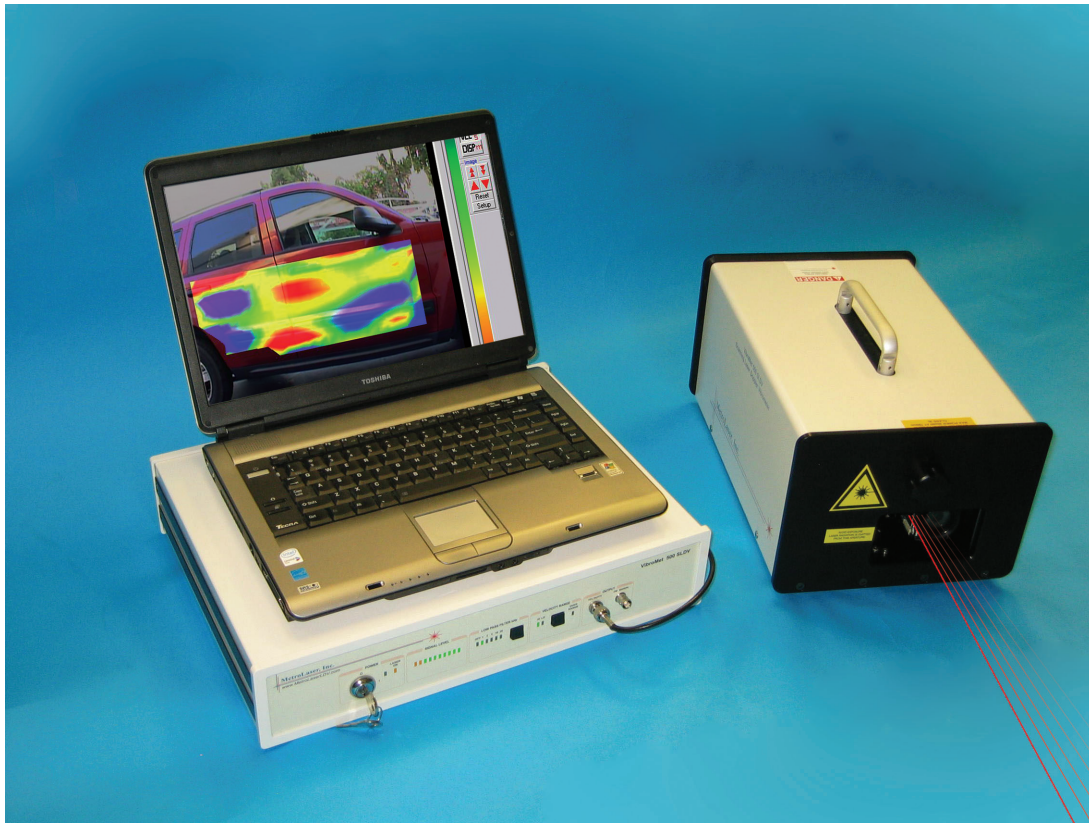


# VibroMet™ 500 SLDV

## Scanning Laser Doppler Vibrometer



### Whole-Field Vibration Measurement

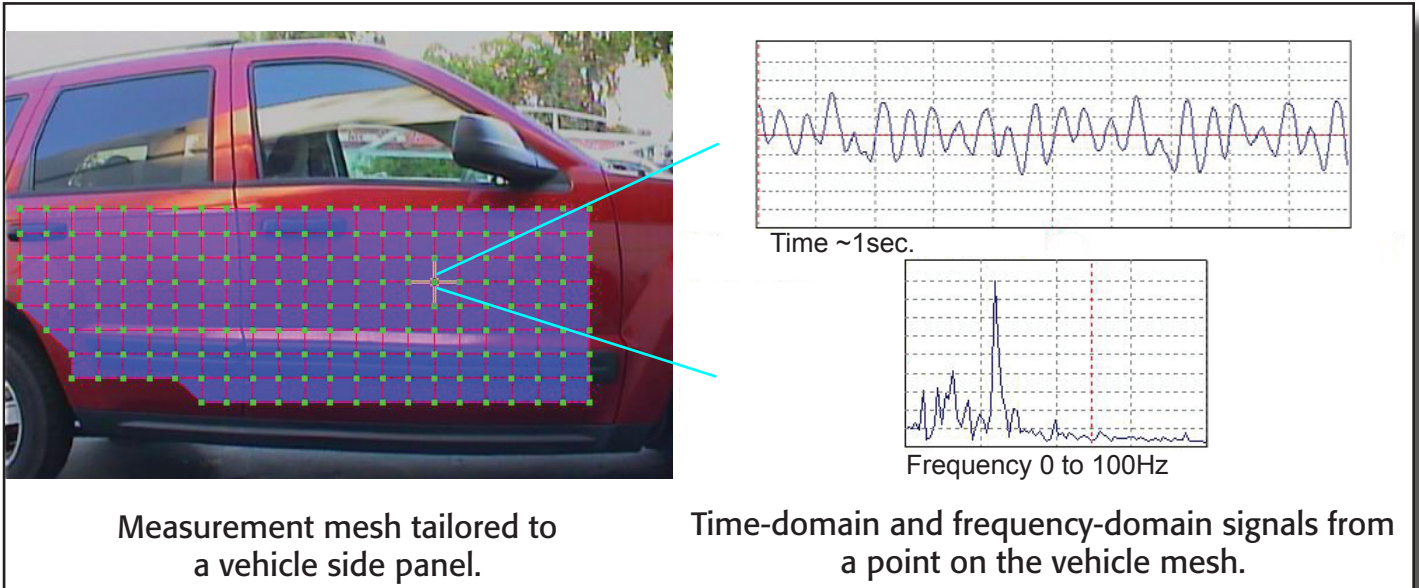
- **Portable System**
- **Programmable Scan**
- **Ultra-High Sensitivity**
- **Large Dynamic Range**
- **Easy-to-use Point & Measure Operation**

MetroLaser, Inc.

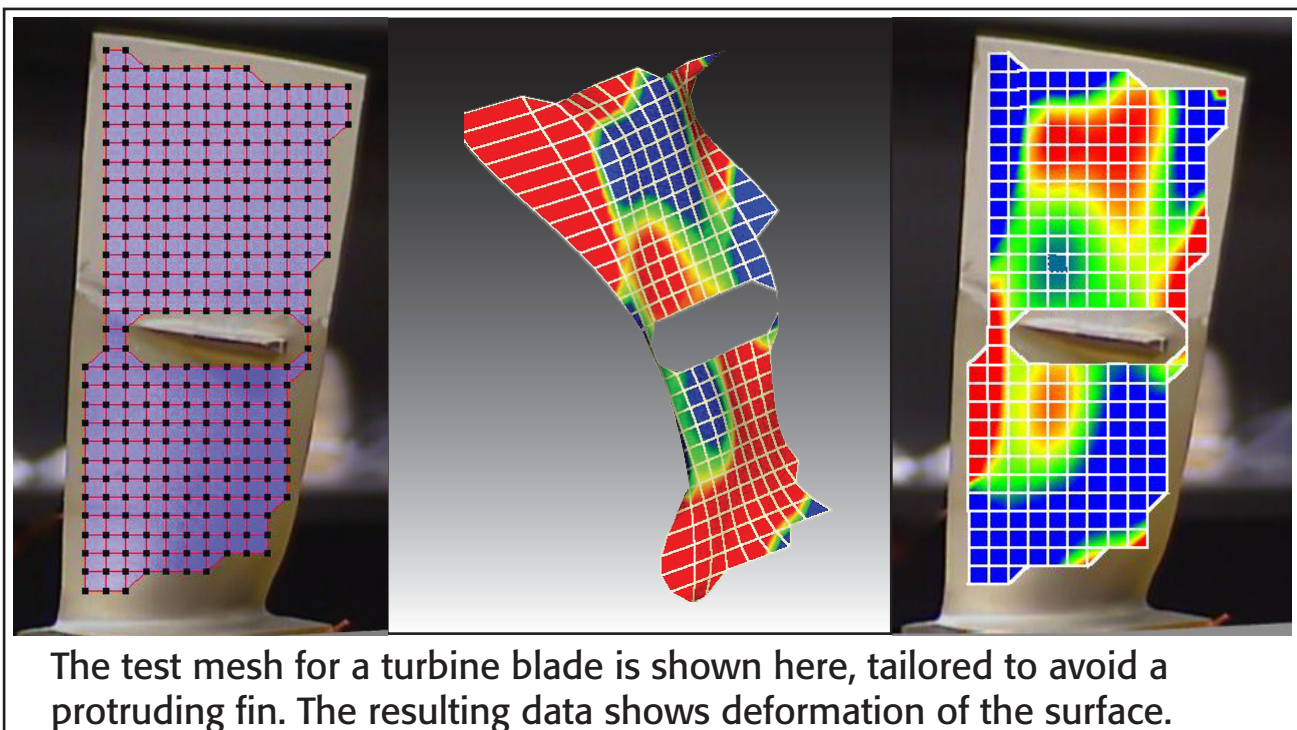


# Non-Contact Measurement for Modal and Structural Analysis

The VibroMet™ 500 SLDV is a portable, competitively priced, and easy-to-use precision instrument to quickly produce vibration maps for whole-field non-destructive testing and non-contact vibration measurement of any surface.

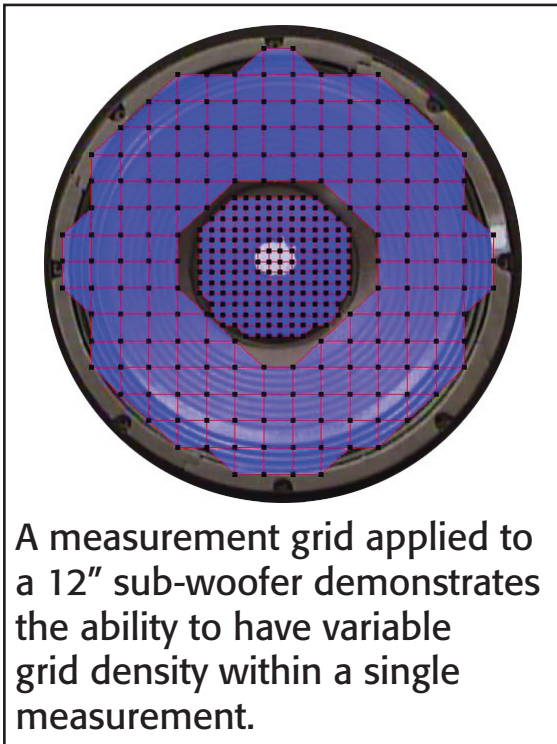


The VibroMet™ 500 SLDV is optimized for measurement distances from 0.5 to 5 meters, so there is no need for adjustments, lens accessories, or object treatment, ensuring the highest level of measurement accuracy.



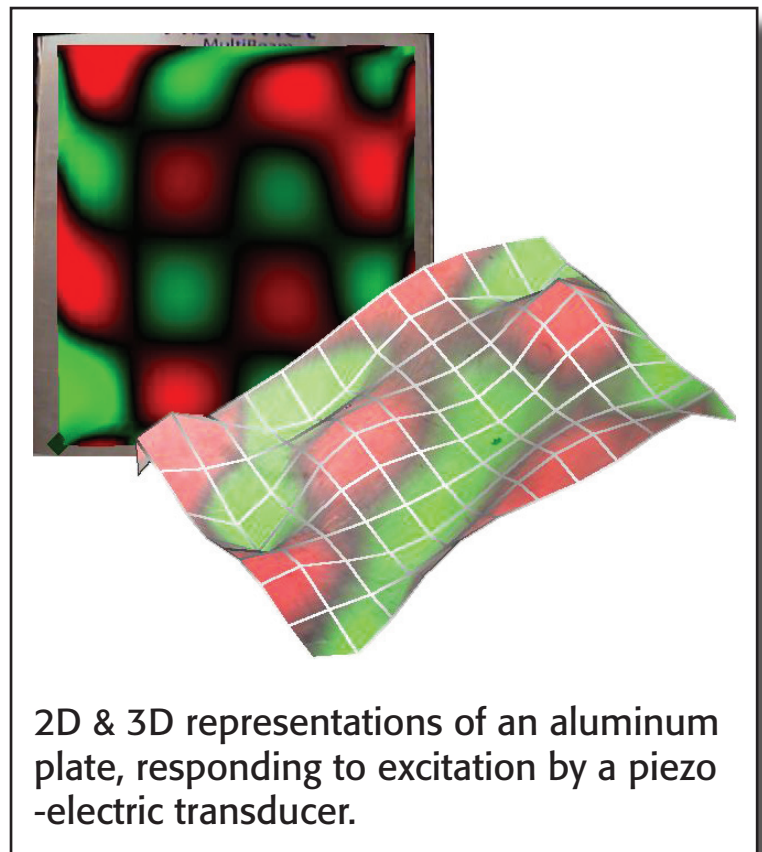
# Diverse Applications

- Automotive: Disk brakes, panels, windshield, engine
- Modal Analysis: Turbine blades, mechanical structures
- Audio and Musical Instruments: Speakers, guitars, violins
- Industrial Equipment: Compressors, appliances, computers
- Medical: Hearing aids, prosthetics, muscular response
- Military: Landmine detection, aging aircraft, noise detection
- Structural Integrity: Buildings and bridges
- Nondestructive Testing: Voids, delaminations, stiffness



## Software & DAQ

The VibroMet™ 500 SLDV can measure up to 1000 points in the horizontal and vertical axes, spanning an angle of  $\pm 20^\circ$  in each direction. The software enables the generation of a flexible measurement grid on the target, automatic scanning of the programmed grid, a large variety of data analysis and filtering options, and 3D animation and visualization of the results.



Precision anti-aliasing filters ensure the highest fidelity in the velocity information. Additional input channels are available for other instruments such as a reference accelerometer. Programmable analog outputs (sine, chirp, noise, etc.) are provided to drive a shaker and other devices. Data acquired by the system can be transferred to an optional modal analysis package that runs within the main software program. The data can also be exported in a variety of formats, including UFF (Universal File Format).

# VibroMet™ 500 Scanning Laser Doppler Vibrometer

## Specifications<sup>1</sup>:

Velocity Range	5 µm/s to 800 mm/s
Vibration Frequency Range <sup>2</sup>	0.1 Hz to 40 kHz
Working Distance	0.5 m to 5 m
Optics	Collimated (No Focusing Needed)
Surface Reflectivity Enhancement	Typically None Required
Signal Output	Analog Velocity and 10.7 MHz FM
Dimensions - Laser Head	36 x 25 x 18 cm
Dimensions - Electronic Controller	43 x 33 x 10 cm (standard 19-in rack)
Weight - Laser Head	10 kg
Weight - Electronic Controller	6.2 kg
Low Pass Filters	1,2,5,10,20 kHz
Output Voltage (max)	+/- 10 Volts
Laser	780 nm, <15 mW, Class IIIb and 650 nm, <1 mW, Class II
Scan Range	+/- 20 degrees, each axis
Beam Size	1 mm diameter
Power Requirement	110V/220V

<sup>1</sup>Specifications are subject to change without notice

<sup>2</sup>Higher frequencies are available. Please contact MetroLaser for more information.

Vibromet™ is a registered trademark of MetroLaser, Inc.

The VibroMet™ 500 SLDV comes with a one year warranty.

## About MetroLaser:

MetroLaser, Inc. is a major developer and provider of laser Doppler vibrometers ranging from single point to multi-beam and scanning systems. MetroLaser has been awarded the National Small Business Prime Contractor of the Year award and, since its foundation in 1988, has been recognized for its laser-based measurement and diagnostic technologies for industrial, military, and space applications.

## Description:

The VibroMet™ 500 SLDV is based on a patented electro-optical configuration developed by MetroLaser. The system consists of a portable laser sensor head and an electronic controller.

### Laser Sensor Head:

The portable laser sensor head includes a laser, frequency modulator, photo-detector, color CCD camera, and two scanning mirrors.

### Electronic Controller:

The electronic controller has both an analog velocity output and a 10.7 MHz frequency modulated signal output. The front of the controller has a signal strength indicator, two selectable velocity ranges and an array of low pass filter options.

### Software:

A comprehensive software package, including modal analysis, is available. The software selects the target, controls the mirrors, performs dithering if needed, collects and analyzes data, and displays 2D and 3D animations.

Infrared and Visible Laser Radiation  
Avoid Direct Exposure

Class IIIb Laser at 780 nm  
Class II Laser at 650 nm

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