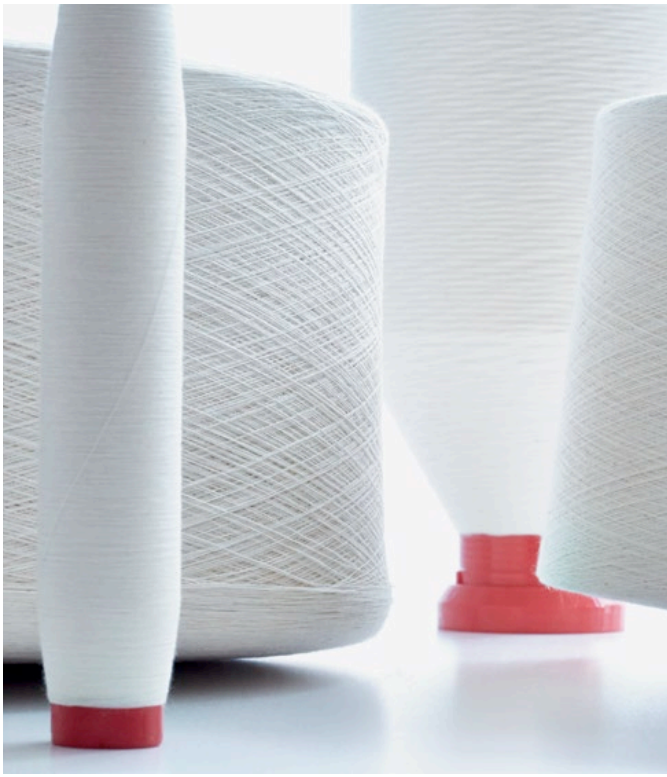
SAURER.

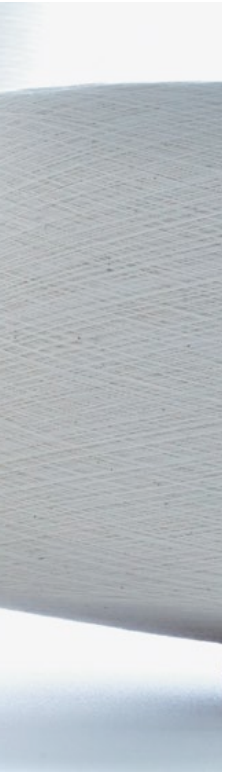
Precise and connected.

Autolab laboratory systems

EN


SAURER.
Overall Yarn Report





Saurer Autolab laboratory systems offer you the most modern, highly precise measuring devices with unique technologies and easy to operate.

The Saurer solution for intelligent data collection and analysis includes networking between the Saurer Autolab laboratory system, Saurer machines and mill management system Senses. This means that in addition to being able to display and evaluate the production data of machines from Saurer and third-party providers from across different production areas, the quality data of the laboratory systems can also be displayed and evaluated in a single application.

Content

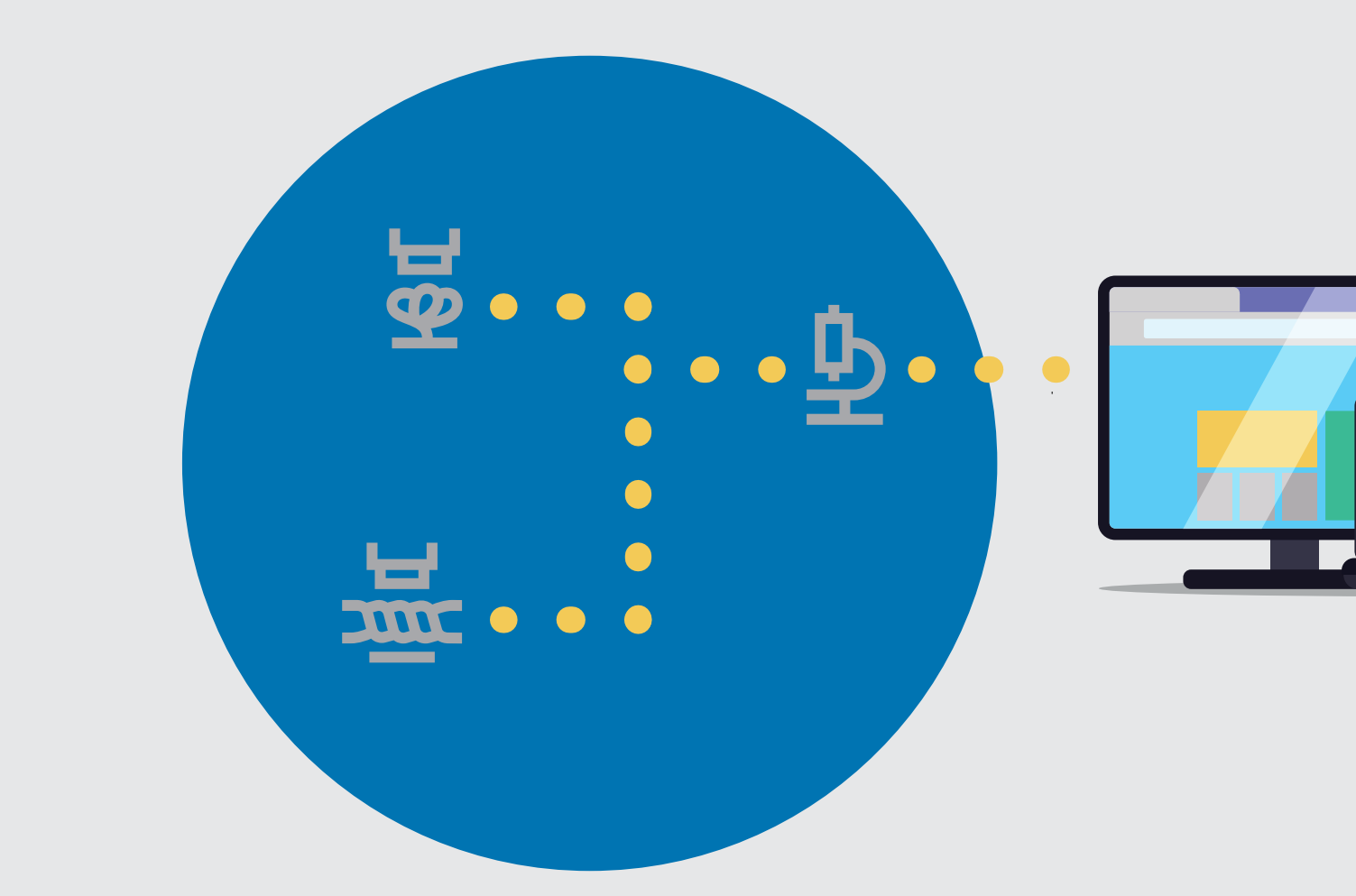
4
Textile testing technology from the innovation leader

5
Ready for digitalised production

6
Optimal use of raw materials with our fibre lab systems

8
Best yarn quality with our yarn lab systems

11
Your textile laboratory as a Saurer complete solution



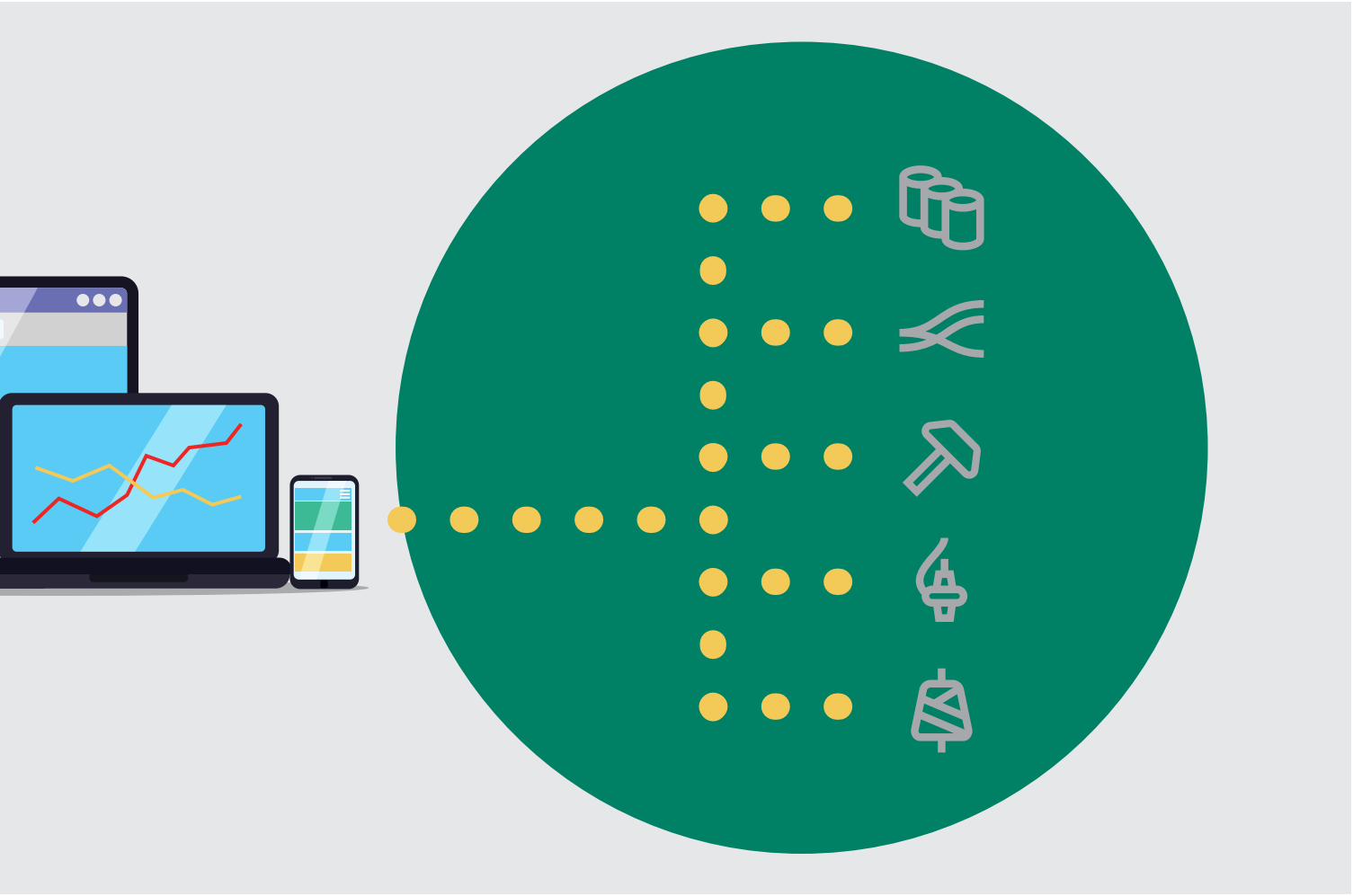
Textile testing technology from the innovation leader

Networked with Senses, the digital mill management system from Saurer, your Autolab laboratory is a powerful tool for increasing the efficiency of your entire production. This unique digitalization solution for spinning mills is only offered by Saurer.

Precisely test of fibres and yarns
The new Autolab laboratory devices product line from Saurer offers you all of the necessary testing devices for your own textile testing laboratory. Autolab laboratory systems test the following precisely and automatically:

- Fibre length and fibre bundle strength
- Micronaire values and degree of maturity
- Tensile strength and elongation
- Color grade of fibres
- linear density and fineness of sliver, rovings and yarns
- Strength and elongation properties of yarns
- Evenness of sliver, rovings, yarns and yarn hairiness

Autolab systems are suitable for all fibre and yarn types used in staple fibre spinning.



Ready for digitalised production

Seamless integration with Senses, the digital mill management system from Saurer
Intelligent digitalisation is the key to more efficient yarn production. Autolab testing systems from Saurer are an important component of sensible digitalisation along your textile process chain. Since it is networked with Senses, the Autolab testing data from all process stages is incorporated into the digital mill management system, and is therefore available throughout your entire production process. Only Saurer offers you this advantage.

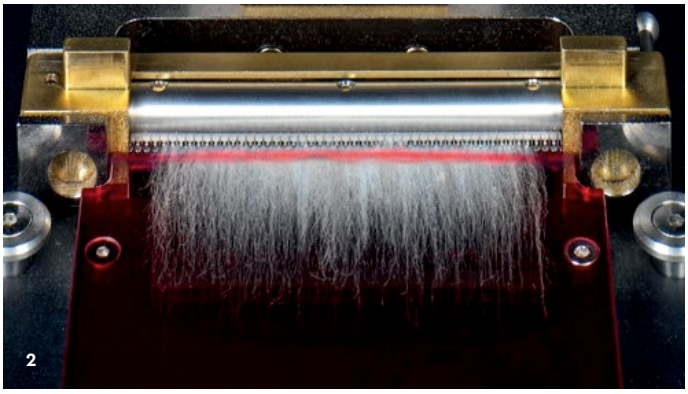
Testing data available always and everywhere
Senses links the offline fibre and yarn data from the Autolab testing devices in the textile laboratory with the online production data and quality data from your production machines in an intelligent way. Thus, each employee always receives the relevant information that they require for the optimal production of required product features at the right time, at the right place.

Quality is decisive
The integration of the Autolab laboratory systems with the Senses digital mill management system makes modern, consistent and comprehensive quality management possible, from the pre-product to the intermediate product to the end product.

Use the opportunities offered by intelligent digitalisation of your processes. The linking, aggregation and analysis of all relevant data makes new information available, with which you can, for example, achieve higher raw material efficiency and better product quality. Thanks to central data storage, a high level of traceability and reproducibility is ensured.

1

3


2

Optimal use of raw materials with our fibre lab systems

Knowledge of the properties of raw materials used is indispensable for profitable yarn production. The determination of the fibre properties serves to determine the incoming quality of the fibres and to group the bales in stock. In this way, matching bale combinations can be selected and the settings for all machines along the entire product chain can be defined.

Autolab LT: fibre length and fibre bundle strength
This tester supplies to measure the fibre length distribution and to test the fibre bundle strength. Both measurements are carried out automatically one after the other on the same sample. The monitoring and evaluation of the measurement data is done on the Autolab LS control and analysis system.

Measurement of strength as an absolute value
In contrast to other systems, Autolab LT determines strength as an absolute value. The measurement results can thus be represented directly in physical base units. Autolab LT does not require any calibration cotton.

1 Autolab LT
2 Autolab LT: measuring section
3 Autolab OT
4 Cotton fibre
5 Autolab MT
6 Autolab AS

4

5

6

Autolab OT: colour determination and trash analysis
This device determines the colour of the fibre material as well as the trash content. Additionally, the colour level, the level of seed particles and the Cie lab colour data are tested. Autolab OT is supplied with a set of HVI calibration tiles that is manufactured by USDA. In combination with Autolab AS and the neps and trash digital analysis (NT-DA) contained in the Autolab OT software, the percentage and amount of impurities can be measured.

Autolab MT: determination of fineness and degree of maturity
This unit determines the micronaire value and the degree of maturity of cotton in accordance with international standards. Degree of maturity and linear density are not calculated, but they are instead actually measured.

Autolab AS: determination of fibre impurities
One of the most important quality parameters of a spinning mill is the degree of purity of the raw material. With the Autolab AS, various sample types such as raw cotton from bales and tufts before carding can be measured. With the help of the measurement values determined, the cleaning efficiency of fibre preparation can be analysed.

The Autolab AS separates the clean cotton from any impurities and precisely analyses the dust content, fibre fragments, short fibres, neps, seed particles and dirt particles.

1


2

Best yarn quality with our yarn lab systems

In yarn production, the quality of sliver, rovings and yarns must be determined to ensure the required yarn properties. With this information, optimal settings for your spinning machines can be implemented. With the Autolab laboratory systems for the yarn laboratory, the stated properties can be determined.

Autolab ST: determination of tensile properties and yarn count
Autolab ST combines the testing of the tensile properties (tensile strength, elongation, force) and the determination of the yarn count in a single testing device. Both tests are carried out on one package after the other.

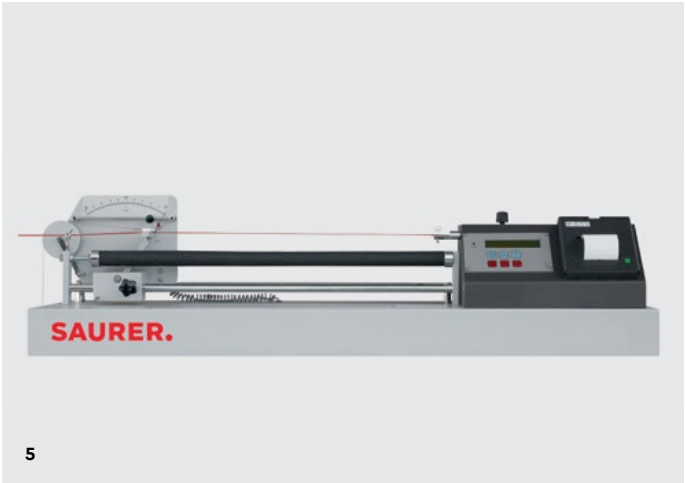
With the high clamping force of the pneumatic jaws and the high degree of variability of the testing process, tensile testing with the Autolab ST is impressive. In addition to the static tensile test, alternating load tests as well as creep and relaxation tests are possible.

The Autolab ST determines the yarn fineness pursuant to ISO 2060 or ASTM D6587. A preselected yarn length is transported from the yarn retraction device to a collecting chamber as per the vacuum conveying principle and is weighed. Test sample feeding and disposal are done fully automatically. Autolab ST is fitted with a package doffer for 24 positions.

1 Autolab ST
2 Autolab ST: detailed view
3 Autolab ET
4 Autolab ET: detailed view
5 Autolab TT

3


4



5

Autolab ET: determination of sliver evenness, yarn evenness, yarn hairiness
Nowadays, a higher level of automation and a short reaction time to irregularities in the production process are key factors for a modern quality control system.

Measurable variables supplied by the system are the variation coefficient of the mass distribution along the yarn length, the spectrogram, and for staple fibre yarns, the number of neps, thick- and thin places (imperfections). Now all relevant parameters for sliver, rovings and yarns can be determined with one testing device and thus optimal running behaviour for the spinning machine can be ensured.

Yarn evenness is tested across a wide yarn fineness range in accordance with ISO 16549. A modern, integrated laser sensor generate the basis of the automatic measurement of yarn hairiness. Determination of the total yarn hairiness and the hair length classification is made on this basis.

Autolab TT: determination of yarn twist
This semi-automatic device determines the twist of a yarn with an "S" or "Z" twist. The twisting and untwisting method and the SCHUTZ method for OE yarns are used. The test results are given in T/m. The measurement length can be set to between 5 and 50 cm. The tester can optionally be connected to the Autolab LS system.

Autolab LS laboratory control and analysis system
The Autolab LS PC system controls the test processes of the Autolab devices, evaluates measurement results and analyses them. All parameters for the test procedures and all parameters for the evaluation of the measurement results are entered here. The results are summarised and represented in easy to understand reports. Through simple networking, Autolab LS presents the interface between the laboratory and the Senses mill management system.

1

2

Autolab CT: manual determination of the yarn count
Autolab CT serves to determine the linear density of sliver, rovings and yarns of all kinds. The system uses an electronic scale with a resolution of 1 mg, which is connected to the Autolab LS system. The result of the linear density of the sample is then transferred directly to the Autolab LS system.

Autolab SR: test preparation roving
With the Autolab SR motor-driven tabletop device, sliver and roving samples with the desired length are prepared for the testing of linear density.

Autolab YR: test preparation yarns
Autolab TR prepares samples with yarns of a predefined length. The electrical preparation device is fitted with an electronic preset counter for setting the desired yarn length. It is supplied with 5 winding positions.

Autolab CG: cone gate
Bobbin creel with 20 positions.

Your yarn quality is important to us
Precise and high-quality Autolab laboratory systems offer you the technological basis for optimising your yarn quality, increasing your productivity and also increasing profits.

1 Autolab SR
2 Autolab YR

Your textile laboratory as a Saurer complete solution

The Saurer Autolab laboratory provides a solution for efficient and comprehensive quality control from bale to yarn. Build your complete textile laboratory with us. For everything from planning to delivery of our Autolab testing systems including setup, assembly and commissioning, as well as high-quality training provided to your personnel, we offer you with your textile laboratory as a turnkey complete solution.

Use our knowledge advantage
Saurer maintains its own textile laboratories that support the development of Saurer machines and the textile end product development of our customers. This breadth of knowledge gained from experience is incorporated into the design of our laboratory solutions.

Fibre laboratory: practice-oriented measurements as absolute values
Autolab fibre measurement systems measure fibre properties as absolute values. In contrast to relative measurement, absolute measurement better reflects the real textile process.

Yarn laboratory: efficiency through automation
Through a clever arrangement of the measuring sections, the Autolab yarn measuring systems enable the determination of the most important quality features with almost no operator intervention. The package doffer ensures that the packages are automatically tested one after the other.

Saurer Spinning Solutions
GmbH & Co. KG
Carlstrasse 60
52531 Übach-Palenberg
Germany
T +49 2451 905 1000
info.spinning@saurer.com
saurer.com

TÜV CERT DIN EN ISO 9001

Our quality management system complies with the requirements of EN ISO 9001.

BLUEcoMPETENCE Alliance Member
Partner of the Engineering Industry Sustainability Initiative