USTER® TESTER 5-C800
The filament yarn inspection system

Technical Data

February 2014
Testing and analyzing installation for the quality assurance of filament yarns

Elements of the USTER® TESTER 5-C800 installation
### Basic Installation

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Test Unit&lt;br&gt;• Sensor CC, Evenness unit&lt;br&gt;• Sensor Humidity/temperature (integrated)</td>
</tr>
<tr>
<td>1a</td>
<td>Changer/Yarn Feeder (only for UT5-C800/A)</td>
</tr>
<tr>
<td>2</td>
<td>Operating Unit&lt;br&gt;• Single-package creel (only for UT5-C800/SA)</td>
</tr>
</tbody>
</table>

### Options

<p>| | |</p>
<table>
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<tr>
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<tbody>
<tr>
<td>3</td>
<td>Sensor FSA, Count Manual&lt;br&gt;KB-System SPG (no illustr.)</td>
</tr>
</tbody>
</table>

### Special accessories

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>4</td>
<td>Tensioner carrier with 24 tensioners</td>
</tr>
</tbody>
</table>
THE FILAMENT YARN INSPECTION SYSTEM

Basic Installation

Overall Installation

Functions:
• Measurement of mass variations in filament yarns
• Collection, evaluation and storage of measurement values
• Automatic check of all measured values, diagrams and spectrograms
• Editor for customizing report layouts
• Filter functions for quick data retrieval and for the preparation of long-term reports
• Simulation of yarn boards, woven and knitted fabrics

Versions:
• USTER® TESTER 5-C800/A (automatic version)
• USTER® TESTER 5-C800/SA (semiautomatic version)

Included in the delivery:
• Test unit
• Operating unit (Control unit, screen, keyboard and mouse, backup unit)
• Single-package carrier (for semiautomatic version only)
• Application software
• Table set

TEST UNIT (1)

Subsystems of the USTER® TESTER 5-C800 basic version:

Sensor CC:
• Capacitive measuring unit for the determination of mass variations in filament yarns
• Measurement range: approx. 10 dtex to 2500 dtex (3.0 to 10 dtex upon request; depending on the structure of the yarn, yarn count of up to approx. 6000 dtex can be measured)

Sensor humidity and temperature:
• Integrated sensor for measurement of humidity and temperature in the environment of the Test unit
  – Humidity: +/- 3% rH at a temperature of 21°C
  – Temperature: +/- 0.3°C at a temperature of 20°C

Tensioner C:
• Material tensioner system for filament yarn

Conveyor C:
• Material conveying system for filament yarn
• Testing speed: 25 to 800 m/min

Twister C:
• Material twisting system for filament yarn

Base C:
• Absorber for the removal of the tested yarn

Keypad:
• Control keys for easy operation
• Display of active sensors and actual speed
### Changer/Yarn Feeder (1a)

**For the automatic version only**

**Function:**
Automatic transfer of the yarn from the package changer and insertion into the measuring slot (max. 24 positions).

### Operating Unit (2)

**Computer software:**
The USTER® TESTER 5-C800 is a menu driven design that allows quick access and selection of testing, setup, calibration and data management. These features include:
- Windows XP operating system with icon-based software
- Simple user interface
- Error messages for troubleshooting
- Network capabilities

**Computer hardware:**
- Industrial computer system with dual core 2.5 GHz processor and 4GB RAM
- DVD-R drive
- 2 hard drive, 250 GB or better

**Computer accessories:**
- 19" High resolution flat panel LCD monitor with Integrated sound bar
- Laser printer
- Keyboard
- Optical mouse
# Options

<table>
<thead>
<tr>
<th>Options</th>
<th>Application</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor FSA, count manual (3)</td>
<td>Application range:</td>
<td>Manual determination of the absolute count of filament yarns in the count range of 10 dtex to 6000 dtex.</td>
</tr>
<tr>
<td>Connection to LAB EXPERT</td>
<td>Function:</td>
<td>Connection set to connect the USTER® TESTER 5 to the USTER® LAB EXPERT</td>
</tr>
</tbody>
</table>
| KBS, Knowledge Based System | Function: | Knowledge-based software module for detecting the cause of periodic faults in the spectrogram:  
- The parts of the respective production machine which may be defective are marked in the graphic representation  
- The gearing layouts of the most important production machines are stored  
- Software-supported configuration of the gearing layouts and the knowledge base |

### Special Accessories

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Application:</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensioner carrier with 24 tensioners (4)</td>
<td>For the measurement of yarn packages from a bobbin carrier without yarn tensioners</td>
<td></td>
</tr>
<tr>
<td>Packages carrier</td>
<td>Packages carrier for creeling and transporting up to 24 bobbins with Ø max. 125 mm</td>
<td></td>
</tr>
</tbody>
</table>
### Application Software

**Reports**

*Type of reports:*
- Test reports of measurement series
- USTER® Quality Report (summary of the key data and the test results on one page; quality certificate)
- QUALIPROFILE® (graphic presentation of the overall yarn quality, with respect to the USTER® STATISTICS or to a customer-specific yarn profile)
- Long-term reports
- Pre-configured standard reports for different applications
- Customized reports

*Display and print-out of the reports:*
- Automatic reports
- Exception reports
- As required

*Limit values:*
- Determination of fixed limits or definition of limits based on the USTER® STATISTICS stored in the system
- Verification of measured values
- Measured values which exceed the set limit values will be marked

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**Numerical output of results (SENSOR CC)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unevenness U</td>
<td>Determination of the mass unevenness by help of the irregularity</td>
</tr>
<tr>
<td>Coefficient of variation CV</td>
<td>Determination of the mass unevenness by help of the coefficient of variation</td>
</tr>
<tr>
<td>Coefficient of variation CV(L)</td>
<td>Determination of the unevenness for cut lengths of 1, 3, 5, 10, 50 or 100 m and for the inert and half-intert modes.</td>
</tr>
</tbody>
</table>
| Maximum mass variation     | • m (max) = maximum mass increase  
                             | • m (min) = maximum mass reduction  
                             | • Possible cut lengths for the calculation: 1, 3, 5, 10, 50 or 100 m      |
| Relative count             | Percentage count variation of the test material between single tests in a sample, with reference to a selectable material length |

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**Numerical output of results (count measuring system)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute count</td>
<td>Determination of the length-related mass value</td>
</tr>
</tbody>
</table>
## STATISTICS

**Statistical values:** Overall result protocol with statistical data of the result columns
- Mean value
- Median
- Standard deviation $s$
- Coefficient of variation CV
- 95% confidence range
- Min. value
- Max. value

### Graphic output of results (SENSOR CC)

| Diagram: | 
| --- | --- |
| Sensitivity selectable in the ranges of ±5% to +500/–100% |
| Longitudinal scale in the ranges of 1 to 10000 m per line |
| Cut lengths: normal, 0.1, 0.3, 1, 3, 10, 30, 100, 300, 1000 m, inert and half-inert |
| Possibility of representing 3D diagrams |

**Spectrogram:**
- Wavelength range up to 1/5 of the measured test length, but to a maximum of 2200 m
- Max. 160 channels (compared to the USTER® TESTER 3, the resolution has been doubled)
- Possibility of representing 3D spectrograms

**Variance-length curve:**
- Cut lengths from 2 cm to 600 m, whereby the maximum calculated cut length is about 1/15 of the measured test length (compared to the USTER® TESTER 3, the resolution has been doubled)
- Possibility of representing 3D variance-length curves

**Frequency distribution diagram:** Representation of the parameter variations within single tests

### Data protection

**Backup:**
- The data are stored on the 2nd hard disk
- For long-term storage, the data can be archived on the 2nd hard disk (backup unit) and presented again as required at a later date
- All settings, measurement values and diagrams are stored

### Input of data, output of results, languages, units

**Dialog and report languages:** English, German, French, Italian, Spanish, Portuguese, Turkish, Russian or Chinese can be selected via the operating menu (other languages on request)

**Possible units:**
- Titer: tex, dtex, den
- Speed: m/min, yd/min

**Test time:** 6 seconds to 20 minutes, variable
Selftest Function check:
• Initiated automatically when the installation is switched on
• Comprehensive function check and special test programs can be initiated at any time via the diagnosis menu

General

General ambient conditions Room climate: The ambient conditions must be maintained in order to avoid any influencing on the test material according to ISO 139.1973 or DIN 53 802.

– Humidity: 65±2% relative humidity.
– Temperature: according to ISO 139.1973 or DIN 53 802
  20±2 °C for temperate climates
  27±2 °C for tropical climates

Installation data Electrical connections: Single phase mains with protective conductor

Mains voltage range: Voltage selector Nominal voltage (-10/+6%) 50/60 Hz

<table>
<thead>
<tr>
<th>Voltage</th>
<th>105 V</th>
<th>125 V</th>
<th>145 V</th>
<th>210 V</th>
<th>230 V</th>
<th>250 V</th>
</tr>
</thead>
</table>

*) Caution: 150 V only +3% tolerance

Mains frequency: 48 – 62 Hz

Power consumption: Max. 1000 VA

Compressed air connection:
• Air quality: according to ISO 8573.1, class 3
• Min. pressure at inlet of air filter regulator: 6 bar
• Max. pressure at inlet of air filter regulator: 7 bar
• Requirement compressed air: Standard
  – C800: 8 m³/h
• Min. internal diameter of the connection: 8 mm
• Max. length of the connection: 5 m
• Max. temperature difference between compressed and laboratory air: 10 °C

Compressed air connection for additional tester will be doubled. For detail please refer to the above mentioned information.
**Gross weight of the basic installation**

<table>
<thead>
<tr>
<th></th>
<th>Semiautomatic version:</th>
<th>Automatic version:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approx. 100 kg</td>
<td>Approx. 110 kg</td>
</tr>
</tbody>
</table>

**Space required for the installation of the**

**USTER® TESTER 5-C800**

- At a vibration-free location
- Manual or automatic count measurement systems must be set up on a separate table
Subject to technical modifications

Uster Technologies has made all reasonable 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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