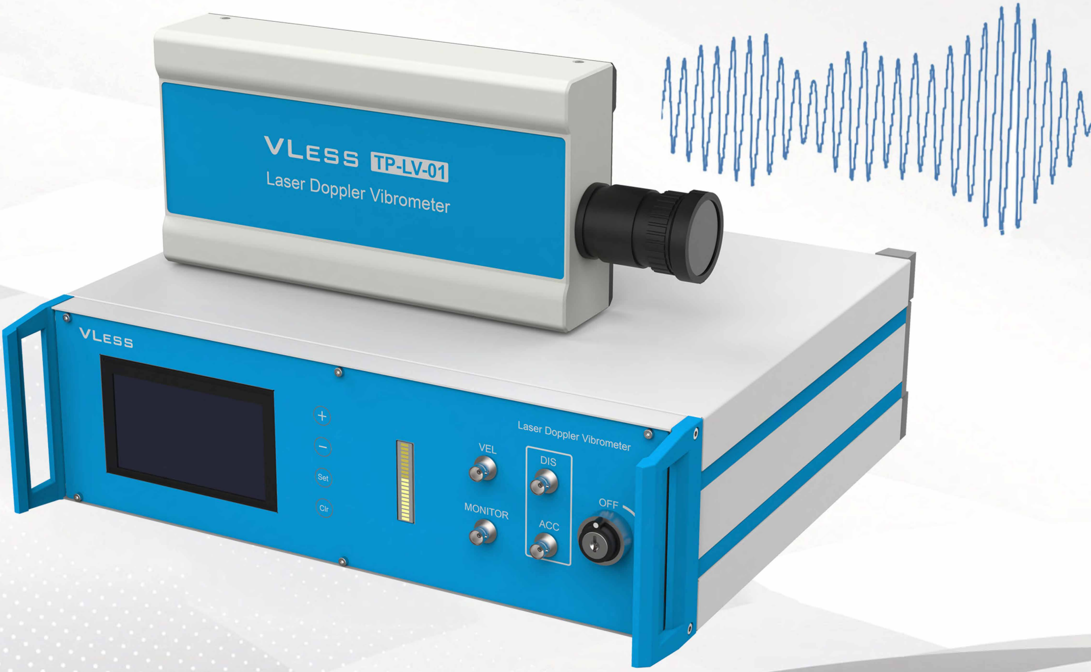
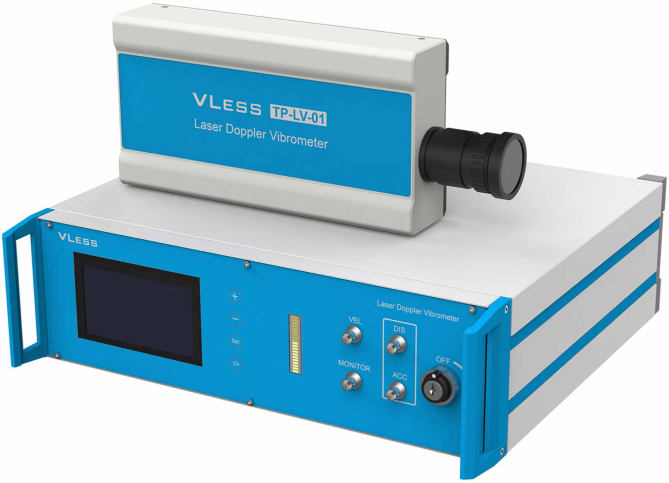
VLESS

Single Point Laser Vibrometer



Laser Doppler Vibrometer

Single Point Laser Vibrometer



Product Description

The single-point laser vibrometer uses the laser Doppler principle to measure the vibration of an object along the laser direction. It adopts a non-contact measurement method and has functions such as auto focus, remote focus and focus storage. The target measurement distance is between 0.35m and 20m. The equipment has strong anti-interference, extremely high resolution and large dynamic measurement range. It is the basis of other types of laser vibrometers and has been widely used in major universities, research In the Sohe factory, the equipment is simple and quick to install, suitable for various measurement environments: laboratory, online measurement, and even outdoor measurement, and vibration data can be obtained in a very short time.

Features

Non-contact measurement: It can solve the test that the contact measurement cannot be completed due to the influence of the measurement environment (high temperature, strong magnetism, corrosive materials, etc.) in practical applications

Dual mode: can realize digital/analog signal output

Upgradable: An external scanning module can be installed to upgrade to a scanning laser vibrometer to achieve automatic scanning function

Complete solution: includes optical debugging, circuit denoising, signal processing, data acquisition and software analysis functions

Customizable: The appropriate range and frequency range can be selected according to customer requirements, and customized for customers

Personalized software: software with intelligent functions such as real-time evaluation of measurement results and real-time display of changing trends can be configured according to customer needs

Multi-function: Configurable optical unit to achieve auto focus, remote focus, focus access functions

Portability: can be fixed on a tripod, with a trolley case customized for the instrument, easy to carry

Technical Information

Single Point Laser Vibrometer

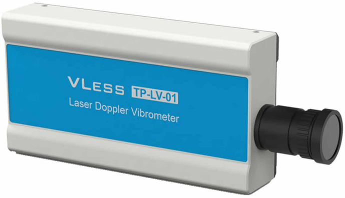
Laser wavelength	He-Ne laser 632.8nm
Laser Safety Level	Class II
Working Distance	0.35m-20m（Depends on the surface of the test object)
Output voltage range	±10V
Maximum measurement velocity*	± 10 m/s
Maximum measurement displacement	± 2 m
Velocity Resolution**	Better Than0.01μm/s/√Hz
Displacement resolution**	Better Than 1pm
Maximum Linearity Error	<±1%
Analog Output	BNC interface output
Digital Output	Rj45 Gigabit Ethernet port
Velocity Decoder	VS-03 Intermediate frequency velocity decoder VD-03 Wideband Digital velocity decoder
Displacement Decoder	DD-21 Intermediate frequency velocity decoder VD-16-25M UltraWideband Digital displacement decoder
Frequency Range	DC~3MHz(VD-16/DD-21F Decoder)
Low Pass Filter	2kHz,10kHz,20kHz,40kHz,80kHz,160kHz,360kHz,1MHz,3MHz(VD-16F/DD-21F Decoder) 100kHz，1MHz,2MHz，4MHz,10MHz，25MHz(DD-16-25H Decoder)
Tracking filter (optional)	Slow，Medium，Fast，Off
Signal Level Display	Reflective signal strength displays、DC voltage signal output (BNC interface，0...5V)
Interface/Display	LCD screen with interactive menu-guided setup
Operating Temperature	+3°C...+45°C
Storage Temperature	-10°C...+65°C
Relative Humidity	<90%
Power Supply	100...240VAC ± 10%，50/60Hz
Power Consumption	max. 100 VA

*Customized services can be provided according to customer needs
**The resolution is defined as the signal amplitude (RMS) measured in a 1Hz bandwidth when the signal-to-noise ratio is 0Db when the reflective film is attached at a distance of 2 meters. The resolution is related to frequency, and this value is measured in a 10Hz bandwidth.

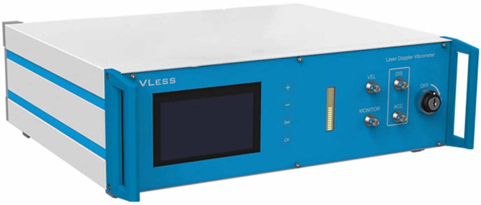
Decoder

Velocity Decoder	Description	Bandwidt	Range	Velocity Range	Velocity Resolution
VS-03	Intermediate Frequency Velocity Decoder	0.5Hz-50kHz	3	±500mm/s	Better than 0.1μm/s/√Hz
VD-16	Wideband Digital velocity decoder	0-3MHz	16	±10m/s	Better than 0.01μm/s/√Hz

Displacement Decoder	Description	Bandwidt	Range	Displacement Range	Displacement Resolution
DD-21	Wideband Digital Displacement Decoder	0-3MHz	21	±2m	Better than 1pm
DD-16-25M	UltraWideband Digital displacement decoder	30kHz-25MHz	16	±500μm	Better than 1pm



He-Ne Optical Head



Control Box

Optional Accessories

Instrument Case

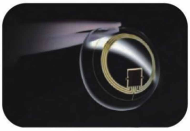
Vibration isolation table

Fixed accessories

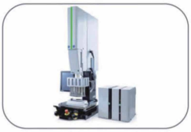
Tripod

Workbench

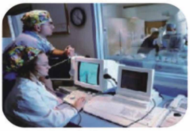
Applications



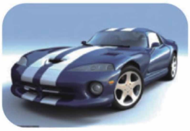
MEMS



Ultrasonic vibration measurement



Medical industry

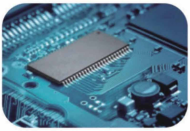


Automobile industry

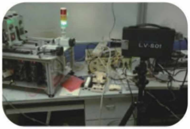
Bridge construction

Disk storage

Mechanical machine



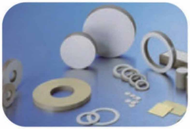
Electronic device



Sport control

Engine

Turbocharger

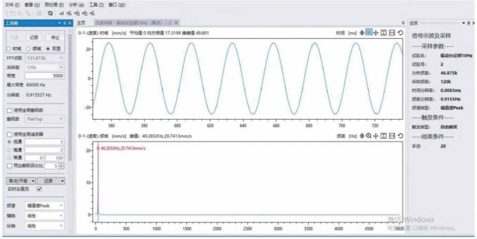


New materiaNew material

Measurement Software

V-METER4.0

V-METER4.0 analysis software is a real-time signal analysis software. The software has a friendly user interface, provides FFT spectrum analysis, high-pass, low-pass and band-pass filters and various window functions, and can display time-velocity curves in real time , time-displacement curve, time-acceleration curve, etc. The data supports arbitrary formula conversion, calculus conversion and other functions, and can record the vibration process data for a long time for playback, viewing and analysis, and supports the export of commonly used data formats (such as UFF format for modal analysis), which is convenient for customer analysis and processing.



FFT点数 131.072k
采样率 120k
带宽 5000
最大带宽 60000 Hz
分辨率 0.915527 Hz
窗函数 FlatTop
频谱 幅值谱Peak
横轴 线性
纵轴 线性

0-1-(速度)-时域 [mm/s] 平均值 0 均方根值 17.3199 峰峰值 49.801

0-1-(速度)-频域 [mm/s] 峰值: 40.2832Hz,20.7413mm/s

信号示波及采样
----采样参数----
试验名: 振动台定频10Hz
试验号: 2
分析频率: 46.875k
采样频率: 120k
时间分辨率: 0.0083ms
频率分辨率: 0.9155Hz
频谱类型: 幅值谱Peak
----触发条件----
触发类型: 自由触发
----结束条件----
手动 20