

FX 3500
On-line Tester COMBISCAN



FX 3500 ON-LINE TESTER "COMBISCAN"

SCOPE

The TEXTEST FX 3500 On-line Tester COMBISCAN is a state-of-the-art instrument for continuous measurement of air permeability or pressure drop, respectively, thickness and basis weight of woven fabrics, nonwovens, felts, films and paper machine clothing *at the moving web*. The instrument is designed for direct integration into new or existing production lines. The operating principle is based on the well-tried FX 3386 Air Permeability Tester PROFILAIR.

The COMBISCAN is available in two basic models, depending on which material properties are to be tested:

- Model FX 3500-TX "Light Frame" for determination of the air permeability and/or thickness.
- Model FX 3500-SX "Heavy Frame" for determination of the basis weight and/or air permeability and/or thickness.



FX 3500-BW, basis weight test head

FUNCTION

The instrument consists of a guide rail, which extends over the entire width of the web. Depending on the model, the guide rail, together with up to three idle support rollers, is integrated into a stable frame. The frame or the guide rail, respectively is mounted directly to the production or finishing line.

The guide rail carries a motor driven test head carriage holding the test head or the test heads, respectively. The air permeability test head is pneumatically pressed against the web and *continuously* determines the air permeability at the selected test pressure or the pressure drop at the selected air velocity, respectively by means of an exchangeable, calibrated orifice plate. The thickness test head too is pneumatically pressed against the material. The thickness is measured with an inductive sensor by means of the surface contact method against a metallic counter plate. Determination of the basis weight is done with X-rays using the penetration method.

For determination of a cross profile, the test heads travel once across the entire width of the web. For determination of a length profile, the test heads are positioned in a fixed, selectable position, and the profiles are taken at this position. In addition, the test heads can travel back and forth between the edges of the web, while the material is moving in length direction. This way the web is measured in a zigzag

pattern. Viewed in machine direction, the test heads are positioned one behind the other. Therefore, all material properties can be measured across the entire width of the web.

The test results are automatically sampled at regular, selectable intervals and are transmitted to a PC. The PC is loaded with a special software package for control of the instrument, as well as for display, evaluation, documentation, and storage of the test results.

For automatic control of the production machine, the test results of the COMBISCAN are available in real-time. The data, which is stored in XML format, can be retrieved directly, i.e. without accessing the evaluation program.

Precise, high-stability pressure sensors provide for an excellent measuring accuracy and reproducibility of the test results.

The robust construction of the instrument ensures a high degree of reliability, thus reducing the chance of failure during operation to a minimum.

The instrument can be calibrated. It is supplied with an ISO conform calibration certificate.

A number of special versions of the instrument are available for special applications besides the standard models. Please contact us.

PRESENTATION OF THE TEST RESULTS

The PC connected to the instrument continuously displays the test results both, graphically and numerically. Due to the permanent comparison with the control range, any deviation becomes immediately obvious.

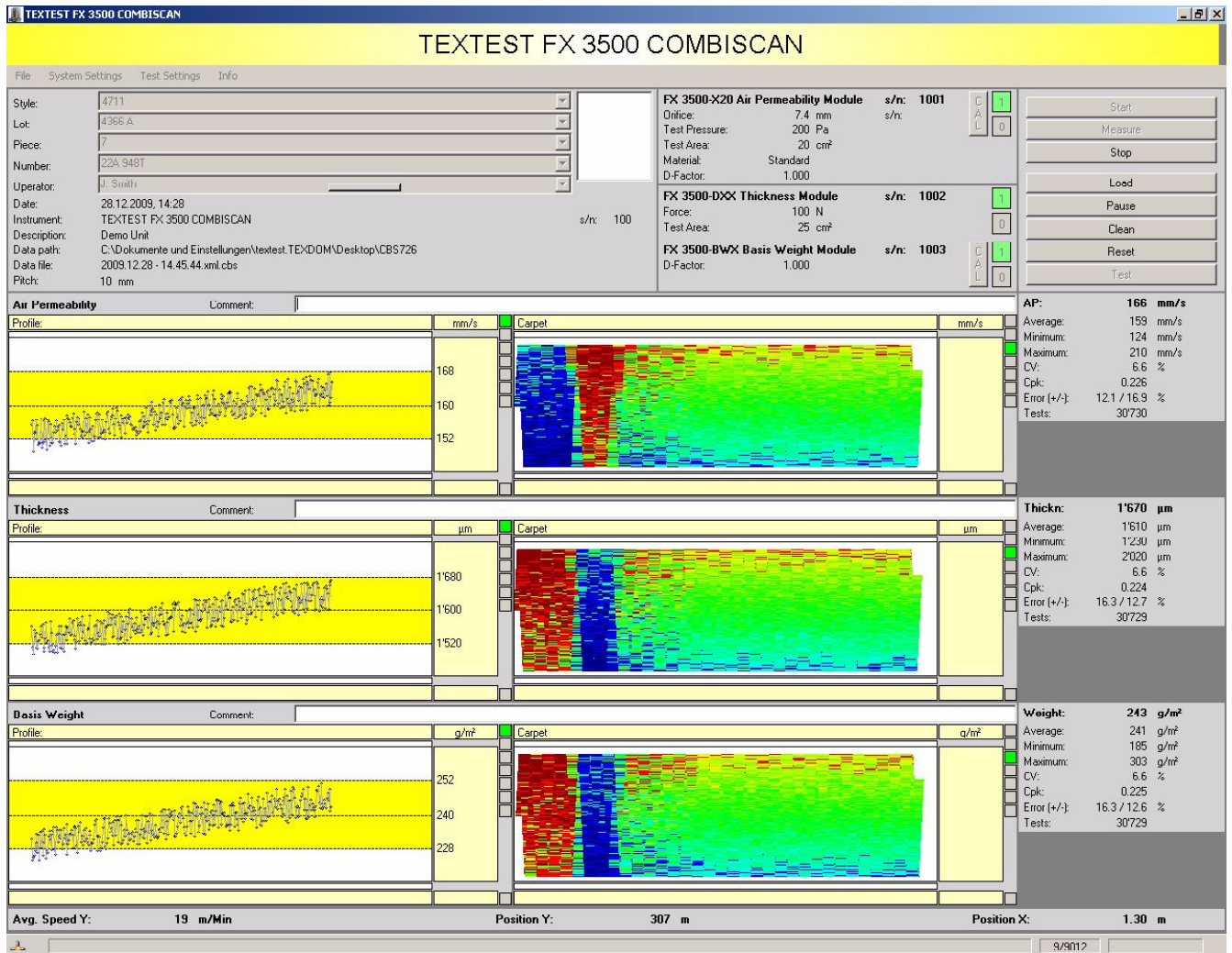
A quasi three dimensional, colored display of the web and meaningful statistical data summarize the enormous amount of test data in an easy-to-read way.

The test results can be documented on a test report.

The PC automatically stores the test results on disk. After testing the data can be analyzed and documented off-line in many different ways.

The program also includes provisions for long-term analysis of the data.

The program handles five different languages: English, German, French, Italian, and Spanish.



Screenshot of the evaluation program of the FX 3500 On-line Tester COMBISCAN

TECHNICAL SPECIFICATIONS

- **Air permeability:**
Measuring range: approximately 1 through 5'000 mm/s (0.2 through 1'000 cfm)
Test area: 20 cm²
Test pressure: 98 through 500 Pa
Units of measure: mm/s, l/m²/s, l/dm²/min, cfm, cm³/cm²/s, m³/m²/h, m³/m²/min, m³/m²/s
Measuring accuracy: ± 3 % of the displayed value
- **Pressure drop:**
Measuring range: 0.01 through 65'000 Pa
Test area: 20 cm²
Air velocity: 0.001 through 10 m/s
- **Thickness:**
Measuring range: 0 through 6 mm
Test area: 10, 20 or 25 cm²
Contact force: 100 through 500 cN
Units of measure: mm, µm, mil
Measuring accuracy: ± 0.02 mm ± 0.5 % of the displayed value
- **Basis weight:**
Tube voltage: 5 kV (standard), maximum 20 kV
Measuring range: 50 through 800 g/m² at 5 kV
800 through 4'000 g/m² at 20 kV
Test area: approximately 3.5 cm²
Measuring accuracy: ± 1 % of the displayed value
- **General:**
Test point pitch: 1 through 100 mm (0.04 through 4")
Maximum measuring rate per test head: 1'000 test results / second
Maximum web width: 400 cm (only air permeability: 2'000 cm)
Power requirements: 230 V, 50 through 60 Hz, 2 kW

The PC required for control of the instrument and for display, evaluation, documentation and storage of

the test results is *not* included in the scope of supply. However, the necessary software is included.



FX 3500-T3 for determination of air permeability and thickness