



USTER® QUALITY EXPERT

The Quality Management Platform™

Technical Data

March 2021

USTER® QUALITY EXPERT The Quality Management Platform™

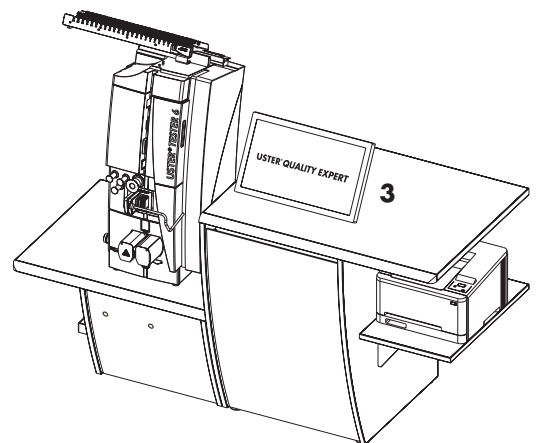
USTER® QUALITY EXPERT is the Quality Management Platform™ for advanced process optimization across yarn manufacturing processes. This single system provides control, securing fiber, yarn and fabric quality. A combination of 100 % in-line monitoring, precise laboratory testing and integrated intelligence delivers the power to predict potential faults and prevent claims.

Elements

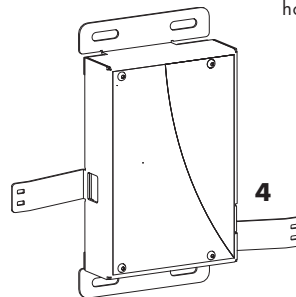
of the USTER® QUALITY EXPERT



USTER® QUALITY EXPERT
Standalone version



USTER® QUALITY EXPERT
hosted version in the USTER® TESTER 6



Basic installation

- 1 USTER® QUALITY EXPERT Control unit
- 2 Keyboard and mouse
- 3 Application software hosted in the USTER® TESTER 6

Option

- 4 Data Box for the USTER® MILL DASHBOARD

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Basic installation

Overall Installation	Functions	<ul style="list-style-type: none"> - Analysis, evaluation and data storage of connected instruments' measurement values with online monitoring - Automatic comparison with the benchmarking tool USTER® STATISTICS - Connection to USTER® MILL DASHBOARD for quality and production data display - Connection to USTER® MOBILE ALERTS for instant alarming in case of quality deviations
	Versions	<ul style="list-style-type: none"> - USTER® QUALITY EXPERT Standalone version - USTER® QUALITY EXPERT hosted version in the USTER® TESTER 6 - The hosted version refers to the USTER® TESTER 6 S-800
	Included in the delivery	<p>Standalone version:</p> <ul style="list-style-type: none"> - Control unit for USTER® QUALITY EXPERT - Keyboard - Mouse - Application software <p>Hosted version in the USTER® TESTER 6:</p> <ul style="list-style-type: none"> - Application software
Control unit (1)	USTER® QUALITY EXPERT software	<ul style="list-style-type: none"> - Server software preinstalled - Client software 'Click once' installation - Windows operating system - Customer configurable networking
	USTER® QUALITY EXPERT hardware	<ul style="list-style-type: none"> - Industrial computer with Intel® processor - 3 internal hard drives for data security and system redundancy - 500 GB quality data storage - 1 TB backup storage
Client	USTER® QUALITY EXPERT client hardware	<p>There are two variants to install and run the client:</p> <ul style="list-style-type: none"> - USTER® QUALITY EXPERT Standalone version <ul style="list-style-type: none"> - Client runs on the delivered control unit - Client runs on a pc unit, which is provided by the customer - minimum Windows 10 - USTER® QUALITY EXPERT hosted version in the USTER® TESTER 6 <ul style="list-style-type: none"> - Client runs on a pc unit, which is provided by the customer - minimum Windows 10

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Option

Data Box for
USTER® MILL
DASHBOARD (4)

Data Box hardware

- The screen to connect the Data Box hardware is provided by the customer
- Recommended screen resolution: Full HD (1920 x 1080)

Application software USTER® QUALITY EXPERT

Feature overview

Value Modules

- Alarm center
- Mill analysis
- Yarn prognosis
- Total Contamination Control
- Ring Spinning Optimization

Further features

- Dashboard
- Mill management

Feature short description

Alarm center

- Observes data from all production processes, analyzing it to spot deviations in quality and visualizes trends
- Differentiates between 'Alarms' due to critical quality deviations and 'Improvements' due to positive quality deviations

Mill analysis

- Combines and analyzes data from the connected instruments for data-based decisions

Yarn prognosis

- Provides an easy-to-understand grading system as basis for an accurate prognosis on the fabric appearance, pilling resistance and weaving performance

The Value Module is available if the required sensor/instrument combinations exist.

Total Contamination Control (TCC)

- Controls contamination levels in yarns with minimum waste by optimizing foreign matter ejections in blow rooms and yarn clearer cuts in winding

The Value Module is available if the required sensor/instrument combinations exist:

Total Contamination Control based on the combination of USTER® JOSSI VISION SHIELD, USTER® VISION SHIELD EXPERT, USTER® QUANTUM 3/4.0, USTER® QUANTUM EXPERT.

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Feature short description

Ring Spinning Optimization (RSO)

- Correlates intelligently ring quality data and winding quality data in a single system

The Value Module is available if the required sensor/instrument combinations exist:

Ring Spinning Optimization based on the combination of USTER® SENTINEL, USTER® QUANTUM 3/4.0, USTER® QUANTUM EXPERT. RSO is available for link winders only.

Reports

Type of report

- Fiber-to-yarn
- Quality comparison
- Carding/Combing efficiency
- Yarn Quality
- Lab utilization
- Benchmark report of Total Contamination Control
- Cop build-up report of Ring Spinning Optimization
- Yarn prognosis
- Alarm history
- Alarm report
- Improvement history
- Improvement report
- Customized reports

Display and printout of the reports

- Reports can be printed on demand

Limit values for the Alarm center

- USTER defined alarms, applied automatically
- Setting of customized alarm sensitivity levels: close, medium or open

Numerical results

- All numerical results are displayed as specified in each USTER instrument's individual technical data

Statistics

Statistical values

- Overall result protocol with statistical data of the test results
- Mean value
- USTER® STATISTICS

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- Material dependent USTER® STATISTICS chapters are stored in the database
- Comparison of the measured values with the USTER® STATISTICS
- Classification based on USTER® STATISTICS

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Graphic output of results

Dashboard	<ul style="list-style-type: none">– Display of 6 key indicators with customizable selections. An arrow indicates the current trend of each individual value
Spider chart	<ul style="list-style-type: none">– Shows the product comparison based on the USTER® <i>STATISTICS</i> values of selected parameters
Bar chart	<ul style="list-style-type: none">– Displays a selectable quality parameter consolidated per machine, product or lot over a configurable time period. For reference the average over previous time periods is indicated by red lines.
Trend diagram	<ul style="list-style-type: none">– Shows the trend over time for selected parameters
TCC Benchmark	<ul style="list-style-type: none">– Shows the potential of optimization in fiber clearing and winding
Cop build-up	<ul style="list-style-type: none">– Shows the speed curve of the ring spinning machine and its relation to the following:<ul style="list-style-type: none">– End breaks recorded from USTER® <i>SENTINEL</i>– Relative Humidity %, Temperature recorded from USTER® <i>SENTINEL</i>– Cuts from USTER® <i>QUANTUM 3/4.0</i>– Quality parameters from USTER® <i>QUANTUM 3/4.0</i>
Lab utilization chart	<ul style="list-style-type: none">– Graphical representation of utilization of each connected lab instrument in a bar chart
Yarn prognosis	<p>Representation of yarn grades in graphical form in a scale of 1 to 5 for</p> <ul style="list-style-type: none">– Fabric appearance with CS, OM, OH and HL sensor combination of the USTER® <i>TESTER 6</i>– Pilling resistance with CS, OH and HL sensor combination– Weaving performance with the instrument combination of USTER® <i>TENSOJET 4/5</i> USTER® <i>QUANTUM 3/4.0</i> via USTER® <i>QUANTUM EXPERT</i> (only possible with capacitive basic clearing, Foreign-Matter/Vegetable-Matter and advanced classification of USTER® <i>QUANTUM 3/4.0</i> clearers)

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USTER® GRADES – Application range (Software version 3.0 and higher)

Material type	Grade for Fabric Appearance				Grade for Pilling Resistance				Grade for Weaving Performance			
	Ring	Compact	Rotor	Airjet	Ring	Compact	Rotor	Airjet	Ring	Compact	Rotor	Airjet
100 % CO carded	•		•		•		•		•			
100 % CO combed	•	•		•	•	•			•	•		
100 % PES carded	•		•	•	•		•	•	•			
100 % CV carded	•		•	•	•		•	•	•			
100 % CMD carded	•	•			•	•			•	•		
100 % CLY carded	•				•				•			
100 % LI carded	•				•							
20 – 65 / 80 – 35 PES/CO*	•				•							
35 – 55 / 65 – 45 PES/CO*		•				•						
25 – 70 / 75 – 30 PES/CO*			•				•					
35 – 70 / 65 – 30 PES/CO*				•				•				
15 – 80 / 85 – 20 PES/CO*									•	•		
45 – 55 / 55 – 45 CO*/CMD	•	•			•	•				•		
48 – 60 / 40 – 52 CO*/CMD									•			
55 – 75 / 45 – 25 PES/CV	•				•							
45 – 75 / 55 – 25 PES/CV				•				•				
50 – 90 / 50 – 10 PES/CV	•								•			

*Applies for carded/combed Cotton.

Important Information: USTER® GRADES cannot be applied to the following yarns:
Fancy yarns, core yarns, plied (folded) yarns and siro yarns

Alarm report

- Display of alarm summary per process, product step
- Acknowledged
- Done
- Alarm summary over time
- Alarm summary by product
- Alarm summary per machine

Improvement report

- Improvement summary over time
- Improvement summary by product
- Improvement summary per machine

Data connection

Instruments

- USTER® AFIS PRO 2
- USTER® TESTER 5/6
- USTER® TENSOJET 4/5
- USTER® TENSORAPID 4/5
- USTER® JOSSI VISION SHIELD 2/T via
USTER® VISION SHIELD EXPERT
- USTER® SENTINEL
- USTER® QUANTUM 2/3/4.0 via
USTER® QUANTUM EXPERT

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Input data,
output of results,
languages, units

Dialog and report languages

English, German, French, Italian, Spanish, Portuguese, Turkish, Russian, Chinese, Japanese or Vietnamese

Possible units

- Yarn counts: Ne, Ne_L Nm, Ne_W, den, tex, dtex
- Roving counts: g/10m, grn/yd, ktex, tex, Ne, Ne_L Nm, Ne_W
- Sliver counts: g/5m, grn/yd, ktex, tex, Ne, Ne_L Nm, Ne_W
- Fiber length: mm, inch
- Twist: T/m, T/inch, T/10 cm, TM Twist multiplier (alpha m), alpha m, alpha e
- Force: cN, N, daN, gf, kgf, lbf, ozf
- Tenacity: cN/tex, N/tex, cN/dtex, gf/denier, Rkm, kgf*Ne, kgf*Ne_L, kgf*Ne_W, lbf*Ne, lbf*Ne_L, lbf*Ne_W, ozf*Ne, ozf*Ne_L, ozf*Ne_W
- Work: cN*cm, N*cm, gf*cm, kgf*cm, lbf*cm, ozf*cm

System security

Protection functions

- System protected from viruses, network and other security threats
- Remote support capabilities built-in
- Diagnostic tools with extensive event logging
- Automated system recovery

Data protection

Backup

Automatic data backup to dedicated internal hard drive every 15 minutes

It is recommended to connect a USP (Uninterruptible power supply) which is provided by the customer in order to prevent the system from dirty shut downs.

Installation conditions

General ambient conditions

Operation temperature

- USTER® QUALITY EXPERT Standalone version: 0 to 40 °C and 5 to 35 °C for the screen / 20 to 80 % R.H., non-condensing
- Data Box for USTER® MILL DASHBOARD: 0 to 50 °C / 20 to 80 % R.H.

Storage temperature

- USTER® QUALITY EXPERT Standalone version: -20 to 65 °C and -20 to 60 °C for the screen
- Data Box for USTER® MILL DASHBOARD: -20 to 80 °C / 10 to 90 % R.H. non-condensing

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Installation data

Electrical connections

- USTER® QUALITY EXPERT Standalone version:
- Mains: IEC-60320 C14
 - 6x USB2.0
 - 2x USB3.0
 - 2x Gigabit LAN RJ45
(Intel i217LM and i210AT ethernet controller)
 - 1x COM RS232 DSUB9M
 - 1x DVI-I (VGA via passive adapter)
 - 2x DisplayPort
 - 2x PS/2 (Keyboard / Mouse)
 - 1x Audio (Line out / Line in / Mic in)

Data Box for the USTER® MILL DASHBOARD:

- 2x USB 2.0
- 2x Ethernet 100 MBit/s
- micro HDMI

Mains voltage range

- USTER® QUALITY EXPERT Standalone version:
100 to 240 VAC +/-10 %
- Data Box for USTER® MILL DASHBOARD:
100 to 240 VAC +/-10 %

Mains frequency

- USTER® QUALITY EXPERT Standalone version:
50/60 Hz
- Data Box for USTER® MILL DASHBOARD:
50/60 Hz

Power consumption

- USTER® QUALITY EXPERT Standalone version:
140 W without the screen
- Data Box for USTER® MILL DASHBOARD:
5 to 12 W

Environment

Safety markings

- CE / CB

Dimension

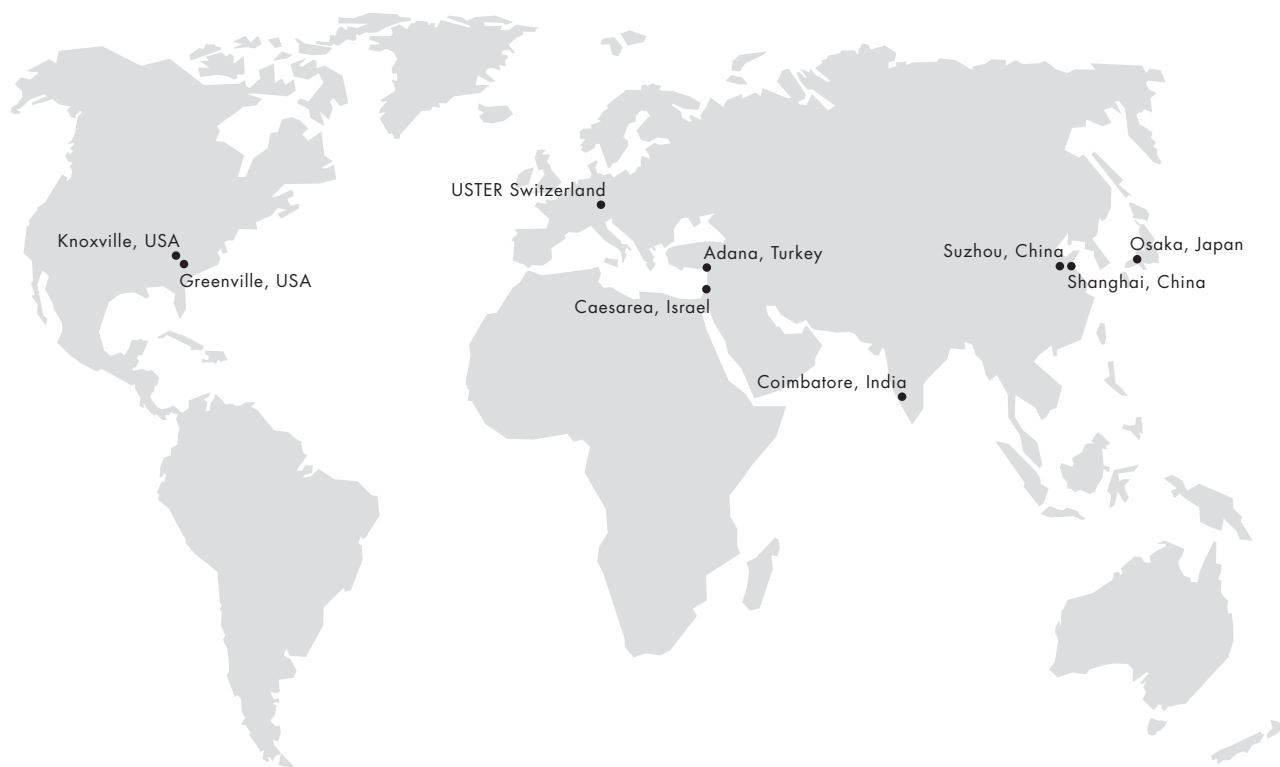
- USTER® QUALITY EXPERT Standalone version:
depth 281 mm, width 391 mm, height 100 mm
- Control unit including the screen: depth 281 mm,
width 539 mm, height 500 mm
- Data Box for the USTER® MILL DASHBOARD:
depth 30 mm, width 75.5 mm, height 142.5 mm
(dimensions without cable fixing tongue)

Weight of the basic function

- Net weight USTER® QUALITY EXPERT Standalone version:
app. 6.1 kg
- Control unit including the screen: app. 13 kg
- Net weight Data Box for USTER® MILL DASHBOARD:
app. 300 g

Uster Technologies has made all possible efforts to ensure that all information is accurate at the time of publication. Hereby it is declared that alterations to the product may be possible at any time. In these cases the information contained in this technical datasheet is subject to change without notice.

March 2021



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