

## VS100 / VS1000 SINGLE-POINT LASER DOPPLER VIBROMETER



OMETRON

## MEETS YOUR MEASUREMENT NEEDS

### Non-contract operation

- No mass loading or local stiffness problems
- Remote measurement upto 200 m (660')
- Moving structures
- High/low temperature surfaces

### Easy to use

- Simple 'point and shoot' operation
- High optical sensitivity – works on most surface finishes
- Real time velocity display

### Flexible operation

- Selectable frequency and velocity ranges
- Interchangeable lens (long and short)
- Detachable control panel

### Compatibility

- Analogue velocity output (BNC)
- Direct interface to external analysis equipment

### Simple design

- Single integrated unit
- No moving parts

## NON-CONTACT VIBRATION MEASUREMENT

### VERSATILE PERFORMANCE

Ometron, a leading supplier and a pioneer of non-contact vibration measurement, are pleased to introduce the VS range of single-point laser Doppler vibrometers. The VS is part of a range of non-contact laser products that have evolved over many years and continue to develop to meet new applications and ever increasing customer needs.

Laser Doppler vibrometers (LDV's) are increasingly used in applications where standard transducers are impractical or prohibited. "Point and shoot" operation totally eliminates the tedious mounting and wiring of traditional surface transducers. The VS is also ideal for users who repeatedly need quick, accurate and reliable measurements from a fixed position.

Supplied complete with power supply, tripod and operating manual within a rugged aluminium shipping case, the VS is a turn-key, stand-alone instrument ready for use as soon as it arrives. If required, the velocity output (BNC) may be fed into a conventional FFT vibration analyser, data recorder or an oscilloscope.

Whether you are conducting structural investigations, test cell or laboratory measurements, condition monitoring or quality control, the VS has the performance you need.

### OPERATION

Due to excellent optical sensitivity, measurements can be easily obtained without the need for surface preparation. Under normal circumstances, it is only when working over

extended distances that surface treatment or retro-reflective tape may be required. The visible Class II laser is also eyesafe thereby avoiding the need for special facilities or protective equipment.

Optics and electronics are integrated into one easily transportable unit weighing 7kg (15 lbs). It can be located on any flat surface or fitted to the tripod using the mounting attachment located on the base of the unit.

Both short and long ranges lenses are provided. These are easily interchangeable and specially manufactured for use with laser light unlike standard camera lenses.

The rear mounted Control Panel allows the operator to easily select the required velocity and frequency ranges. The VS incorporates two bargraph indicators showing the strength of signal returning from the measuring point as well as the velocity level. Observing these indicators enables the laser beam to be easily focused on the measurement point in a matter of seconds. The Control Panel is also detachable and supplied with a 2m interconnecting cable to facilitate remote operation.

High performance, excellent optical sensitivity and a high tolerance to surface finish make the VS a highly versatile instrument. All the operator needs is a clear line-of-sight to the vibrating surface. An optional mirror kit is also available allowing the VS to access otherwise difficult areas.





## FEATURES

- 1 Interchangeable lens (long & short range)
- 2 Mechanical laser shutter
- 3 Detachable control panel
- 4 Velocity output (BNC)
- 5 12 Vdc input
- 6 Doppler signal display
- 7 Velocity range selection & bargraph display
- 8 Frequency bandwidth selection
- 9 Standard tripod mounting







The VS100 and VS1000 are part of a family of vibration measurement instruments from a world leading supplier, and a pioneer, of non-contact laser vibrometers. The range includes other single-point and scanning vibration analysis equipment.

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## SPECIFICATION

Velocity	VS100: < 0.01 mm/s to 100 mm/s peak VS1000: < 0.1 to 1000 mm/s peak
Velocity Ranges	VS100: 10 mm/s, 100 mm/s VS1000: 100 mm/s, 1000 mm/s
Frequency	VS 100: < 0.01 Hz to 50 kHz VS1000: < 0.01 Hz to > 400 kHz
Working Distance	50mm (2") upto 200m (660') dependent upon surface
Demodulation	Homodyne
Spatial Resolution	Ø 1mm (0.039") at 20m (65') with long range lens Ø 0.2 mm (0.008") at 0.5m (1.6') with short range lens
Standard Lens Kit	Short and long range lens
Signal Outputs	Analogue velocity ( $\pm 10V$ ) 2 x analogue doppler signals ( $\pm 5V$ )
Controls	Lens shutter, lens focus
Power Requirements	12 V DC
DC Power Supply	110 - 240 V, 50/60 Hz
Control Panel	Bargraph displays of velocity and doppler signal level Velocity range selection (x 2) Frequency range selection (x 4)
Dimensions	325 x 210 x 85 mm (13" x 8.5" x 3.5")
Weight	7 kg (15 lbs)
Safety	< 1mW max output, Class 2, helium neon laser

## Environment

Temperature	+5°C to +35°C (+41°F to +95°F)
Altitude	up to 2200m (7200ft)
Relative Humidity	up to 80% (non-condensing)

## Standard System Configuration

- VS100/VS1000 Sensor
- Long Range Lens
- Short Range Lens
- Tripod
- DC Power Supply
- Detachable Control Panel & Cable (2m)
- Operating Manual
- Shipping Case

All dimensions and weights are approximate.

Ometron reserves the right to change this specification without prior notice.

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