

USTER® CLASSIMAT QUANTUM

TECHNICAL DATA

THE YARN CLASSIFICATION SYSTEM



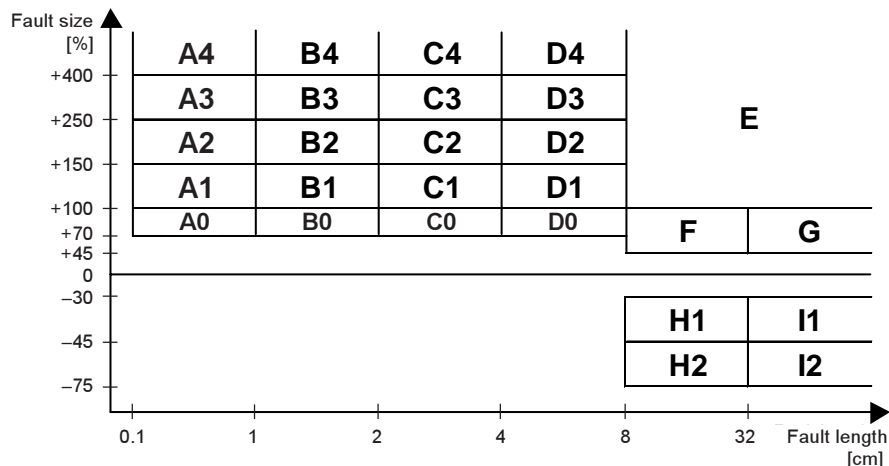
THE YARN CLASSIFICATION SYSTEM

Technical Design	<i>Architecture:</i>	Intelligent Measuring Head Standalone Classifying Unit
	<i>Detectors:</i>	Mass Reflectance for Foreign Fiber
	<i>Configuration:</i>	Capacitive Capacitive and Foreign Fiber
Functions	<i>Thin and Thick Places:</i>	Detection and analysis of seldom-occurring yarn faults. Classification of yarn faults in 23 thick and 4 thin classes. Definition of customized class.
	<i>Foreign Matter:</i>	Classification of foreign matter in 27 classes. Definition of customized class. Determination of vegetable matter content.
	<i>Yarn Count/Weight:</i>	Monitoring of yarn count – C-channel for yarn count faults (detection of incorrect material). – Data produced with respect to the incorrect material are rejected. Definition of length and weight of wound yarn.
	<i>Evaluation:</i>	Measured values per machine/winding position. Cumulative/per class. Absolute/per 100 km. All/remaining yarn faults after QUANTUM clearing. All/remaining foreign matters after QUANTUM clearing.
	<i>CAY (Computer Aided Yarn Clearing):</i>	Scatter plot of yarn faults in USTER® CLASSIMAT matrix. Scatter plot of foreign matter faults in USTER® FOREIGNCLASS matrix. Determination of optimum clearing curve, based on scatter plot. Online visualization of yarn faults (thick places). Online simulation of defects in fabric or garment. Cut prognosis indicates the number of cuts with particular settings.
	<i>Application Range:</i>	Textile laboratory: for quality control and quality assurance. Production: on the first/last section of the winding machine. For staple-spun yarns of natural and synthetic fibers. Checking of uncleared yarn. Determination of the optimum setting parameters for yarn clearing. Checking of cleared yarn. Inspection of purchased yarn. Test protocols. Yarn certification.
	<i>Power Supply:</i>	Supply Voltage 100/120 V; 200/240 V Stabilizing Range $\pm 25\%$ Power Consumption max. 300 VA

THE YARN CLASSIFICATION SYSTEM

Definition of Class Limits

Classification Diagram



Length Classes

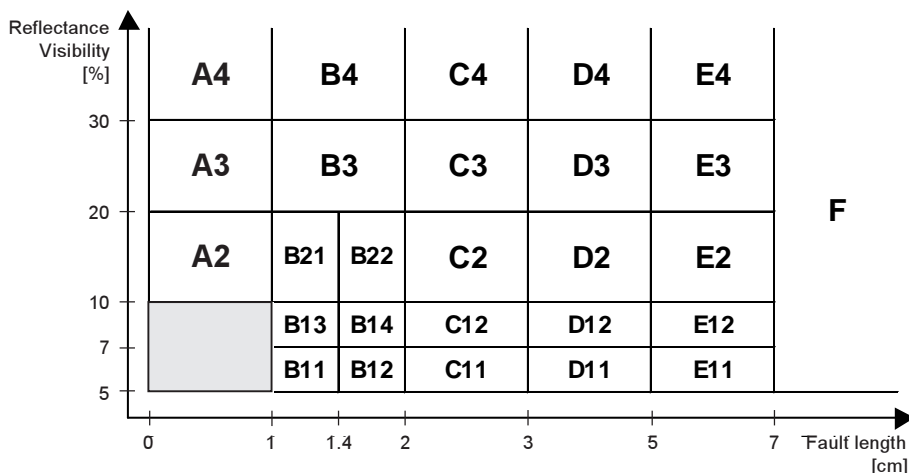
- A: shorter than 1 cm
- B: 1 to 2 cm
- C: 2 to 4 cm
- D: 4 to 8 cm
- E: longer than 8 cm
- F and H: 8 to 32 cm
- G and I: longer than 32 cm

Cross-section Classes

- 0: +70 to +100%
- 1: +100 to +150%
- 2: +150 to +250%
- 3: +250 to +400%
- 4: over +400%
- E: over +100%
- F and G: +45 to +100%
- H1 and I1: -30 to -45%
- H2 and I2: -45 to -75%

Definition of Foreign Matter Class Limits

Classification Diagram



Length Classes

- A: shorter than 1 cm
- B: 1 to 2 cm
- C: 2 to 3 cm
- D: 3 to 5 cm
- E: 5 to 7 cm
- F: longer than 7 cm

Cross-section Classes

- 1: 5 to 10%
- 2: 10 to 20%
- 3: 20 to 30%
- 4: over 30%

THE YARN CLASSIFICATION SYSTEM

Measuring Head	<i>Types of Measuring Heads:</i>	Special measuring head designs for different automatic cone winding machines. Two types of measuring heads for different yarn count ranges.
	<i>Yarn Count Range:</i>	C15: Nm 10 – 280 Nec 6 – 170 100 – 3.7 tex C20: Nm 5 – 125 Nec 3 – 75 200 – 8 tex

Alarms	<i>Textile Alarms:</i>	Yarn fault for individual winding positions. Yarn count alarm for incorrect yarn counts in measuring slot. Setting range: – 1 to 9999 yarn faults – 1 to 999 km reference lengths
	<i>Bobbin Alarm:</i>	Alarm if a bobbin exceeds the preset limit values. ¹ Detection of «rogue» bobbins. ¹
	<i>Technical Alarm:</i>	Function alarm is actuated by the following disturbances: – Failure of the classifying unit – Voltage deviation – Failure of the measuring head – Deviation in the sensitivity of a fault channel

¹ only possible if the corresponding signal is supplied by the winding machine.

Online Application Software	<i>USTER® STATISTICS 2001:</i>	Material-dependent USTER® <i>STATISTICS 2001</i> according USTER® <i>CLASSIMAT QUANTUM</i> . For comparisons of measured values, USTER® <i>STATISTICS</i> can be displayed on the screen.
	<i>USTER® STATISTICS 1997:</i>	Material-dependent USTER® <i>STATISTICS 1997</i> according USTER® <i>CLASSIMAT 3</i> . For comparisons of measured values, USTER® <i>STATISTICS</i> can be displayed on the screen.
	<i>Customer Statistics:</i>	Similar to USTER® <i>STATISTICS</i> but based on customer's data. For comparisons of measured values, the Customer Statistics can be displayed on the screen.
	<i>USTER® YARN GRADES:</i>	USTER® <i>YARN GRADES</i> Ring Spinning Capacitive. USTER® <i>YARN GRADES</i> Rotor Spinning Capacitive. Online visualisation of thick places.
	<i>Trend Analysis:</i>	Line diagram for representation of all classifications carried out. Assessment of quality over an extended period on the basis of individually arranged class totals.

THE YARN CLASSIFICATION SYSTEM

General Ambient Conditions	<i>Location/Room Conditions:</i>	Textile laboratory with standard climatic conditions specified below.
	<i>Recommended Standard Conditions:</i>	To prevent any influence on testing material, the specified climatic conditions must be observed! – Temperature: (20±2)°C – Humidity: (65±2)% relative humidity
	<i>Room Climate:</i>	For all electronic parts: – Temperature: +4 to +40°C – Humidity: max. 80% relative humidity, non-condensing

Installation	<i>Winding:</i>	Murata MC7-V, MC7.x Savio Espero, Orion Schlafhorst AC138, AC338 SSM PW1, PS6, DP1 Motocono Most manually operated machines Application to machines from other manufacturers on request.
	<i>Winding Positions:</i>	6 to 12 positions, exclusive operation on winding machine only.
	<i>Speed:</i>	100 – 2000 Meters/Minute

Reliability	<i>Factory Testing:</i>	Full Functional
	<i>Factory Calibration:</i>	Complete
	<i>Operation:</i>	Self-Calibrating

