen
- ✓ Changeable force sensor
- ✓ Quick clamp return after test

PRODUCT DESCRIPTION

The universal tester has been specially developed for different tensile and pressure tests on various materials (paper, board, tissue) and is outstanding in its ease of use and high levels of accuracy, even under heavy loads. The sample holder and the load cell can be exchanged according to requirements. The unit is operated via a rotatable touch screen, from which the different test methods can be selected, and which also displays values and curves. To prevent wear to the touch screen, the start and stop buttons are mounted separately on the unit. The universal tester is equipped with the standard FRANK-PTI connection.

TEST DESCRIPTION

The load cell and sample holder required for the selected test procedure are attached to the test unit, and the corresponding test program is selected from the touch screen. After a brief reference operation, the sample is tensioned and assigned a test series (MD/CD) via the touch screen. The test procedure is begun by pressing the start button. When the test is complete, the upper sample clamp travels automatically to the start position and the test strip can be removed. The test results are displayed numerically and graphically on the touch screen. If more than one MD and CD test is carried out, the results can be compared and displayed as a ratio.

TECHNICAL DATA

DEVICE/INSTRUMENT

- Robust construction with one frictionless spindle
- Easy operation via the touch screen
- Test strips distinguishable into test series (e.g. MD/CD)
- Automatic ratio calculation and display of statistics
- Changeable force sensor
- Testing force up to 2,000 N
- Quick clamp return after test
- Separated start button
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Included into delivery: manual sample clamps

INSTALLATION REQUIREMENTS

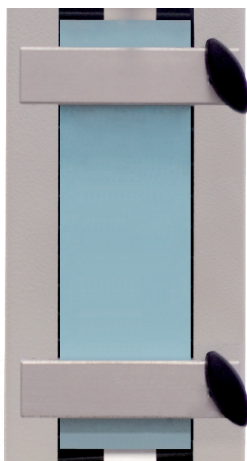
Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar (pneum. clamps)

APPLICABLE STANDARDS

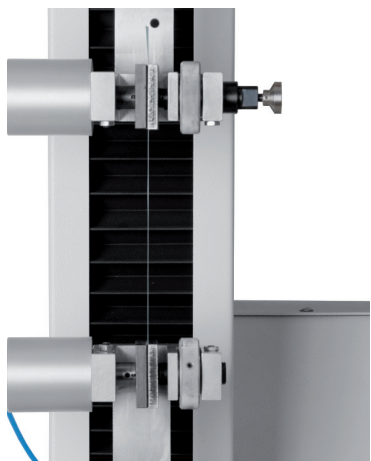
- DIN ISO 1924-3
 - ISO 1924-2
 - TAPPI T494, T456
- etc.



Easy operation via the pivotable touch screen



Changeable hand clamps



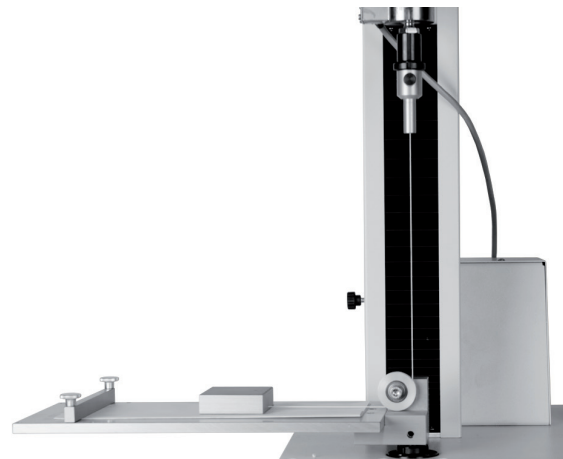
Optional: pneumatic clamps

ACCESSORIES FOR PAPER

FRICTION TABLE

To determine the coefficients of friction between two materials (static and dynamic).

A sheet of paper is clamped on the abrasion table. A metal block with the abrasive material attached to the underside is placed on top. The metal block is attached to the load cell via a cable. Pressing the start button draws the block over the sheet attached to the abrasion table. The measured values are displayed as a real-time curve on the touch screen of the universal tester.



Friction table

3-POINT-BENDING

To determine flexural strength.

The material for testing is placed on the two supports. The distance between the supports can be set as required. Pressing the start button moves the compression bar down and applies a central load to the test strip. As soon as the predefined force or desired distance is reached, measuring stops and the compression bar travels back to the start point. The measured values are displayed on the universal tester's touch screen as a real-time curve.



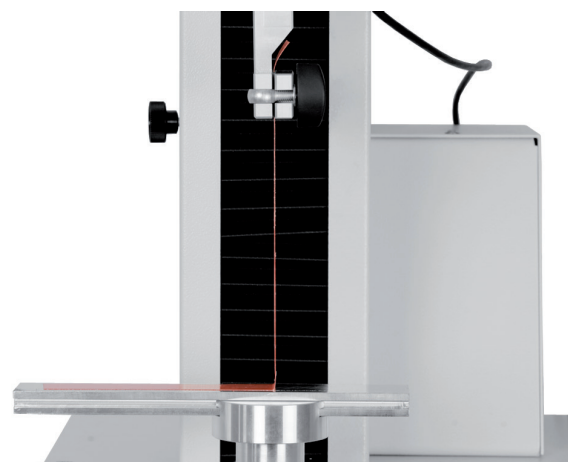
3-Point-Bending

PEELTEST

To determine the adhesiveness of adhesive tape.

The adhesive tape to be tested is attached to the base platen and its end is clamped. Pressing the start button moves the clamp upwards. This pulls the adhesive tape from the base platen and the adhesive force is determined. The measurements are displayed on the touch screen in a real-time curve.

Peel mechanisms for the peel test Finat 1, 2 or 3 are available.



Peeltest Finat 2

ACCESSORIES FOR BOARD

PUNCTURE TEST

To determine the energy used during static puncturing of board and corrugated board.

The same geometry of the puncture head as in the puncture tester is employed. During the static procedure, the sample is clamped into the sample holder. Pushing the start button sets the puncture head in motion down onto the sample from above at 200 mm/minute and punctures the sample. The measurement values can be read from the touch screen of the universal tester from a real-time curve.

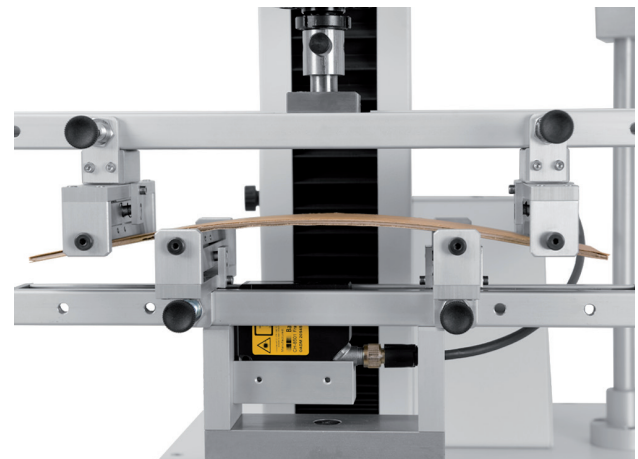


Sample support for the Puncture Test

4-POINT-BENDING

To determine flexural strength.

The material for testing is placed on the two supports. The distance between the supports is set as required. Pressing the start button moves the compression bar down and applies a central load to the test strip. As soon as the predefined force or desired distance is reached, measuring stops and the compression bar travels back to the start point. The measured values are displayed on the universal tester's touch screen as a real-time curve.



4-Point-Bending

SCORE QUALITY TEST (SQT)

To determine the score quality of corrugated board.

The prepared 25.4 mm sample is fluted, in MD or CD as required, and placed in the sample holder. A compression bar applies pressure to the corrugation in the middle of the corrugated boards until this is pushed downwards at least 12.7 mm, or the angle between the two sides reaches 90°. The measured values are displayed on the universal tester's touch screen as a real-time curve. The force required is compared with force used in a test with uncorrugated board. This procedure allows the score quality to be determined.



Sample support for the Score Quality Test (SQT)

ACCESSORIES FOR TISSUE

BALL BURST TEST

To determine the burst strength of tissue materials.

The tissue sample is clamped into the sample mechanism using quick clamps. The distance between polished plunger and the sample support is set automatically when a program is selected. Pushing the start button causes the plunger to travel downward at a defined speed and apply a load to a point on the tissue sample until it breaks. Then the plunger travels automatically back to the start position. The measured values can be read from the touch screen of the universal tester as a real-time curve.



Sample support for the Ball Burst Test

WET TENSILE STRENGTH TEST (FINCH TEST)

To determine the wet tensile strength of tissue.

The tissue sample is pulled one time over the sample mechanism bar, above the water container, and clamped at both ends into the sample holder above using the quick clamps. The water container is lifted upwards by hand and returned to the start position 15 seconds later. Pushing the start button initiates the wet tensile test. The sample holder moves upwards continuously until the sample breaks at the bar. The values can be read from the touch screen as both numerical results and graphically. If more than one test in MD and CD is carried out, their statistics can be compared and displayed as ratio.

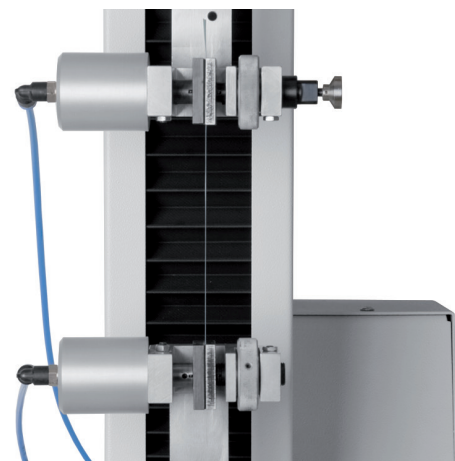


Sample support for the Wet Tensile Strength Test (Finch)

DRY TENSILE STRENGTH TEST

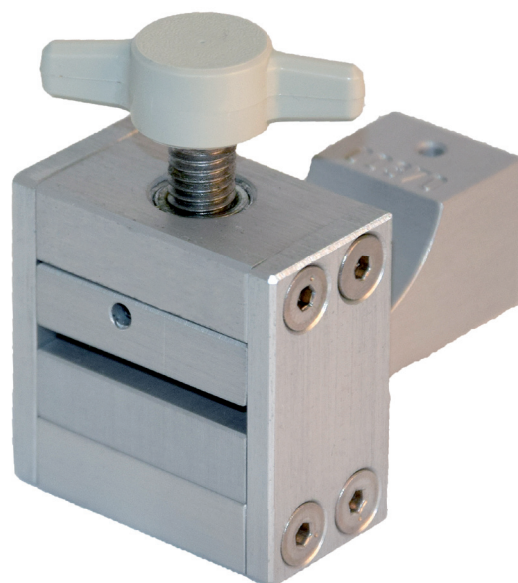
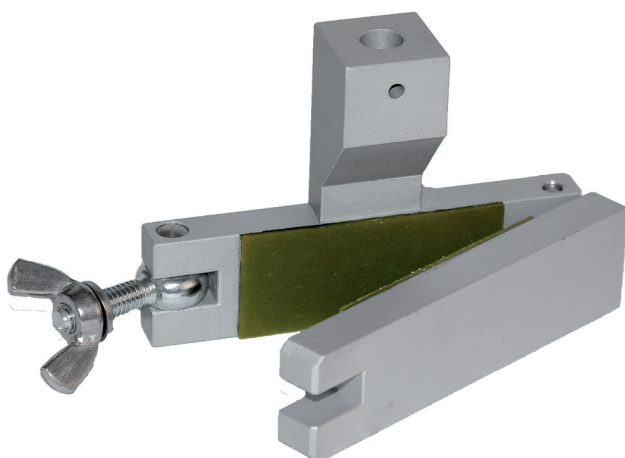
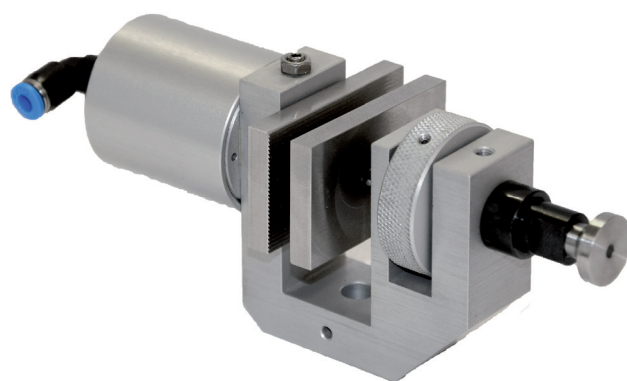
To determine the dry tensile strength of tissue.

The touch screen is used to select the appropriate program, and the upper sample clamp travels automatically to the correct start position, so that the clamps are a distance acc. to standard apart. The test strip is then clamped into the sample clamps. Pushing the start button initiates the tensile strength test. The upper clamp moves upwards until the sample breaks. The values can be read from the touch screen as both numerical results and graphically. If more than one test in MD and CD is carried out, their statistics can be compared, and displayed as ratio. The universal tester is delivered with hand clamps as standard. Optionally, pneumatic clamps are available.



Pneumatic clamps for the Dry Tensile Strength Test

CLAMPS





BURST TESTER

For determination of the burst strength and burst energy absorption (BEA) of paper or board.

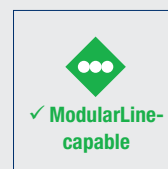
For:



✓ PAPER



✓ BOARD



✓ ModularLine-capable



✓ ProbeNet-capable

MOST IMPORTANT BENEFITS

- ✓ Easy operation via the inbuild touch screen
- ✓ Pneumatic sample clamping
- ✓ Contact pressure adjustable
- ✓ Safety cover around the measuring area

PRODUCT DESCRIPTION

The specially developed ModularLine housing, which comes as standard with user-friendly touch screen and the FRANK-PTI connections, offers an exceptional basis for the high precision measurement technology of the burst pressure tester. This consists, in essence, of a clamping bell and membrane, as well as high precision pressure and force sensors. To prevent wear to the touch screen, the separate start button on the device can be used. The ModularLine burst test device can also be used as a separate laboratory device, as well as for profile testing as a module of the ModularLine.

TEST DESCRIPTION

The sample to be tested is placed in the measuring area. After pressing the start button, the clamping bell lowers and fixes the sample. Glycerine under the membrane is compressed and the membrane is thus pressed continuously against the sample. The sample bulges, and loses cohesion, until it eventually breaks. Then the clamping bell returns to the start position. The measured burst pressure as well as the energy absorption characteristics are displayed numerically and graphically on the touch screen. If more than one test is carried out, these can be compared as statistics, and the standard deviation displayed.

MODELS

MODULARLINE-VERSION

- Paper top side
- Paper bottom side
- Board top side
- Board bottom side

STANDALONE-VERSION

- Paper bottom side
- Board bottom side

TECHNICAL DATA

DEVICE/INSTRUMENT

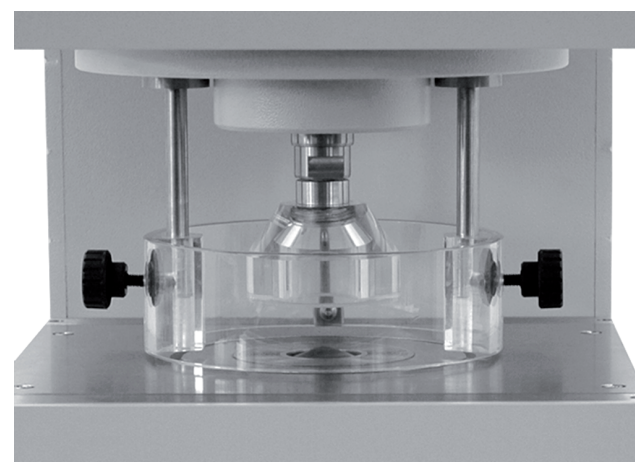
- Pneumatic sample clamping
- Safety cover around the measuring area
- Measuring area:
paper: 860 mm²
board: 780 mm²
- Motor operated hydraulic (glycerine), pressure adjustable:
Paper: 20 – 2,000 kPa
Board: 200 – 10,000 kPa
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- ModularLine-version:
Easy operation via the integrated touch screen
Useable as ModularLine unit
- Standalone-version:
Operation via the digital display
No display of the Burst Energy Absorption (BEA)

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

- DIN EN ISO 2758 Paper, DIN EN ISO 2759 Board
- TAPPI T403, T807
- etc.

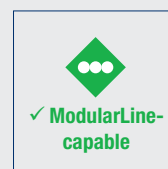


Measuring area system ModularLine, bottom side



UNIVERSAL MICROMETER

For:



MOST IMPORTANT BENEFITS

- ✓ **Warp-resistant housing**
that thanks to its stability ensures exact measurement results
- ✓ **The measuring pin and weights are exchangeable**
which enables the measurement of different materials with a single device

PRODUCT DESCRIPTION


The universal micrometer consists of a warp-resistant housing, which ensures exact measurements thanks to its stability. On the front of the device there is a digital display and controls, as well as start and stop buttons. The high-precision measurement mechanism is protected by being integrated within the housing, and consists, in essence, of a motor-driven lifting mechanism, a measuring pin, and the appropriate weight, which can be simply exchanged if required. This allows a single device to measure the thickness of materials acc. to different standards.

TEST DESCRIPTION

The single or multiple layer sample is placed on the measuring area. The start button is pushed and the measuring pin goes downward toward the sample at the preset speed to apply the appropriate weight to the area acc. to standard. On elapsing of a preset period the high-definition sensor measures the thickness of the sample. Then the measuring pin returns to the start position. The measurement result is displayed on the digital display and saved as statistics. The option exists of switching from single to continuous operation, where the measuring pin moves back and forth continually, allowing several consecutive measurements to be carried out.

MODELS

PAPER ACC. TO TAPPI T411
Available measuring pins and weights: 2 cm² 1.0 kg
PAPER ACC. TO ISO 534
Available measuring pins and weights: 2 cm² 2.0 kg
BOARD ACC. TO ISO 534
Available measuring pins and weights: 10 cm² 2.0 kg
TISSUE ACC. TO ISO 12625-3
Available measuring pins and weights: 10 cm² 0.2 kg



Any form of measuring pins (size, shape, loadings) can be produced.

TECHNICAL DATA

DEVICE/INSTRUMENT

- High-resolution digital sensor
- Measurement range: 1 – 20,000 µm
- Testing speed adjustable: 1 – 11 mm/s
- Resolution: 1 µm
- Compatible with ProbeNet (see pages 84 – 87)

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

- DIN EN ISO 534
 - DIN EN ISO 12625-3
 - TAPPI T411
- etc.



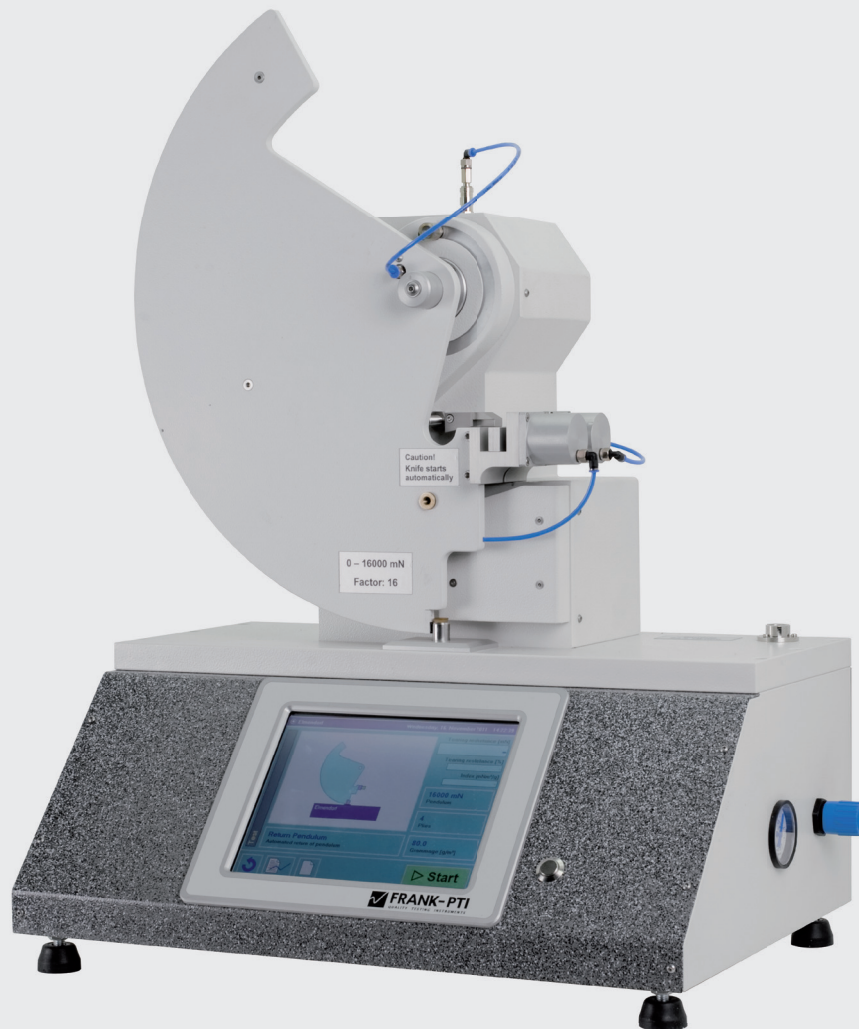


ELMENDORF TEAR TESTER FULLY AUTOMATED

For:



Determines the tearing resistance of various materials.



Fully-automatic model



Manual model



MOST IMPORTANT BENEFITS

- ✓ Easy operation via the inbuilt touch screen
- ✓ Pneumatic sample clamping and automatic pendulum return
- ✓ Fully-automated test sequence
- ✓ Changeable pendulum

PRODUCT DESCRIPTION

The Elmendorf tear tester has been developed specially for the paper industry and is outstanding for simplicity of operation and high measurement accuracy. The exchangeable pendulum is equipped with a pneumatic sample clamp. The initiation and return of the pendulum, as well as sample cutting is completely automatic. The device is operated via an integrated touch screen, where the test method can be selected, specific settings can be adjusted, and, after the measurement, results and statistics can be displayed. Each pendulum is supplied with the appropriate control weight so that, with the help of the service program, it can easily be checked for functionality and balance.

TEST DESCRIPTION

Up to 16 samples (acc. to standard 4 samples), prepared with the sample punch, are laid one on top of another and placed in the sample holder. On the touch screen, the number of samples inserted is selected, these are allocated to a test series (MD/CD) and the start button is pressed. The samples are automatically clamped and cut with a blade. Then the pendulum is automatically initiated and tears the sample above the cut. The pendulum is slowed, returned automatically to the start position, and the destroyed samples are released. The force required to tear the sample is displayed on the touch screen. If more than one run is carried out in MD and CD, these can be compared as statistics, and the results displayed.

MODELS

FULLY-AUTOMATIC MODEL

Available pendulums:
4,000 mN; 8,000 mN; 16,000 mN; 32,000 mN;
64,000 mN

MANUAL MODEL

Available pendulums:
2,000 mN; 4,000 mN; 8,000 mN; 16,000 mN;
32,000; mN; 64,000 mN

TECHNICAL DATA

DEVICE/INSTRUMENT

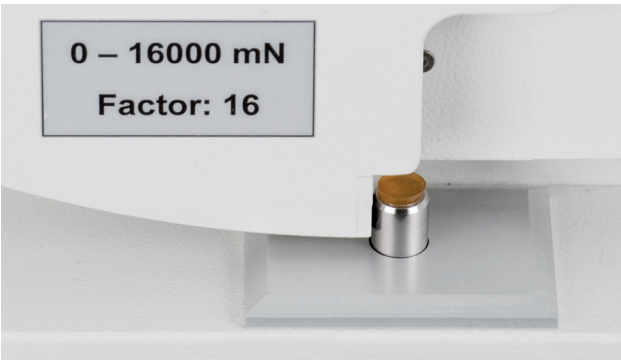
- Changeable pendulum
- Pneumatic sample clamping
- Easy operation via the integrated touch screen
- Fully-automatic test sequence and pendulum return
- Control weight for checking the pendulum
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Also as ModularLine unit available

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

- DIN EN ISO 6383-2, 13937-1, 1974
 - TAPPI T414
- etc.



Automated release and break of the pendulum



Inbuilt blade cuts in the samples fully automated



BENDING STIFFNESS TESTER

For:



✓ PAPER



✓ BOARD



✓ TISSUE

For determination of the dynamic forces in a 2-point bending test.



MODELS

AVAILABLE FORCE SENSORS

2 N, 5 N, 10 N

AVAILABLE SAMPLE CLAMPS

- Pneumatic sample clamp (paper)
- Manual sample clamp (automotive VDA)
- Manual sample clamp with automatic bending length adjustment (haptic)



✓ ProbeNet-capable

MOST IMPORTANT BENEFITS

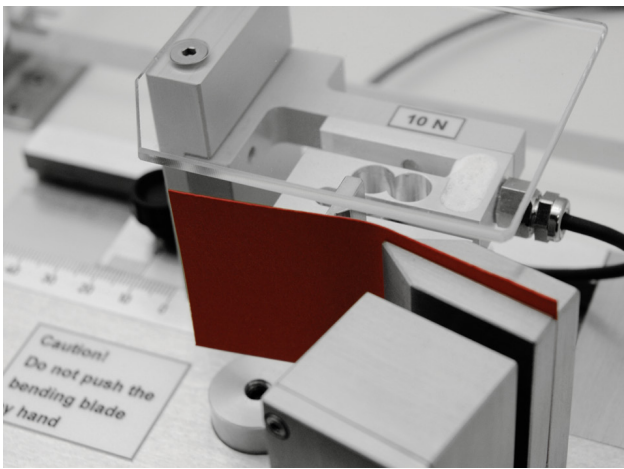
- ✓ Easy operation via the inbuilt touch screen
- ✓ Special vibration dampers and wind shield
- ✓ Three measuring points and dwell time individually adjustable

PRODUCT DESCRIPTION

The bending stiffness tester was especially developed for the paper and automotive industry (VDA) and can also be used for creaseability measurements. To avoid falsifying influences, the tester is installed on especially developed anti-vibration dampers. A protection cover made of acrylic glass protects the measurements area. Sample clamping either happens pneumatically or manually with a torque screw driver. The measurement length can be set as required from 1 to 50 mm. The touchscreen is used to select the test programme and assign the samples to the corresponding test series (MD/CD, front side/rear side, angle data, etc.) A comparison of the individual test series can be selected as needed. More settings are available like bending angle, dwell time, angle speed etc.

TEST DESCRIPTION

After preparing the sample with the punch, put it into the support. Close the acrylic glass cover, select your test programme and assign your test to a test series. When you press the start button, the machine pushes the sample towards the measurement cell with precisely defined speed. When the pre-defined bending angle is reached, the sample remains in this angle for the pre-set dwell time. When the pre-set dwell time is over, the sample returns to the initial position. The touchscreen displays the testing results of up to three pre-defined measurement points. The results are displayed in values as well as in the form of a real-time diagram. If various tests of a test series were done, the results can be compared statistically and the ratios can be displayed.



Sample is pushed towards the measurement cell automatically

TECHNICAL DATA

DEVICE/INSTRUMENT

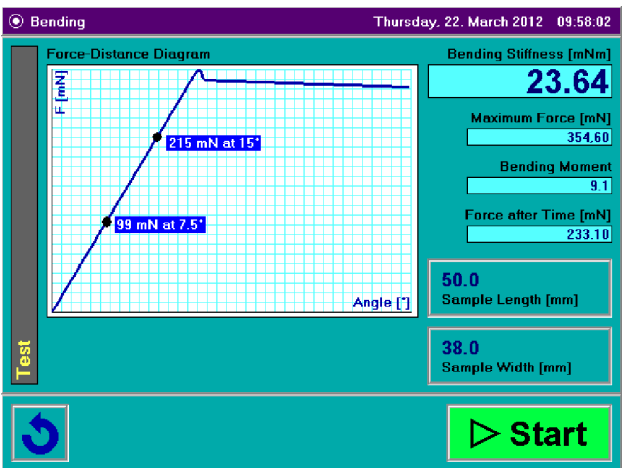
- Easy operation via the integrated touch screen
- Angular speed: 0.5 – 50 °/sec adjustable
- Three measurement points and dwell time individually adjustable
- Bending angle: 0 – 92°
- Wind shield made of acrylic glas
- Special vibration dampers
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Also as ModularLine unit available

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

- DIN 53121
 - ISO 2493-1
 - TAPPI T556
- etc.



Up to 3 measurement points can be displayed (e.g. 7.5° / 15° / 30°)



BEKK SMOOTHNESS TESTER

For:



For smoothness tests on paper and foils according to BEKK.



MODELS

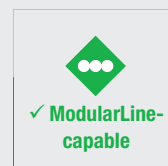
AVAILABLE MEASURING RANGES

- 50.7 – 48.0 kPa (for smooth materials)
- 50.7 – 29.3 kPa (for rough materials)

AVAILABLE MEASURING DIRECTIONS:

- Top side
- Bottom side
- Top and bottom side

Model with measuring cylinders for simultaneous measuring on the top and bottom side



MOST IMPORTANT BENEFITS

- ✓ Easy operation via the inbuilt touch screen
- ✓ Three different measuring volumes choosable
- ✓ Measuring cylinders with special developed rubber plate

PRODUCT DESCRIPTION

The specially developed ModularLine housing, which comes as standard with user-friendly touch screen and the FRANK-PTI connections, offers an exceptional basis for the high-precision measurement technology of the Bekk smoothness tester. This consists, in essence, of a pneumatic measuring cylinder that is sealed flat against a glass platen with a rubber platen, high-precision sensors, and a vacuum pump with vacuum tank. To prevent wear to the touch screen, the separate start button on the device can be used. The ModularLine smoothness tester can also be used as a separate laboratory device, as well as for profile testing as a module on the ModularLine.

TEST DESCRIPTION

The sample to be tested is placed in the measurement area. On pressing the start button, the measurement cylinder lowers and its weight holds the sample between the rubber platen and glass platen. The vacuum pump creates a partial vacuum of 50.7 kPa within the system. The laboratory device measures the time required for the pressure difference with the environment to reach exactly 48.0 kPa or 29.3 kPa. Then the cylinder returns to the start position. The time measured is displayed on the touch screen in Bekk seconds. For the measurement of very smooth materials, the measurement volume can be lowered to 1/10 or 1/20 at the touch of a button, which lowers the measurement time accordingly. The real measured values are automatically calculated afterwards.

TECHNICAL DATA

DEVICE/INSTRUMENT

- Easy operation via the integrated touch screen
- Measuring area: 10 cm²
- Accuracy: 0.01 s
- Forecast after 10 s
- Measuring volume:
1/1 (380 ml), 1/10 (38 ml), 1/20 (19 ml)
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Useable as Modular-Line unit

INSTALLATION REQUIREMENTS

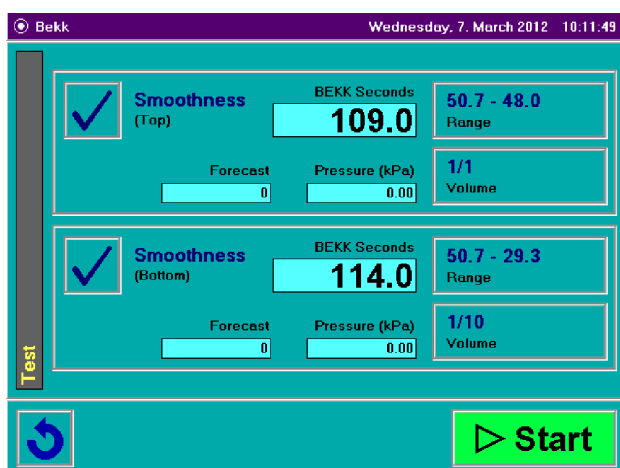
Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

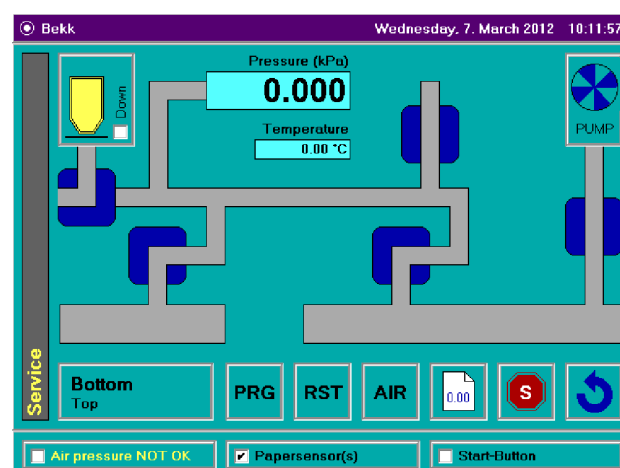
- DIN 53107
- ISO 5627
- TAPPI T479



Measuring cylinder with rubber plate for good tightness



Touch screen display for the 2-head Bekk



Service menu



PPS - PRINT SURF ROUGHNESS TESTER

For:

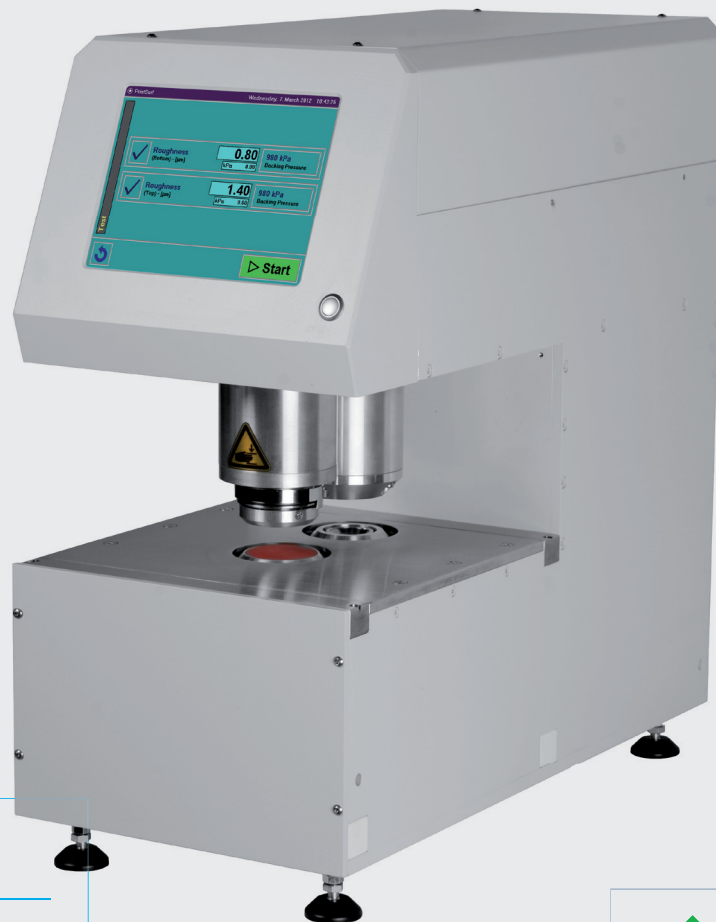


✓ PAPER



✓ BOARD

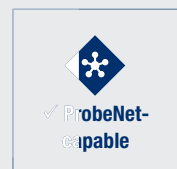
For determination of the roughness of paper according to the Print-surf method.



MODELS

AVAILABLE MEASURING DIRECTIONS

- Top side
- Bottom side
- Top and bottom side



MOST IMPORTANT BENEFITS

- ✓ Easy operation via the inbuilt touch screen
- ✓ Special produced highly accurate measuring head
- ✓ Contact pressure adjustable
- ✓ High reproducibility

PRODUCT DESCRIPTION

The specially developed ModularLine housing, which comes as standard with user-friendly touch screen and the FRANK-PTI connection, offers an exceptional basis for the high-precision measurement technology of the PPS roughness tester. This consists, in essence, of a measurement cylinder with a precision measurement head below, the pressure regulation system and the measurement sensors. To prevent wear to the touch screen, the separate start button on the device can be used. The ModularLine PPS roughness tester can also be used as a separate laboratory device, as well as for profile testing as a module on the ModularLine.

TEST DESCRIPTION

The sample to be tested is placed in the measurement area. On pushing the start button, the measurement cylinder lowers and places the precision-manufactured measurement head on the material. The backing, located below, presses the sample with a predefined force of 980 or 1960 kPa against the blade of the measuring head. The pressure regulation system creates a difference in pressure of 19.6 kPa between the two ring channels. This determines the throughflow of air from one to the other ring channel, and the roughness is displayed on the touch screen in μm . For the measurement of compressibility, the compressive force of the backing against the measurement head can be reduced to 490 kPa.

TECHNICAL DATA

DEVICE/INSTRUMENT

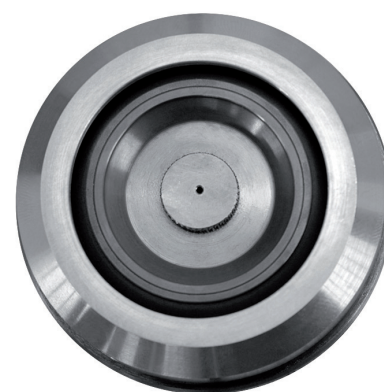
- Easy operation via the integrated touch screen
- Measuring range: 0.5 – 8.0 μm
- Measuring pressure: 19.6 kPa
- Contact pressure adjustable: 490, 980 or 1,960 kPa
- Special sensor for measurements below the 1 μ limit
- High reproducibility
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Useable as Modular-Line unit

INSTALLATION REQUIREMENTS

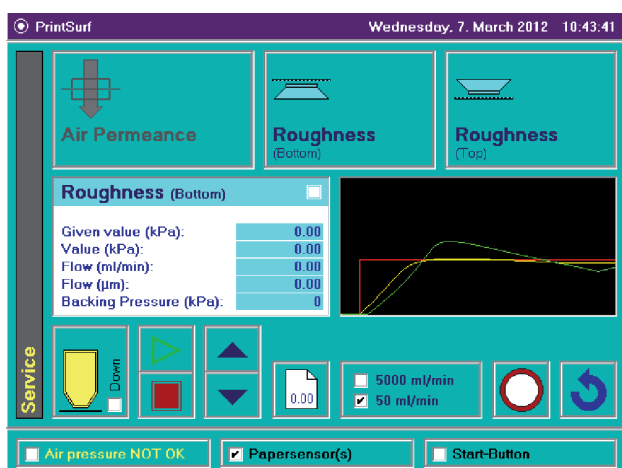
Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	6 bar

APPLICABLE STANDARDS

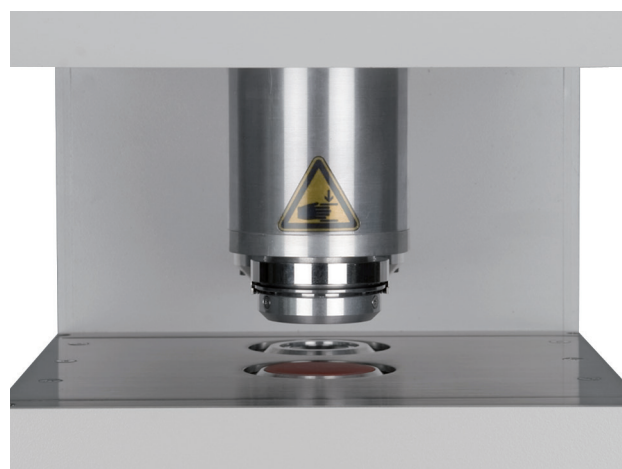
- DIN ISO 8791-4
- ISO 8791-1
- TAPPI T555



Precision-manufactured measurement head



Service menu for two heads with top and bottom side



Measuring cylinder with PPS head



BENDTSEN

For determination the of surface roughness and air permeability.

For:



MODELS

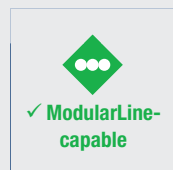
UP TO 3 MEASUREING HEADS IN ONE DEVICE

- Air permeability
- Roughness bottom side
- Roughness top side

AVAILABLE FLOW SENSORS

- 5 – 3,000 ml/min
- 10 – 5,000 ml/min

Optional:
extended measuring range
1 – 5,000 ml/min



MOST IMPORTANT BENEFITS

- ✓ Easy operation via the inbuilt touch screen
- ✓ Automatic positioning of the measuring heads on the sample
- ✓ Measuring time and -speed adjustable
- ✓ Measuring of air permeability and roughness at the same time

PRODUCT DESCRIPTION

The specially developed ModularLine housing, which comes as standard with user-friendly touch screen and the FRANK-PTI connection, offers an exceptional basis for the high-precision measurement technology of the Bendsten. This consists, in essence, of up to three pneumatic measurement cylinders with the measurement heads corresponding to the test technique, the regulation system, and the precision sensors. To prevent wear to the touch screen, the separate start button on the device can be used. The ModularLine Bendsten can also be used as a separate laboratory device, as well as for profile testing as a module on the ModularLine.

TEST DESCRIPTION

The sample to be tested is placed in the measurement area. On pushing the start button, the measurement cylinders lowers onto the material. During testing of the surface roughness, the measurement head is detached from the magnetic holder to press on the sample with its own weight. Depending on selected measurement pressure, a pressure difference of 0.74, 1.47 or 2.20 kPa is created and the air escaping between measurement blade and sample is measured. During measurement of air permeability, the material to be tested is sealed at the side by the measurement head and the throughflow through the sample is measured. On the touch screen, the air permeability and roughness are displayed numerically in ml/min.

TECHNICAL DATA

DEVICE/INSTRUMENT

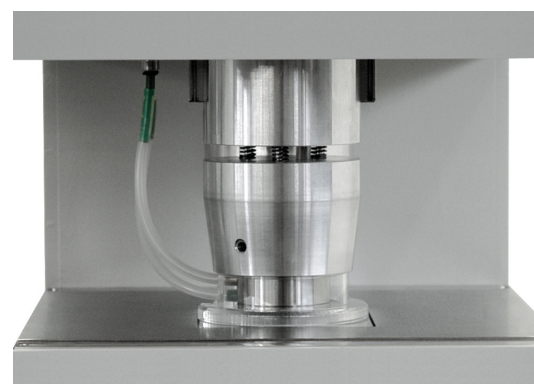
- Easy operation via the integrated touch screen
- Flow: 10 – 5,000 ml/min
- Measuring time adjustable: 1 – 40 sec
- Pressure difference adjustable: 0.74 kPa, 1.47 kPa, 2.20 kPa
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Useable as ModularLine unit

INSTALLATION REQUIREMENTS

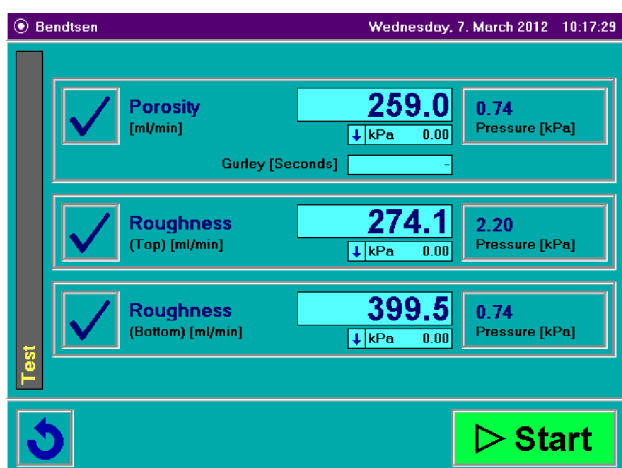
Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	6 bar

APPLICABLE STANDARDS

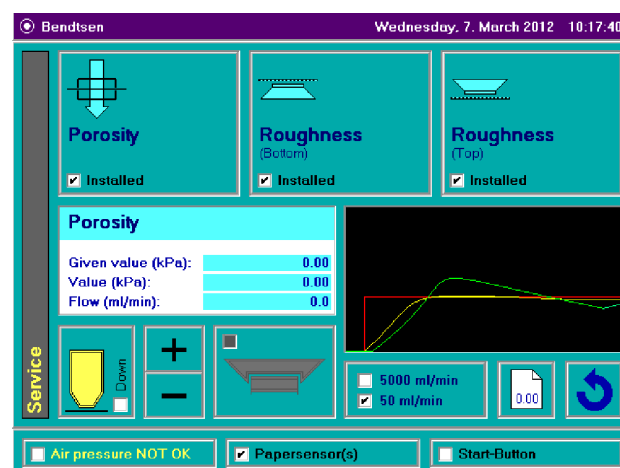
- DIN 53120-1
- ISO 5636-3
- ISO 8791-2



Measuring cylinder for surface roughness



Touch screen for 3 heads Bendsten



Service menu for 3 heads Bendsten

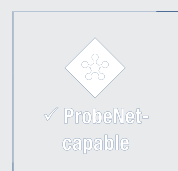


AIR PERMEABILITY TESTER ACC. TO GURLEY AUTOMATIC

For:



To measure the air permeability according to Gurley.



MOST IMPORTANT BENEFITS

- ✓ Pneumatic lifting and lowering function
- ✓ Operation via the digital control box
- ✓ Automatic test sequence

PRODUCT DESCRIPTION

The digital air permeability tester according to Gurley consists of a robust cylinder with a pneumatic lifting and lowering mechanism. The start and stop position of the cylinder is detected by a sensor. The device is operated by a separate control unit, which evaluates the measurement data and displays it on a digital display, as well as calculating statistical values.

TEST DESCRIPTION

The sample is inserted into the test area and is pneumatically clamped when the start button is pressed. The calibrated cylinder is released and floats down into the sealing liquid. When the end position is reached, the measurements are sent to the control unit, and displayed there. When the stop button is pushed, the sample is released again and the measuring cylinder travels back to the start point. If more than one measurement is carried out, both individual and statistical values are displayed.

TECHNICAL DATA

DEVICE/INSTRUMENT

- Graduated measuring cylinder with 20 oz capacity
- Measuring area: 1 in²
- Pneumatic lifting and lowering function (no manual lifting of the cylinder - no splashing of oil)
- Operation via the digital control box
- Digital display of the measuring and statistic data
- Compatible with ProbeNet (see pages 84 – 87)

INSTALLATION REQUIREMENTS

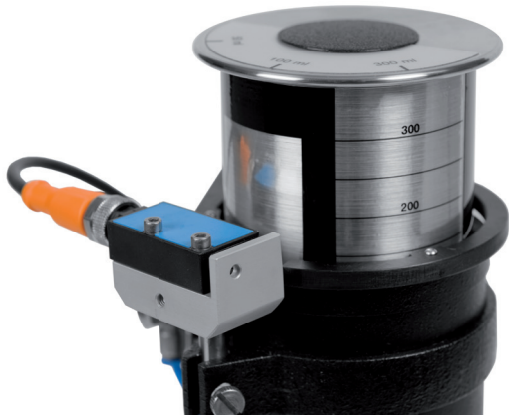
Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

- ISO 5636-5
- TAPPI T460



Separate control unit



Robust cylinder with sensor and pneumatic lifting



Sample is pneumatically clamped when the start button is pressed



BRIGHTNESS & COLOUR METER TS

For:



✓ PAPER



✓ BOARD



✓ TISSUE

For determination of ISO brightness, color, color differences, fluorescence and opacity of paper.



Damped sample support



✓ ProbeNet-
capable

MOST IMPORTANT BENEFITS

- ✓ Compact device with inbuild touch screen
- ✓ Double-beam-spectrophotometer with $d/0^\circ$ geometry
- ✓ Measuring with different light sources without recalibration
- ✓ Automatic calculation of the standard deviation after several test sequences

PRODUCT DESCRIPTION

The brightness colour meter consists of a spectrophotometer and a touch screen, supported within a robust case. The double beam spectrophotometer allows quick measurement procedures at the same time as providing high resolution. The device is operated via a touch screen, which displays both the results and relevant graphics after the test. The damped sample support is beneath the spectrophotometer. The sample is clamped with help of the damped sample support, so that no light from outside comes into the sphere and the measurement is carried out correctly. There are two USB ports on the reverse of the unit to enable printers to be connected, measurement data to be stored, and for simplifying software updates.

TEST DESCRIPTION

The desired measurement method is selected from pre-set standard test types or a predefined test program created by the operator. The identification number of the sample (tambour number, etc.) is entered to identify the sample. Then the sample is placed on the sample support, and this is released to initiate automatic closing. Pushing the start button begins the measurement. The results are displayed on the touch screen, both numerically and graphically. If more than one test is carried out, these can be compared as statistics as well as displayed as standard deviations. The data can be easily printed via the unit's USB port, or stored using a USB compatible storage device.



Black trap, brightness and UV calibration standards

TECHNICAL DATA

DEVICE/INSTRUMENT

- Easy operation via the integrated touch screen
- Double-beam spectrophotometer with d/0°-geometry
- Wavelength range: 360 – 740 nm
- Wavelength pitch: 10 nm
- Reflectance range: 0 – 200 %, resolution: 0.01 %
- Light source: pulsed xenon lamps
- Measurement area: ø 30 mm
- Sphere diameter: 152 mm
- Measuring with different light sources without recalibration
- Measurement methods:
 - Color: XYZ /Rx, Ry, Rz / L, a, b / L*, a*, b* / L*, C*, h* / x, y, Y
 - Color difference between two samples resp. standard and sample
 - Fluorescence
 - Opacity
- Two USB ports
- Compatible with ProbeNet (see pages 84 – 87)
- Optional available:
 - Ethernet port for data transfer
 - Brightness and UV calibration standards

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

- DIN 53145 bis 53147, 54500
- ISO 2469, 2470, 2471, 3688, 11475, 11476
- TAPPI T519, T525, T527



USB ports on the back side of the device



BRIGHTNESS & COLOUR METER PC-VERSION

For:



For determination of ISO brightness, color, color differences, fluorescence and opacity of paper.



Sample support with clamped sample



MOST IMPORTANT BENEFITS

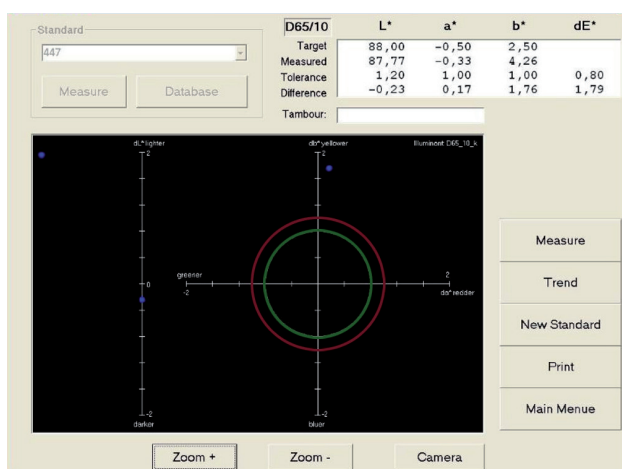
- ✓ Double-beam-spectrophotometer with $d/0^\circ$ geometry
- ✓ Measuring with different light sources without recalibration
- ✓ Automatic calculation of the standard deviation after several test sequences

PRODUCT DESCRIPTION

The brightness colour meter consists of a spectrophotometer, which is supported within a robust housing, and a separate PC. The double beam spectrophotometer allows speedy measurement procedures at the same time as providing high resolution. The device is operated via the included PC, which displays both the results and relevant graphics after the test. The damped sample support is beneath the spectrophotometer. The sample is clamped with help of the damped sample support, so that no light from outside comes into the sphere and the measurement is carried out correctly.

TEST DESCRIPTION

The desired measurement method is selected from pre-set standard test types or a predefined test program created by the operator. The identification number of the sample (tambour number, etc.) is entered to identify the sample. Then the sample is placed on the sample support, and this is released to initiate automatic closing. Pushing the start button begins the measurement. The results are displayed on the PC, both numerically and graphically. If more than one test is carried out, these can be compared as statistics as well as displayed as standard deviations. The data can be easily printed via the PC's USB port, or stored using a USB compatible storage device.



Automatic calculation of the standard deviation

TECHNICAL DATA

DEVICE/INSTRUMENT

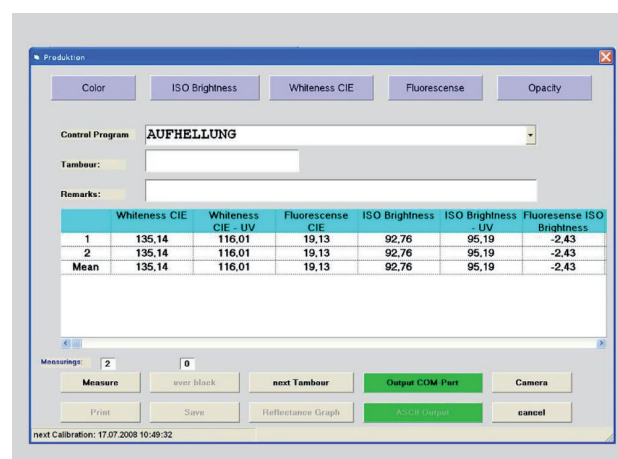
- Easy operation via delivered PC
- Double-beam spectrophotometer with d/0°-geometry
- Wavelength range: 360 – 740 nm
- Wavelength pitch: 10 nm
- Reflectance range: 0 – 200%, resolution: 0.01%
- Light source: pulsed xenon lamps
- Measurement area: \varnothing 30 mm
- Measuring with different light sources without recalibration
- Compatible with ProbeNet (see pages 84 – 87)
- Measurement methods:
 - ISO brightness (R457)
 - Color: XYZ / Rx, Ry, Rz / L, a, b / L*, a*, b* / L*, C*, h* / x, y, Y
 - Color difference between two samples resp. standard and sample
 - Fluorescence
 - Opacity
- Optional available:
 - Brightness and UV calibration standards

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

- DIN 53145 bis 53147, 54500
- ISO 2469, 2470, 2471, 3688, 11475, 11476
- TAPPI T519, T525, T527



User interface with measuring results



GLOSS METER

For measuring the gloss on paper and board.

For:



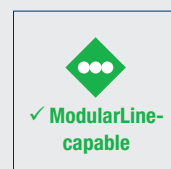
MODELS

AVAILABLE MEASURING DIRECTIONS

- Top side, machine- and cross direction
- Top side, machine direction
- Top side, cross direction
- Bottom side, machine direction
- Bottom side, cross direction
- Top- and bottom side, cross direction
- Top- and bottom side, machine direction

AVAILABLE SINGLE- OR MULTI ANGLE SENSOR

- TAPPI: 20° / 75°
- DIN: 45° / 60° / 75°



MOST IMPORTANT BENEFITS

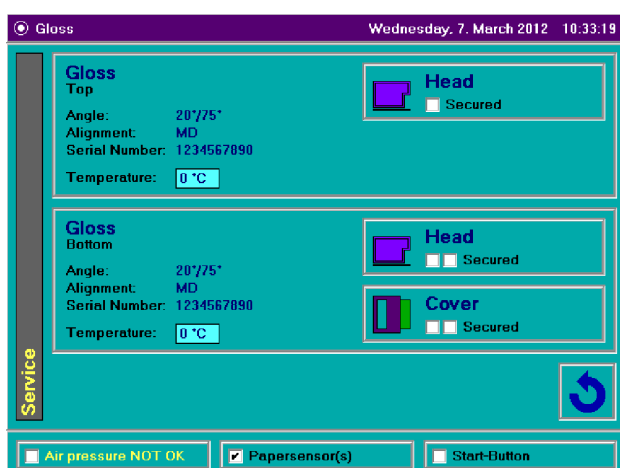
- ✓ Easy operation via the inbuilt touch screen
- ✓ Based on the latest LED technologys
- ✓ Up to four different measuring directions
- ✓ Single- or multi angle sensors availabe

PRODUCT DESCRIPTION

The specially developed ModularLine housing, which comes as standard with user-friendly touch screen and the FRANK-PTI connection (see page 12), offers an exceptional basis for the high-precision measurement technology of the gloss meter. This consists, in essence and depending on measurement direction, of single or multi-directional sensors, which are equipped with the latest LED technology. To prevent wear to the touch screen, the separate start button on the device can be used. The ModularLine gloss meter can also be used as a separate laboratory device, as well as for profile testing as a module on the ModularLine.

TEST DESCRIPTION

The sample to be tested is placed in the measurement area. On pressing the start button, the measurement head automatically lowers onto the sample. The spring-mounted base platen guarantees the flatness of the sample required by the standards for gloss measurement. The device is based on the latest LED technology, which reduces measurement to a few seconds and significantly increases measurement quality. The measurement results are displayed on the touch screen and saved as statistics.



Service menu

TECHNICAL DATA

DEVICE/INSTRUMENT

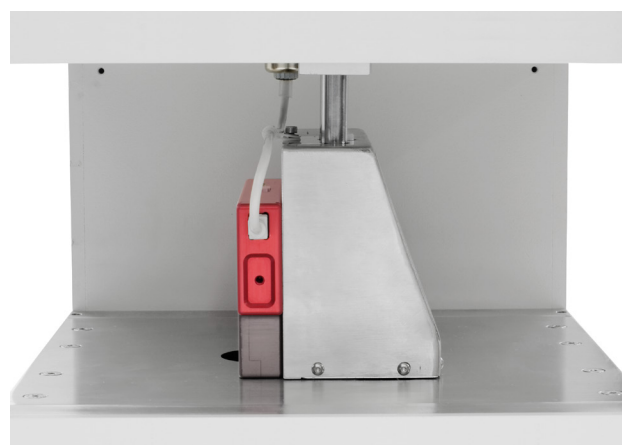
- Easy operation via the integrated touch screen
- Latest LED technology
- 0 – 100 gloss unit (0 – 100%)
- Measuring area: 10 x 15 mm
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Useable as ModularLine unit

INSTALLATION REQUIREMENTS

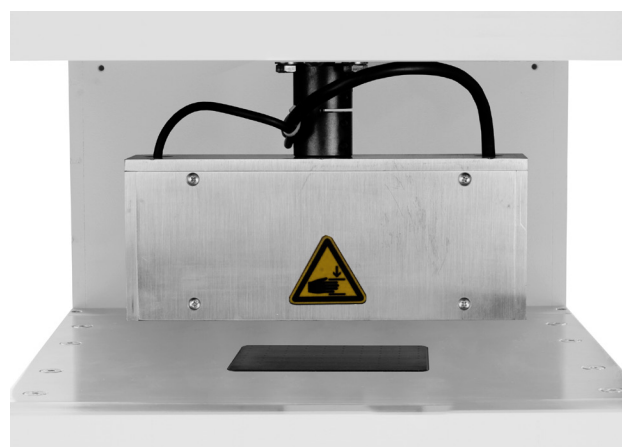
Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

- DIN EN 14086
- ISO 8254-1 | -2 | -3
- TAPPI T480, T653



Measuring head (top side, MD)



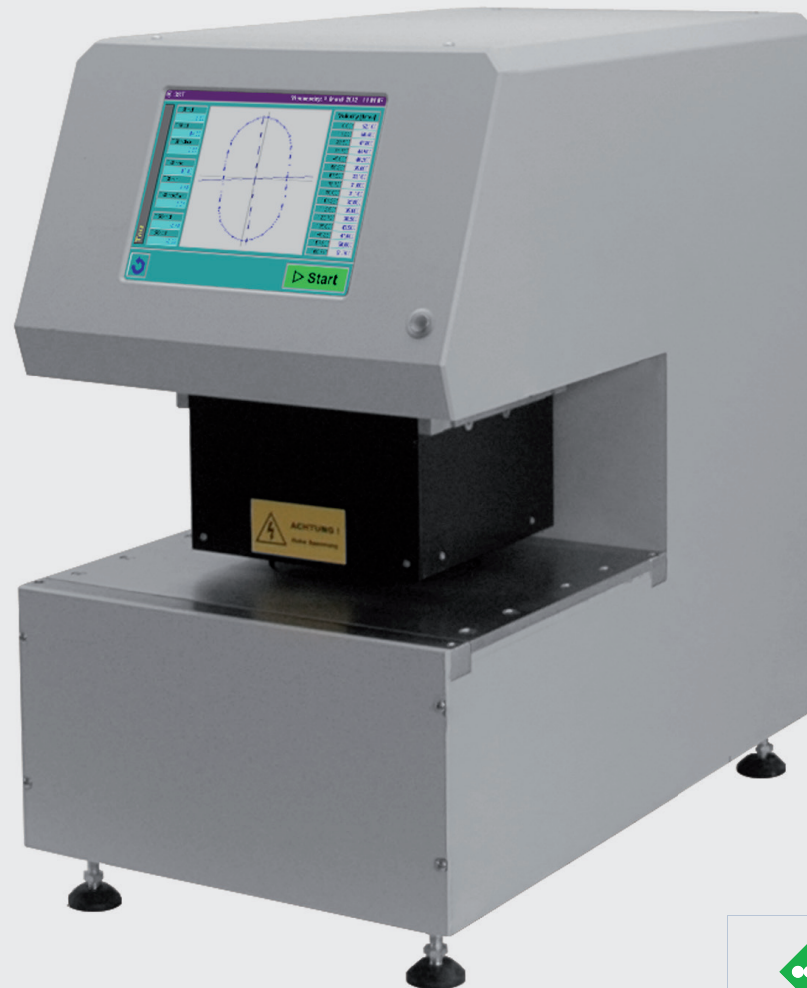
Turnable sensor for MD and CD measurement



SONIC SHEET TESTER

For the determination of tensile stiffness index (TSI), -orientation (TSO), and the ratio MD to CD of TSI.

For:



MOST IMPORTANT BENEFITS

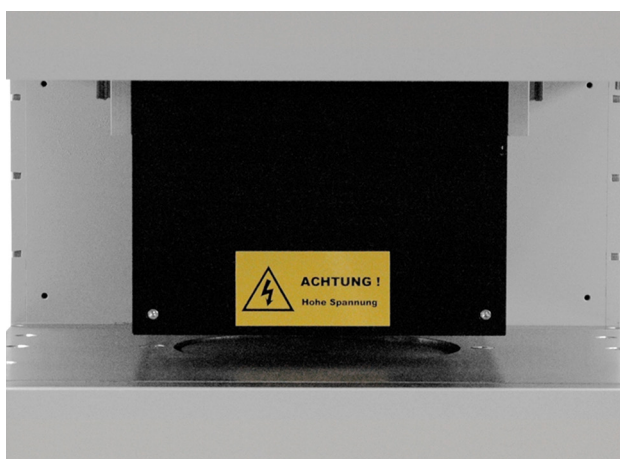
- ✓ Easy operation via the integrated touch screen
- ✓ 16 Ultrasonic sensors with a measuring area of $\varnothing 120$ mm
- ✓ 32 measuring angles, each of $11,25^\circ$
- ✓ Displays the warp angle of the tambour

PRODUCT DESCRIPTION

The specially developed ModularLine housing, which comes as standard with user-friendly touch screen and the FRANK-PTI connections, offers an exceptional basis for the high-precision measurement technology of the sonic sheet tester. This consists, in essence, of an ultrasound sensor with a measurement diameter of 120 mm as well as a transmitter located opposite. To prevent wear to the touch screen, the separate start button on the device can be used. The ModularLine sonic sheet tester can also be used as a separate laboratory device, as well as for profile testing as a module on the ModularLine.

TEST DESCRIPTION

The sample to be tested is placed in the measurement area. On pressing the start button, the ultrasound sensor, mounted behind a protective cover, lowers onto the sample. The transmitter, located opposite, creates sound waves that are directed through the material being tested and received by the sensor. The time required by the sound to travel directly and indirectly to the sensor is measured. Based on this data, algorithms are used to determine the angle of maximum tensile stiffness, along with the tensile stiffness index, which provides valuable findings on the cohesiveness of the material. These results are displayed numerically and graphically on the touch screen.



Ultrasound sensor with a measurement diameter of 120 mm

TECHNICAL DATA

DEVICE/INSTRUMENT

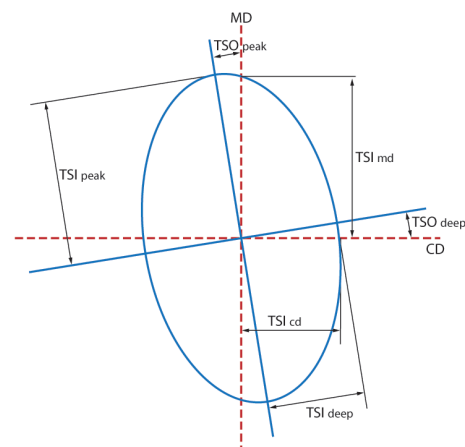
- Easy operation via the integrated touch screen
- Displays the warp angle of the tambour
- Measuring area: \varnothing 120 mm
- 32 measuring angles, each of 11.25°
- Measuring range: 20 – 200 μ s (7.5 bis 0.75 km/s)
- 16 Ultrasonic sensors (8 pair)
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Useable as ModularLine unit

INSTALLATION REQUIREMENTS

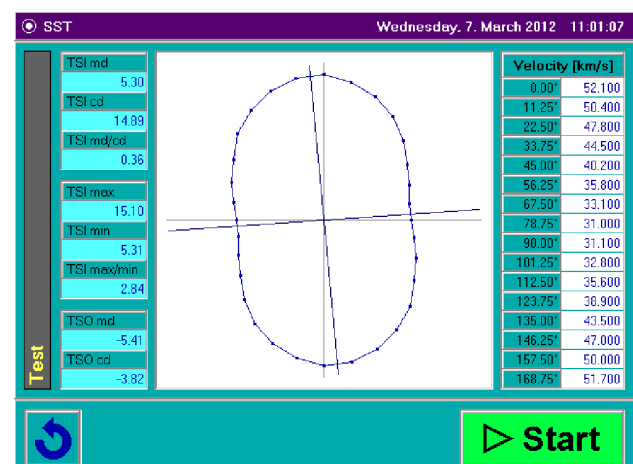
Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

No standards available



TSO and TSI orientation and peak



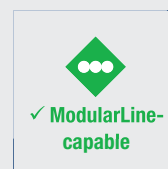
Display of the result on the touch screen



FORMATION TESTER

Measures the formation (flocculation dispersion) in papers.

For:



MOST IMPORTANT BENEFITS

- ✓ Easy operation via the integrated touch screen
- ✓ Measuring speed: 4 pictures per sec
- ✓ Distribution of the flake size into 6 classes
- ✓ Proved algorithm for calculating the formation index

PRODUCT DESCRIPTION

The specially developed ModularLine housing, which comes as standard with user-friendly touch screen and the FRANK-PTI connection, offers an exceptional basis for the high-precision measurement technology of the formation tester. This consists, in essence, of a high definition CCD camera system and the lighting unit located opposite, which illuminates stroboscopically. To prevent wear to the touch screen, the separate start button on the device can be used. The ModularLine formation tester can also be used as a separate laboratory device, as well as for profile testing as a module on the ModularLine.

TEST DESCRIPTION

The sample to be tested is placed in the measurement area. After pushing the start button, the sample is illuminated by the transmitted light unit using a stroboscope. The CCD camera system takes a high-definition picture of the measurement area. The light intensity is automatically regulated during this process, to bring the picture to a comparable grey scale level. This allows samples with different grammage and opacity to be directly compared. The picture taken is displayed on the touch screen and the floc size and formation index are calculated and displayed numerically. The pictures taken can be stored and retrieved at any time to enable a manual evaluation process.



Display of images and comparable values

TECHNICAL DATA

DEVICE/INSTRUMENT

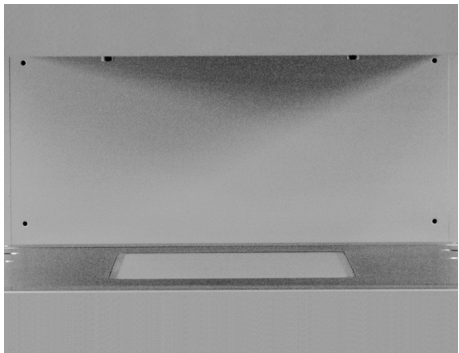
- Easy operation via the integrated touch screen
- Measuring range: 5 – 300 g/m² (depending on the opacity)
- Measuring area: 120 x 120 mm
- Resolution: 250 µm
- Measuring speed: 4 pictures per sec
- Proved algorithm for calculating the formationindex
- Distribution of the flake size into 6 classes (1, 2, 3, 6, 10 and 16 mm)
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Useable as ModularLine unit

INSTALLATION REQUIREMENTS

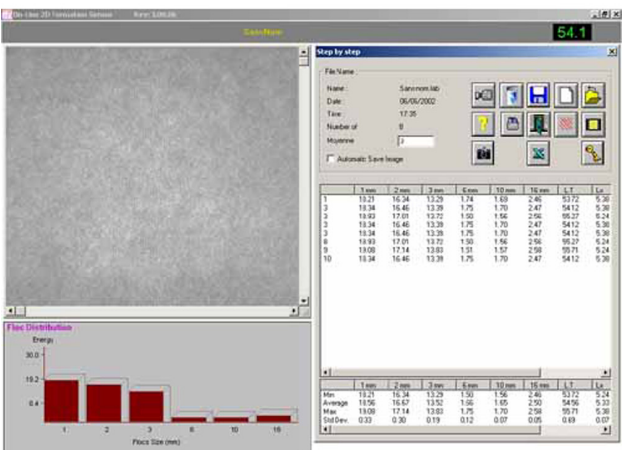
Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

No standards available



Transmitted light unit with opal glass



Display of images and comparable values



DOMAS SCANNER SYSTEM

For picture analysis of paper samples on different properties.

For:



MOST IMPORTANT BENEFITS

- ✓ Picture analysis with high-resolution scanner and PC
- ✓ High level of automation
- ✓ Easy to use

PRODUCT DESCRIPTION

The Domas scanner system is a modern device for image analysis, which was developed specially for the paper industry by PTS Heidenau. It consists of a high-definition scanner with reflected light and transmitted light unit, and a separate PC. To ensure correct measurements, the scanner is pre-calibrated by PTS Heidenau. Exact adjustment is carried out with a calibration sheet supplied with the device. The pre-installed analysis software makes possible the automatic and flexible analysis by the preselected module. The user modules can be extended according to requirements.

TEST DESCRIPTION

The round or rectangular sample is placed on the scanner. With the help of the analysis software these are evaluated. During this process, every parameter of the image acquisition and analysis can be defined, saved and retrieved at any time. The Domas system is based on a simple push button solution, which makes analysis possible without any knowledge of the system. The measurement results are clearly displayed as an Excel table, which allows further processing of the data.

TECHNICAL DATA

DEVICE/INSTRUMENT

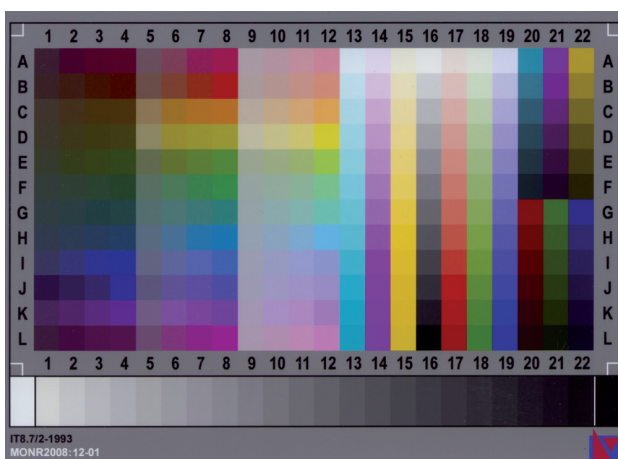
- High-resolution scanner with reflect and transmitted light
- Preinstalled analysis software
- High level of automation
- Modular software design
- Easy operation via the PC
- Available software modules:
 - Dirt specks
 - Formation
 - Stickies
 - Mottling
 - Heliotest
 - Pinholes
 - Missing Dots
 - Structures
 - Blackening
 - DCF analysis
 - Bleeding und Wicking
 - Pitting
- Delivery content:
 - High-resolution scanner
 - PC with preinstalled software
 - Calibration foil for readjustment
 - Printer

INSTALLATION REQUIREMENTS

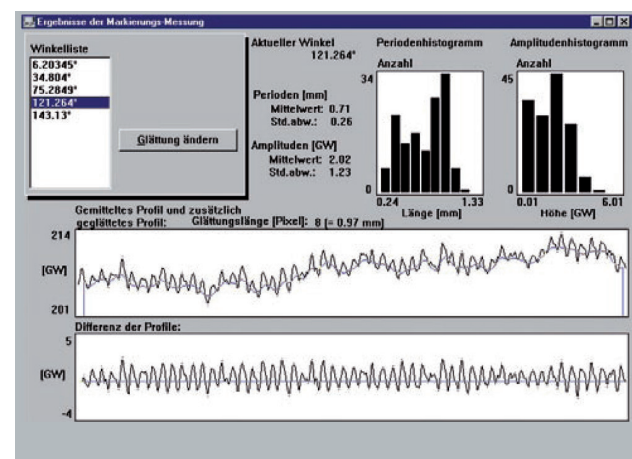
Electrical connection	100 – 240 V / 50 – 60 Hz
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

No standards available



Calibration foil



Statistics and trend analyses



INTERNAL BOND TESTER SYSTEM FRANK

For:



Determines the internal bonding of paper and board.



MOST IMPORTANT BENEFITS

- ✓ Integrated digital display
- ✓ Easy inserting of the support plates
- ✓ Automatic pendulum return
- ✓ Magnetic pendulum holding

PRODUCT DESCRIPTION

The Internal Bond Strength Testing Device complies with state-of-the-art technology and convinces with an easy-to-use touch display, a fully automated pendulum return and the possibility of changing the various pendulums very easily.

The large touch display shows a well-structured representation of individual values and statistics (maximum, minimum and average values and standard deviations) and, in addition, is compatible with ProbeNet.

TEST DESCRIPTION

After placing the prepared test samples into the device the pendulum is released. The pendulum hits the test sample and splits the paper in the z-axis. The forces that are generated during the test are measured and can be displayed in various units. The pendulum is automatically returned to its initial position and is ready for another measurement.

The results of a measurement series are recorded in a statistics.

TECHNICAL DATA

DEVICE/INSTRUMENT

- Integrated digital display
- Five support plates and associated aluminium angles
- Easy inserting of the support plates
- Automatic pendulum return
- Display of the values in ft-lb/in², J/m² or kg/cm
- Compatible with ProbeNet (see pages 84 – 87)
- Available pendulums:
 - Low Range (525 J/m²)
 - Standard Range (1,050 J/m²)
 - High Range (2,100 J/m²)

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

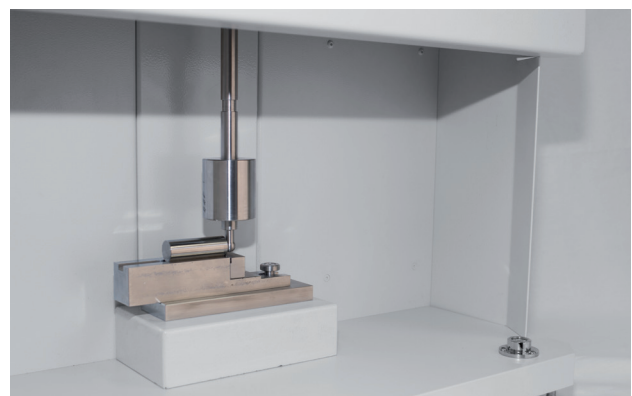
- ISO 16260
- TAPPI T569, TAPPI T833



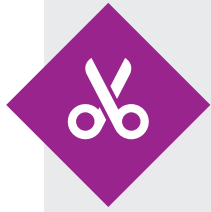
Pendulum before striking off the angle



Integrated digital display and controls



Pendulum before striking off the angle



INTERNAL BOND SAMPLE PREPARATION STATION

For:



For preparing samples for the internal bond test



✓ ProbeNet-
capable

MOST IMPORTANT BENEFITS

- ✓ Integrated digital display
- ✓ Easy inserting of the support plates
- ✓ Contact pressure pneumatic, contact time adjustable
- ✓ Semi-automatic model: manual sample cutting
- ✓ Automatic model: easy inserting of the sample, automatic cutting

PRODUCT DESCRIPTION

The Internal Bond Sample Preparation Station with its adjustable contact pressure and definable pressing time allows for a constantly identical preparation of all test samples for the internal bond test. Pressure and time are displayed on the easy-to-use touch screen display. A convenient locking mechanism prevents the test samples from slipping.

TEST DESCRIPTION

At first the sample holders and angles are installed in the station in prescribed order. Then the material to be tested is inserted. When the station's lid is tilted forward all components are locked by means of compressed air and none of them can slip! The station compresses all five samples with identical pressure and time. The samples can now be cut manually and withdrawn individually.

TECHNICAL DATA

DEVICE/INSTRUMENT

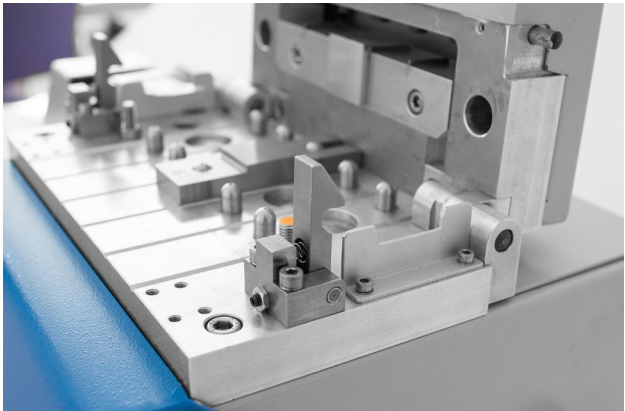
- Integrated digital display
- Contact pressure and time adjustable
- Optional available: standardized tape
- Recommended accessory: Strip punch 7 x 1 in

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

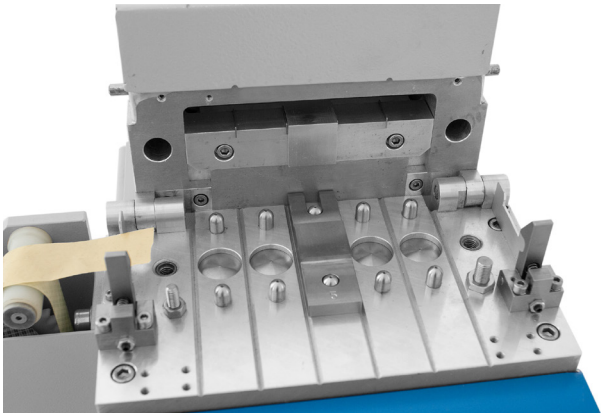
- ISO 16260
- TAPPI T569



Convenient locking mechanism



Rear panel of device with supply connections



Open sample preparation station for placing the test samples



STATIC FRICTION TESTER

Measures the static friction between two materials in two directions.

For:



✓ PAPER



✓ BOARD



✓ ProbeNet-capable

MOST IMPORTANT BENEFITS

- ✓ Quick clamping due to magnetic clamps
- ✓ Static friction measuring in two directions
- ✓ Presetable number of turnings and adjustable rotation speed
- ✓ Display of the single slope angles as well as statistics

PRODUCT DESCRIPTION

The static friction tester consists of a housing with integrated digital display and a moving platen located on the front. On this is located a quick clamp mechanism with magnetic clamping, which makes inserting the sample very simple. Sensors are integrated within the clamping bar, and these are used to determine when the metal block acc. to standard slips away. The device is operated by separate start and stop buttons located on the housing. The setup module can be used to set the speed of movement and the number of test repetitions.

TEST DESCRIPTION

The base material is placed on the moving platen and clamped. The sample to be tested is affixed to the metal block and placed on the base material so that it rests on the clamp bar with a short side and is detected by the sensor. When the start button is pressed, the platen rotates at a defined speed until the metal block begins to slide, allowing the slip angle to be determined. As soon as the metal block reaches the opposite bar the platen stops and rotates in the opposite direction until the metal block begins to slip again. This process is continued until the preset number of test repetitions has been reached. The digital display reports the slip angle and statistics.

TECHNICAL DATA

DEVICE/INSTRUMENT

- Static friction tester System FRANK-PTI
- Quick clamping due to magnetic clamps
 - Metal block detection via integrated sensors
 - Bidirectionally rotation
 - Adjustable rotation speed in °/sec
 - Presetable number of turnings
 - Display of the single slip angles as well as statistics
 - Compatible with ProbeNet (see pages 84 – 87)

- Static friction tester System Noviprofibre (single side)
- Quick clamping
 - One-side tilt
 - Display of the friction in degrees
 - Automatic stop when device detects slipping

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

- DIN 53119-1 | -2
- TAPPI T815, T549

MODELS

- Static friction tester System FRANK-PTI

Available metal blocks:

- | | | | |
|------------|--------------|---------|-------------|
| • Block A: | 2.0 x 4.0 in | 750 g | 14.50 g/cm² |
| • Block B: | 3.5 x 4.0 in | 1,260 g | 14.00 g/cm² |
| • Block C: | 1.5 x 3.5 in | 500 g | 14.76 g/cm² |
| • Block D: | 2.5 x 2.5 in | 200 g | 4.96 g/cm² |



COBB-UNGER OIL & WATER ABSORPTION TESTER

For:



For determination of oil or water absorption of paper or board.



MODELS

- COBB-UNGER with integrated couch roll and Stop watch
- COBB-TESTER with separated couch roll for paper
- COBB-TESTER with separated couch roll for board



✓ ProbeNet-
capable

MOST IMPORTANT BENEFITS

- ✓ Turnable oil and water vessel, easy to clean
- ✓ Quick clamping device for easy insertion of a sample
- ✓ Stop watch with timer-function and automatic start
- ✓ Integrated couching device, no lifting of the roll needed

PRODUCT DESCRIPTION

The Cobb-Unger oil or water absorption tester is different to a regular Cobb tester due to its rotatable liquid container, with a quick latch cover, which can be removed for easy cleaning. The integrated couching mechanism consists of a roll and couching plate, allowing effortless couching. The unit includes a digital stopwatch, for time measurements, that starts automatically when the liquid container is rotated.

TEST DESCRIPTION

The liquid container is filled with oil and water and placed in the unit. A weighed sample is placed over the container and the cover is closed. A handle on the side of the unit is used to rotate the container with clamped sample, and the preset time on the stopwatch begins to count down. When this time has elapsed, a signal noise is heard, and the container can be rotated to the start position. The wet sheet is removed and placed on the couching plate. It is then covered with a blotter and couched by pulling and pushing on the couching plate. The blotter is removed and the sample weighed again to determine the sample's absorbency.

TECHNICAL DATA

DEVICE/INSTRUMENT

- Turnable oil and water vessel
- Easy to clean due to the removeable vessel
- Quick clamping device for easy inserting of the sample
- Integrated stop watch with timer-function
- Integrated couching device
- Suitable for castor oil in case of food tests as well as for water in case of paper tests

INSTALLATION REQUIREMENTS

Electrical connection	Battery
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

- DIN EN ISO 535
- TAPPI T441



COBB-TESTER with separated couch roll



For easy cleaning the vessel can be removed



Couching by moving the couching plate



TWIN FOLDING TESTER

Determines the folding resistance of paper or board acc. to the Louis Schopper methode.

For:



MODELS

MODEL FOR PAPER

- Up to 0.25 mm sample thickness
- Testing length: 90 mm, clamping length: 110 mm

MODEL FOR BOARD

- 0.25 – 1.4 mm sample thickness
- Testing length: 130 mm, clamping length: 150 mm



✓ ProbeNet-capable

MOST IMPORTANT BENEFITS

- ✓ Testing of two samples the same time due to the two folding heads
- ✓ Spring loaded sample carrier
- ✓ Speed: 120 strokes/min
- ✓ Automatic stop if device detects sample break

PRODUCT DESCRIPTION

The twin folding tester consists of a robust case, on which two folding heads are attached. The sample supports, which are located to the side, are spring-loaded and are opened and closed using a quick latch. To prevent environmental influences an acrylic glass safety cover is attached above the folding tester. A digital display and start and stop buttons are located on the front of the unit.

TEST DESCRIPTION

Two samples, created with the sample strip cutter (see pages 204 and 208), are placed through the folding heads at the same time and clamped in the sample supports with a preset tensile force. Pushing the start button moves the sample swiftly between the folding rolls with a reciprocating action in a radius of 0.25mm. This folds the test strips in both directions. If one of the samples breaks, the folding operation continues on the second sample until this also breaks. Then the unit stops automatically and the number of folds before breaking is shown on the digital display. Because of the quite large standard deviation, two samples are always tested simultaneously. To ensure correct test behaviour the test should be carried out under suitable climatic conditions (23 °C / 50% RH).



Folding unit with open security cover

TECHNICAL DATA

DEVICE/INSTRUMENT

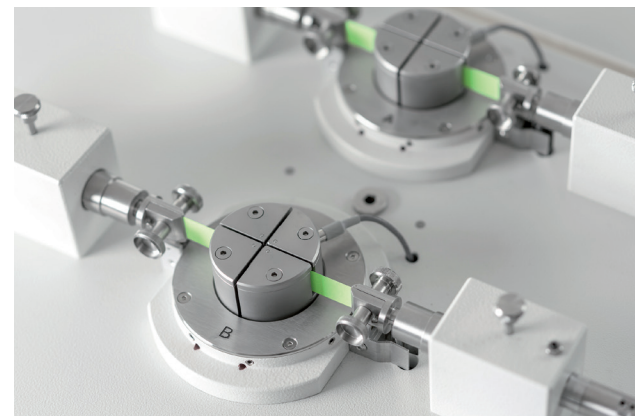
- Testing of two samples the same time due to the two folding heads
- Safety shield made of acrylic glass
- Spring-loaded sample carriers
- Spring-load preset
- Speed: 120 strokes/min
- Temperature sensor detects increase of the temperature
- Automatic stop if device detects sample break
- Digital display with statistic functions
- Compatible with ProbeNet (see pages 84 – 87)

INSTALLATION REQUIREMENTS

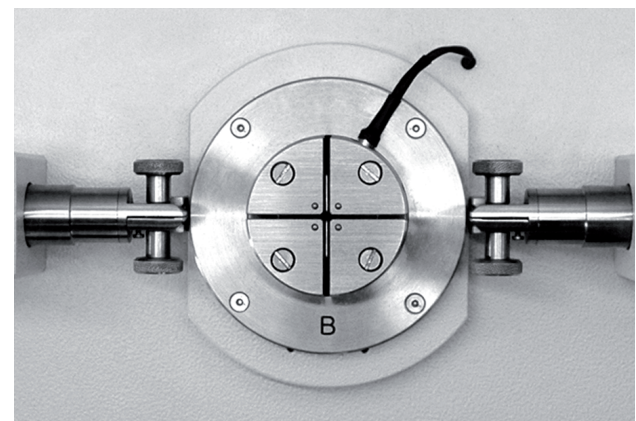
Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

- ISO 5626



The samples are clamped with spring-loaded sample carriers



Folding head with integrated temperature sensor



SCT - SHORT SPAN COMPRESSION TESTER

For:



✓ PAPER



✓ BOARD

For determining the compression strength on paper and board samples.



ModularLine-
version available



✓ Prodenet-
capable

MOST IMPORTANT BENEFITS

- ✓ Easy operation via the integrated touch screen
- ✓ Clamp pressure and distance adjustable
- ✓ Pneumatic clamping of the sample
- ✓ Automatic ratio calculation

PRODUCT DESCRIPTION

The short span compression tester has been developed specially for the paper industry, and has exceptional ease of use and high measurement accuracy. Its open design allows samples to be easily placed in the test jaws. To allow measurement of thick as well as thin materials, the gap between the clamp jaws can be set, via the software, between 0.3 and 0.7 mm. The device is operated via an integrated touch screen, which is used to select test methods, and displays values and curves. The separate start button located on the device can be used to prevent wear to the touch screen. The test device is equipped with the FRANK-PTI standard connections (see page 12).

TEST DESCRIPTION

The sample, prepared with the sample punch (see page 207), is placed in the sample holder and the start button is pushed. The sample is pneumatically clamped and the test jaws move towards each other at the preset speed, whereby the sample is compressed. The resistance exhibited by the material is measured and displayed on the touch screen, numerically and as a real-time curve. If more than one run, in MD and CD, is carried out, these can be compared statistically and the ratios displayed.

TECHNICAL DATA

DEVICE/INSTRUMENT

- Easy operation via the integrated touch screen
- Clamping pressure and distance infinitely variable between 0.7 and 0.3 mm
- Pneumatic clamping of the sample
- Test speed adjustable
- Automatic ratio calculation
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Available as ModularLine unit

INSTALLATION REQUIREMENTS

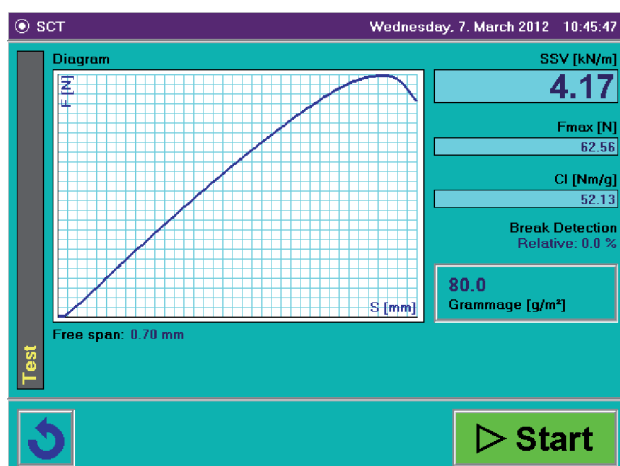
Electrical connection	100 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

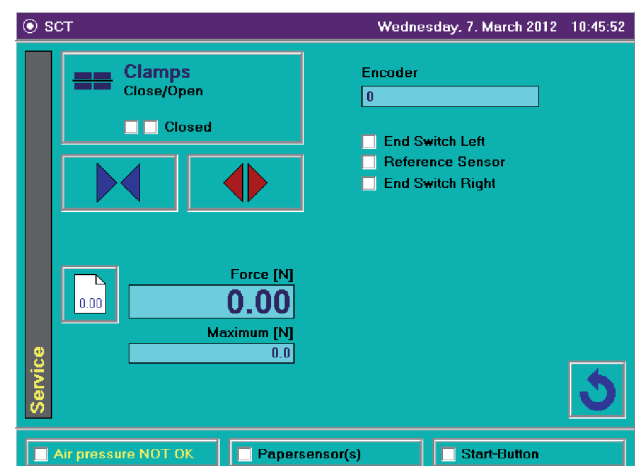
- DIN 54518
- TAPPI T826



Open design allows samples to be easily placed



Display of values and in real-time curves



Service interface

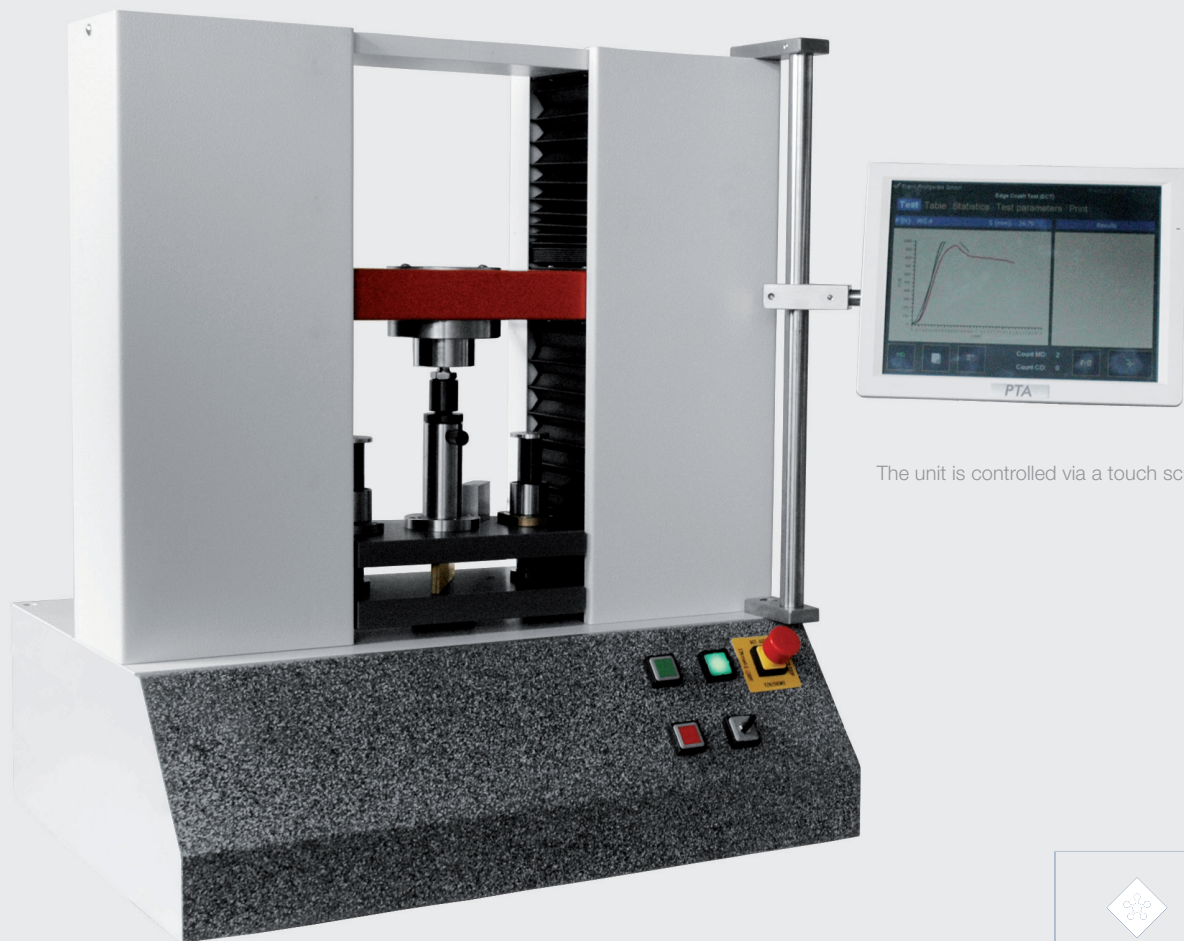


CRUSH TESTER SYSTEM FRANK-PTI

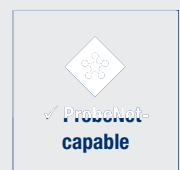
For:



For determination of the compressive strength of board and corrugated board on various tests.



The unit is controlled via a touch screen



MOST IMPORTANT BENEFITS

- ✓ Robust construction with two frictionless spindles
- ✓ Easy operation via the touch screen
- ✓ Pressureplates with frictionless guidance guarantee high plan parallelism
- ✓ Testing force up to 5,000 N

PRODUCT DESCRIPTION

The crush tester has been specially developed for crush tests on various materials (paper, board, etc.) and is impressively simple to operate. Its robust construction and two frictionless spindles guarantee high measurement accuracy, even under very heavy loads. The platens included are specially constructed to ensure the least possible deviation from the parallel. There are sample holders for different test procedures available as options (see pages 64 – 65). The unit is controlled via a touch screen, where the individual testing methods can be selected, and values and curves displayed. To avoid wear to the touch screen, the start and stop buttons are located separately. The crush tester is equipped with the FRANK-PTI standard connector.

TEST DESCRIPTION

The sample is placed, with or without sample holder depending on test procedure, between the platens. The appropriate test program is selected on the touch screen. The platens automatically travel to the correct start position. Pressing the start button causes the platens to compress the sample at a preset speed. On reaching the preset test criteria (depending on the test procedure, breaking of the sample or a preset distance) measuring stops and the platens automatically travel back to the start position. The test results are displayed both numerically and graphically on the touch screen. If more than one run of one of the two test series (MD/CD) is carried out, they can be statistically compared and displayed as ratios.



Pressure platens with frictionless guidance

TECHNICAL DATA

DEVICE/INSTRUMENT

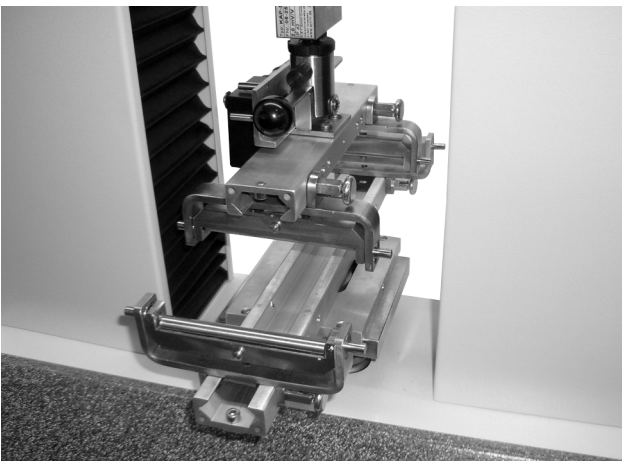
- Robust construction with two frictionless spindles
- Workspace for sample intake : 125 x 120 x 110 mm (WxDxH)
- Easy operation via the touch screen
- Test strips distinguishable into test series (e.g. MD/CD)
- Automatic ration calculation and display of statistics
- Testing force up to 5,000 N
- Testing speed up to 200 mm/min adjustable
- Fast returning of the platen after the test
- Seperated start button
- Overload protection due to a spring pack
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Included into delivery:
 - Pressure platens (195 x 120 mm) with frictionless guidance
- Optional available:
 - 4-Point-Bending bridge with associated software
 - Variable sample holders (see page 64 – 65)

INSTALLATION REQUIREMENTS

Electrical connection	100 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

- DIN EN ISO 3035, 3037, 7263
- ISO 12192, 13820
- TAPPI T809, T811, T821, T822, T825, T829, T838, T839, T843



Optional available: 4-point-bending bridge

CRUSH TEST METHODS

RING CRUSH TEST (RCT)

To determine ring crush resistance.

A 152.4 x 12.7 mm paper or board sample, prepared with the strip punch, is inserted, long edge uppermost, into the sample holder and placed in the crush tester. Different sample holders are available for different material thickness.

In the RCT test, the test strip is exposed to compression until it buckles. The force measured indicates how much force is required to finally break them.



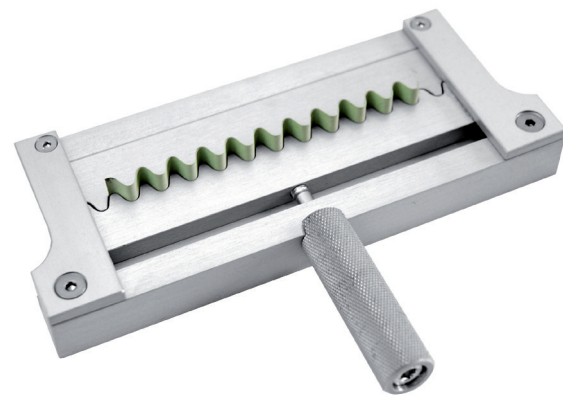
Sample holder for the Ring Crush Test (RCT)

CONCORA CRUSH TEST (CCT)

To determine the crush resistance of flutes.

A 152 x 12.7 mm sample, prepared with the concora fluter is placed in the sample holder of the crush tester with the long edge uppermost. Different sample holders are available for different flute sizes.

In the CCT test, the flute is exposed to compression on the long edge until it buckles. The force measured indicates how much force is required to break the fibres.



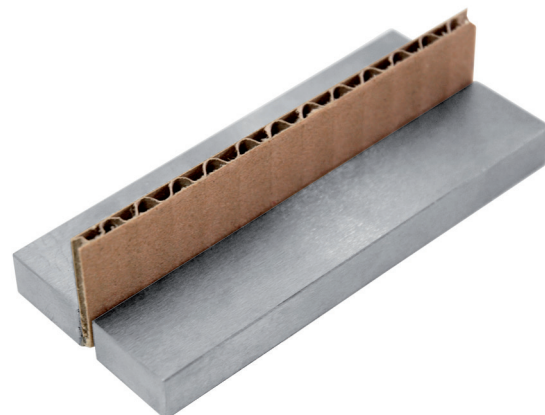
Sample holder for the Concora Crush Test (CCT)

EDGE CRUSH TEST (ECT)

To determine the edge crush resistance of corrugated board.

A 100 x 25 mm sample, prepared with the ECT sample saw is placed long edge uppermost in the crush tester between two metal blocks. The two blocks prevent sideways slippage of the sample during the crush test.

In the ECT test, the corrugated board is exposed to compression until it buckles. The force measured indicates how much force is required to finally break them.



Sample holder for the Edge Crush Test (ECT)

SCORE QUALITY TEST (SQT)

To determine the score quality of corrugated board.

The prepared 25.4 mm sample is rilled, in MD or CD as required, and placed in the sample holder.

In the SQT test, a compression bar applies pressure to the rilling line in the middle of the corrugated boards until this is pushed downwards at least 12.7 mm, or the angle between the two sides reaches 90°. The force required is compared with force used in a test with uncorrugated board. This procedure allows the score quality to be determined.



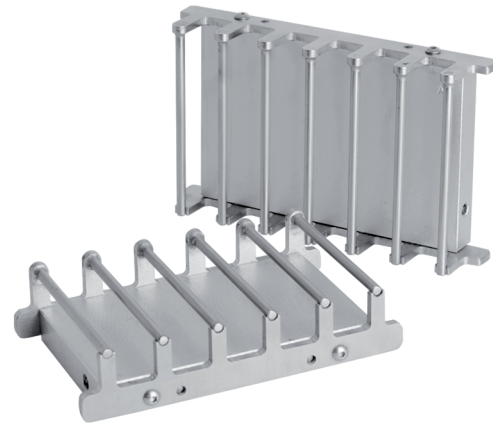
Sample holder for the Score Quality Test (SQT)

PIN ADHESION TEST (PAT)

To determine the adhesion bond strength of corrugated board.

The pins of the holder for the PAT test are inserted through the flutes of the corrugated board in such a way that the lower holder presses the flute upwards and the upper holder pushes the lower linerboard downwards. Sample holders are available for different flute sizes.

In the PAT test, force is applied to the inner side of the linerboard until the bond is broken between the board and the adhesive. The measured values indicate how much force must be applied to break the bond between linerboard and flutes.



Sample holder for the Pin Adhesion Test (PAT)

CONCORA MEDIUM TEST (CMT)

To determine the crush resistance of concora flutes.

The 152 x 12.7 mm sample prepared with the concora fluter is glued with the aid of the third hand and placed between the platens of the crush tester.

In the CMT test, the flutes are exposed to compression until they buckle. The force measured indicates up to which point the fibres recover or when they can no longer return to their original shape and how much force is required to finally break them.



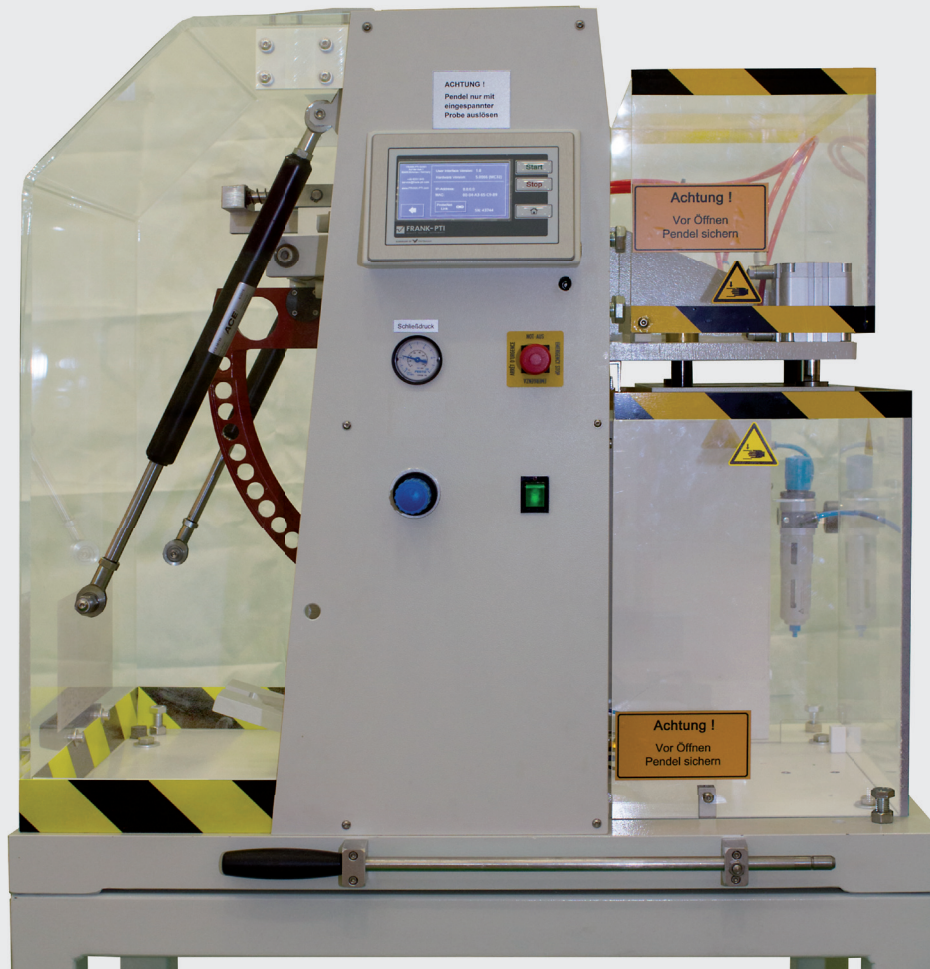
Concora Medium Test (CMT)



PUNCTURE TESTER DIGITAL

For measuring of the energy absorption when puncturing board or corrugated board.

For:



MOST IMPORTANT BENEFITS

- ✓ Robust construction with a dead weight of 250 kg
- ✓ Quick clamping of the sample
- ✓ Frictionless bearings
- ✓ Security cover

PRODUCT DESCRIPTION

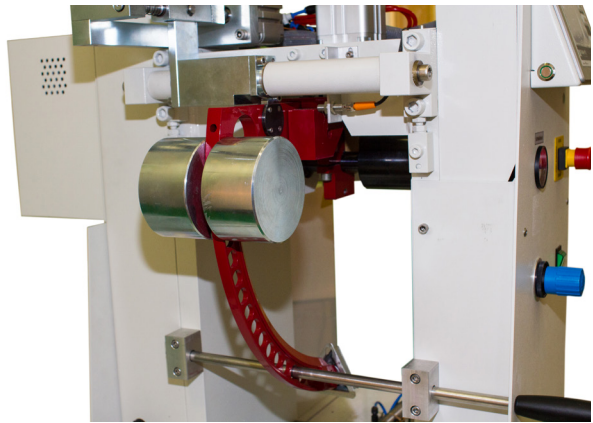
The digital puncture tester is a warp resistant, robust structure with a weight of 250 kg, which prevents external vibrations affecting the carrying out of the test, and also ensures accurate measurements. A triangular puncture head is attached to a weighted pendulum arm. A frictionless bearing allows exact measurements to be made with the pendulum arm. The sample holder is equipped with a quick clamp mechanism, which allows easy insertion of samples, and an acrylic glass safety guard prevents injury. The results of the test are read from the digital display.

TEST DESCRIPTION

A board or corrugated board sample is clamped into the sample holder. Pulling the start lever releases the pendulum from its holder allowing it to puncture the clamped sample with the puncture head. The energy used to accomplish this is determined and can be read from the digital display. After the test, the pendulum arm is manually returned to the start position.

MODELS

- System IDM
- System FRANK-PTI



System FRANK-PTI with shortened pendulum length

TECHNICAL DATA

DEVICE/INSTRUMENT

- Sturdy device with a dead weight of 250 kg
- External vibrations are damped
- Quick clamping of the sample
- Pendulum arm with 3 edges puncture head
- Frictionless bearing
- Circular angle of the pendulum: 90°
- Exchangeable weights
- Protectiv acrylic glas
- Digital display with a nominal range up to 48 joule

INSTALLATION REQUIREMENTS

Electrical connection	230 V / 50 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

- DIN 53142
- ISO 3036
- TAPPI T803



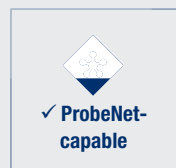


BCT-BOX COMPRESSION TESTER

For:



For the determination of compression resistance of boxes.



MOST IMPORTANT BENEFITS

- ✓ Sturdy frame with inside mounted pressure plates
- ✓ Upper pressure plate can be loosened or stays stiff, depending on the used standard
- ✓ Automatic platen return after test sequence

PRODUCT DESCRIPTION

The box compression tester is a robust base frame in which the two platens are mounted. The lower platen is fixed, while the upper platen can be used as either fixed or rotatable, as required, by opening or closing the four fixing levers. Three sensors are mounted below the fixed platen to measure the force exerted and detect the box breaking. Settable limit switches and the digital display and controls are mounted on the front of the unit.

TEST DESCRIPTION

A box, with or without content, is placed in the centre of the lower platen. The controls are then used to set the parameters for the test, and then the start button is pressed. The upper platen travels downwards at the pre-set speed. Measuring starts as soon as the upper platen touches the box, and automatically stops as soon as a break is detected, or the preset compression time has elapsed under constant exertion of force. Once measurement has stopped, the upper platen travels back to the start position. The measured values can be read from the digital display.

TECHNICAL DATA

DEVICE/INSTRUMENT

- Adjustable limit switch
- Testing speed up to 400 mm/min
- Three force sensors
- Automatic stop after break detection or expiration of the preset pressure time
- Automatic plate return after test
- Digital display and controls
- Compatible with ProbeNet (see pages 84 – 87)

INSTALLATION REQUIREMENTS

Electrical connection	230 V / 50 Hz
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

- DIN EN ISO 12048
- TAPPI T804

MODELS

<p>TOP PRESSURE PLATE</p> <ul style="list-style-type: none">• Pivotable• Permanent stiff
<p>AVAILABLE WORKING SPACES (WxDxH)</p> <ul style="list-style-type: none">• 600 x 600 x 800 mm• 600 x 800 x 800 mm• 800 x 800 x 800 mm• 800 x 1,000 x 800 mm• 1,000 x 1,000 x 1,000 mm• 1,250 x 1,250 x 1,250 mm <p>Other working spaces on demand</p>
<p>AVAILABLE FORCE SENSORS</p> <p>10 kN, 20 kN, 30 kN, 40 kN, 50 kN</p>



TISSUE ABSORPTION TESTER

For:



✓ TISSUE

For the determination of the water absorption time and water absorbency of tissue.



✓ ProbeNet-
capable

MOST IMPORTANT BENEFITS

- ✓ Entire made of stainless steel
- ✓ Standardized immerse basket ($3 \text{ g} \pm 0.1 \text{ g}$)
- ✓ Changeable water container with a capacity of 3 l
- ✓ Digital display of values and statistics

PRODUCT DESCRIPTION

The absorption tester is manufactured from robust stainless steel. The exchangeable water container (3 litre) is lowered and raised via an integrated pneumatic cylinder. The immersion basket is located at an angle of 30° above the raising and lowering mechanism. It swings freely and is attached to the load cell that weights the sample with and without water. The digital display and controls are located on the upper part of the unit at a comfortable height.

TEST DESCRIPTION

A sample weighing approximately 5 grams ± 0,2 g is placed in the immersion basket. The water container is filled with distilled water and the lifting and lowering mechanism is set. Pushing the start button automatically weighs the sample and the water container is lifted pneumatically. After the sample is completely immersed in the water, the start button is pressed again to determine the immersion time. Once 30 seconds have elapsed the water container is lowered. Excess water then drips back into the container from the sample for 60 seconds. Then the sample is once more weighed and the absorbency of the material is determined. The values, in relation to 1g sample weight, can be read from the digital display as values and statistics.

MODELS

- Fully-automatic model (System FRANK-PTI)
- Semi-automatic model (System Noviprofibre)

TECHNICAL DATA

DEVICE/INSTRUMENT

- Fully-automatic model (System FRANK-PTI):
- Standardized immerse basket (3 g ± 0.1 g)
 - Exchangeable water container with a capacity of 3 l
 - Digital display of values and statistics
 - Display of absorbed water (g) per 1 g tissue
 - Compatible with ProbeNet (see pages 84 – 87)
- Semi-automatic model (System Noviprofibre):
- Standardized immerse basket (3 g ± 0.1 g)
 - Water basin with a capacity of 3 l
 - Automatic test sequence
 - No digital balance: sample needs to be weight manually
 - Drainage via a valve

INSTALLATION REQUIREMENTS

Electrical connection	100 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

- DIN EN ISO 12625-8



Immerse basket and exchangeable water container



POROSITY TESTER “HIGH PORO”

For:



✓ **TISSUE**

For the determination of the porosity of tissue and filter papers.



MODELS

AVAILABLE FLOW RATES

- 100 – 50,000 ml/min
- 200 – 100,000 ml/min
- 300 – 150,000 ml/min



✓ **ModularLine-**
capable



✓ **ProbeNet-**
capable

MOST IMPORTANT BENEFITS

- ✓ Easy operation via the integrated touch screen
- ✓ Pressure difference adjustable
- ✓ Different flow rates available

PRODUCT DESCRIPTION

The specially developed ModularLine housing, which is equipped as standard with user-friendly touch screen and the FRANK-PTI connections, offers an exceptional basis for the high-precision measurement mechanism of the porosity tester „High Poro“. The tester is based on the principle of Bendtsen air permeability testing. The main difference is the measurement range, which in this device can be, depending on configuration, increased by up to 150 l/min. As with the ModularLine Bendtsen air permeability tester (see page 32) the measurement pressure to be used is regulated at the test unit directly. This guarantees stable and comparable measurement across the entire range.

TEST DESCRIPTION

The sample to be tested is placed in the measurement area. On pushing the start button, the measuring cylinder, with a measurement area of 10 cm², lowers onto the material and compresses it at the sides. A difference in pressure of 0.74, 1.47 or 2.20 kPa is created automatically, and the throughflow through the sample is measured. The air permeability values are displayed on the touch screen in l/min. If more than one measurement is carried out, these can be compared as statistics, and their minimum, maximum and standard deviation displayed.

TECHNICAL DATA

DEVICE/INSTRUMENT

- Easy operation via the integrated touch screen
- Pressure difference adjustable:
 - 0.74 kPa
 - 1.47 kPa
 - 2.20 kPa
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Useable as ModularLine unit

INSTALLATION REQUIREMENTS

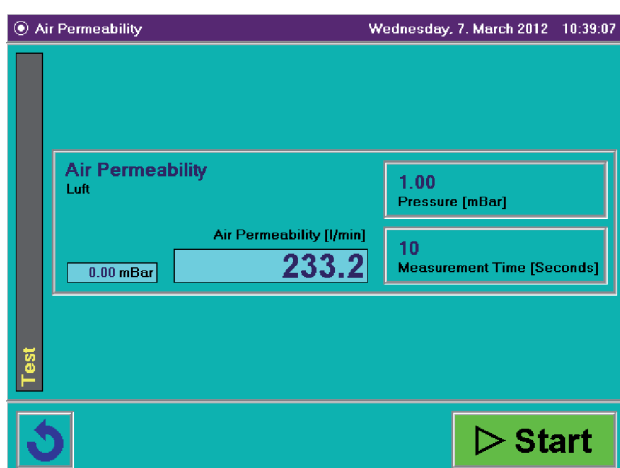
Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

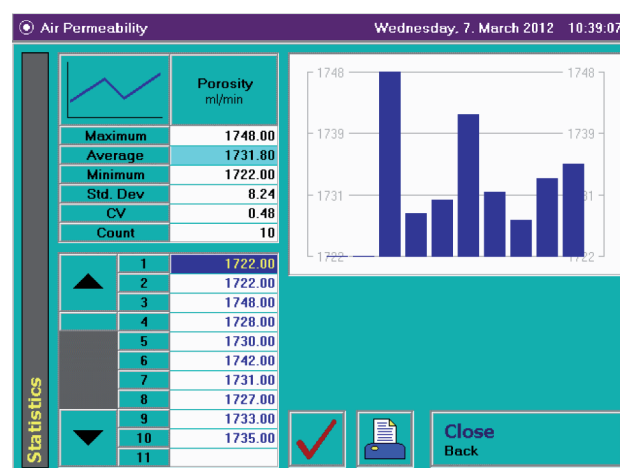
- ISO 5636-3
- DIN 53120-1



Measuring cylinder



User interface



Statistics



AIRMATIC BURST TESTER FOR FILTER PAPERS AND FOILS

For:



✓ **TISSUE**



✓ **FOILS**

For determination of bursting strength and bulging height of elastic foils and aluminium foils.



✓ **ProbeNet-
capable**

MOST IMPORTANT BENEFITS

- ✓ Easy operation via the touch screen
- ✓ Electronic sensor for measuring the bursting strength
- ✓ Optical sensor for measuring the bulging height
- ✓ Optional: Pore detection system

PRODUCT DESCRIPTION

The burst tester is equipped with an electronic sensor to measure burst pressure, as well as an optical sensor to measure bulging height. The system can optionally be supplied with an optical porosity detector. This detects pores created during the burst test. Sample clamping is pneumatic, with the ability to preset the clamping pressure. The clamping bell is surrounded by a safety guard, to prevent injury, and is also equipped with a supressor. A pivotable touch screen is attached to the side of the unit, which can be used to define all unit parameters. The burst tester is equipped with a standard FRANK-PTI connector.

TEST DESCRIPTION

The touch screen is used to set the necessary parameters depending on test method (burst strength, bulging height and/or pore detection). The sample is placed in the burst tester and the start button is pushed, causing the clamping bell and safety guard to lower, and the selected test procedure begins. First, the sample is clamped at the preset pressure and then air is blown under the sample (aluminium foils) or into a rubber membrane (filter papers), causing the sample to bulge, until it bursts, to the preset bulge height, or until a pore is detected. According to requirements, the individual values, diagrams, or statistics can be read from the touch screen.

MODELS

- For foils without pore detection
- For foils including pore detection
- For filter paper with a rubber membrane

Available span bells: 50 cm², 100 cm²

Optional: Sixfold electionsystem for presetting the varios flows and testing times

TECHNICAL DATA

DEVICE/INSTRUMENT

- Easy operation via the touch screen
- Display of values, graphs and statistics
- Electronic sensor for measuring the bursting strength
- Linear force increase (10 – 1.000 kPa)
- Optical sensor for measuring the bulging heighth
- Pneumatic sample clamping
- Span bell: 50 or 100 cm²
- Security cover and suppressor
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)

INSTALLATION REQUIREMENTS

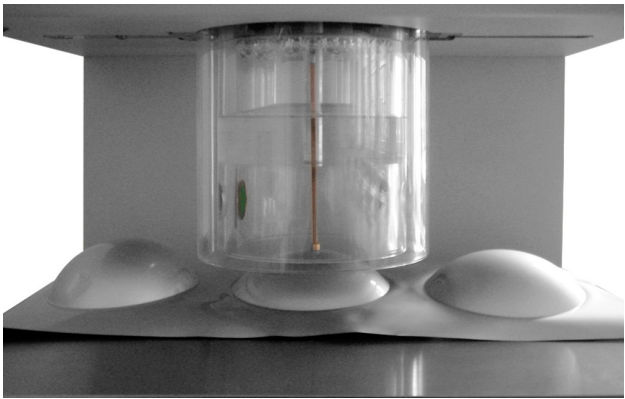
Electrical connection	100 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

- DIN EN ISO 13938-2



Ring light for pore detection

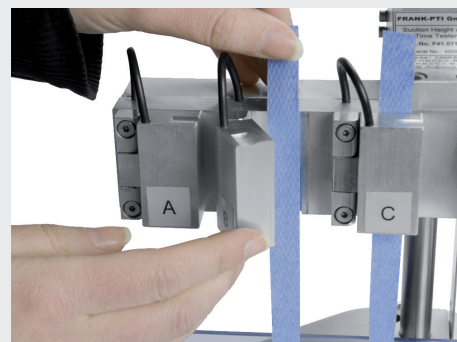
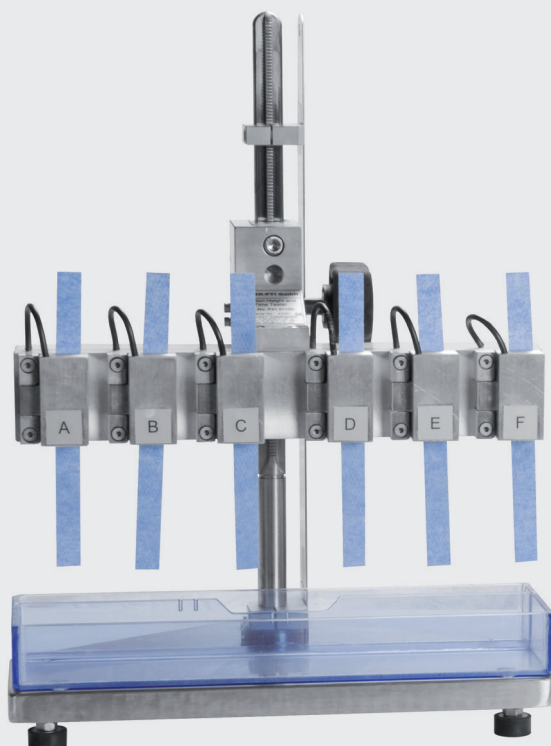


Stamp for measuring the bulging height



SUCTION SPEED TESTER DIGITAL

For:



Quick clamping mechanism for easy inserting of the sample



PRODUCT DESCRIPTION

The suction speed tester consists of an acrylic glass water bath, a stainless steel stand and a sample holder with sensors for up to six samples. The quick clamping mechanism allows simple insertion of test strips. Sensors, which are connected to a control and analysis unit, are integrated within the sample holders

TEST DESCRIPTION

The test strips are clamped into the sample holder via the quick clamping mechanism and a rotary knob is used to lower them into the water bath. Once the lowering operation is complete, measuring begins automatically. As soon as the preset height of capillary rise is reached, the individual rise time of each individual sample is determined and displayed on the analysis unit.

TECHNICAL DATA

DEVICE/INSTRUMENT

- Sample holders for up to 6 samples
- Quick clamping mechanism
- Water bath with overflow made of acrylic glass
- Measuring sensors integrated in the clamps
- Digital control and evaluation box

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	No

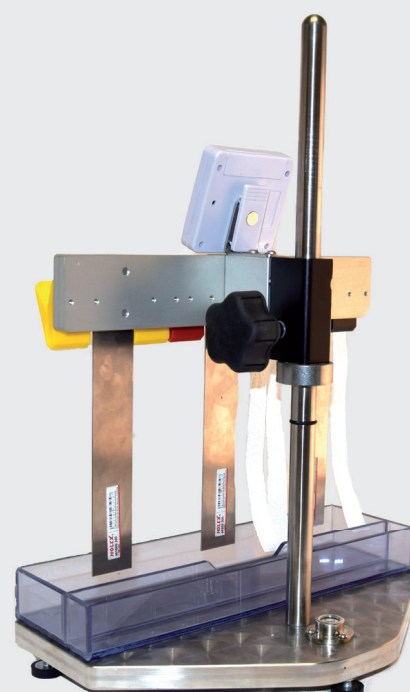
APPLICABLE STANDARDS

- DIN EN ISO 9073-6



SUCTION HEIGHT TESTER "KLEMM" MANUAL

For:



PRODUCT DESCRIPTION

The suction height tester consists of an acrylic glass water bath, a stainless steel stand and a sample holder for up to six samples. The quick clamping mechanism allows simple insertion of test strips. A stopwatch is located on the sample holder, for time measurement, along with three scales for determining the capillary rise.

TEST DESCRIPTION

The test strips are clamped into the sample holder via the quick clamping mechanism and a knob is used to lower them into the water bath. Once the preset time has elapsed, the capillary rise is read from the scales.

TECHNICAL DATA

DEVICE/INSTRUMENT

- Sample holders for up to 6 samples
- Quick clamping mechanism
- Water bath with overflow made of acrylic glass
- Stop watch for measuring the climbing time
- Ruler for reading of the climbing height

INSTALLATION REQUIREMENTS

Electrical connection	Battery
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

- DIN EN ISO 9073-6

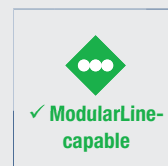


VERSEIDAG AIR PERMEABILITY TESTER

For:



For determination of air permeability of textiles and glass fibre mats.



MOST IMPORTANT BENEFITS

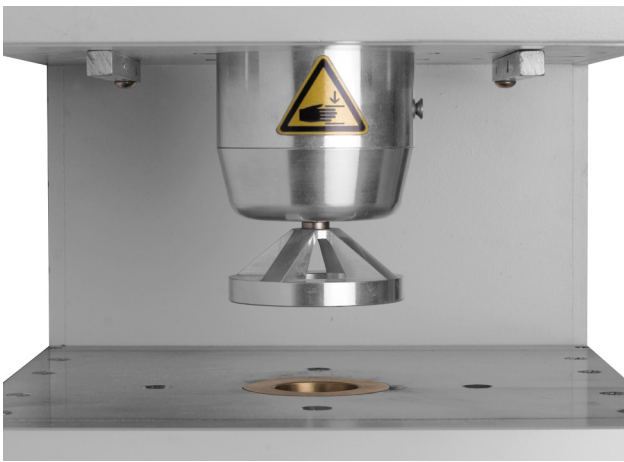
- ✓ Easy operation via touch screen
- ✓ Changeable measuring areas and heads
- ✓ Measuring range: 1 – 200 l/min

PRODUCT DESCRIPTION

The specially developed ModularLine housing, which is equipped as standard with user-friendly touch screen and the FRANK-PTI connections, offers an exceptional basis for the high-precision measurement mechanism of the Verseidag air permeability tester. It is used to determine the air permeability of very porous materials, such as non-woven material. Its changeable measuring areas and heads (5 – 20 cm²) allow the device to be easily adjusted according to requirements. The difference in pressure of 0.1 or 0.2 kPa can be precisely regulated. The Verseidag air permeability tester can both be used as an independent laboratory device, and also for profile measurement as a module of the ModularLine.

TEST DESCRIPTION

The material to be tested is placed in the measurement area. On pushing the start button, the measurement head lowers automatically onto the sample. The preset high pressure of 0.1 or 0.2 kPa is regulated. Then the through-flow is measured and calculated taking into account the previously selected measurement area. This allows the results of tests with different measurement areas to be directly compared. It is possible to select either a 10 or 20 mm water column as measurement pressure specification. The values are displayed on the touch screen. If more than one measurement is carried out, these can be compared as statistics and their minimum, maximum and standard deviation displayed



Measurement cylinder with changeable measuring head

TECHNICAL DATA

DEVICE/INSTRUMENT

- Easy operation via the integrated touch screen
- Changeable measuring areas and heads (5, 10 or 20 cm²)
- Measuring range: 1 – 200 l/min
- FRANK-PTI standard-ports (see page 6)
- Compatible with ProbeNet (see pages 84 – 87)
- Useable as ModularLine unit

INSTALLATION REQUIREMENTS

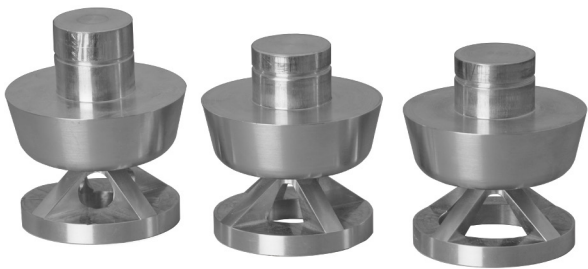
Electrical connection	100 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	6 bar

APPLICABLE STANDARDS

- DIN EN ISO 9237



Changeable measuring areas



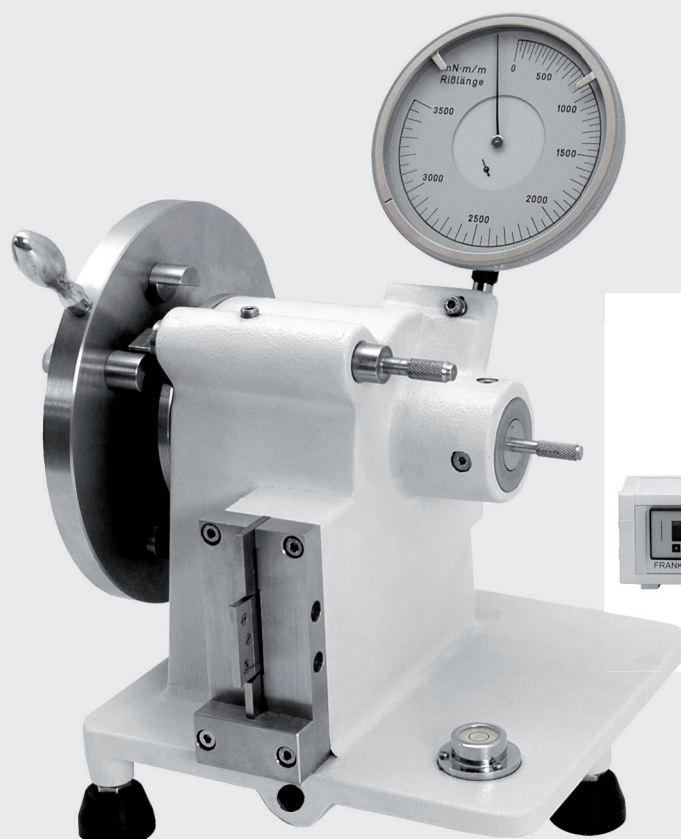
Changeable measuring heads



BRECHT-IMSET

For determination of tear growth work of paper.

For:



PRODUCT DESCRIPTION

Further rip extenders and precutting blades are mounted in a cast metal housing. The device is available with either an analogue or digital display as desired. The digital display is equipped with a data transfer port.

TEST DESCRIPTION

The sample is inserted into the sample holder, and the pendulum is placed in the test position, causing the sample to be cut. After resetting the force to zero, the pendulum is triggered and the tear resistance is displayed on the analogue gauge or digital display. The pendulum is returned to the start position and the sample is removed.

The sample is centrally precut in a Brecht Imset tester, while the Elmendorf tester (see page 24) makes a cut in the side.

TECHNICAL DATA

DEVICE/INSTRUMENT

- RS232 interface
- Manual release
- Sensitive rotary encoder
- Simple proven technology

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz in the digital variant
Water connection	No
Compressed air	No

APPLICABLE STANDARDS

- DIN 53115



KAPPA NUMBER ANALYSER

For measuring the Kappa number in pulp.

For:



PRODUCT DESCRIPTION

The Kappa number analyser consists of a titration stand with special agitator and automatically changeable bu-
rettes and a PC with pre-installed software for determi-
ning the Kappa number.

TEST DESCRIPTION

The dry pulp is weighed and placed in the titration stand. Chemicals are added automatically, and their amounts are controlled via the software. After automatic determi-
nation of the titration process, the Kappa number is de-
termined and displayed on the PC.

TECHNICAL DATA

DEVICE/INSTRUMENT

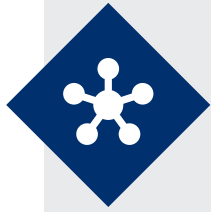
- Automatic determination of the Kappa number
- Test rig made of stainless materials

INSTALLATION REQUIREMENTS

Electrical connection	230 V / 50 Hz
Water connection	No
Compressed air	No

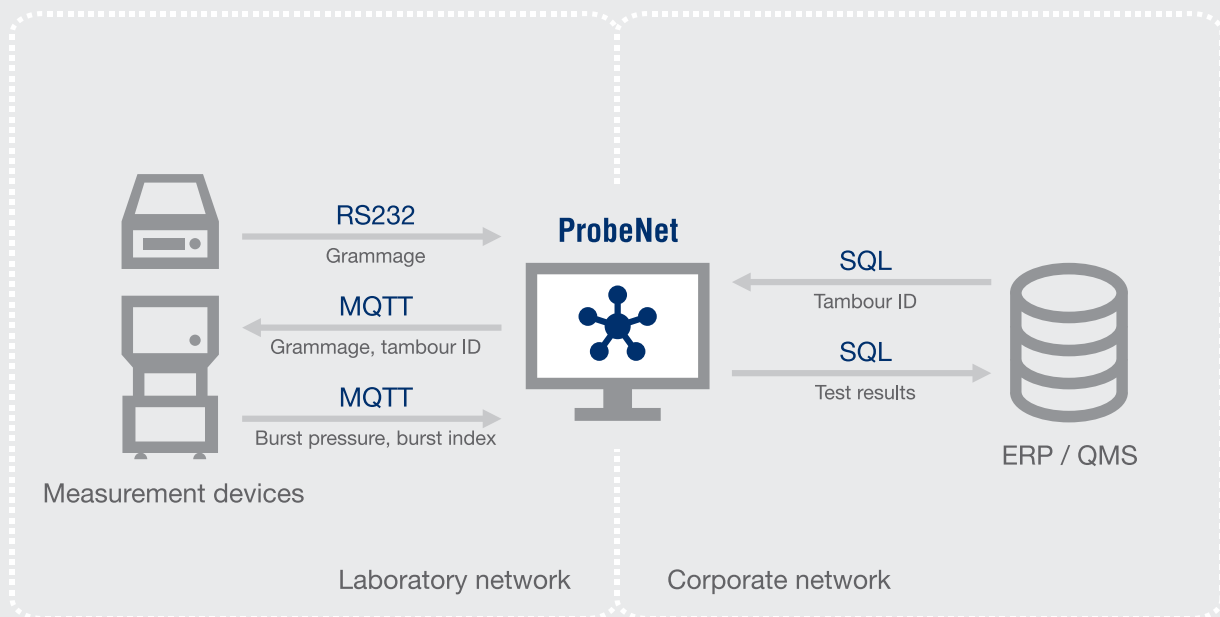
APPLICABLE STANDARDS

- DIN 54357



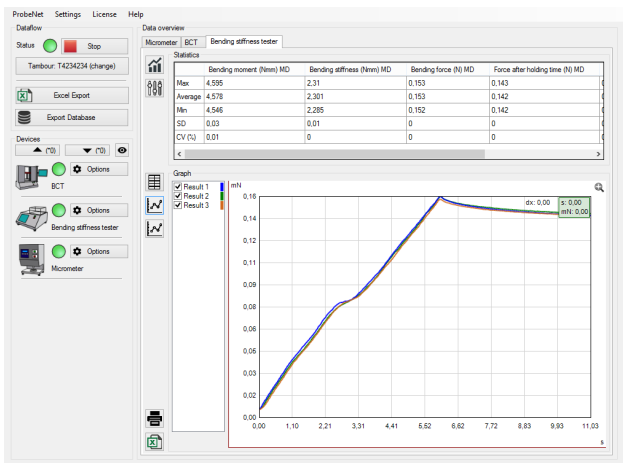
PROBENET

Software for collecting, saving and printing of test-results of various laboratory devices.

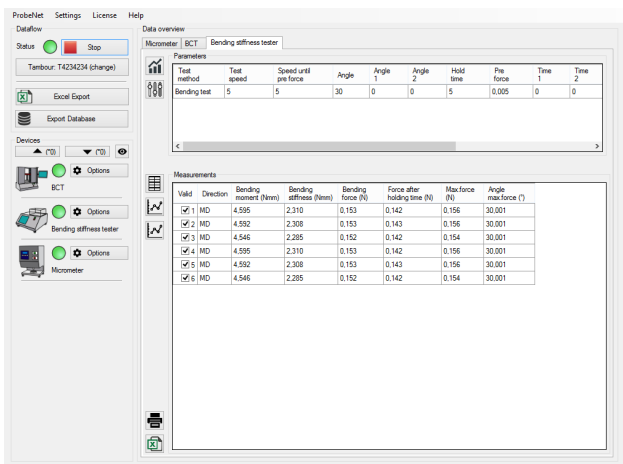


MOST IMPORTANT BENEFITS

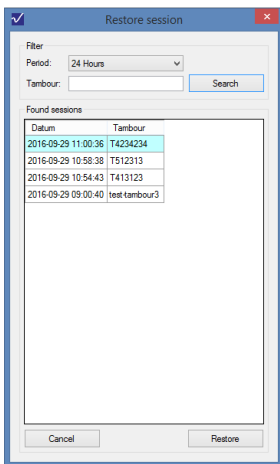
- ✓ **Simple operation thanks to a clear interface**
Measurement data from various devices shown in graphs and tables on a central computer
- ✓ **Customer-orientated setting options**
Description of measurement values adaptable according to customer wishes Conversion of measurement results to other units
- ✓ **Industry 4.0**
Use of MQTT (Message Queue Telemetry Transport) via Ethernet for linking laboratory equipment.



Statistics and graphics



Parameters and measurements



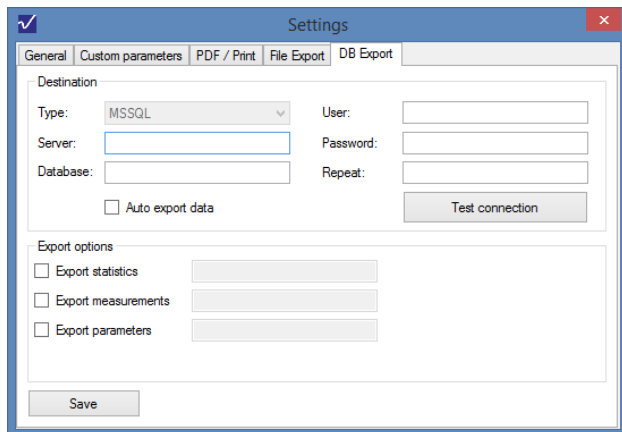
Backup traceability

PRODUCT DESCRIPTION

The ProbeNet application by FRANK-PTI is a software for the centralised collection of measurement data from different laboratory measurement equipment on one PC. ProbeNet is very easy to use and presents the measurement results on a well-arranged interface. Individual measurement results and statistics of all devices can be rapidly and clearly summarised in only one area. It is possible to mark results as outliers in the list of individual results and exclude them from the statistics and reports.

ProbeNet facilitates a linking of various software systems for data exchange. All relevant data can be exchanged between the systems. Upon request, it is also possible to connect external devices through RS232, MQTT, Ethernet or file import.

A temporary local data backup guarantees the saving of the received data and offers traceability for up to 4 weeks. The data can comprise test parameters and measurement results but also tambour or batch numbers and climate data (data collection by means of an external climate measurement device, e.g. by FRANK-PTI).

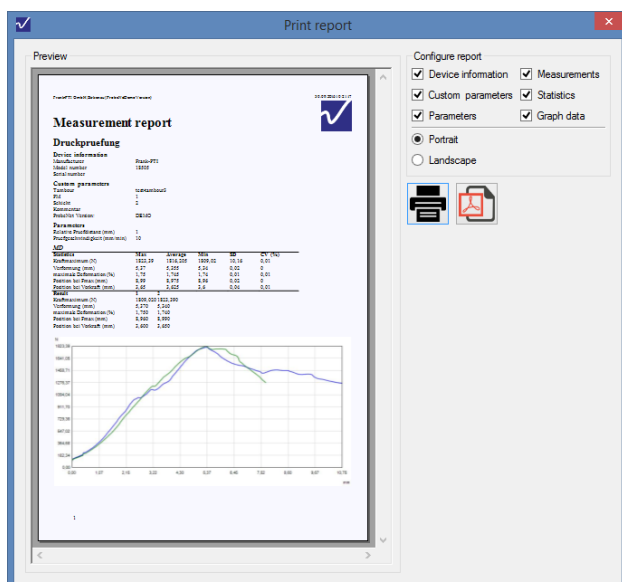


Settings data export

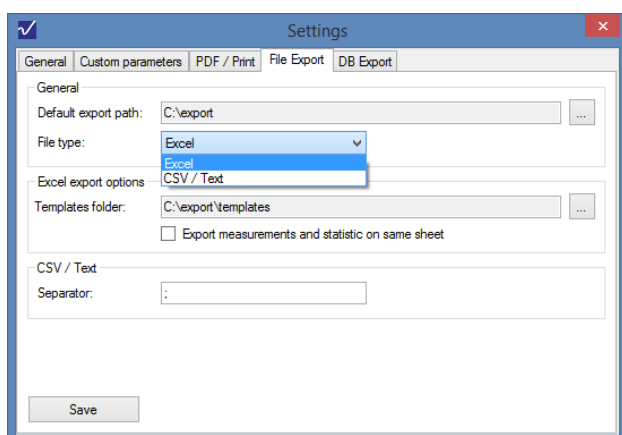
Data exchange is carried out via a local SQL database, which can also be used for data exchange with other data processing programmes within the company. Customers can define the data they want to export, e.g. measurement values and/or test parameters and/or statistics. It is also possible to define whether the data of all linked laboratory equipment or of individual devices should be exported. Furthermore, users can link data (e.g. climate data) to individual test series.

A hard copy of the report can be printed, to document the results, and contains an area for general information about device and measurement process, a listing of individual results, statistics, and a diagram showing the curves. This area can be removed from the report if desired, in order to save space. A company logo can also be added if required.

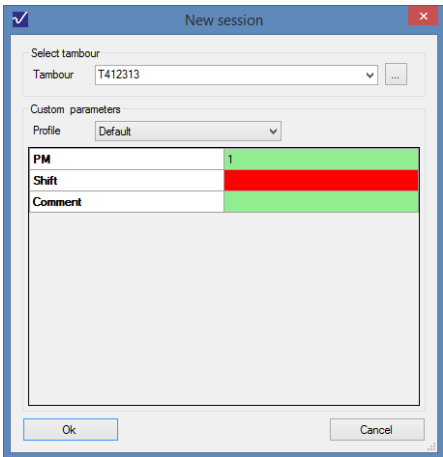
The results can be exported manually or automatically, both in a spreadsheet (e.g. Microsoft Excel), and a machine-readable format for further processing by other systems. The data can either be saved to the computer's hard disk or saved to a network drive.



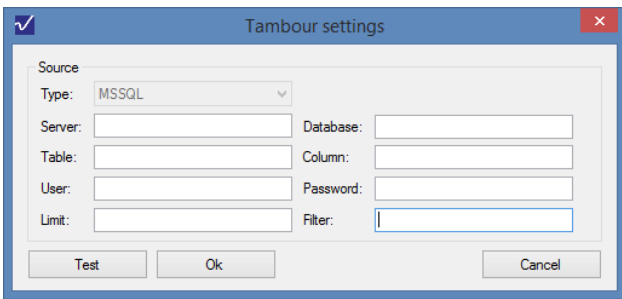
Detailed print report with single values, statistics and curves



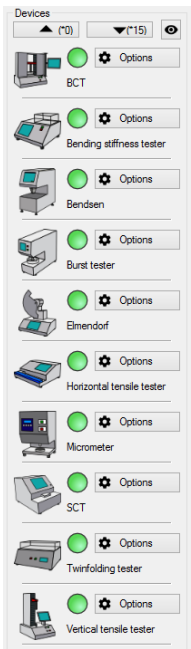
Settings file export



Entering of user defined parameters



Configuration of user defined parameters



Connected devices
Easy access to
device options and
customisation

USER DEFINED PARAMETERS

To satisfy the demands of various different applications, user-defined parameters can be used to give ProbeNet several profiles. For every test series, the lab worker can optionally select a profile (e.g. customer log, internal log etc.) and data must be entered in the appropriate fields, where it is recorded both as a hard copy report and exported data. To speed data entry, there is an option to keep the latest input and reuse it for the next test series, and can be quickly selected if desired. Fields can also be set as optional or required.

COMPATIBILITY

ProbeNet supports all devices with a data output manufactured and distributed by the PTA Group. If support is not yet available in the program, it can be added if needed. Devices are easily connected, via serial port, USB, or over the network. ProbeNet Mini supports parallel operation of more than one device.

CUSTOMISATION

An individual adaption of descriptions and conversion of measurement values (e.g. from N to kN) is also possible. Furthermore, users can fade out unnecessary measurement values to keep the data overview compact.

EASY SETUP

The initial setup process of ProbeNet takes less than 30 seconds. The application works out of the box and has no dependencies on third party software. In most cases the setup can be completed even without support from the local IT department.

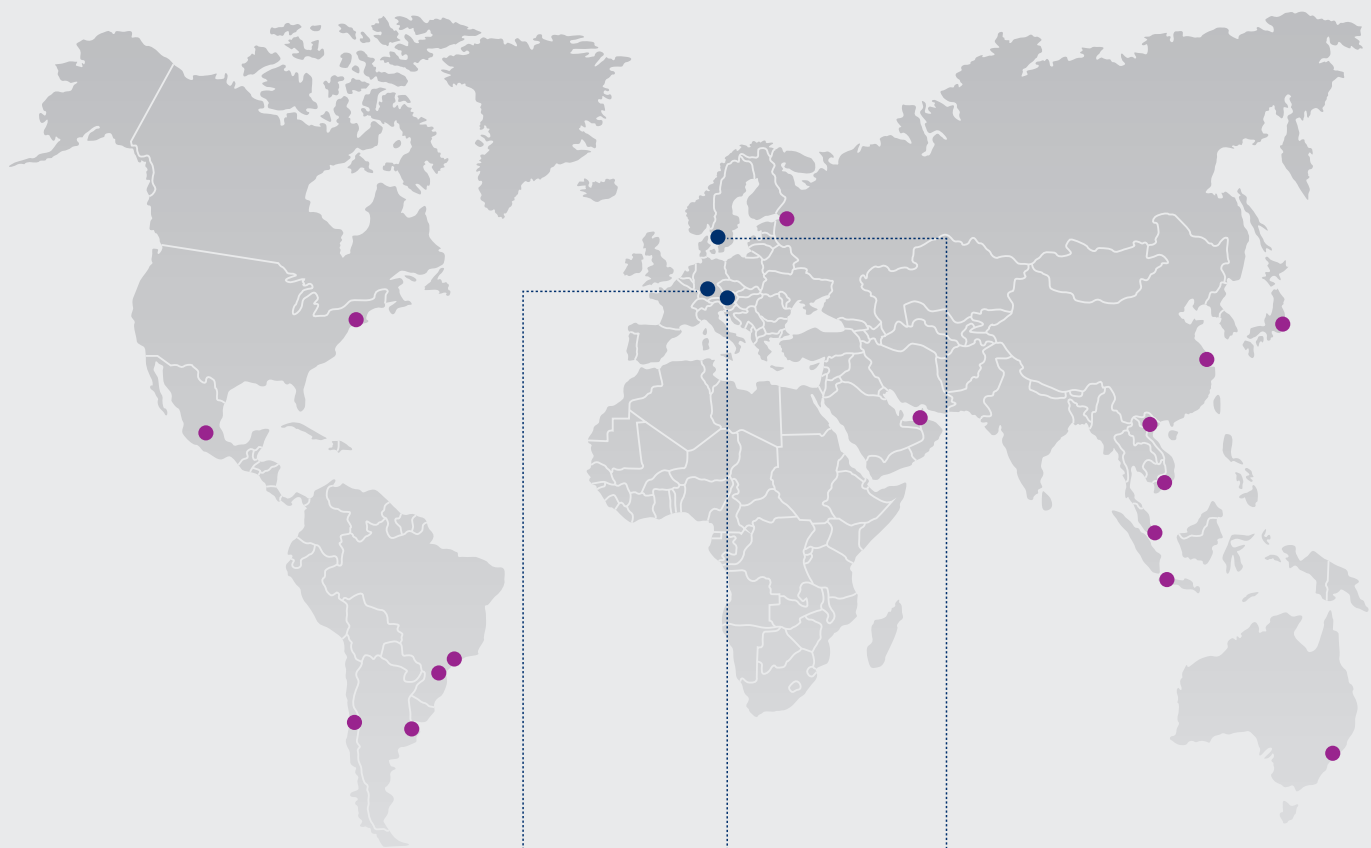
TECHNICAL DATA

SYSTEM REQUIREMENTS

Operating system	Windows XP Professional SP3 or newer
Software	Microsoft DotNet 4.0
Resolution	at least 1280 x 800 pixel
Internal memory	at least 1 GB
Hard drive space	20 MB for the software Local traceability needs additional drive space, depending on use.

AT YOUR DISPOSAL – WORLDWIDE!

Owing to our integration into the globally acting Elof Hansson Company we are able to offer you a worldwide service network and service technicians who speak your language. They will always be on the spot when it comes to maintain, calibrate or repair your instruments.



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PRODUCT DIRECTORY

BY
PRODUCT
NAME

S40450	AIR PERMEABILITY TESTER ACC. TO GURLEY - AUTOMATIC	32
S18622	AIRMATIC BURST TESTER FOR FILTER PAPERS AND FOILS	70
S18600	BCT-BOX COMPRESSION TESTER	64
S62500	BEKK SMOOTHNESS TESTER	26
S58566	BENDING STIFFNESS TESTER	24
S62400	BENDTSEN	30
S89830	BRECHT-IMSET	76
S40600.PC	BRIGHTNESS & COLOUR METER PC-VERSION	36
S40600.TS	BRIGHTNESS & COLOUR METER TS	34
S63000	BURST TESTER	18
S95333	COBB-UNGER OIL & WATER ABSORPTION TESTER	52
S18502	CRUSH TESTER SYSTEM FRANK-PTI	58
S24100	DOMAS SCANNER SYSTEM	44
S53984	ELMENDORF TEAR TESTER FULLY AUTOMATED	22
S63200	FORMATION TESTER	42
S62800	GLOSS METER	38
S405301003	INTERNAL BOND SAMPLE PREPARATION STATION	48
S40530	INTERNAL BOND TESTER SYSTEM FRANK	46
S21020	KAPPA NUMBER ANALYSER	77
S62407	POROSITY TESTER "HIGH PORO"	68
S62600	PPS - PRINT SURF ROUGHNESS TESTER	28
S40690	PROBENET	78
S53809	PUNCTURE TESTER DIGITAL	62
S18510	SCT - SHORT SPAN COMPRESSION TESTER	56
S63100	SONIC SHEET TESTER	40
S29010	STATIC FRICTION TESTER	50
S41010	SUCTION HEIGHT TESTER "KLEMM" MANUAL	73
S41011	SUCTION SPEED TESTER DIGITAL	72
S81502	TENSILE TESTER ORIZONTAL	8
S18010	TISSUE ABSORPTION TESTER	66
S13505	TWIN FOLDING TESTER	54
S16502	UNIVERSAL MICROMETER	20
S81838	UNIVERSAL TESTER	12
S63700	VERSEIDAG AIR PERMEABILITY TESTER	74

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