



Aerospace  
NDT Systems

Model  
LTI  
5100

# All Mode, Remote Control Shearography Camera

*LTI-5100 inspects an aircraft radome.*



## SYSTEM FEATURES:

- Remote control of all camera, shear vector and laser functions
- Ultra High Definition Shearography Imaging
- Powerful Zoom lens and laser beam steering
- User image processing macros
- Programmable target scan and image stitching
- Structured Light projection for remote image calibration to the requirements of ASTM E-2581-19
- Operates in all shearography Modes:  
Phase Map, Unwrap, Phase Reversal, Subtraction
- Powerful image processing and analysis suite with many measurement tools, image, and graphic overlays for fast defect measurement and on-part location
- Use on benchtop, a tripod, or an X/Y scan gantry or a mobile lift

## Benefits:

- Large area inspection
- Ultra high through-put (up to 500 sq. ft/hr)
- Provides a large increase in manufacturing productivity
- Tests parts with complex geometries that challenge conventional NDT methods



*Above, a 5100 is mounted on a scan gantry in a vacuum test chamber.*



# Model LTI-5100

For the Ultimate in High Definition Shearography NDT

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## Description

The LTI-5100 offers the ultimate in shearography NDT performance. The 5100 operates in all modes, including continuous real-time phase maps, real time subtraction, Phase Stepping and Phase Reversal. The 5100 has built in laser spot projection for fast precision calibration. In addition, the 5100 provides complete remote control of all camera functions including camera pan, tilt, zoom, iris, focus, shear vector as well as laser beam X/Y steering and laser beam expansion. The LTI-5100 consists of the SC-5100 Digital Shearography Camera with built-in laser, Interface Console, and the IP-5100 Image Processing Computer (Laptop style work station or desk-top work station), all interconnecting cables, 2 Manuals and a One Year Warranty.

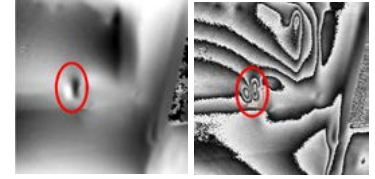
## Optional Equipment

- Tripod and Adapter Plate
- MECAD-100, 200 Vibration Stress Units
- ACAD-100, 200 Acoustic Stress Units
- TES-200, 400 Thermal Stress Unit
- VG-1100 Vacuum Windows
- Model 20 COPV Pressure Control Unit
- LTI-9000 Vacuum Test Chambers
- Gantry and Mobile Lift Systems
- Robotic Inspection Systems

## Training

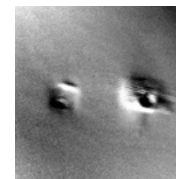
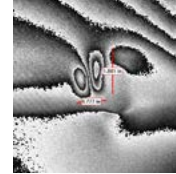
LTI offers Shearography Certification Courses to ASNT SNT-TC1A Level II & III. Please check our website for the latest schedule.

## Shearography Applications



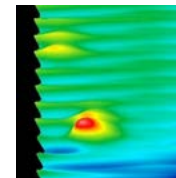
### Composite Aircraft Manufacturing

Detecting and measuring voids, disbonds and damage



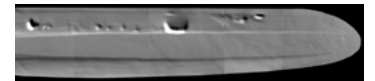
### Impact Damage

- Carbon Fiber Laminates
- Composite Honeycomb
- Aircraft, Spacecraft & Marine vehicles



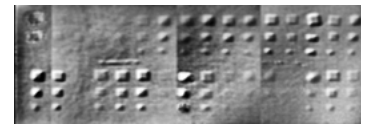
### Liquid Fuel Rocket Engines

- Disbonded cooling channels in thrust chambers or nozzles

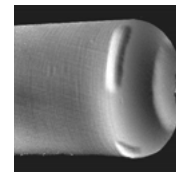


### Composite Propeller Blades

Voids, disbonds and damage



FOD Test Panel, Carbon Fiber Laminate



### Carbon Fiber COPV

- Fiber Bridging
- Impact Damage
- Liner Buckling
- Heat Damage
- Liner-Wrap Disbonds
- Poor compaction

## Specifications

Shear Camera	Digital Phase Stepping Shearography Camera, real time mode
Stress Methods	All Mode: Thermal, Vacuum, Vibration, Microwave
Laser	Built in 150mW @532nm (Green) Laser Class IIIa, or 300 mW. @532nm rated Class IIIb.
Sensor	CMOS 5mp, 12bit
Lens Zoom	16-96mm
Shear Angle	Continuously adjustable 0° - 5°, Remote Control
Shear Direction	Continuously adjustable 0° - 360°, Remote Control
Field of View	1m <sup>2</sup> : up to 3x3 m <sup>2</sup> (with external laser)
Measuring Sensitivity	0.02 μm/shear distance
Camera Remote Control Features	Camera Lens: Iris, Focus, Zoom Shear Vector: X/Y Shear 0-5°, 0-360° Laser: X/Y Steer, Beam Expansion Motion: (Pan350°, Tilt 120°) Programmable Laser Spot Projector for Precision Remote Image Calibration
Manual Adjustments:	Laser Shutter on/off



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The LTI-5100HD is manufactured in the USA under US and foreign patents. 6,717,681; 5,257,088; 5,094,528 Additional patents applied and Pending. Specifications are subject to change without notice. 3/2015