

Q-800

Portable Shearography NDT System

Applications

- Non Destructive Testing method for a large variation of different composite materials.
- Reinforced plastics, laminates, honeycomb, foam, wood, metal, Glare etc.
- Approved in the aerospace, automotive, wind turbine and other industries

Features

- Fully portable NDT measuring solution
- Detects delaminations, disbonds, kissing bonds, wrinkling, impact damage and many more
- Non-contact and full field - no surface preparation
- Live display - fast results



Portable Q-800 System with 4 laser diodes - Non Destructive Testing, Non-Contact, Full-Field

Introduction

Shearography is a Non Destructive Testing technology that provides fast and accurate information about the inside quality of different materials.

State of the Art Performance

The Q-800 Laser Shearography System is a compact and fully portable NDT measuring solution that can detect defects, delaminations, disbonds, kissing bonds, wrinkling, impact damage and many more. The turn-key optical system is non-contact and full-field and will work on such materials as fiber reinforced plastics, laminates, honeycomb, foam, wood, metal and Glare.

Real-time Inspection

The results are displayed live to the operator allowing an early judgment to be made. Further image processing is also available for export and reporting. Typical inspection times are 10 to 30 seconds and can cover areas from a few mm² up to several m² in one inspection. The Q-800 system consists of a miniaturized shearography sensor with integrated high-resolution CCD and variable computer controlled shear optics. Illumination is provided by an integrated diode laser array and the whole system is controlled from a laptop PC using the new ISTR4 4D software platform.

The sensor can be mounted on a tripod or integrated into a fully automatic robotic production inspection system. The system can be operated in daylight conditions using the standard laser diode array.

A Certified Technique

Shearography has been incorporated in ASNT standards since 2006. (SNT-TC1-A and CP-105). ASTM standard (ASTM E2581) defines how to inspect composites with shearography. Laser shearography has been approved by leading suppliers in the aerospace, automotive, wind turbine and other industries.

Measurement Principle

The highly sensitive interferometric technique will measure microscopic surface deformations caused by internal flaws when a small loading is applied to the object. This can be done using thermal, pressure, vibration or mechanical excitation.

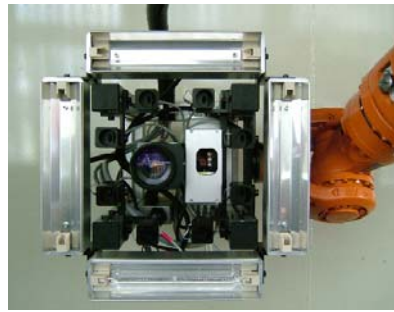
The results are displayed live as the material responds to the excitation and are easily interpreted by the operator.

Additional information

For additional information please contact your Dantec Dynamics representative.



*Portable Q-800 System
with 2 laser diodes*



*Q-800 sensor integrated In a
robot inspection system*



*Live results from an inspection showing
impact damage and structural information*

Technical specifications	
CCD-resolution	1392 x 1040 pixels
Inspection Speed	Typically 300 mm x 300 mm / 20 s
Shear angle	up to 1/20 the field-of-view, fully adjustable (software controlled)
Shear direction	0-180°, fully adjustable (software controlled)
Measuring area	300 mm x 200 mm with 2 laser diode array 700 mm x 700 mm with 4 laser diode array ~ 1,2 m ² with 8 laser diode array > 1,2 m ² with 5 W external laser (option)
Sensor head dimension	W x H x D = 70 mm x 70 mm x 160 mm
Sensor head weight	1.2 kg incl. zoom lens
Options	
Motorized pan/tilt sensor and zoom lens for remote operation, Vacuum tripod	
Manual and automated excitation systems: Vacuum chamber/ hood; Heating systems; Vibration excitation systems	
Customised inspection solutions	
EN 4179, NAS 410 and ASNT SNT-TC-IA Training Courses	

The specifications in this document are subject to change without notice.