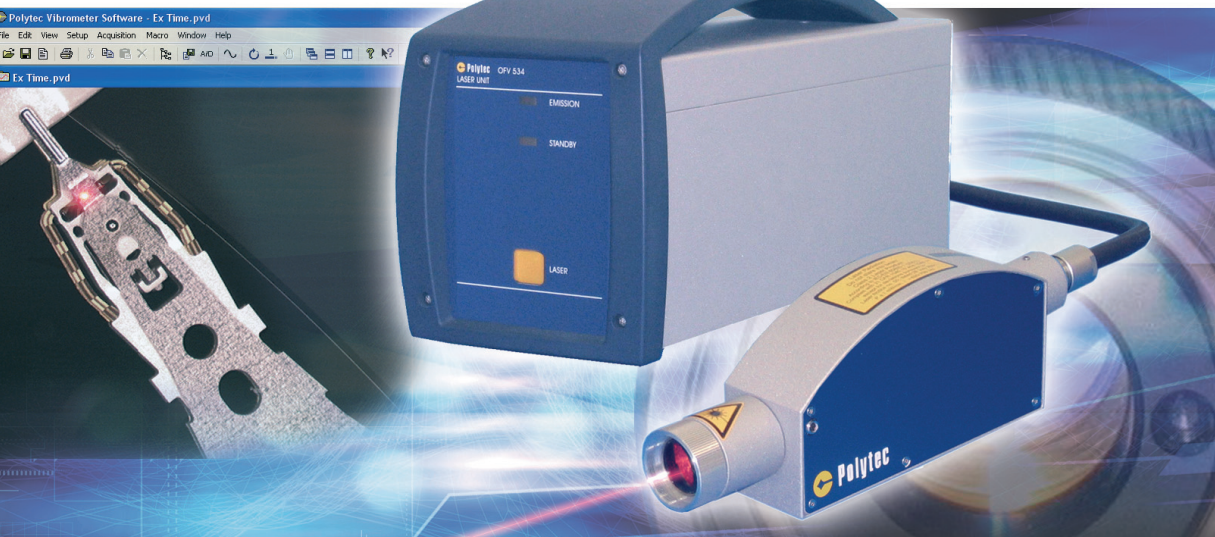


# OFV-534 Compact Sensor Head



## MODULAR VIBROMETER SYSTEM

- OFV-5000  
Vibrometer Controller  
– Velocity Decoders  
– Displacement Decoders
- OFV-505/503  
Standard Sensor Heads
- OFV-551/552  
Fiber Interferometers
- OFV-534  
Compact Sensor Head

## VERSATILE, PRECISION VIBRATION MEASUREMENT

*Fitting a sophisticated heterodyne laser interferometer into an extraordinarily small package is only one of many design triumphs that sets the OFV-534 Compact Vibrometer Head apart from its competition. Two outstanding innovations include an integrated CCD video camera to improve test sample monitoring and laser spot positioning; and, an add-on microscope objective lens to measure microstructures with a 1.5 micron spot. Other no less remarkable features include high sensitivity, low noise and convenient mounting in space-limited situations.*

### The Perfect Solution

The Compact Vibration Head is the perfect solution for making precision vibration measurements where space and weight are at a premium. The new head packs sophisticated technology into a small light weight head perfect for stable mounting, motorized positioning and squeezing into space-constrained locations.

Polytec vibrometers are the Gold Standard in optical sensitivity. With the new generation OFV-534, this sensitivity comes in a standard optical package that can be focused from 200 mm to infinity. The housing is IP-50 protected and has a 3 m cable to the external laser unit.

A color video camera option provides a real-time image of the test object and provides feedback on laser spot positioning. In addition, an optional microscope objective can be attached to the OFV-534's body for measuring vibration response on objects as small as microstructures. Designed to cover a wide range of challenging applica-

tions, the OFV-534 Compact Vibrometer Head has measurement versatility that covers anything from a macro test stand with camera-supported positioning to measuring vibrations on microstructures positioned with a probe station.

The new sensor head can be operated with either the modular OFV-5000 Vibrometer Controller or a controller from the new OFV-2500 Family.

### Features

- Very compact, industry-rugged optical vibration sensor
- Practical, easy, "point & measure" capability
- Low power, visible, eye-safe (class 2) laser
- Variable focus lens from 200 mm to infinity
- Video camera option
- Microscope objective option for measuring microstructures with a 1.5 micron spot
- Operates with OFV-5000 or OFV-2500 Vibrometer Controllers

## OFV-534 Technical Data

Optics Specifications										
Laser type	Helium neon (HeNe)									
Laser protection class	Class 2, < 1 mW, eye-safe									
Laser wavelength	633 nm, visible red laser beam									
Minimum stand-off distance	200 mm									
Minimum spot size	1.5 µm (with VIB-A-20xLENS 20X objective)									
Maxima of visibility (coherence)	287 mm + n · 204 mm; n = 0; 1; 2; ...									
Video Camera (optional)										
Camera type	¼" CCD Color Board Camera									
Active pixels (H x V)	510 x 492									
Lens	F 4.5									
Shutter speeds	Automatic from 1/60 to 1/100,000									
Characteristics										
Stand-off distance <sup>1)</sup>	mm	20.0 <sup>2)</sup>	33.5 <sup>3)</sup>	200	300	500	1000	2000	each m	
Depth-of-field	mm	0.012	0.048	±2	±6	±19	±81	±339	-	
Spot size (1/e <sup>2</sup> )	µm	1.5	3.0	25	40	70	148	302	add 150	
Camera field of view	mm	0.68	1.36	10	17	31	64	130	-	
	x mm	x 0.52	x 1.04	x 8	x 13	x 24	x 49	x 100		

<sup>1)</sup> Measured from the front edge of the sensor head housing

<sup>2)</sup> With VIB-A-20xLENS 20X objective    <sup>3)</sup> With VIB-A-10xLENS 10X objective

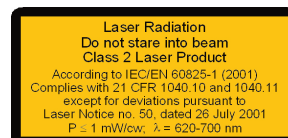
General Specifications	Sensor Head	Laser Unit
Dimensions (L x W x H)	201 mm x 38 mm x 71 mm (7.9 in x 1.5 in x 2.8 in)	309 mm x 120 mm x 150 mm (12.2 in x 4.7 in x 5.9 in)
Power	max. 3 W	max. 15 W
Cable length	3 m (to Laser Unit)	5 m (to Controller)
Ambient temperature	+5 °C ... +40 °C (41 °F ... 104 °F)	
Storage temperature	-10 °C ... +65 °C (14 °F ... 149 °F)	
Relative humidity	max. 80 %, non-condensing	
Housing protection	IP-50 standard	
Compatibility	OFV-5000, OFV-2500 <sup>1)</sup> Series Vibrometer Controllers	

<sup>1)</sup> When operating the OFV-534 Sensor Head with the OFV-2510 Controller, the signal level display on the sensor is not available.

Compliance with Standards	
Laser safety	IEC/EN 60825-1 (CFR 1040.10, CFR 1040.11)
Electrical safety	IEC/EN 61010-1
EMC	IEC/EN 61326

Options & Accessories	
Camera Options	OFV-A-534-CAM (NTSC output); OFV-A-534-CAP (PAL output)
Microscope Objectives	VIB-A-10xLENS (3 µm laser spot at 33.5 mm stand-off distance) VIB-A-20xLENS (1.5 µm laser spot at 20 mm stand-off distance) Use option OFV-A-534-CAM/CAP for viewing and displaying the image of the test object.

For more information please visit our website  
[www.polytec.com/usa/vibrometers](http://www.polytec.com/usa/vibrometers)  
 or contact your local Polytec sales/application engineer.



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