imperium
Advanced Ultrasound Imaging

AcoustoCam™ i700

SYSTEM SPECIFICATIONS

GENERAL

Dimensions (W x H x D)	Camera: 10” x 4” x 3.5” (25.4 cm x 10.16 cm x 8.9 cm) Controller: 12.5” x 8.0” x 3.5” (31.7 cm x 20.3 cm x 8.8 cm)
Weight	Camera: 3.5 lbs (1.6 kg) Controller: 6.0 lbs (3.2 kg)
Camera	800 x 600 color
Camera Cable	8.0’ (2.4 m) length; customized lengths to 20’ (6.1 m)
Battery	Rechargeable 14.4-volt lithium-ion; 90-minute battery life; built-in charger
Power Requirements	110/240 VAC; 50/60Hz
Hardware & Software	Intel Atom 1.91GHz processor; Microsoft Windows 7
Test Modes	C-Scan: pulse-echo A-Scan: pulse-echo, dual element
Data Storage	4 GB RAM; 120 GB solid state hard drive
SD Card	32 GB removable
Other Features	Offline Analyzer Tool

INPUTS & OUTPUTS

Display	High brightness TFT color LCD 9.75” W x 7.2” H x 12.1” D;	Sunlight readable
Display Modes	C-Scan, A-Scan, combined C/A scans	Normal & full screen
Software	AcoustoVision™	Touchscreen GUI
Ethernet	100 BaseT	(1) RJ45, F jack
Wireless (Optional)	802.11 a/b/g (supports remote NDI system)	(1) 4.25” antenna
Touch Screen	Multi Point P-cap	(1) 15-pin HD D-sub, F
USB	USB 2.0	(2) USB jack
HDMI	XGA 1024 x 768	HDMI Jack

C-SCAN

Acoustic Lenses	Three element F/1 lens set
Acoustic Field of View	1.0” x 1.0” (2.5 cm x 2.5 cm) instantaneous,
Imaging ASIC Array	Patented Digital Acoustic Video™ Version 6.0
Array Elements	120 x 120 (14,400 pixels)
Pixel Size	100 microns
C-Scan Video Rate	30 frames per second
X/Y Spatial Resolution	600 microns (0.6 mm) @ 5 MHz
Curvature	Adjustable trolley from 4” (10 cm) to flat
Thickness Range	0” to 6.0” (0 cm to 15 cm)
Dynamic Range	60 dB instantaneous
Depth Resolution	10 ns
Image Acquisition Range	Variable delay from 0 µs to 250 µs
Image Acquisition Length	Variable detection window from 0 ns to end of range in 10 ns increments
Match Gates	C-Scan gate start/width can match to A-Scan gate start/width
X,Y Defect Sizing	User calibrated grid or point-to-point manual sizing
Angle of Inspection	Angle Range 0º to 70º
Image Capture	C-Scan, A-Scan, combined C/A-Scans
Image Capture Type	PNG; on-board storage up to 100,000 image capture files
Video Capture Type	MPEG-3; 60 s max. record time/file; on-board storage up to 50,000 files

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A-SCAN

A-Scan Rectification	Full, half, none
A-Scan Gate Start	Variable over entire displayed range
A-Scan Gate Width	Variable from gate start to end of displayed range
A-Scan Gate Height	Variable from 1% to 100% FSH
Gain	0 to 60 dB
Maximum Input Signal	5 Vp-p
Receiver Input Impedance	10 MΩ ± 5%
Receiver Bandwidth	0.1 to 20 MHz @ -3 dB
Receiver Delay	0 to 0.2 µs
Distance Amplitude Correction	Up to 5 reflected peaks can be used for calibration DAC
Time Corrected Gain	Up to 5 reflected peaks can be used for calibrating TCG
Amplitude Measurement	0% to 110% full screen height with 0.125% resolution
Measurement Rate	30 Hz (equivalent to PRF)
Gate Type	Peak, Flank, Zero Crossing, Back Wall
Alarms	Alarm feature for 2nd reference cursor
Acoustic Velocities	Pre-installed, editable library of 40 commonly inspected materials plus unlimited user added materials
Shear Wave	Angle Range 0º to 70º
Echo-To-Echo	Between gate 1 and 2

PULSER

Pulses per Burst	Up to 20 square wave pulses
Pulser Voltage	0 V to 1000 V
Pulse Repetition Frequency	250 Hz
Pulser Rise Time	< 15 ns
Bandwidth	Adjustable from 0.5 MHz to 5.0 MHz

2-DIMENSIONAL SCANNING & STITCHING

Encoder	0.7” (1.7 cm) diameter wheel; 0.14 mm per step resolution
Scanning Software	AcoustoVision™
Scan Imaging Features	Real-time display; image auto-correction; on-board storage up to 50,000 scans
Scan Area	30” x 30” (76 cm x 76 cm) per image
Scan Speed	6”/second

CERTIFICATIONS & ENVIRONMENTAL QUALIFICATIONS

ASME Section V	*NDE – Nondestructive Examination*
ASTM E317-06a	*Standard Practice for Evaluating Performance Characteristics of Ultrasonic Pulse-Echo Testing Instruments and Systems*
ASTM 1324-11	*Standard Guide for Measuring Some Electronic Characteristics of Ultrasonic Testing Instruments*
AWS D1.1	*Structural Welding Code - Steel*
Boeing NDT Procedure	*Part 4: 51-00-19 Ultrasonic Inspection of BMS 8-276 Solid Laminate Fuselage Structures for Damage (Ultrasonic Camera)*
Operating Temperature	*Normal Operating Temperature: 32 °F to 122 °F (0 °C to 50 °C)* *Camera Head Contact Temperature: Up to 200 °F (93 °C)*

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