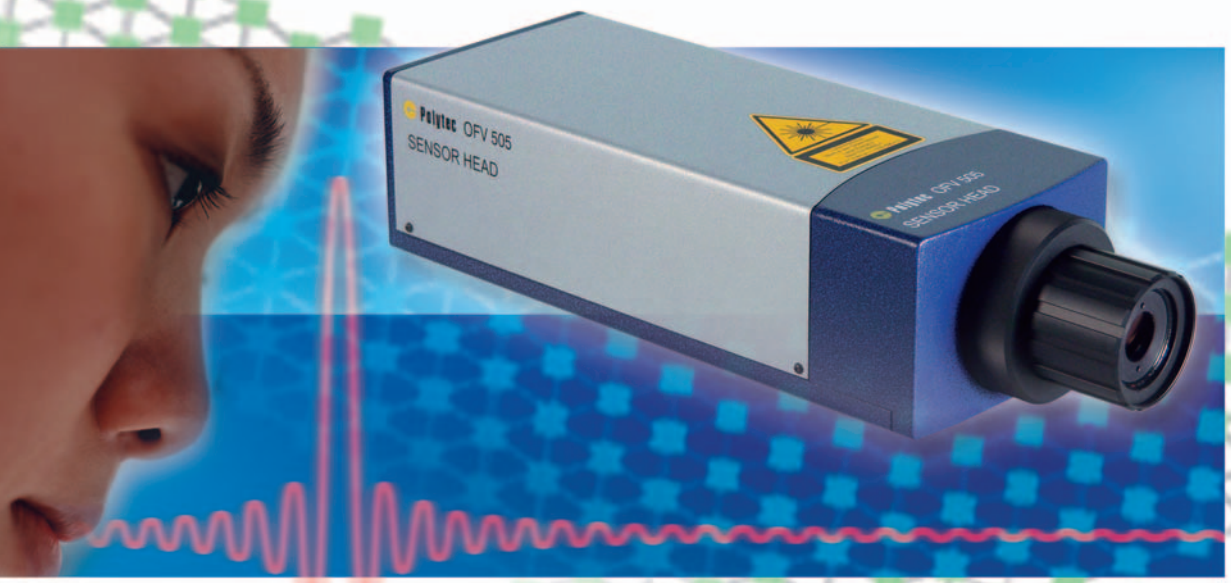
OFV-505/503 *Vibrometer Sensor Head*



MODULAR VIBROMETER SYSTEM

- OFV-5000
  Vibrometer Controller
  – Velocity Decoders
  – Displacement Decoders
- **OFV-505/503**
  Standard Sensor Heads
- OFV-551/552
  Fiber Interferometers

HIGH PERFORMANCE VIBRATION MEASUREMENT

Polytec Laser Doppler Vibrometers are used to precisely measure mechanical vibrations, quickly, easily and free from cross-talk or feedback problems. They operate on the Doppler principle, measuring back-scattered laser light from a vibrating structure, to determine its vibrational velocity and displacement.

The Sensor Head – The Heart of a Quality Vibrometer System

The sophisticated optical design of the OFV-505 and OFV-503 heads offers excellent performance including exceptional optical sensitivity. The OFV-505 features autofocus and focus memory. Coupled to the high-end, modular OFV-5000 Vibrometer Controller (see separate data sheet), the OFV-505/503 sensor heads take full advantage of the high resolution processing of the OFV-5000 – digital as well as analog. OFV-505 and OFV-503 are at the heart of a range of universal and expandable non-contact vibrometer systems.

Applications

Single point sensor heads are used for applications in the automotive and aerospace industries, on electrical appliances or machines, for monitoring buildings, on-line quality testing and other mechanical production, research and development projects.

Key Features and Benefits

- **Practical, Easy, "Point & Measure" Capability**
- **Low Power, Visible, Eye-Safe (Class 2) Laser**
  provides outstanding optical sensitivity.
- **Remote Focus Control with Focus Memory**
  Motorized focusing can be made either via the OFV-5000 control panel or software. Focus positions can be stored and recalled from controller memory.
- **Auto Focus (with OFV-5000)**
  The OFV-505 sensor head can auto-sense the return signal quality and automatically set the focus for an optimal signal.
- **Expandability Options**
  The OFV-505 sensor and OFV-5000 controller are fully upgradeable to Polytec's 1-D and 3-D Scanning Vibrometer systems for full field vibration analysis.

OFV-505/503 Technical Data

General Specifications	
Operating temperature range	+5 °C … +40 °C (41 °F ... 104 °F)
Relative humidity	max. 80 %, non-condensing
Weight	3.4 kg
Dimensions [W x H x L]	120 mm x 80 mm x 345 mm (4.7 in x 3.1 in x 13.6 in)
Laser wavelength	633 nm, visible laser beam
Laser protection class	Class 2 He-Ne laser, < 1 mW, eye-safe
* Auto Focus	only OFV-505
Remote Focus	only OFV-505
Manual focusing	Electrical control of the internal focusing unit (mechanically isolated)
Maximum stand-off distance	~ 300 m (with OFV-SLR, surface dependent)
Coherence maxima	234 mm + n·204 mm; n = 0, 1, 2, 3, … measured from the focusing ring
Compatibility	OFV-505 recommended for OFV-5000 controller; OFV-503 recommended for OFV-2XXX series controllers
PSV-Upgradeable	only OFV-505

* Depending on surface properties

OFV-505 and OFV-503 Interchangeable Lens Options – Technical Data				
Front lens	**OFV-SR** short range	**OFV-MR** mid range	**OFV-LR*** long range	**OFV-SLR** super long range
Focal length [mm]	30	60	100	200
Min. stand-off distance [mm]	60	185	530	1800
Aperture diameter ($1/e^2$) [mm]	3.4	6.8	11.3	22.6
Typical spot size in µm at				
100 mm	25	–	–	–
200 mm	49	25	–	–
500 mm	121	54	18	–
1000 mm	245	112	62	–
2000 mm	500	235	135	60
3000 mm	750	356	210	96
5000 mm distance	1260	604	356	168
Each additional meter plus [µm]	240	126	74	36

* Default configuration

For mounting and positioning of the OFV-505/503 Sensor Heads, a wide range of accessories including tripods, tilt and traverse stages is available. Please contact your local vibrometer sales engineer or visit our website for more detailed information.

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