**USTER® QUANTUM 3**
The yarn quality assurance system
Prepare to be amazed – and delighted

The USTER® QUANTUM 3 is your introduction to Smart Clearing Technology™ and your passport to a new world of yarn quality. This is a world where the USTER® QUANTUM 3 does the job for you – measuring, analyzing and recommending how your winding machine can be set up to meet your yarn quality and productivity needs. As well as detecting thick and thin places, USTER® QUANTUM 3 has a powerful and innovative foreign-matter solution. It delivers the lowest ever remaining contamination level – regardless of whether the yarn is intended for greige, dyed or bleached fabrics.

The USTER® QUANTUM 3 is the most advanced clearer to date, with future-oriented technology. Tough on the outside, it’s designed to stand up to the most demanding mill environments and deliver sustained high performance over a long service life.

Welcome to a new world of clearing with the USTER® QUANTUM 3 – the quality assurance system!
Smart technology enables the USTER® QUANTUM 3 to forecast exactly how many cuts will need to be made to hit the quality goals you set. That gives you the information you need to define the clearing limit for the perfect balance of quality and productivity, removing only the most troublesome defects from your yarn during the winding operation and allowing you to create the optimal yarn quality profile for you and your customers.

The ease of use and effectiveness of the system also flows logically across into the USTER® QUANTUM EXPERT 3 – the new-generation expert system for yarn clearing. Within 60 minutes, a new user of the USTER® QUANTUM EXPERT 3 will be able to navigate through reports, modify and configure the system, handle articles and their clearing limits, define and report exception limits and optimise the synchronization of articles.

Smart and simple to use

The definition of a clearing limit is the basic and most important challenge for all spinning mills. Simply because you have to consider a variety of factors – the USTER® CLASSIMAT results, the final fabric, the knitting or weaving performance, the affordable cut level, among other things. Until now, yarn manufacturers had to carry out their own fault analysis and try to work out the most effective and profitable quality control regime for their yarn cleaners. Not all spinners have that kind of expertise at their disposal, or have the time to focus on so complicated and difficult task.

The smart technology in USTER® QUANTUM 3 is focused on solving this challenge. It is practically equivalent to having an USTER specialist always on hand to help achieve the optimum results for any yarn application. And the USTER® QUANTUM EXPERT 3 constantly monitors changes to any single article. If there is a change the system should be implemented across all winders running the same article, ensuring consistent quality for the entire yarn lot to your final customer.

The new USTER® QUANTUM 3 will also amaze you with its speed and ease of use. In just two minutes, it will learn everything it needs to know about your yarn. Then, drawing on its built-in USTER know-how, it will suggest the best way to achieve the quality requirements you specify, by proposing suitable clearing limits. If you approve, simply hit the start button. That’s it!
Technology for future progress

With USTER® QUANTUM 3, the future is here today. An astoundingly innovative piece of technology, it will repay your investment many times over. And keep on rewarding you by connecting with a series of exciting further advancements for several years to come.

Everything is smartly designed, using the latest digital technology: the housing, core sensor technologies, intelligent processing circuitry, outer assembly, central control unit, user interface and more. All designed and shaped by USTER specialists with years of know-how and practical industry experience.

Powerful capacitive, optical and foreign-matter sensors are at the heart of the USTER® QUANTUM 3. They can see it all, in greater detail than ever before. In combination with powerful processing electronics, for the first time ever, the system shows the full YARN BODY™ – a massive breakthrough. (The YARN BODY™ simply displays the normal yarn with its expected tolerable variations.)

The outstanding foreign-matter sensor uses multiple light sources, so it detects colored foreign fibers and helps separate them from mostly non-disturbing vegetable material. Polypropylene detection improves enormously using this new sensor technology.

It’s not only the sensor technology that has progressed to the next level. The USTER® QUANTUM 3 also has a significantly amended central clearing unit – the sixth generation – controlled via a 14-inch touch screen. This unit can communicate in real time with the new-generation USTER® QUANTUM EXPERT 3 allowing, for example, comparisons of changed clearing settings at any winder, and synchronization across similar yarn lots if required.

State-of-the-art central unit with improved user interface

Multicolored light sources

- Powerful new sensor with multicolored light sources
- Detection of short defects
- Separate classification and clearing of foreign fibers
- One button clearing limit proposal
- Forecast of expected cuts for the selected clearing limit
- Foreign matter clearing during splicing process
The USTER® QUANTUM 3 is both larger and more robust than any previous cleaner. Tough on the outside, its completely new design will stand up to the most demanding mill environments and provide a long service life. Improvements include a better sealed clearer core to keep out dirt and dust, reinforced sensors to cope with vibration. The foreign fiber sensor, for example, is wider than before. Along with the new air-blowing arrangements, this reduces dirt buildup at the sensor from both the yarn and the air supply. Your business will benefit, directly, from these innovations.

USTER® QUANTUM 3 will work better, last longer and need less cleaning and maintenance.

Another design feature with a big influence on maximizing the service life of the USTER® QUANTUM 3 is better separation of the cutter mechanism from the main housing. This simple but effective change which means less vibration from the cut is transferred to the clearer housing.

As a result of all this, the all-important ‘total cost of ownership’ will be significantly lower. And of course, USTER® QUANTUM 3 is Swiss made by USTER – so you can be sure it is manufactured to the most exacting and precise standards.

The USTER® QUANTUM 3 has a comprehensive system of alerts to let you know instantly if something is wrong. Cutter problems, excessive dirt ingress – whatever the reason, an alarm will signal the fault. If it is serious enough, USTER® QUANTUM 3 will automatically halt the affected winding position, safeguarding your quality and protecting your assets.

Better sealing against dust and dirt.
Quality is when your customer comes back – not the product. With a range of features that improve fabric appearance and the productivity of downstream processes, you can be sure customers will want more of your yarn cleared with USTER® QUANTUM 3.

For starters, the technological advancements in USTER® QUANTUM 2 make all disturbing faults visible. Of these faults, long thick and thin places have a decisive impact on fabric appearance. Smart techniques, based on intensive USTER textile research, detect these defects and correlate them to disturbing fabric effects. A further powerful enhancement, to prevent cloudiness or disturbing uneven fabric effects, is the simultaneous monitoring of medium term mass/diameter variations from 2 to 12 m and periodic faults of multiple wavelengths.

When it comes to quality, you can be confident – USTER® QUANTUM 3’s smart clearing proposals will deliver the results you specify, with assured USTER® CLASSIMAT results, improved yarn performance in downstream processing and superior fabric appearance.

How about problems with contamination? The USTER® QUANTUM 3 is the ultimate tool to control contamination. Its new and advanced F寿 sensor technology uses multiple light sources to pinpoint all colored defects. And smart technology classifies foreign-matter separately into colored foreign fibers and mostly non-disturbing vegetable material. Your benefit: removal of really disturbing foreign fibers, with the lowest number of cuts.

The powerful contamination package of USTER® QUANTUM 3 is completed by the most reliable PP clearing. Thanks to technological improvements, USTER® QUANTUM 3 achieves a multifold increase in PP detection rates, proven in several trials. Whether for bleached or dyed fabric applications, USTER® QUANTUM 3 will deliver yarns with the lowest level of foreign-matter per meter.

Best results in contamination control are guaranteed by combining USTER® QUANTUM 3 and USTER® JOSSI VISION SHIELD, with its effective fiber cleaning in the blowroom. Tackling the contamination challenge at two stages ensures Total Contamination Control – most efficient production, effective control and satisfied customers.

With USTER® QUANTUM 3 all disturbing defects become visible.
A modular system allows users to tailor the product configuration to one’s need. Starting from the basic module further modules can be added.

Product configuration

Your spun yarn is valuable, and your productivity is vital to overall profitability. So it makes sense to avoid hampering production, by cutting only when it’s really necessary. That’s exactly what USTER® QUANTUM 3 does – it cuts only what needs to be cut. Firstly, the system uniquely identifies and displays the YARN BODY™ – using this as the basis for the limits proposed by the system. Of course, using smart limits based on the YARN BODY™ ensures quality. But it also means that no cuts are made in the ‘normal’ YARN BODY™, and this has been proved in extensive mill trials to save a significant number of unnecessary cuts. In fact, in many cases it has shown to offer better quality at lower cuts than today! And saving cuts means saving costs.

The unique foreign-matter clearing concept, separating foreign fibers and vegetable matter, takes the productivity focus a stage further: either reducing cuts to maintain the same quality, or producing better quality for the same cut level. And USTER® QUANTUM 3’s higher-efficiency polypropylene clearing is yet another means of reducing the number of cuts for the same quality level.

Options

- USTER® QUANTUM 3 Anniversary Edition
  - Hairiness monitoring
  - Connectivity to the Total Testing Center™

- USTER® QUANTUM 3 EXPERT 3
  - Integral data storage
  - Predefined role-oriented reports
  - Exception handling and reporting

- USTER® QUANTUM 3 ULTIMATE
  - Report wizard
  - Remote handling of CCUs
  - Article synchronization and management
  - Illustration, storage and comparison of yarn bodies
  - Alert management
  - Hairiness monitoring (only with foreign-matter cleaners)
  - Hairiness monitoring and advanced classification
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- USTER® QUANTUM 3 EXPERT 3 ULTIMATE
  - Hairiness monitoring and advanced classification

Package

- Advanced classification (including tailored classes)
  - Predefined classes NSLT
  - Tailored classes

- LAB online
  - Package of USTER® QUANTUM EXPERT 3

- Hairiness monitoring
  - Advanced classification
  - Connectivity to the Total Testing Center™

Basic

- Capacitive or Optical
- YARN BODY™-Clearing NSLT
- Coverage (C)
- Advanced Count (CC)
- Slab Yarn Clearing
- Slab Yarn NSLT
- Scatter Flat NSLT
- Utility Functions

Polypropylene Clearing

- Polypropylene Clearing
  - Polypropylene Alarms

Foreign Matter Clearing

- Foreign Matter: Dark
- Foreign Matter: Light
- Vegetable Matter Clearing

Yarn Data

- YARN BODY™
- Yarn Metrics (Y)
- Periodic Faults Clearing
- Classification NSLT
- Classification PL
- Classification GD
- Classification LMS
- Classification SPM
- Classification DMS
- Classification DMS
- Classification SPM
- Classification DMS
- Classification DMS

Dissolving Organic Yarn Body

- Spline Classification
- CLASSIMA® Alarms

Advanced Count

- Advanced Count (CC)
- Slab Yarn Clearing
- Slab Yarn NSLT
- Scatter Flat NSLT
- Utility Functions

Core Yarn Clearing

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In 1999 USTER® QUANTUM series celebrates its 20th anniversary. Reviewing its history shows the impressive development progress of the five models. All members of the QUANTUM yarn clearer family have been unique and ahead of their time – introducing new possibilities to spinners for winding efficiency and yarn quality security, as well as optimization.

To combine a capacitive clearer and a foreign-matter clearer in one measuring head was a quantum leap – which gave this unique yarn clearer its name. USTER® QUANTUM was a real breakthrough in 1999. The first generation also introduced CAY (Computer Aided Yarn clearing).

USTER® QUANTUM 2 offered in-line quality data such as evenness, imperfections and hairiness. Polypropylene Clearing and Vegetable Filter were another advantage of the second generation, launched in 2004.

The third QUANTUM generation showed the world – in combination with powerful processing electronics, for the first time ever – the full yarn body. USTER’s unique YARN BODY™ provides detailed visualization of the normal yarn with its set of expected tolerable natural variations. Smart Limits – instant clearing limit recommendation at a push of a button – based on the YARN BODY™ delighted spinners in the same way.

Reliable yarn clearing with a minimum of cuts remains the basic need, but the industry is continually requesting advanced features to meet new quality challenges and yarn trends. USTER responded with the USTER® QUANTUM 3 Anniversary Edition (2015 marked 50 years of automatic yarn clearing) featuring Core Yarn Cleaning and Color and Shade Variation Detection.

The latest version of the USTER® QUANTUM 3 extends its functionality still further: Evolution from a yarn quality assurance system to preventive yarn clearing goes beyond quality optimization. New spinners are guided to preventive action at source, actually avoiding poor quality being produced.
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.