USTER® *AFIS PRO 2*

TECHNICAL DATA

THE FIBER PROCESS CONTROL SYSTEM

September 2007

USTER®
Think quality

Function

The USTER® *AFIS PRO 2* instrument measures Fiber and Seed Coat Neps (Neps Classification), Length and Maturity, and Trash in cotton fibers and blends as described under "Applications" below. These are essential measurements for the spinning to optimize its spinning operation based on the raw material purchased. The USTER® *AFIS PRO 2* is also extensively used to evaluate if incoming raw cotton meets quality specifications.

INSTRUMENT	COMPONENTS / SOFTWARE
USTER® *AFIS PRO 2*	Nep Classification: Fiber and Seed Coat Neps; USTER® *QUALIPROFILE*, and Reports Software
USTER® *AFIS PRO* 2 with USTER® *AUTOJET*	Nep Classification: Fiber and Seed Coat Neps, USTER® *AUTOJET* Cassette carrousel; USTER® *QUALIPROFILE* , and Reports Software
Optional Modules	Length and Maturity, Trash

Dimensions

	English	Metric
Length:	46.5"	118 cm
Height:	38.3"	97.4 cm
Depth:	30.0"	76 cm
Weight:	Lbs. 408	185 gross kilos

Equipment

The following features are provided with the USTER® *AFIS PRO 2*:

Main Equipment:

Base Unit containing the Nep Classification instrument without the USTER® *AUTOJET* feature.

Computer Software:

The main USTER® *AFIS PRO 2* screen contains only six function buttons on the initial screen. These allow you to access the major areas of testing, setup and data management. Other features include:

- Windows-based operating system with icon-based software
- Simplified user interface
- Error messages for troubleshooting
- USTER® *QUALIPROFILE* for quality evaluation "at a glance"

Computer Hardware:

- Computer system with CD-ROM drive, 3.5-inch floppy drive, 8- GB or better hard drive, and Pentium processor
- Color Monitor
- Keyboard and Mouse
- Balance
- Printer

Available Options

Optional Modules:

- Length and Maturity (L&M) Module to measure cotton fiber length and maturity, integrating results into the USTER® *AFIS PRO 2.*
- Trash (T) Module to measure the dust and trash content in cotton, integrating results into the USTER® *AFIS PRO 2.*
- USTER® *AFIS AUTOJET* (AJ) Module to measure up to 30 samples automatically, reducing idle operating time.
- UPS – Uninterrupted Power Supply device to support the computer and monitor *(See page 4)*.

Application Range

100% cotton samples in the form of bale, opened and cleaned material (card mat), sliver, and roving. Waste material cannot be tested on the USTER® *AFIS PRO 2.* Doing so can damage instrument components.

Synthetic fibers can only be tested up to a 50/50% blend with cotton fibers in sliver and roving form. Uster Technologies does not guarantee test results on 100% synthetic fibers. Maximum fiber length: 2 inches (app. 50 mm).

Measurements and Calculations

All measurements are performed optically on individual fibers and events (neps and trash)

Nep Classification:	Fiber and seed coat nep count per gram and size (m) distribution.
Length:	Fiber length by number and by weight distributions; short fiber content by number and by weight (%).
Maturity:	Maturity, immature fiber content (%) and fineness (mtex) distribution.
Trash:	Dust and trash count per gram and size (m) distribution; visible foreign matter content (%).

Power

The following power requirements apply to both North American and European-type systems.

Voltage (nominal):	208 or 230 volts ±10% (single phase)
Current:	<10 Ampere (dedicated circuit breaker)
Frequency:	50 - 60 Hertz
Harmonic distortion:	<5%
Wire size:	Sufficient to have <5% drop from no load to full load
Electrical interference:	Free of transient voltages from other equipment

The USTER® *AFIS PRO 2* requires a separate, dedicated 10-Ampere circuit breaker at the facility's electrical load center. During normal operation the instrument draws approximately 5 Ampere. A power cord for connection is provided with the USTER® *AFIS PRO 2*. The opposite end must be fitted with connections compatible with the facility's electrical system.

Uninterruptible Power Supplies (UPS)

If you expect to have frequent power shutdowns, USTER Technologies recommends that an Uninterrupted Power Supply (UPS) device be used to prevent loss of data or other related problems. The input for the UPS, which powers the computer and monitor only, is located on the back of the main cabinet beside the power entry connector.

Requirements for UPS to Support the Computer/Monitor

Warner Electric #UPSY52005-3 (recommended) or equivalent with the following characteristics:

- "On-line" design for maximum protection against line transients
- Minimum output power rating of 500 VA (325 Watts) at 230 volts 50 or 60 Hz
- Input voltage of 195 - 264 volts, 50 or 60 Hz (single phase)
- Must be TÜV certified or bear the CE mark for European countries and be UL listed for North America
- Run time of 5 minutes or greater

Requirements for UPS to Support the Entire USTER® *AFIS PRO 2* Instrument

- SOLA #S42000TRM-5 for European power systems.
- SOLA #S41800-208TRM for North American power systems or their equivalent; minimum 1.5 KVA that meets the above requirements.

UPS is not required for the computer/monitor if UPS is used for the entire system.

Compressed Air

The air supplied to the instrument should comply with ISO 8573.1 Quality Class 3 as follows:

DIRT Particle Size:	<5 microns
WATER Pressure Dew Point:	<-4 F @ 100 PSIG (128 ppm by volume)
OIL (including vapor):	<1.0 ppm
Air Pressure:	(100-150 PSIG 700-1034 kPA)
Air Volume:	The instrument requires at least three SCFM (85 liters/min) supplied by a 10-mm (3/8 inch) line.
Laboratory Temperature:	These specifications are for the ambient conditions referenced below. If the air line will be subjected to temperatures that could promote condensation, a water filter attached to the air line inside the lab is recommended to remove any condensation that may occur.

Ambient Conditions

According to ISO 139, the following ambient conditions must be maintained in the laboratory in order to get repeatable and comparable test results:

- Temperature: 20±2°C; 65 °F to 72 °F
- Relative Humidity: 65±2%

For consistent test results, fiber samples should be conditioned in the laboratory environment with the above-mentioned ambient conditions for 24 hours. Samples should be laid out openly in the laboratory, and taken out of plastic bags, in order for the cotton to fully condition to the environment.

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