USTER® *TESTER 6*
The Total Testing Center™

USTER®
Think quality

 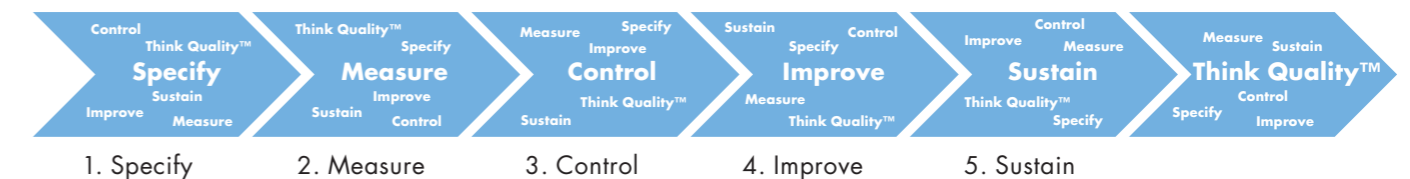
Optimization
Manpower
Cost control
Consistency
Labor skills
Automation
Finished fabric
Energy and cost
Fabric yield
Analysis
Quality
Productivity
Market reputation
Interest
Global sourcing
Waste reduction
Testing
Raw material
Claims
Yarn breaks
Maintenance
Sustainability
Compliance
Safety
Depreciation
Contamination
Efficiency per production step
Transparency
Raw material usage

What is Think Quality™?

What is Think Quality™?
It is 'managing your textile mill with quality in mind'
Today's textile markets are highly-competitive, throughout the entire value chain from fiber to fabric. Customers expect unique products, at the right quality and free from unacceptable defects, every time. Mills need to manufacture economically, with best-possible use of resources – especially raw materials and labor. These are major challenges, requiring comprehensive mill management strategies.

Take control of your quality – Think Quality™
USTER's unique Think Quality™ approach is the way to 'manage your textile mill with quality in mind'. It integrates world-class USTER® products and services to ensure you always produce optimum quality, enhancing your reputation – as well as achieving predictable profits.

Think Quality™ means:
- Working to clear quality specifications from customers
- Controlling raw material sourcing, costs and yields
- Applying the best measurement and information systems
- Continuous production monitoring, for rapid response
- Understanding improvement options, through automated application know-how
- Benchmarking with USTER® *STATISTICS*
- Improve yield and assure quality of the final product


Control
Think Quality™
Specify
Sustain
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Measure
Think Quality™
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Think Quality™
Control
Specify
Improve

1. Specify 2. Measure 3. Control 4. Improve 5. Sustain

USTER® *TESTER 6* – the vital link to Think Quality™
The USTER® *TESTER 6* is the heart of the laboratory in mills around the world. It provides the key to many of the principles of USTER's unique Think Quality™ approach. With the USTER® *TESTER 6* the role of the USTER® *TESTER* is expanding beyond 'laboratory testing' to 'Total Testing'.

Connecting to USTER® *QUALITY EXPERT* is the route to effective and preventive process optimization in textile mills. Assistant Q, the expert with 70 years of experience, facilitates fast action by smart alerting. The USTER® *TESTER 6* and USTER® *QUALITY EXPERT* create a unique synergy between 100 % online control and laboratory precision to secure quality in every part of the spinning process.
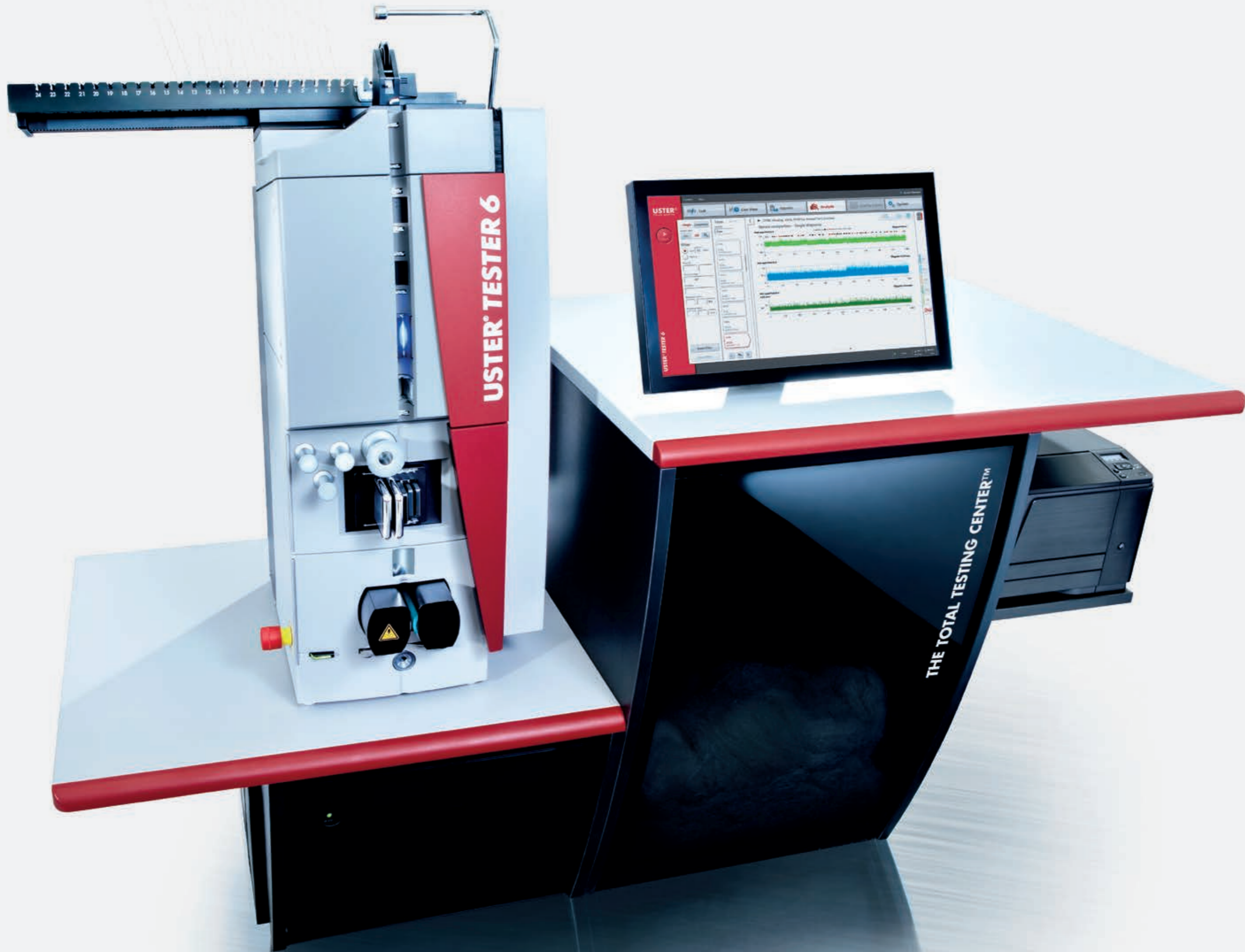
Innovation: the starting point for superb quality and optimized productivity in the spinning mill

USTER customers can expect exciting innovations in the new USTER® TESTER 6 generation. To start with there is a brand new Capacitive Sensor, which measures with more accuracy and reliability than ever. There is also a range of completely new optical sensors and features, surpassing expectations by providing all the answers in testing, for overall customer satisfaction.

– The new global standard from the leading name in yarn testing
– USTER accuracy: your guarantee of reliable measurements at top testing speeds
– Direct correlation with the world's textile quality benchmarks, the USTER® STATISTICS

New global standard

The USTER® TESTER 6 is acknowledged throughout textiles as the new global standard in evenness testing. Its new Capacitive Sensor and Optical Sensor options give spinners the power to control yarn quality levels precisely and guarantee the quality is right first time.
– Automatic and semi-automatic models available
– Upgradeable for all sensor options, automatic function, Knowledge Based System and Fancy Yarn Profile
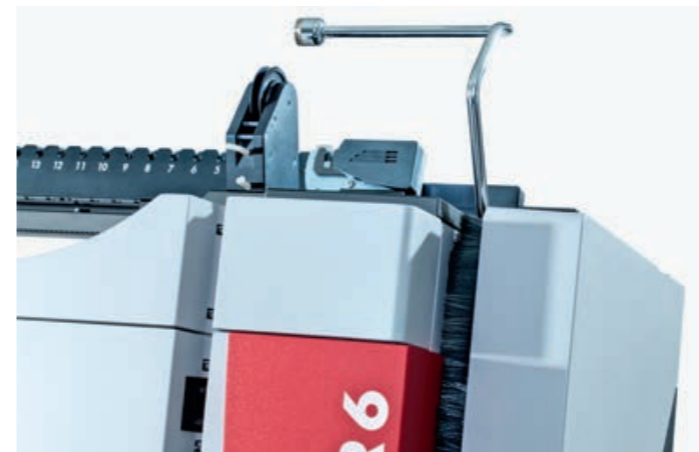
### USTER accuracy reliability at top speed

All models operate at the testing speed of 800 m/min with greater accuracy and reliability than ever. Set to automatic, the high sample throughput rates give even faster detection of quality exceptions. That cuts down the risk of claims, reduces labor costs and ensures customers get the quality they expect.

It's also a vital part of the USTER® 'Total Testing' concept.

Direct link with USTER® STATISTICS

Founded on 60 years of textile expertise, the USTER® STATISTICS benchmarking tool is the worldwide standard for objective quality comparisons. It provides a benchmark basis for yarn trading and certified specifications.

Only the USTER® TESTER produces data which links directly to USTER® STATISTICS standards.
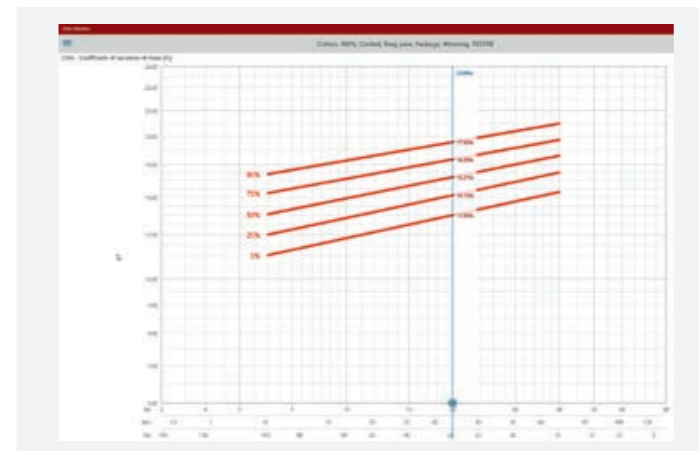
Welcome to the Total Testing Center™…
integrated quality throughout the mill with USTER® *TESTER 6*

The Total Testing Center™ – incorporated in the USTER® *TESTER 6* – integrates data from precise laboratory tests and online monitoring systems covering all short staple spinning mill processes. It is a unique combination, transforming data into practical choices for quality yarns and profitable production.

– USTER® *TESTER 6* – the gateway to Total Testing
– USTER® *QUALITY EXPERT* – the link to the Quality Management Platform™
– Assistant Q – the 'staff member' with 70 years' know-how

USTER® *TESTER 6* – the gateway to the Total Testing Center™
It's the pulse of a new generation, destined to be the beating heart of every textile laboratory. The USTER® *TESTER 6* is a genuine evolution and the launchpad for Total Testing. Opening up brand new possibilities for every spinning mill.

USTER® *QUALITY EXPERT* – the link to optimization
Full control from fiber to yarn in one online system illustrates textile mill's entire processes with key quality parameters in the right format and right time. Mill analyses with meaningful quality comparisons, integrated application knowledge, focused management reports – are leveraged for an even more profound and informed decision making.
– One-stop shop for quality management and optimization
– Accessibility 24/7 from everywhere

Assistant Q – ever-ready helper with extensive USTER Application Intelligence
Quality managers no longer need to waste time on trivial tasks. Assistant Q is like a well-qualified and highly-experienced new 'staff member' who ensures nothing goes unnoticed. He works tirelessly to present spinners with exactly the information they need, for the ultimate goal of 'managing the spinning mill with quality in mind'. The unique rule engine and smart algorithms for alarms and predictions build the foundation for reliable alerting.

Sensors are the powerful brains inside the world-renowned USTER® *TESTER* family. A completely new and unique Capacitive Sensor has been developed specifically for USTER® *TESTER 6*. Along with the integrated Hairiness Length Classification Sensor, and the Fineness Automatic, it means spinners will have all the answers in testing – and all the information they need – to prevent claims.

– Brand-new: the latest USTER® Capacitive Sensor (Sensor CS)
– The new Sensor HL for Hairiness Length Classification at up to 800 m/min
– Automatic measurement of absolute yarn counts and variations (Sensor FA)

Sensor CS – the brand-new USTER® Capacitive Sensor

This is USTER's new digital Capacitive Sensor, bringing even greater accuracy and reliability.
– Accurate, dependable results, including the famous 'USTER value' CV_m to ensure the right quality is produced
– Easy-reference graphical presentations with diagrams, spectrograms, length variation curves and histograms
– Highlighting quality issues with periodic faults, for reduced customer claims

### Sensor HL – hairiness at high-speed

Complete evaluation of the vital hairiness parameter is now possible, thanks to the new Sensor HL for Hairiness Length Classification. Its new measuring principle focuses on the real length of the protruding fibers, for the ultimate in useful data. Combined with the established Sensor OH, spinners now have the full picture of yarn hairiness, the ultimate assurance against quality claims.

Fineness Automatic (Sensor FA)

Accurate measurement of absolute yarn count and any variations is crucial for every mill. With the new Sensor FA, yarn count measurement is effective and automatic. This feature of USTER® *TESTER 6* saves time in the laboratory, is operator-independent and speeds up reaction times for mill process improvements.

Existing USTER® *TESTER 6* installations can be upgraded with Sensor FA on-site.
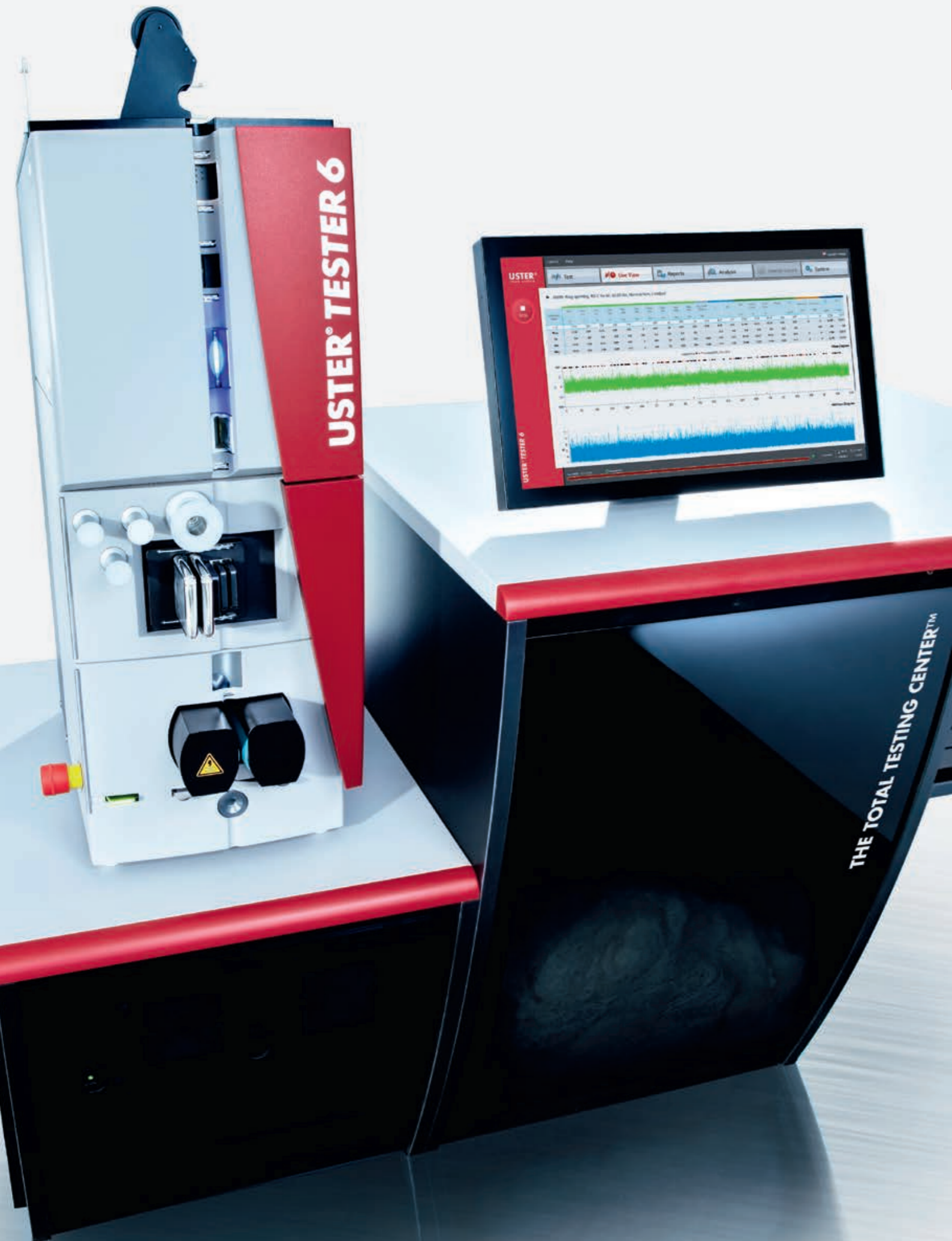
Yarn hairiness: the unique methods for the full story

With USTER® *HAIRINESS* technology, spinners have the full story, so they can manage every hairiness testing need, for absolute customer satisfaction. USTER® *TESTER 6* is the definitive hairiness solution, its unrivaled combination of Sensor HL and Sensor OH providing the key values for precise yarn specifications.

– Sensor OH measures the H-value, acknowledged worldwide for use in yarn contracts
– Sensor HL provides the S3*u* value for protruding fibers – a key indicator of fabric durability
– Together, the Sensors HL and OH form the unique USTER® *HAIRINESS* solution

Optical Hairiness (Sensor OH)

The H-value is the globally-recognized hairiness benchmark. It is used in yarn trading, and as an early-warning mechanism during production. The Sensor OH offers reproducible and objective hairiness measurement at 800 m/min. It provides the USTER® *HAIRINESS* value, directly comparable with USTER® *STATISTICS* benchmarks. Hairiness variations may show up in a fabric only after dyeing – just one example of how unmonitored yarn hairiness can have a negative and costly impact.


Hairiness Length (Sensor HL)

With its new measuring principle based on the real length of the protruding fibers, this sensor provides the results of protruding fibers longer than 3 mm.

Sensor HL has the high sensitivity needed for use in yarn engineering, in identifying long protruding fibers likely to cause pilling, and for machine checks, especially on compact spinning machines.

Optical Hairiness and Hairiness Length Sensors – the complete package

Yarn hairiness has a huge impact on fabric appearance and durability. The ultimate two-sensor package brings together all hairiness data for a yarn at the same time. Mills can react faster, to improve quality or prevent expensive claims.
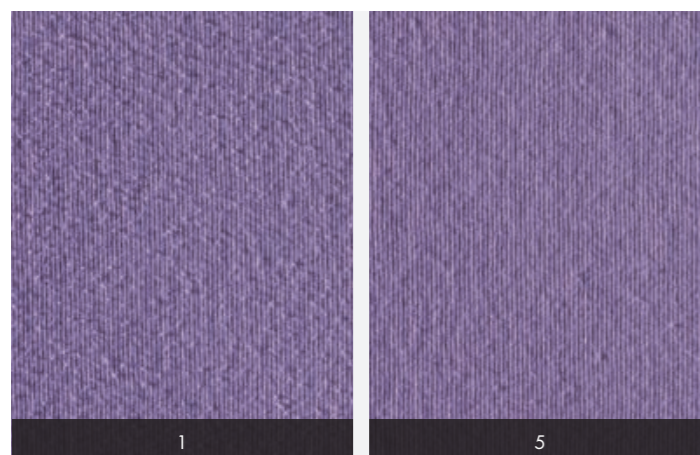
Yarn twist: precision control, for productivity and optimum fabric appearance

Along with mass and hairiness problems, spinners know that variations in yarn diameter and twist influences ultimately the final product. USTER® *TESTER 6* deals with all these threats, with a range of sensors dedicated to optimizing fabric appearance by controlling the yarn.

– Sensor OM identifies twist variation to enhance the feel of the finished fabric
– Sensor OM avoids claims for apperance variations
– Sensor OI assesses the impact of impurities

Optical Multifunctional – Twist (Sensor OM)

Spinners and yarn users know that twist is one of the most important parameters in producing a yarn. The twist level in a yarn affects the look and performance of the finished product. For cotton and synthetics ring and compact yarns the USTER® *TESTER 6* offers the unique option to get twist and twist variations during the yarn testing routine at a testing speed of 800 m/min. Without any further effort, performance gaps like low speed spindles are identified, independent from the operator and saving additional test time in the laboratory.

Optical Multifunctional – Evenness (Sensor OM)

The CV FS (fine structure) parameter helps to prevent 'cloudiness' in knit goods. For compact spinners, Sensor OM is a must – offering better structure and smoothness information for their yarns. Color variations and shadowing can be traced back to irregularities in yarn diameter, density and shape. This sensor's data provides vital quality information on how the yarn will look in the finished fabric.


Optical Impurity (Sensor OI)

Dust and trash particles can cause serious problems in subsequent fabric manufacturing processes. Sensor OI prevents this, by accurately measuring trash and dust particles in the yarn. The benefits: less downtime in weaving; knitting needles last longer. Unique measurement of the cleaning efficiency in an open-end spinbox.

Built-in knowledge: USTER expertise in problem-solving makes yarns and fabrics better, faster, simpler

USTER's detailed know-how, underpinned by 70 years of experience, is all available to USTER® TESTER 6 users. Three special features draw on this expertise to help spinners trace faults and implement fast quality management remedies, for minimal downtime and ideal quality in both yarns and fabrics.

– Knowledge Based System (KBS) needs no extra settings
– Improved fabric simulation – a clear visual representation
– Smart view of exceptions and limits
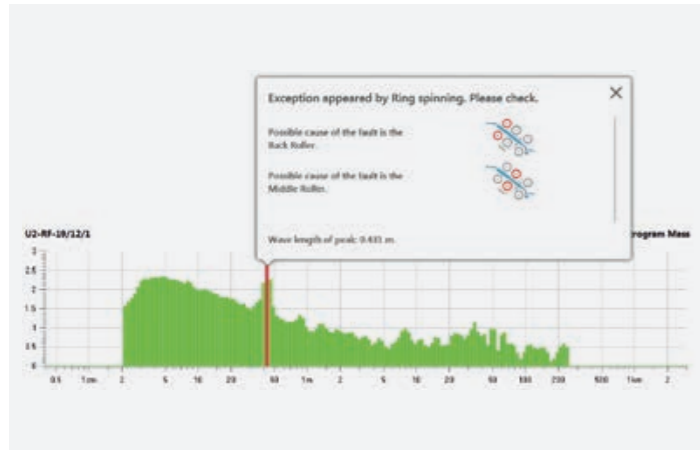
Knowledge Based System needs no extra settings

The new Knowledge Based System (KBS) quickly traces the cause of a quality problem on the spinning machine, with no need for extra settings or input from the machine supplier. A single click on the spectrogram display brings up the defective component on the screen. Time saved, quality improved and expensive claims avoided…

For more details please see the Technical Data sheet.

Low quality · High quality
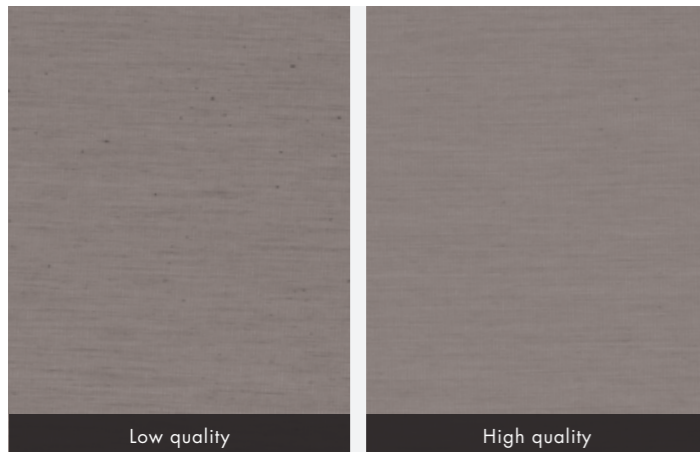
Fabric simulation, a clear view in advance

Yarn results are displayed on blackboards, giving a clear view, in advance, of how the knitted or woven fabric will look.
– Yarn board
– Knitted fabric
– Woven fabric (plain)
– Woven fabrics displayed in reflected and transmitted light
– Magnified yarn board view for yarn hairiness

For more details please see the Technical Data sheet.

Smart view of exceptions

A new feature with USTER® TESTER 6 is 'Smart View'. At one click, customers can focus on test exceptions and outliers. Or switch quickly to the USTER® STATISTICS function, to compare results with worldwide benchmarks. Smart View is a valuable time-saver, as a quick check on whether a yarn meets specifications.

Easy to learn, easy to use: a fresh approach to textile laboratory testing

Laboratory staff will appreciate the benefits of the new USTER® TESTER 6. Designed-in ergonomics, and a superb graphical user interface, make it exceptionally user-friendly. Even more complex tasks such as slub yarn testing are made simple, thanks to the new USTER® Fancy Yarn Profile.

– USTER® Fancy Yarn Profile (FYP) for automatic slub yarn analysis
– Touchscreen monitor, easy to learn and efficient in use
– Intelligent user interface able to mirror textile processes in the mill
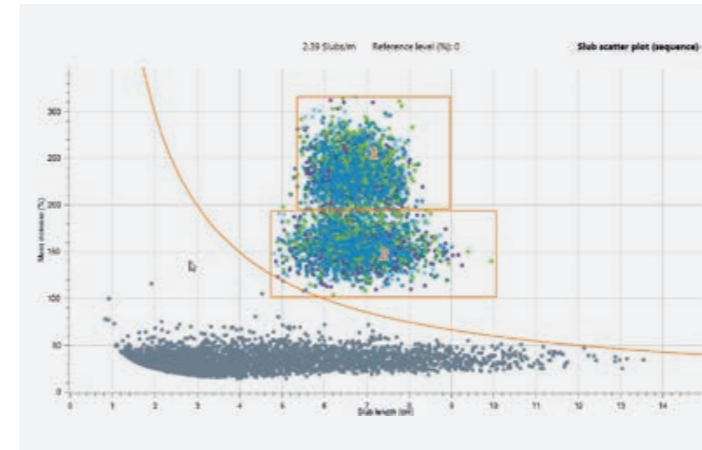
USTER® Fancy Yarn Profile (FYP)

The FYP is the standard for precise slub yarn measurement. USTER knowledge is the key, enabling an automatic first evaluation – quick and easy for all users.

The USTER® Fancy Yarn Profile measures quality data for: number of slubs, mass increase and slub length, and mass decrease after a slub.

An extended range of reports give quality information and prevent unwanted patterns.

Intuitive touchscreen

The USTER® TESTER 6 has a touchscreen monitor. It is easy to use, even for untrained staff, so operators can stay focused on test results, guaranteeing higher efficiency and optimum user satisfaction.
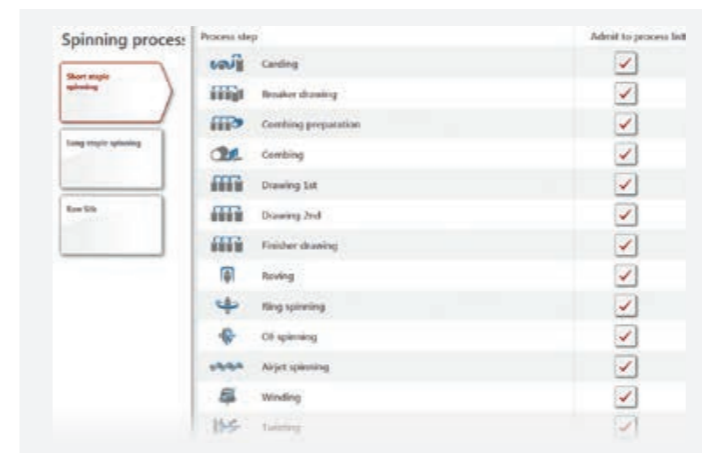
Mirroring textile processes

With test samples coming in from various spinning mill departments, the USTER® TESTER 6 is able to mirror the different processes in its user interface. This makes the entire test procedure simple and intuitive for the operator.
– Process routes are selectable: short staple, long staple or raw silk
– Automatically follows logical sequence from carding to winding

Conductive yarns have attracted considerable attention in the past decade, because they are used in fast-growing markets such as protective wear, fitness clothing and healthcare. The USTER® *TESTER 6* with Sensor OM is uniquely able to measure frequent occurrences such as thin and thick places. This function fills a gap in improving yarn quality and prevention of costly claims.

– Measurement of frequent occurrences with Sensor OM
– Yarn evenness testing and detection of periodic faults with Sensor OM
– Hairiness length classification for colored yarns with Sensor HL

No.	FO-M /km	FO+M /km	FO spots M /km	CV2D 8mm %
1 / 1	105	200	233	9.52
2 / 1	103	193	223	9.34
3 / 1	65	155	158	9.14
4 / 1	200	270	220	10.19
5 / 1	125	220	240	9.60
Mean	120	208	215	9.56
CV	41.8	20.3	15.3	4.1
s	50	42	33	0.40
Q95	62	52	41	0.49

Measurement of frequent occurrences

The unique measurement of frequent occurrences (FO) with Sensor OM allows the objective evaluation of conductive yarns. Analysis of neps, thin and thick places is vital in improving and guaranteeing quality of a yarn.

Frequent occurrences are available in 12 classes and can be measured at a testing speed up to 800 m/min.

Not specified/ 4/1
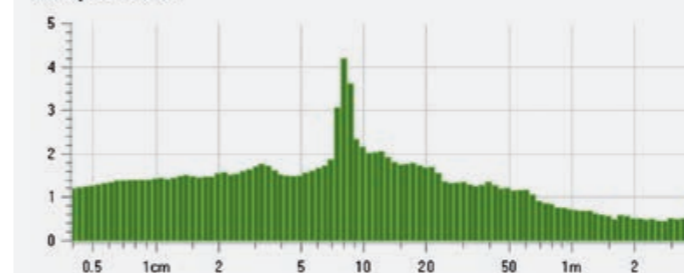
Yarn evenness and detection of periodic faults

Sensor OM also measures optically the yarn evenness, diameter, density and shape. This information combines all the key factors required to control the quality of a conductive yarn – maintaining the supplier's reputation in this competitive environment.

Spectrogram analysis now makes it possible to obtain information of periodic faults. This helps to locate the source and assist with repair of defective machine elements.

No.	S3u /100m	S1+2u /100m	1mm /100m	2mm /100m	3mm /100m
1 / 1	1,474	12,158	8,998	3,160	1,009
2 / 1	1,511	11,768	8,409	3,359	1,054
3 / 1	1,499	11,515	8,490	3,025	1,055
4 / 1	2,957	12,187	8,366	3,821	1,710
5 / 1	1,635	11,826	8,572	3,253	1,083
6 / 1	1,385	11,390	8,254	3,136	948
7 / 1	1,741	12,549	8,932	3,617	1,214
8 / 1	1,367	11,898	8,672	3,226	949
9 / 1	1,295	10,072	7,230	2,842	848

Hairiness length classification for colored yarns

Most conductive yarns are colored. Sensor HL is the perfect solution for hairiness measurement of these yarns, since it is color independent.

It provides the well-established S3*u* values (fibers longer than 3 mm). Values for both long and short protruding fibers are critical for downstream processes, because they are key indicators for performance at weaving and knitting machines, as well as for fabric durability.

USTER® QUALITY EXPERT

Ring Spinning Optimization

Total Contamination Control

Yarn Prognosis

Alarm Center

Mill Analysis

USTER® QUALITY EXPERT is the Quality Management Platform™ for advanced process optimization across yarn manufacturing processes. A single system provides control, securing fiber, yarn and fabric quality. A combination of 100% in-line monitoring, precise laboratory testing and integrated intelligence delivers the power to predict potential faults and prevent claims. USTER® QUALITY EXPERT is available in two versions: either as a standalone solution via a dedicated client-server – or integrated within USTER® TESTER 6.

USTER's Application Intelligence is the foundation for merging textile application know-how with insightful analytics and connected products. Smart algorithms guide data-based decisions, extending the analytical possibilities as each additional instrument is connected.

USTER® QUALITY EXPERT and its Value Modules:
– **Alarm center** – creates awareness and triggers action
– **Mill analysis** – insightful analytics for data-based decisions
– **Yarn prognosis** – increases credibility between spinners and yarn users
– **Total Contamination Control** – for managing remaining contaminants in yarns at minimum possible cost
– **Ring Spinning Optimization** – the link to productivity and quality

Fast action in response to quality deviations requires Application Intelligence in the right format, which is provided by USTER® QUALITY EXPERT. Together with USTER® TESTER 6, the benefits of 100% in-line control and laboratory precision merge to highlight the optimization potential in textile mills.

– Yarn prognosis for increasing credibility between spinners and yarn users
– Mill analysis to benefit from insightful analytics for data-based decisions
– Application Intelligence for quality consistency to avoid claims from yarn users
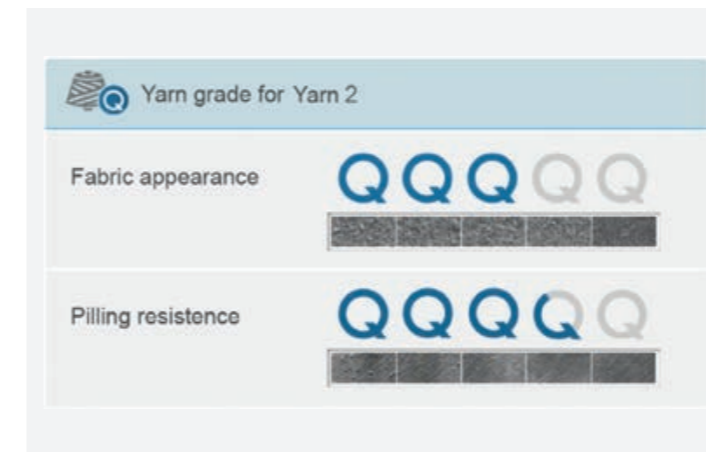

Yarn prognosis for increased credibility
Spinners are increasingly keen to see quality from the perspective of the customer, the yarn user, to understand the issues concerning weavers and knitters. The combination of USTER® TESTER 6 and USTER® QUALITY EXPERT with the intuitive yarn-grading options provides an accurate prognosis for customer satisfaction, based on an easy-to-understand grading system. So, Fabric appearance and Pilling resistance prognosis require no fabric samples and offer the possibility to test all produced lots at practically no cost.

Insightful analytics for data-based decisions
Information is condensed and presented in an easy-to-read format that can be interpreted easily by users. Comprehensive reports simultaneously help to target areas for optimization. For instance, the intuitive quality comparison reports point up differences between products or production lots, supported by the power of USTER® STATISTICS.

With the extension of twist measurement results from USTER® TESTER 6, all relevant quality data for yarn specifications are finally brought together.
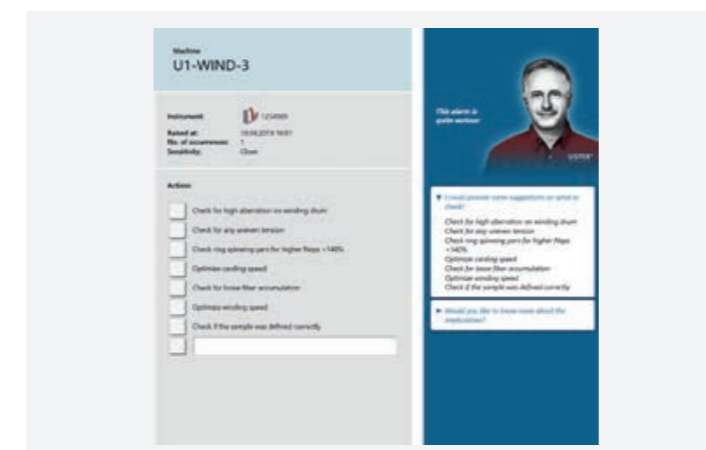
Application Intelligence for quality consistency
Quality consistency is the goal of every spinning mill – as inconsistent quality results in claims from the yarn user, which can be very costly to spinning mills. Application Intelligence with smart algorithms and the unique rule engine builds up the foundation for Assistant Q and smart alerts. Wide-ranging quality alerts can be further extended by feeding in mill-specific rules on troubleshooting, constantly expanding the level of knowledge.

S800 (table included)	Modules and their functionalities
	Further options and accessoires Knowledge Based System, Fancy Yarn Profile, Unwinding device with drive, Package carrier
	Automatic Changer Automatic transfer of the yarn from the package changer and insertion into the measuring slot (24 positions)
	Fineness Automatic (Sensor FA) Automatic determination of the absolute count
	Hairiness Length (Sensor HL) Hairiness length classification
	Optical Hairiness (Sensor OH) Determination of the yarn hairiness
	Optical Multifunctional (Sensor OM) Determination of diameter, evenness, twist, density and roundness Determination of frequent occurrences for conductive yarns
	Optical Impurity (Sensor OI) Determination of trash and dust particles in the yarn
	MS 120 Measuring unit for heavy sliver, wool tops in the range 12–80 ktex
	USTER® QUALITY EXPERT The managment tool for Total Testing
	Capacitive (Sensor CS) Determination of the unevenness and imperfections (thin and thick places plus neps, spectrograms and diagrams)

■ Basic ■ Options ■ Further options and accessoires

A modular system allows to tailor the product configuration to one's need.
Starting from the basic module further modules can be added.

USTER® *TESTER 6* – The Total Testing Center™

It is exactly what you expect from USTER: the very latest sensor technology, the highest accuracy, innovative measurements. Everything you need for an integrated approach to 'managing a textile mill with quality in mind'.

– Ultimate sensor technology – the basis for maximum performance
– Built-in knowledge from 70 years of experience
– Unique combination of laboratory and online data

Sensor technology for top performance

For 70 years, USTER has been synonymous with quality control sensors for textiles. The new Capacitive Sensor CS with the USTER® *TESTER 6* represents the summit of current technology. The integration of the latest Sensor HL for complete yarn hairiness testing is another key element.

With the latest development for the Sensor OM, the measurement of frequent occurrences for conductive yarn, the evaluation of twist and twist variation takes these vital quality parameters into new areas.

Smart View

Knowledge Based System

USTER® *STATISTICS*

Assistant Q
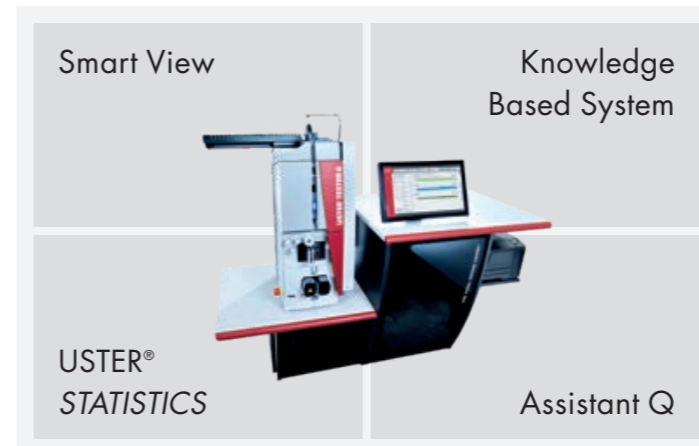
Built-in knowledge to support mills

USTER shares the textile knowledge of several decades. Making customers' working tasks simpler, so that they can focus on the ideal quality-cost ratio. This is supported by:

– Knowledge Based System for detecting faulty machine elements
– Smart view for pinpoint exceptions
– USTER® *STATISTICS* the worldwide benchmarks

Everything is here, ready to deliver constant quality and utmost efficiency.

The Total Testing Center™

Integration of laboratory test results with online data creates the Total Testing Center™. The ultimate safeguard for quality yarns.

USTER® *TESTER 6* delivers the full package. Quality optimization, setting new standards in yarn grading, monitoring 100 % of production, protecting against exceptions.

The Total Testing Center™: meeting quality expectations every day.

The standard from fiber to fabric

Uster is the world's leading supplier of total quality solutions from fiber to fabric. Uster standards and precise measurement provide unparalleled advantages for producing best quality at minimum cost.

Think Quality™

Our commitment to state-of-the-art technology ensures the comfort and feel of the finished product – satisfying the demands of a sophisticated market. We help our customers to benefit from our applied knowledge and experience – to think quality, think Uster.

Broad range of products

Uster occupies a unique position in the textile industry. With our broad range of products, we have a wide reach across the textile chain that is unmatched by any other supplier in the market.

Optimal service

Know-how transfer and instant help – we are where our customers are. A total of 215 certified service engineers worldwide grants fast and reliable technical support. Benefit from local know-how transfer in your specific markets and enjoy our service à la carte.

USTER® STATISTICS – the textile industry standards

We set the standards for quality control in the global textile industry. With Uster Statistics, we provide the benchmarks that are the basis for the trading of textile products at assured levels of quality across global markets.

USTERIZED® – brand your products with quality

USTERIZED® stands for 'defined quality assured' within the textile chain. We invite selected customers to join the USTERIZED® Member Program. More information at www.usterized.com.

USTER worldwide

With four technology centers, four regional service centers and 50 representative offices around the world, Uster is always sure of delivering only the best to its customers. Uster – committed to excellence, committed to quality. And that will never change.

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Shanghai, China
Osaka, Japan
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