



USTER® QUANTUM 4.0

The connected yarn quality assurance system

Technical Data

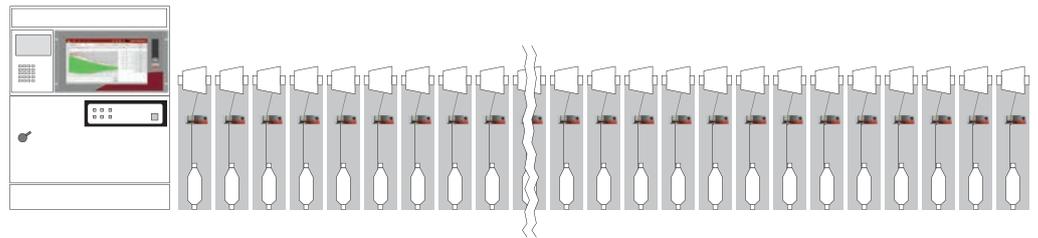
April 2021

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Basic installation

Uster Quantum 4.0 is the connected yarn clearing and monitoring system for winding.



Overall Installation

Functions

- Yarn clearing system with Smart Clearing Technology for
 - Basic clearing
 - Smart Duo Technology
 - Contamination Clearing
 - Special application
- Alarm settings and indication at measuring head
- Defect and alarm details listed at the central clearing unit
- Monitor and control of winding data
 - Cuts and alarm overview
 - YARN BODY™, Dense area, Scatterplot
 - Classification data
 - Q-Data
 - Trend display
- Reports to USB stick
- iMH LED function to stop and analyze defects
- Uster Quantum Expert for central data management

Included in the delivery

- Central Clearing Unit 7 (CCU7) – one standalone or integrated unit per winding machine to control settings and data. Integrations available with Murata QPRO, Saurer ACX6, Savio PulsarS
- Intelligent measuring heads (iMH) for each winding position
- Interface to the winding positions and connecting cables
- Documentation, Tools, Yarn Boards and Yarn Grades

Subsystem of the USTER® QUANTUM 4.0

Standard equipment

USTER® QUANTUM EXPERT

- Uster Quantum Expert application software
- Central winding data management
- Machine monitoring control
- Advanced analysis and intuitive reporting
- Central article management
- Configuration of shift calendar, user management and data export
- Connection to overall quality management platform Uster Quality Expert

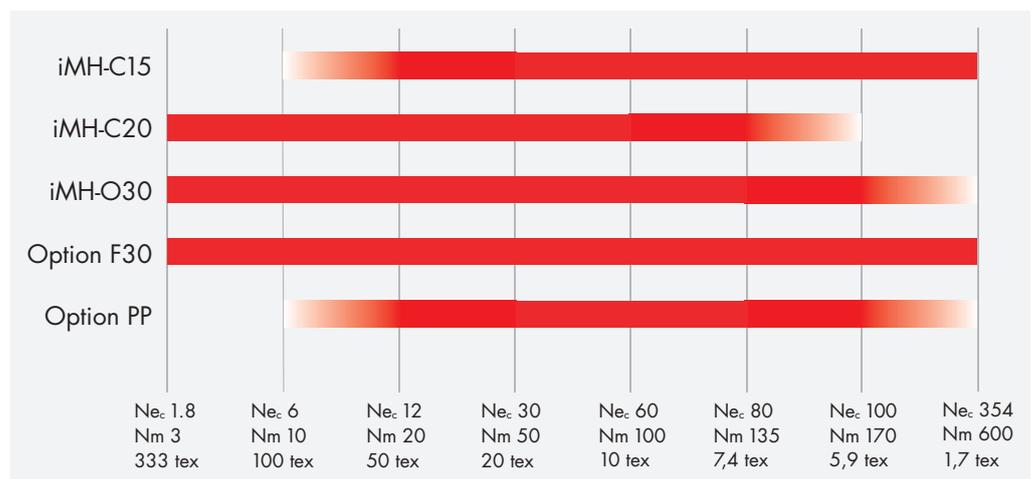
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Scope of application

Application range	Yarn types	For all spun yarns consisting of natural fibers, blended fibers, synthetic fibers, and ply-yarns
	Languages	DE, EN, CN, TR, VN, FR, IT, ES, PT, RU, ID, JP, TH, KR
	Count range	Nec 1.8 to Nec 354 / Nm 3 to Nm 600 / 1.7 tex to 333 tex
	Maximum speed	2,500 m/min

Count range of the USTER® QUANTUM 4.0



Winding machines

Manufacturer	Actual machines	Retrofit
Muratec	QPRO EX, FPRO EX	QPRO, FPRO, PC 21 C
Saurer Schlafhorst	Autoconer ACX6 (PreciFX)	Autoconer AC6 (PreciFX), Autoconer AC5 and ACX5, Autoconer AC338
Savio	PulsarS, Polar	Polar, Orion, Espero
Qingdao Hongda	VCRO	Spero, Smaro
Qingdao QTM	Faro, ISPERO	ISPERO
Lakshmi	LAW60	

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Feature overview

			Capacitive	Capacitive and/or optical	Optical
			<C>	<C>, <C.opt>	<O>
			C15 C20	C15 F30 C20 F30	O30
Basic clearing	Thick and thin places	N, S, L, T	•	•	•
	Count channel	C, CC	•	•	•
	Periodical defects	PF	•	•	•
	Swarm clearing	swNSL, swT	•	•	•
	Splice clearing	Jp, Jm, U	•	•	•
Smart Duo clearing	Cross clearing	X		•	
	Density clearing	D, CD		•	
	Switch capacitive / optical mode	<C>, <C.opt>		•	
	Conductive yarn			•	•
Q-Data	Yarn unevenness	CV	•	•	•
	Imperfections	IP	•	•	•
	Hairiness	H		•	
	Class alarm		•	•	•
	Tailored classes		•	•	•
Contamination clearing	Foreign matter clearing dark and light	FD, FL		•	
	Swarm clearing	swFD, swFL		•	
	Vegetable matter clearing	VEG		•	
	Polypropylene clearing	PP		○	
Special applications	Core yarn clearing	MC, CMC, OC, COC		○	
	Blend mix-up	BM		○	
	Shade variation	SV, CSV		○	
USTER® QUANTUM EXPERT	Data system for yarn clearing		•	•	•
USTER® RSO 3D	Rings pinning optimization	RSO 3D	○	○	○

- This feature is included in this version of the sensor
- Product Option Key (POK) is needed to have access to the feature mentioned in the header of this column

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Application Software for USTER® QUANTUM 4.0

Clearing settings	Article settings	<ul style="list-style-type: none">– Article definition– Clearing mode selection for different application– Switch capacitive and optical basic clearing
	Smart Clearing Technology	<ul style="list-style-type: none">– Central smart limit button for a fast setup– Individual smart limits for data-based setting configuration with cut forecast in the most intuitive and user-friendly way (NSL, T, CC, CD, FD, FL, PP, MC, CMC, OC, COC, BM, CSV)– Manual setting definition possible– YARN BODY™, Dense area and/ or Scatter plot display– Clearing limit comparison
	Alarms and Q-parameter settings	<ul style="list-style-type: none">– Yarn fault alarms set per number of faults and reference length– CV, H and IP with Smart limits and Data display– Class alarms and tailored classes with separate settings
	Special and group settings	<ul style="list-style-type: none">– Linen, Twin splice, Wet splice– Special monitoring and alarm settings
Data display	Machine summary	<ul style="list-style-type: none">– Trend display up to 9 shifts back– Data per position– Length, Yarn faults, Q-Data, Alarms, Q-Blockings, Q-Cuts, Q-Registrations, Miscellaneous– Favorites definition
	Yarn faults, Alarms and Special Counters	<ul style="list-style-type: none">– Full display of active and inactive functions– Absolute and relative value display– Machine, group, spindle– Current, shift (current and last 9 shifts), lot, day
	Q-Data	<ul style="list-style-type: none">– Classification: NSLT, J, FD, FL, VEG, PP– YARN BODY™, Dense area and/or Scatterplot: NSL, T, C, CC, D, CD, J, FD, FL, VEG, PP, SV, CSV– CV, Hairiness, Imperfections, Class alarms– Machine, group, spindle depending on display– Current, shift, day depending on display
	Logbook	<ul style="list-style-type: none">– General logbook and service logbook– Information, warning, alarm– Technical, textile
	RSO 3D Data	<ul style="list-style-type: none">– Quality map of ring spinning machine– Section and spindle display per doff– Favorites definition

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Reports	Standard reports printed to USB stick	<ul style="list-style-type: none">– Pre-defined and customizable reports– Current, shift, lot, day– Machine, group– Yarn faults, Alarms, Classification, Q-Data– Position exceptions (configurable)
	Special reports printed to USB stick	<ul style="list-style-type: none">– Article report– Service reports– Event report– Logbooks
	Event report	<ul style="list-style-type: none">– Configurable list of events– Date, time, position and event details
Service	System info	<ul style="list-style-type: none">– iMH overview– Version and connection state
	Special functions	<ul style="list-style-type: none">– iMH LED display to inspect yarn defects– Service functions
Start-up	System settings	<ul style="list-style-type: none">– Language selection– Unit systems:<ul style="list-style-type: none">– Yarn count: Nm, Ne, New, tex– Classification: cuts/ total; remaining/ total– Rel. value: /10 km, /100 km, /1,000 km– Shift schedule if not commonly defined via Uster Quantum Expert– Alarm reset rights
	Machine settings	<ul style="list-style-type: none">– Machine and group settings– iMH display
	Options	<ul style="list-style-type: none">– Options overview and activation– Shareware options valid for 30 days
	Article control	<ul style="list-style-type: none">– Article list with up to 30 articles– Stop and start of production groups with assigned articles
Operating functions	Alarm display	<ul style="list-style-type: none">– List of alarms – technical and textile– Acknowledge alarms
	Access rights	<ul style="list-style-type: none">– User login change via passwords– Master key login
	Online help	<ul style="list-style-type: none">– Explanation for all menus and submenus

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USTER® QUANTUM 4.0 with connection to other systems

<p>Total Contamination Control (TCC)</p>	<p>Based on the combination of</p>	<ul style="list-style-type: none"> - USTER® JOSSI VISION SHIELD - USTER® VISION SHIELD EXPERT - USTER® QUANTUM 4.0 - USTER® QUANTUM EXPERT - USTER® QUALITY EXPERT
<p>Ring Spinning Optimization (RSO)</p>	<p>Based on the combination of</p>	<ul style="list-style-type: none"> - USTER® SENTINEL - USTER® QUANTUM 4.0 - USTER® QUANTUM EXPERT - USTER® QUALITY EXPERT
<p>Ring Spinning Optimization 3D (RSO 3D)</p>	<p>Based on the combination of</p>	<ul style="list-style-type: none"> - USTER® SENTINEL - USTER® QUANTUM 4.0 - USTER® QUANTUM EXPERT - Muratec QPRO EX/FPRO EX with Spin Inspector
<p>Uster Quality Expert</p>	<p>Further value modules</p>	<p>Alarm center, Mill analysis, Yarn prognosis</p>

RSO and RSO 3D available for linked winders only

Installation conditions

<p>General ambient conditions</p>	<p>Operating conditions</p>	<ul style="list-style-type: none"> - Temperature: +5 to +50 °C (*) - Humidity: < 80% R.H. (non condensing)
	<p>Transport/Storage conditions</p>	<ul style="list-style-type: none"> - Temperature: -20 to +85 °C - Humidity: 10–95% R.H. (non condensing)
	<p>Application conditions</p>	<p>Typical experienced ambient conditions in winding are between 20 °C to 38 °C and 50% to 69% R.H. This may vary depending on the produced raw materials. Spinning conditions are usually controlled by a suitable air-conditioning.</p>

(*) Temperature for CCU7 openframe integrated: +5 to +60 °C

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.

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