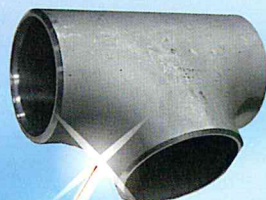
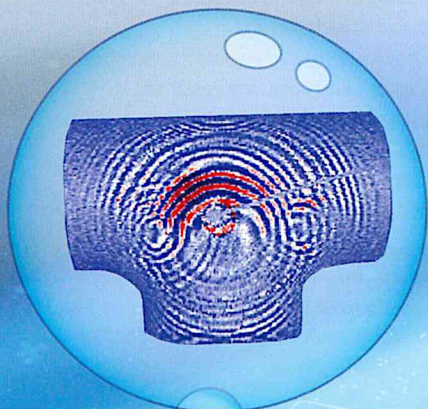


Laser Ultrasonic Visualizing Inspector



LUVI-ST4



LUVI is an inspector that can nondestructively inspect the internal defect of cars, planes, power plants, ships, steel, electronic parts, etc.

With LUVI, you can see ultrasonic propagation using laser. The noncontact laser scanning allows inspection of defect using ultrasound, even with complex-shaped objects. Imagine our “Tech.man” shooting laser from his fingertips to generate ultrasound, which enables him to see whether any defect exists in the internal parts of the object, just by looking at the ultrasonic propagation.

Tsukuba
technology

産総研技術移転ベンチャー

Feature

【Detect Flaw Instantly by Watching Video of Ultrasonic Propagation】

Watch video image of ultrasound propagated in test object and detect flaw instantly, by irradiating and scanning laser to the test object.

【Available for Complex-shaped】

Due to non-contact scanning, defect detection of complex-shaped objects such as curved surfaces, gaps, and narrow sections is possible.

【Fast Visualizing Inspection and Defect Detection for Wide Area】

Fast visualization for wide area is possible with fast scanning by the combination of laser and galvanometer scanner.

【No Optical Adjustment】

Easy measurement as no optical adjustment is necessary.

【Principal Application】

Non-Destructive Testing in industry sector of automobile, airplane, training, ship, steelmaking, oil plant, gas plant, and power plant, material such as Fiber Reinforced Plastic; Elucidation of wave propagation mechanism; Performance evaluation of ultrasonic probe; Evaluation of structural integrity, etc.

Specification

Visualizing range : Within $55^\circ \pm 5^\circ$

Number of channel : 2ch

Distance to object : 0.1m ~ 2m (~ 5m with additional lens)

Scanning frequency : Max. 2kHz (200×200 point in 20sec.)

Laser power : Max. 2mJ@1kHz

(Pulse YLF laser with wavelength 1053nm)

Pulse duration : 30ns

A/D Sampling rate : Max. 250MHz

Display image : Ultrasonic propagation image, B-scope image (speed image), A-scope waveform, etc.

Inspection object : Crack, corrosion, void and separation of compound materials, metal, ceramics and resin, etc.

Inspection thickness : about 100mm (metal)

Inspection precisin : 0.1mm (5mm thick metal)

Cable : Length 3m (main unit to laser oscillator)

Display : Rack-mount type

Option

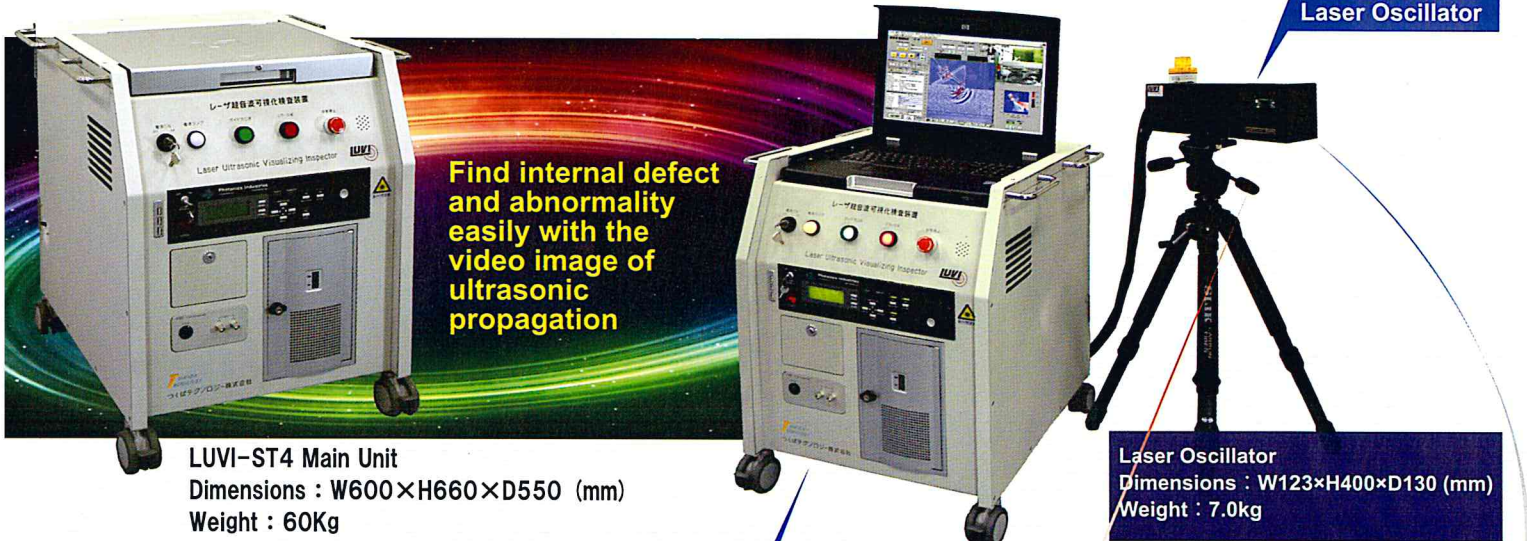
- Robust Against Ambient Temperature
- Dust Protection
- Number of channel : 4 or 8

Power

- Power Unit
- Max. Electricity Consumption : AC100V/450W (Average about 300W)

Software

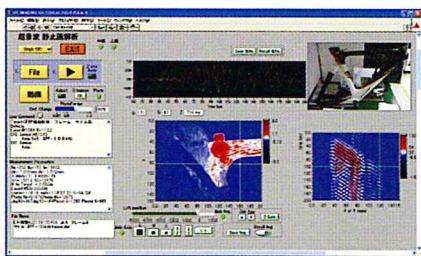
- Automatic Creation of Inspection Report
- Web Camera Image Superimposition
- Image Analysis



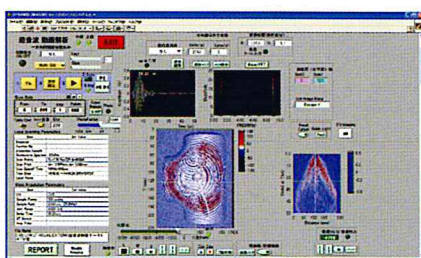
LUVI-ST4 Main Unit
Dimensions : W600×H660×D550 (mm)
Weight : 60Kg

Laser Oscillator
Dimensions : W123×H400×D130 (mm)
Weight : 7.0kg

CFRP Bicycle Frame, Stationary Image Analysis Window



T-Shape Pipe, Video Image Analysis Window



Principal of Laser Ultrasonic Visualizing Inspector

