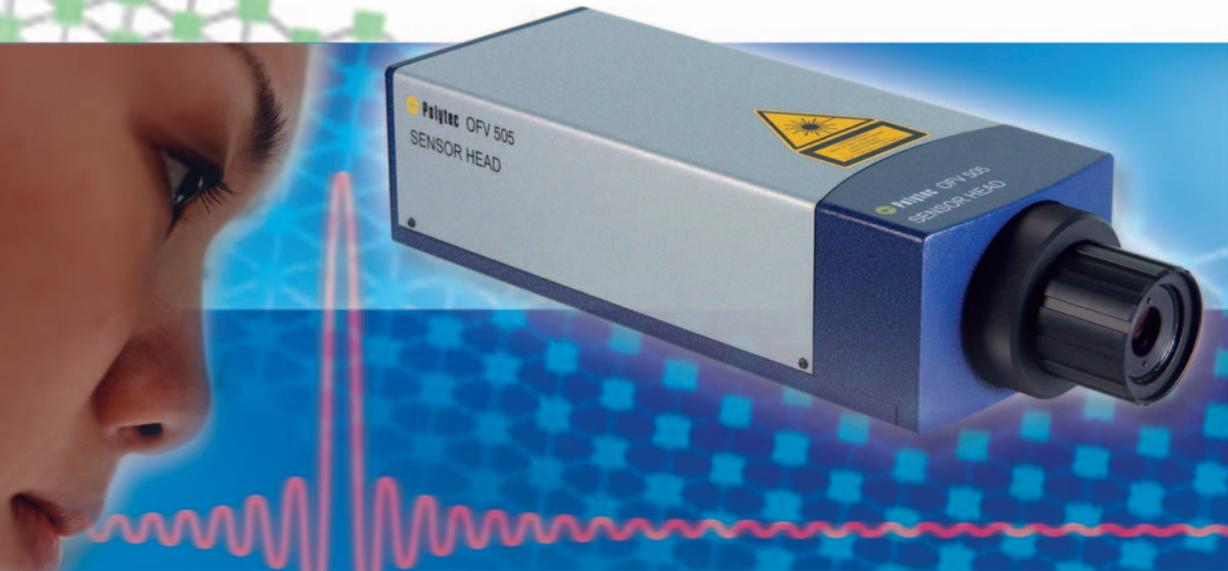


OFV-505/503 Vibrometer Sensor Head



MODULAR VIBROMETER SYSTEM

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

MEASURING VIBRATIONS

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.

OFV-505/503 Compact Sensor Heads – The Heart of a Quality Vibrometer System

Customers familiar with Polytec’s single-point sensor heads, will appreciate the outstanding performance and reliability of these models. The completely new optical design of the OFV-505 and OFV-503 heads offers even better performance including exceptional optical sensitivity. The OFV-505 features autofocus and focus memory. Coupled to the new OFV-5000 modular vibrometer controller (see separate data sheet), the OFV-505/503 sensor heads take full advantage of the higher 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.

Features

- Practical, Easy, “Point & Measure” Capability
- Low Power, Visible, Eye-Safe (Class 2) Laser provides outstanding optical sensitivity (for example, measurement from matt black paper loudspeaker surfaces at >30 m).
- Remote Focus Control, with “Memory Position” Facility
Stepper motorized focusing can be made either manually at the head or via the OFV-5000 control panel. Focus positions can be precisely returned to (only OFV-505). The focus position can also be locked.
- 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 new 1-D and 3-D Scanning Vibrometer systems for full field vibration analysis.

OFV-505/503 Technical Data

General Specifications	
Operating temperature range	+0 °C ... 40 °C
Relative humidity	20 % ... 80 %, non-condensing
Weight	3.4 kg
Dimensions [W x H x L]	120 mm x 80 mm x 345 mm
Laser wavelength	633 nm, visible laser beam
Laser protection class	Class II He-Ne laser, < 1 mW, eye-safe
* Auto Focus	OFV-505: standard / OFV-503: not available
Remote Focus	OFV-505: standard / OFV-503: not available
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 controller OFV-5000; OFV-503 recommended for controller OFV-2200, -2700, -26XX
PSV-Upgradeable	OFV-505: yes / OFV-503: –

* 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
Spot size on the lens from ... to [mm]	3.4 5.0	6.8 10.2	11.3 14.9	22.6 26.0
Size of focal point 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

Accessories: Positioning Units (Most Frequently Used)

Tripod	OFV-S2	High stability tripod for most applications
Fluid head	OFV-A1	3 axes adjuster for OFV-S2
Tilt adjuster	OFV-P1	(Tilt) angle precision adjustment for OFV-A1, angular resolution of 0.04°
Tilt and linear adjuster	OFV-P2	Same as OFV-P1, but with linear movement, positioning range 25 mm, resolution < 10 μm

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