USTER® *INTELLIGIN-M*

The gin process control system

Technical Data

USTER®
Think quality

USTER® *INTELLIGIN - M: Gin Process Control*

The USTER® INTELLIGIN - M system monitors the ginning process so the equipment and value of the cotton can be optimized. The system uses established sensor technology developed in the Uster HVI. The system gives the gin real time information on the trash grade, color grade and moisture of the cotton being processed through the gin. This information allows the gin to customize its operation and settings based on the incoming seed cotton quality. This on-line quality and moisture data gives the gin information to set the drying temperatures, pre-cleaning equipment and lint cleaning equipment. The moisture data also provides information for controlling moisture restoration systems that increase moisture in the cotton.

The system has a user-friendly software interface and integrated application and reporting software Data Manager. The system can also be connected into an existing LAN to assist the management of processing data.

Possible Configurations

SystemComponents / Software

USTER® *INTELLIGIN - M*
Trash, Color, Moisture; Reports; Data Manager; Monitor dryer temperatures, Monitor seed and lint cleaning equipment, Reports, Data Manager Final Bale Moisture sensor (optional)

Moisture Management (option)
Spray system with pump, nozzles and controls, add supplemental moisture of 0 - 2%, Seed Cotton Station(option) Seed cotton sampling station for trash and color

Administative Station (option)
PC, printer, software, network connection to console.

The following features are provided with the USTER® *INTELLIGIN - M:*
Main Equipment:
- Base system contains the control console and sampling station

Computer Software:
- Windows operating system
- Data base with quality and operating history for all bales
- DataManager (data import and backups)
- Report Launcher (report software)
- IntelDBServ (system setup software)
- Station software

Computer Hardware:
- Computer system with CD-ROM drive, 3.5-inch floppy drive, 4.1 GB or better hard drive, and Pentium processor
- Color monitor
- Keyboard and mouse
- Connection to sampling station
- Interface to dryer temperatures
- Interface to monitoring pre-cleaning and lint cleaning equipment

The following options are available for the USTER® *INTELLIGIN - M:*
Options:
- Final Bale Moisture Sensor
- Moisture management system for supplemental moisture
- Seed cotton sampling station
- Administration PC and network connection
- Bar Code Reader
- 775 Micronaire

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Application Range

Measurements and calculations

Trash
% Surface area covered by trash
USDA Leaf Grade
Custom Leaf Grade
Measured optically by video image camera, compared to USDA trash grades or customized trash standards.

Color
Rd (whiteness), +b (yellowness)
Color Grade; measured optically using color filters, compared to USDA Upland or customized color chart.

Grade
Combination of USDA color and leaf grades based on the International grade standards

Moisture
Moisture content (% by weight) of the cotton sample;
Measured conductive by pressure of the sample against the probe mounted in the sampling station.

Software Features

The main USTER® *INTELLIGIN - M* screen contains an overview of the process monitoring and gives the operator access to additional screens for more detailed information. These detailed screens can be customized for each gin location. Other features include:

- Windows-based operating system with icon-based software
- Simplified user interface
- Error messages for troubleshooting
- Integrated Data Manager software for importing and exporting data

Main Screen
- Trash and leaf grade
- Moisture %
- Station readings
- Summary of last 10 bales

Moisture Screen
- Dryer temperatures
- Moisture %
- Summary of last 10 bales

Leaf Grade Screen
- Digital picture of cotton
- Digital picture of USDA leaf grades
- Leaf grades from last 2 hours of processing
- Summary of last 10 bales

Alarms and settings
- Leaf and moisture results will be graphed
- Upper and lower alarm limits can be set
- Alarm signal light will signal when outside of limits

Monitoring Process Equipment
- Monitor pre-cleaning equipment (on/off)
- Monitor lint cleaning equipment (on/off)
- Monitor stage1 and stage 2 drying temperatures

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Electrical Power Requirements

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

Voltage (nominal):	110, 208 or 230 volts ± 10% (single phase)
Current:	< 8 Amperes
Frequency:	47 - 63 Hertz
Harmonic distortion:	< 5%
Wire size:	Sufficient to have < 5% drop from no load to full load

**Instrument Air Quality and Handling Requirements**

The air supplied to the instrument should comply with ISO8573.1 Quality Class 3 as follows.

DIRT particle size:	< 5 microns
WATER Pressure Dew Point:	40 PSIG
OIL (including vapor):	< 1.0 ppm
Air pressure:	85-110 PSIG (585-825 kPA).
Air volume:	The instrument requires at least two SCFM (85 liters/min) supplied by a 3/8-inch (10-mm) line.

Floor Space Requirements

The main console cabinet is 25 inches wide, 37 inches high, and 31½ inches deep. The sampling station is 15 inches wide, 18¾ inches high and 12 inches deep.

37" (94 cm)
25" (63.5 cm)
31½" (80 cm)
18¾" (47.6 cm)
15" (38.1 cm)
12" (30.5 cm)
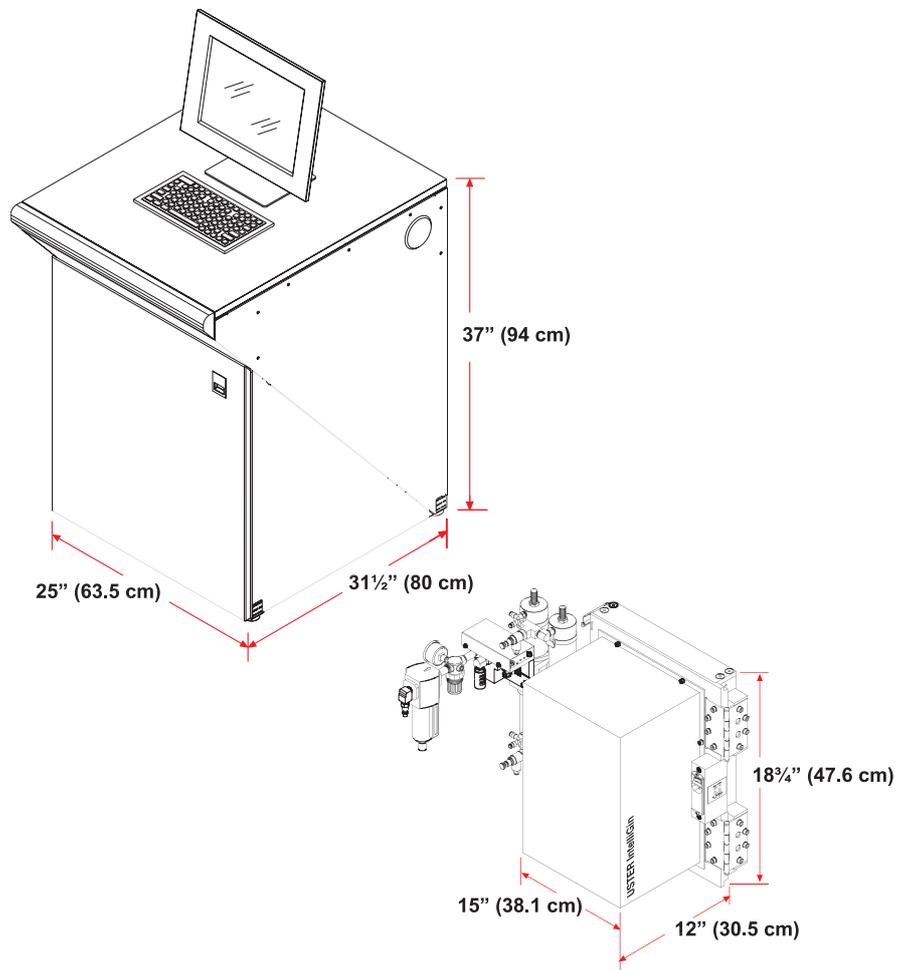
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System Overview

The following diagram is an overview of the USTER® *INTELLIGIN - M* inputs and controls. Areas lined in red are standard components in the USTER® *INTELLIGIN - M* system. Those lined in blue are optional components.

Standard components
Options

Control Console

Administrative
software on remote PC

Optional administrative
Remote PC with
network connection to
console

Optional moisture
restoration system

Optional final bale
moisture sensor

Sampling Station