



USTER® Fabric Inspection

The quality analysis systems

What is Think Quality™?

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It is 'managing your textile mill with quality in mind'

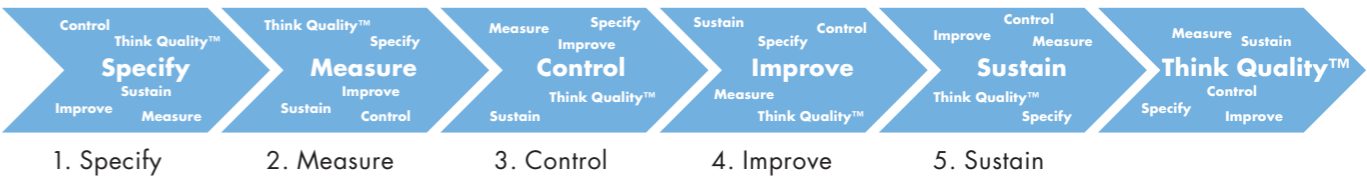
Today's textile markets are highly competitive, throughout the entire value chain from fiber to fabric. Customers expect unique products, at the right quality and free from unacceptable defects, every time. Fabric producers need to manufacture economically, with best-possible use of resources – especially raw materials and labor. These are major challenges, requiring comprehensive management strategies.

Take control of your quality – Think Quality™

Uster's unique Think Quality™ approach is the way to 'manage your textile production 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
- Improve yield an assure quality of the final product



Producing the right quality every time – the challenge for fabric producers

Uster Fabric Inspection delivers major benefits for fabric producers. The three automated solutions support quality assurance and optimization of fabric yield in the final product. Automated inspection technology means fabric producers depend less on human judgment and produce consistent, reliable quality.

Uster Q-Bar 2 provides early-stage detection of defects direct on the loom. Uster EVS Fabriq Vision automates the inspection and grading process for greige and finished fabrics. Uster EVS Fabriq Shade ensures color uniformity of fabrics. Uster Fabriq Expert provides quality analysis tools.

A word cloud illustrating various factors in textile production. The most prominent words, shown in larger fonts, include:

- Automation** (with sub-terms: Finished fabric, Optimization, Cost control, Manpower)
- Quality** (with sub-terms: Analysis, Interest)
- Productivity** (with sub-terms: Labor skills, Consistency)
- Market reputation** (with sub-terms: Testing, Waste reduction)
- Sustainability** (with sub-terms: Depreciation)
- Raw material usage** (with sub-terms: Transparency, Efficiency per production step)
- Compliance** (with sub-terms: Global sourcing, Raw material, Claims, Maintenance, Yarn breaks)
- Contamination** (with sub-terms: Safety)
- Energy and cost**, **Fabric yield**, **Raw material**, **Claims**, **Sustainability**, **Raw material usage** are also visible in various sizes.

USTER® Fabric Inspection: Business growth and quality assurance

Delivering the right quality every time – the challenge for fabric producers in the textile industry

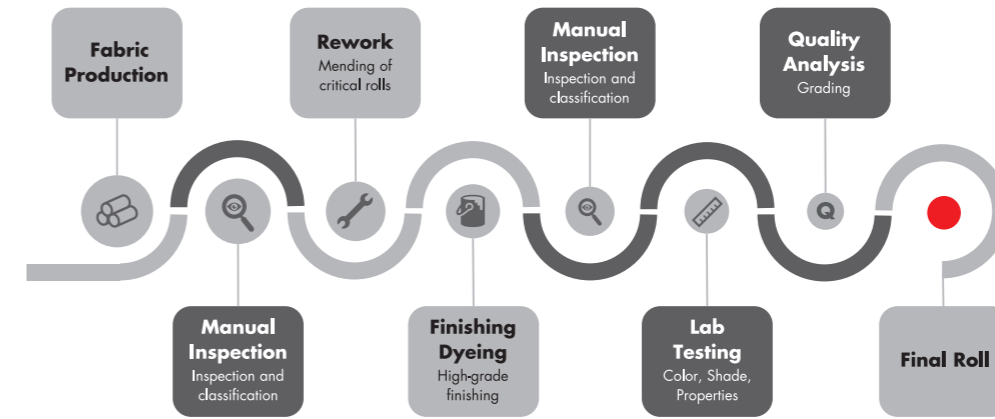
At every stage of textile production, it is essential to prevent defects as early as possible, as well as controlling the finished product. First-quality production, to customer specifications, is the goal. It is especially important in demanding applications such as technical textiles and nonwovens. In apparel and home textiles, it is vital to avoid seconds and minimize waste fabric. Using the right instruments, producers can also extend their flexibility by reacting to changing markets.

With our solutions for fabric inspection, Uster meets the needs of several different market segments:

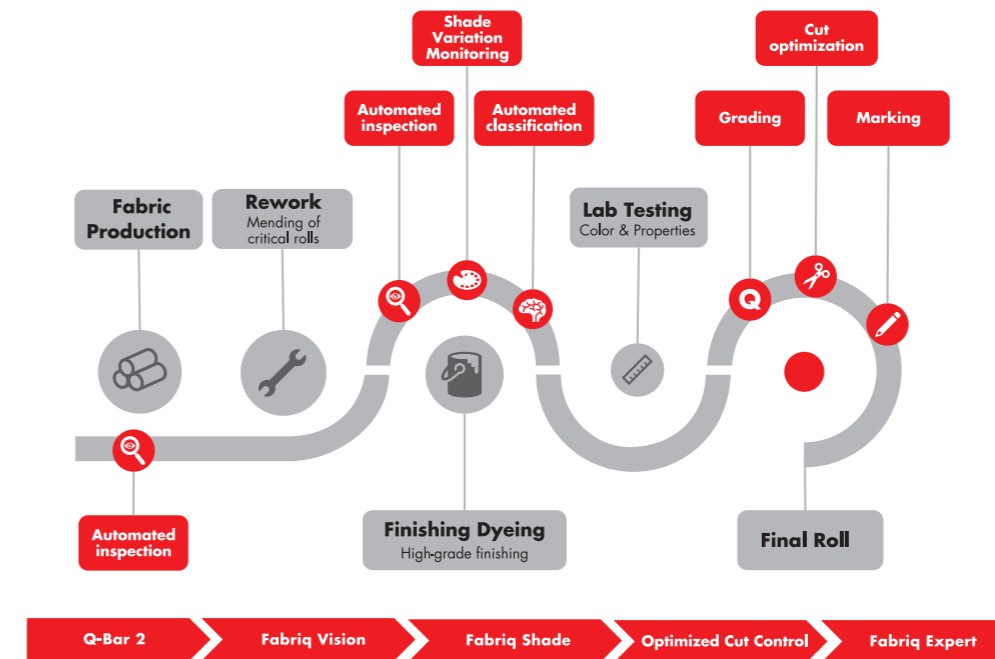


Creating benefits by adding automation

In the classic production process, manual inspection and lab testing are time-consuming operations which need to be optimized with automated solutions.



Adding automation to the process will reduce production costs and satisfy customers by delivering 100% inspected fabrics. Operators can be more focused on production and maintaining machines, which will have a positive influence on efficiency and quality.



The need for manual documentation will be eliminated, as our inspection systems provide both data flow and storage. Analyzing the inspection data created will help to optimize styles and prevent defects in the production process. A major benefit arises from reducing the manual testing steps, which will speed up production through efficient and objective inspection, while process safety will also increase. Uster Fabric Inspection solutions bring the added benefit of helping customers to prepare for the future.

USTER® Q-BAR 2

The formation monitoring system

The best way to avoid off-quality is simply not to make it. Uster Q-Bar 2 operates directly in the fabric formation area. Inspecting the fabric at this point reduces material losses and the need for manual inspection after production. This enables delivery of constant and reliable quality and helps fabric producers stay competitive in the market.

- Fast, early-stage detection to prevent material loss
- Attractive and functional design
- User-friendly visualization and classifying



Fast, early-stage detection to prevent material loss
Its inspection position in the fabric formation area allows the Uster Q-Bar 2 to respond quickly when a defect appears and avoid long-running or repeating defects. The alarm and stop signals enable the operator to correct problems immediately. This early detection reduces second quality and material loss.

The system design allows for simple integration on existing weaving machines. For specified machine types, an interface for communication with the loom is available.



Attractive and functional design
The slim and light housing enables the operator to work on the weaving machine without hindrance. The front can be opened, for easy access to the hardware for maintenance. Integrated LEDs in the side cap of the Uster Q-Bar 2 indicate system status. The operator is guided to the exact position of a defect by a red light on the Q-Bar 2, which is visible at both front and back. The system contains no moving parts. Which reduces costs for spare parts and maintenance effort.



User-friendly visualization and classifying
The system displays the fault image and position in front of the operator, in real time via the user interface. Defects are detected, categorized, saved and displayed on an intuitive touchscreen. A quality defect map is created for each roll and this can be reviewed in the additional album software. Uster Q-Bar 2 offers different classification and grading possibilities and allows rolls to be categorized according to number, size and position of defects, as well as customer criteria, reducing the demand for manual post-weaving inspection.

USTER® Q-BAR 2

The formation monitoring system

Weaving defects can have various root causes, so Uster Q-Bar 2 provides different algorithms to identify specific defects and their causes. With this knowledge, it is possible to prevent defects during the actual weaving process.

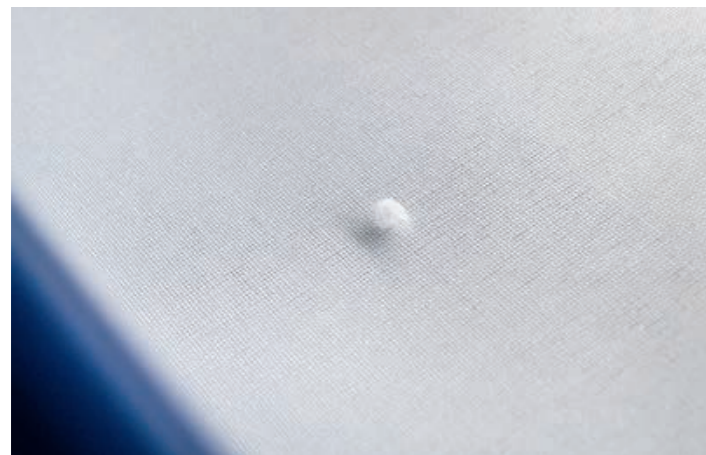
- Minimize warp defects with warp monitoring
- Reduce weft irregularities with weft monitoring
- Improve fabric yield with fabric inspection



Minimize warp defects with warp monitoring
With the enhanced detection position in the fabric formation zone, the warp is monitored even before it is traversed by the weft. It allows detection of incorrect warp tensioning, loose warp ends and even pattern irregularities.



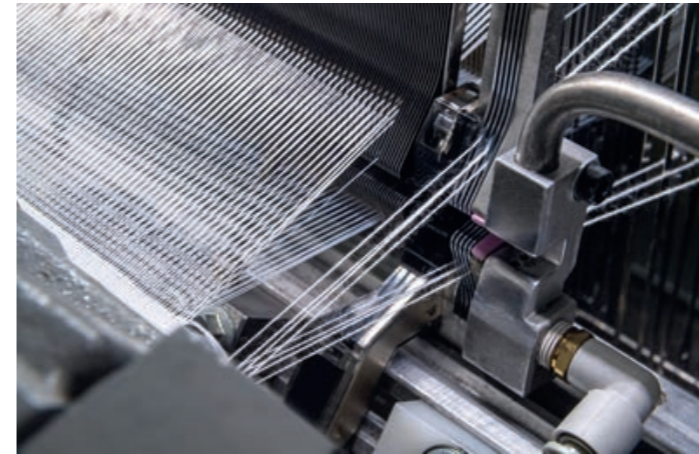
Reduce weft irregularities with weft monitoring
By monitoring each inserted weft in the formation area, Q-Bar 2 allows users to react to weft irregularities at the earliest possible stage. At this point it can detect weft-related defects such as double picks, broken weft or slubs and loops.



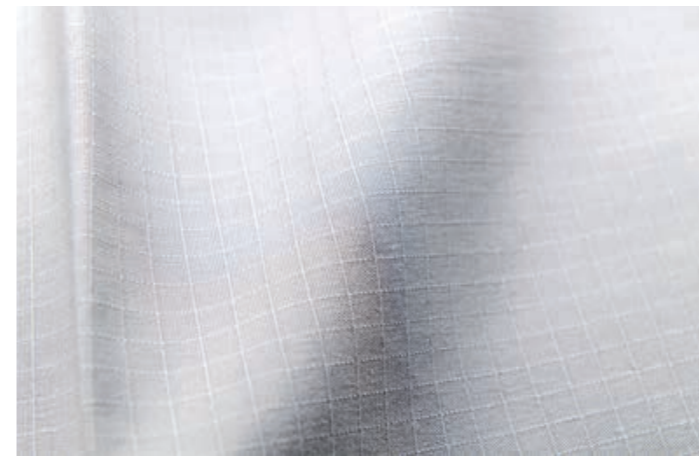
Improve fabric yield with fabric inspection
Defects that become visible only in the woven fabric – such as reed marks, dirty yarns or floats – will be detected by the fabric inspection algorithms.

Uster Q-Bar 2 also monitors critical machine units in the formation zone. If there is a problem here, the system makes it easy to identify and eliminate it, preventing further defects and maximizing fabric yield.

- Prevent problems in finishing through selvedge and leno monitoring
- Continuous pattern monitoring at the earliest possible stage
- Continuous width monitoring to identify irregularities



Prevent problems in finishing through selvedge and leno monitoring
The selvedge area is not only critical for an efficient weaving process, it is also important in further process steps. Q-Bar 2 provides specific algorithms to detect irregularities in the selvedge and detect broken leno.

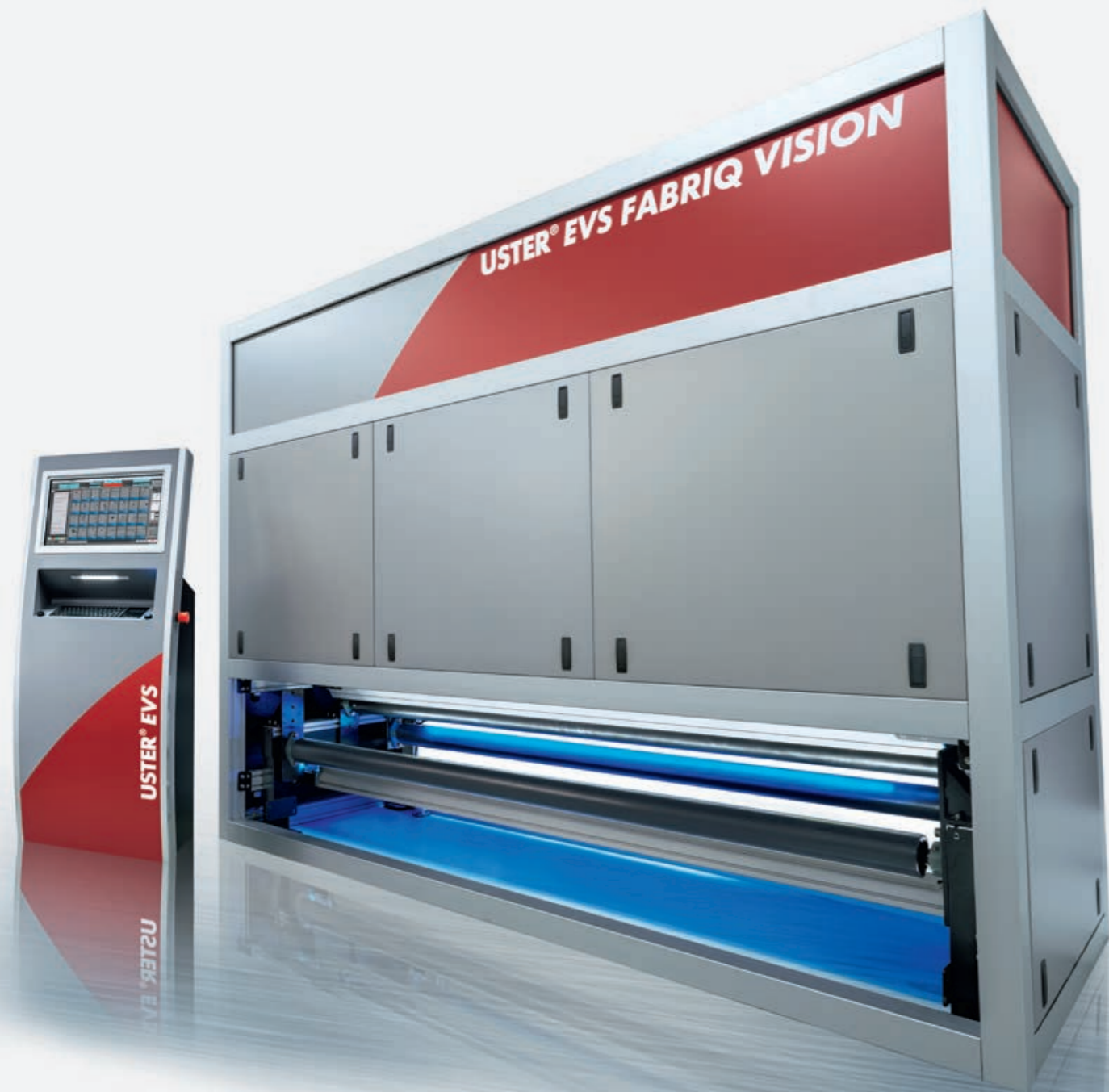


Continuous pattern monitoring at the earliest possible stage
Uster Q-Bar 2 provides algorithms for monitoring of the weaving pattern. Any pattern irregularities will be identified, so the loom can be stopped and the problem fixed.



Continuous width monitoring to identify irregularities
Ensuring the fabric is the correct width is essential for further processing. For this reason, Q-Bar 2 provides continuous width measurement of the woven fabric, from loom setup to full roll.

USTER® EVS FABRIQ VISION The fabric quality assurance system



Fabric producers need to guarantee reliable quality. This requires a consistently high rate of defect detection. Uster EVS Fabriq Vision ensures this is achieved by using automated control during intermediate and final inspection, removing the need for costly manual inspection. The system's ability to capture any visible defects allows fabric yield to be optimized and prevents claims.

- Optimized fabric quality through automated inspection
- Maximum fabric yield for various applications
- Optimized grading efficiency



Optimized fabric quality through automated inspection

Real-time process monitoring detects, records and locates all defects in every roll of fabric. Uster EVS Fabriq Vision is able to capture any visible defect, at line running speeds. It can be used in a variety of positions on most manufacturers' machines. Inspection is objective, accurate and consistent. It removes the need for slow, costly and unreliable manual inspection and upgrades the operators to higher-skilled jobs.



Maximum fabric yield for various applications

First-quality yield improves significantly. The combination of a full map of fabric defects and the cut optimization module means more first-quality rolls can be produced and substandard quality taken out.

To maximize the yield in various applications, Uster offers two versions:

- Uster EVS Fabriq Vision for textile production
- Uster EVS Fabriq Vision N for seamless integration, especially for nonwovens production and sensitive fabrics



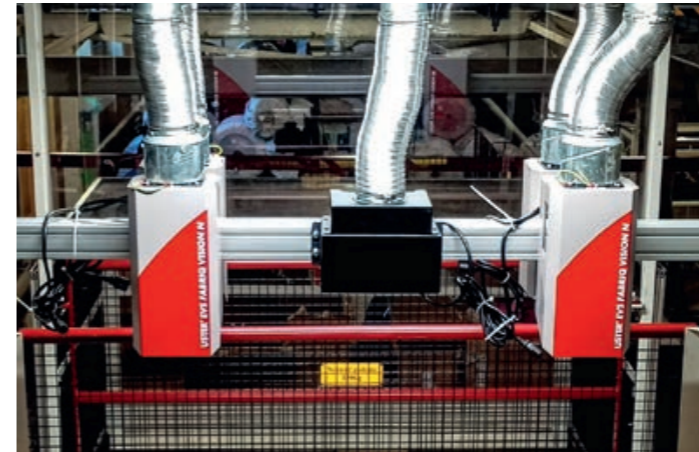
Optimized grading efficiency, for consistent quality

Uster EVS Fabriq Vision provides real-time alerts for operators, showing all defects and automatically creating roll inspection charts. All detected faults are collected in an album for review. Here the operator can quickly mark faults and select those which can be deleted. Users can set their own quality standards for different types of fabric and increase the efficiency of the grading process.

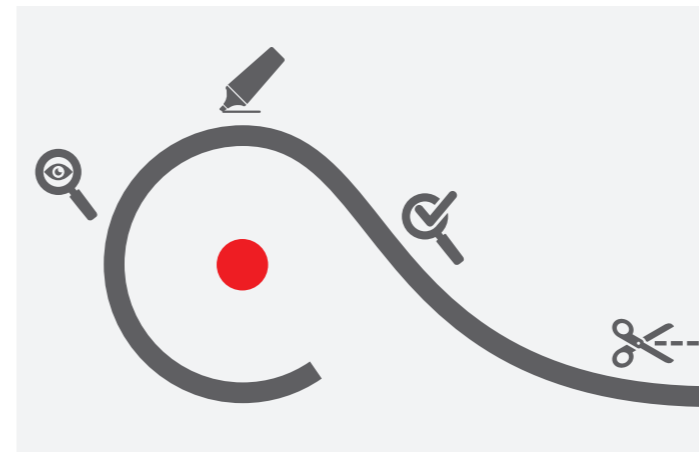
USTER® EVS FABRIQ VISION N Seamless integration into production

If space is limited, or the process does not allow a frame with rollers to be installed – for example in nonwovens or tire cord production – Uster EVS Fabriq Vision N is the solution.

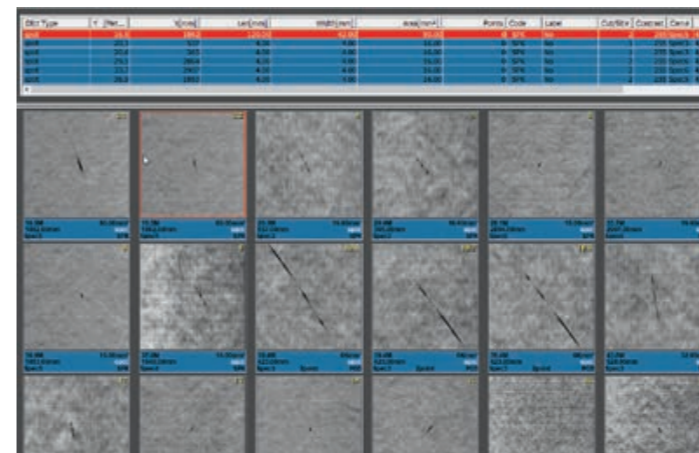
- Seamless integration in space-critical processes
- Protection of sensitive fabrics
- Automated classification for consistent quality



Seamless integration in space-critical processes
The space requirement of some production lines – in nonwovens, for example – is very tight. Depending on environmental conditions, there is simply no space for an additional process for inspection. Uster EVS Fabriq Vision N can be integrated easily into an existing production line, without requiring extra space for a manual inspection process.



Protection of sensitive fabrics
For sensitive fabrics, each additional re-rolling process carries the risk of damaging the fabric, and therefore must be avoided. By integrating Uster EVS Fabriq Vision N into the production line, there is no need for an additional rolling process which would risk damaging the fabric. Integration into a tire cord dipping line is an excellent example, enabling the producer to avoid post-production inspection and react to running problems immediately.



Automated classification for consistent quality
Uster's neural network provides individual models for automated classification. This can train the AI to code specific defects, according to individual defect catalogues. Automated coded defects make it possible to acquire very quick inspection results with a small effort. Irrelevant defects can be sorted intelligently, creating reliable inspection performance. The coded defects make it easier to analyze and optimize production with Uster Fabriq Expert.

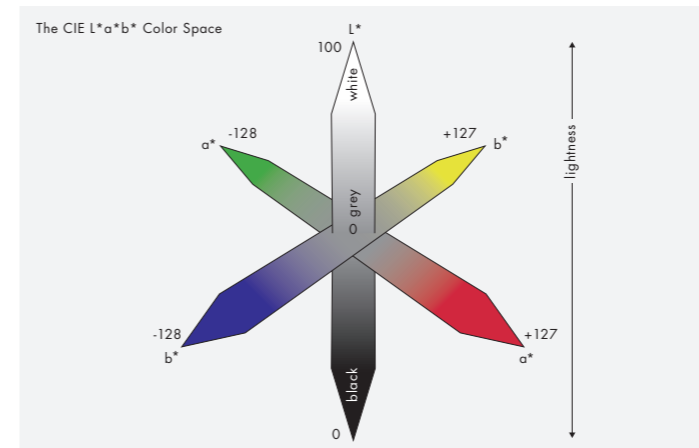


USTER® EVS FABRIQ SHADE

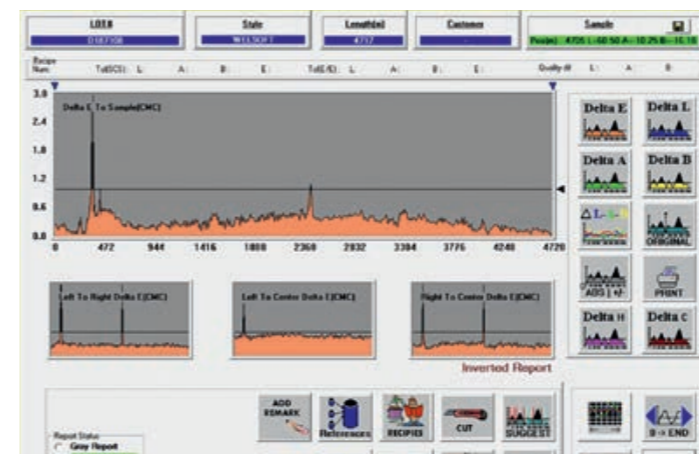
The fabric shade optimization system

With dyed fabrics, the main challenge is color consistency from beginning to end and from side to side of a roll – as well as between rolls of the same lot. Uster EVS Fabriq Shade provides standard shade measurements with high accuracy. It supports fabric producers to deliver a constant shade in end-products, preventing claims and keeping customers satisfied.

- Elimination of manual shade sampling
- Yield optimized based on customer requirements
- Combined solution for maximum efficiency



Elimination of manual shade sampling
Uster EVS Fabriq Shade combines the power of a traversing spectrophotometer with sophisticated information processing. Monitoring is done directly in production, without the need to cut the fabric. This reduces cost and effort for sampling.



Yield optimized based on customer requirements
The system continuously qualifies shade variation, based on a set reference point, and includes an automatic planning and sorting feature. Uster EVS Fabriq Shade offers several sorting options, which can be displayed on the monitor. To ensure that lots have optimal color uniformity, the system offers grouping options according to shade. This allows fabric producers to optimize fabric yield and meet the requirements of major retailers.

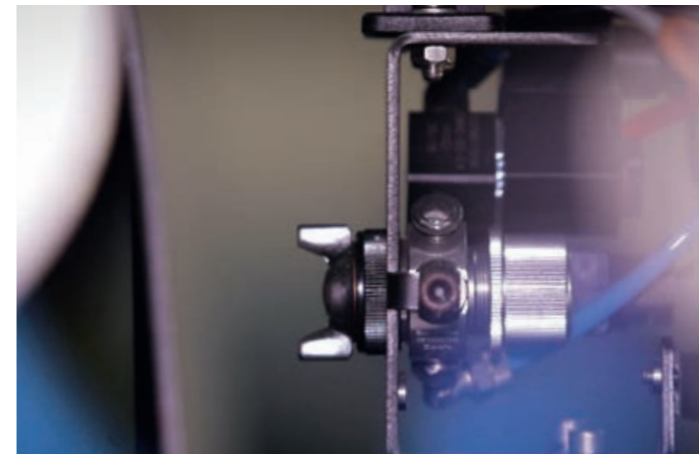


Combined solution for maximum efficiency
By combining Uster EVS Fabriq Vision and Uster EVS Fabriq Shade in one process step, the efficiency of fabric inspection will be greatly increased. Additional space requirements and process steps can be avoided, and all relevant quality data will be provided in one operation.

Optimized Cut Control (OCC) Increased fabric yield after inspection

After final inspection, fabric will often be cut into smaller rolls, which will then be delivered to various customers. The OCC system provides a software tool for automated cut optimization, as well as additional components which can be installed on any existing debatching or cutting line. With these components, process efficiency can be increased.

- Upgraded process efficiency
- Maximized fabric yield
- Easy operation



Upgraded process efficiency

The cut optimization software automatically identifies the correct cutting position to achieve maximum fabric yield according to quality requirements. This makes the cutting process highly efficient. Invisible synchronization marks indicate the position of defects and cut positions in a roll, so these are always under control, allowing the cutting table to run at maximum possible speed.



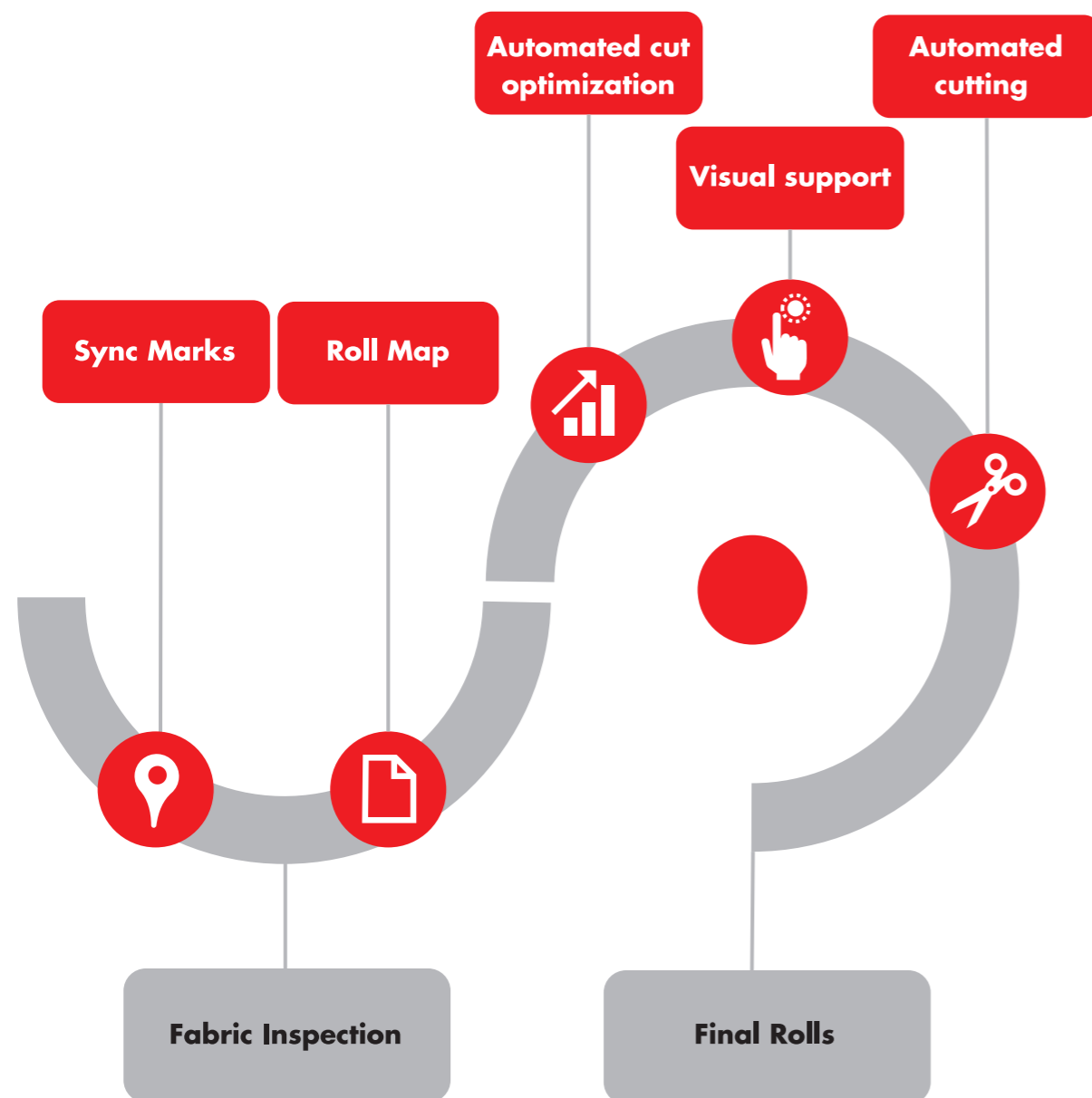
Maximized fabric yield

The cut optimization software calculates the optimum cutting position according to the quality requirements of the end-customers. By adding individual cutting rules, it is possible to meet different specifications and achieve the maximum possible fabric yield.



Easy operation

All cutting tables can be extended with a laser pointer, which supports operators to find defect positions quickly and securely, when mending or marking is required. In addition to the defect map on the screen, these visualization tools help operators to work smoothly and efficiently.

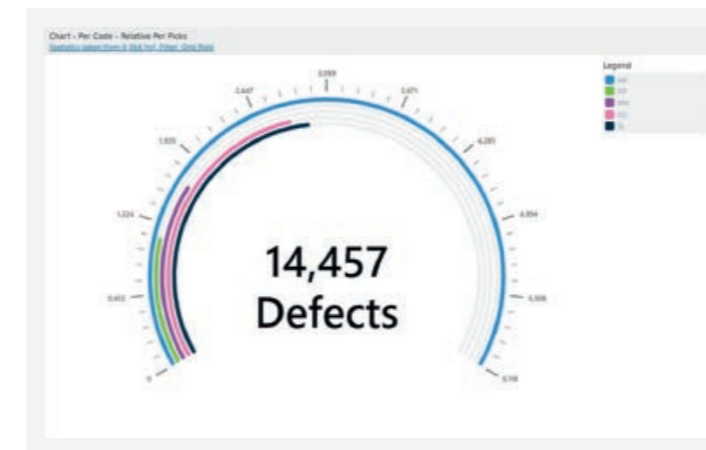


USTER® FABRIQ EXPERT

Real-time quality analysis system

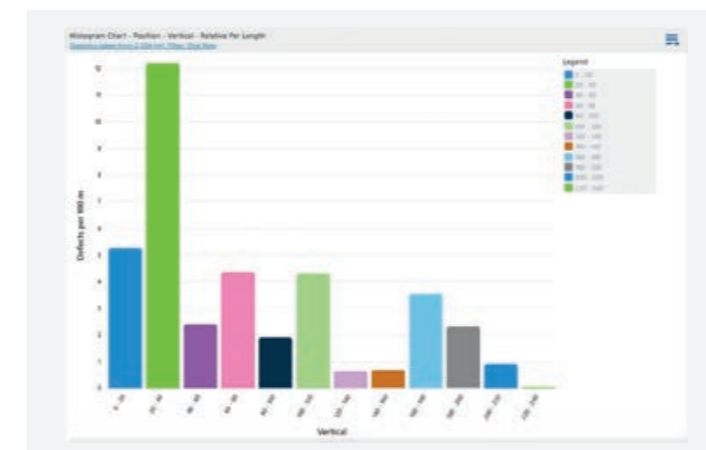
Uster Fabriq Expert provides fully-customizable quality analysis tools to provide immediate information on process and product quality, based on data from each fabric roll inspected with one of our fabric inspection systems. Uster Fabriq Expert helps managers and operators to optimize product and process quality, without the need for an additional quality reporting routine.

- Immediate reactions and continuous improvement
- Efficient quality reporting
- Increased quality awareness



Immediate reactions and continuous improvement
Process-related quality problems can be eliminated by immediate reactions and suitable corrective measures. Fabriq Expert provides real-time quality statistics, which can be used to identify root causes and main problem areas.

Customizable quality analysis tools such as pareto charts, histograms and pie charts make it very easy to recognize problem 'hot spots' and take the right corrective actions.



Efficient quality reporting
Editing and processing raw quality data into the required quality report format often requires additional knowledge and software. The flexible dashboard system of Uster Fabriq Expert means there is no need for internal distribution of quality reports and extra reporting process flows. Dashboards can be displayed on screens or PCs in every area of production, and different dashboards can be used to show the relevant data for each target group.



Increased quality awareness
Machine operators and others with direct influence on quality need to be constantly aware of their impact on product and process quality. Having actual and relevant quality information available on the shop floor increases the visibility and awareness of quality. This helps operators to feel personally involved and motivates them to optimum performance in their daily work.

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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