

## PSV-500 Xtra Scanning Vibrometer

Polytec Scanning Vibrometers are state-of-the-art systems for noise and vibration measurement in Research and Development. They characterize operational deflection shapes, Eigenmodes and traveling waves, and are widely used in NVH, acoustics, structural dynamics, ultrasonics, FEM validation and non-destructive testing.

Extra optical sensitivity is key for optimizing data quality and productivity. PSV Xtra is available either with a new system or as an upgrade for all existing PSV-500 models, achieving up to 8 x better optical sensitivity.



### Highlights

- Reactionless laser measurement
- Low noise optics unveil more details for a quick validation
- Safe high power laser for larger field of view
- Best results with up to 8 x better optical sensitivity
- Safe investment: Available in new systems or as an upgrade for all PSV-500 and PSV-500-3D systems

**PSV-500 Xtra Scanning Vibrometer**  
Upgrade to Xtra Optical Sensitivity  
Preliminary Datasheet



# Technical Data

The PSV Xtra upgrade option is fully compatible with the PSV-500 Scanning Vibrometer series with the specifications given below.



## PSV-I-550 Scanning Head

Dimensions [W x L x H]	189 x 370 x 177 mm (74.4 x 145.7 x 69.7 in)
Weight	9 kg (19.8 lbs); 9.2 kg with PSV-G-500 Geometry Scan Unit <sup>1</sup>
Laser type	<ul style="list-style-type: none"> <li>■ Measurement laser: wavelength 1,550 nm (invisible), output power &lt;10 mW</li> <li>■ Targeting laser: wavelength 515 nm (green), effective output power &lt;1 mW</li> <li>■ PSV-G-500 Geometry Scan Unit <sup>1</sup>: wavelength 660 – 680 nm (red); effective output power &lt;1 mW</li> </ul>
Laser safety class	Class 2
Working distance	Vibrometer: 125 mm ... ~100 m; Geometry Scan Unit <sup>1</sup> : 250 mm ... 30 m
Scan angle [h x v]	50° x 40°
Scanner properties	Angular resolution <0.002°, Angular stability <0.001°/h, max. 30 scan points/s
Sample size	From a few mm <sup>2</sup> up to several m <sup>2</sup>
Camera <sup>2</sup>	HD format, 20x optical zoom, max. field of view [h x v] 55° x 32°
Interfaces, electrical	Multi-pin bayonet connector, DIN plug for pan/tilt head control or external scanner control
Interfaces, mechanical	Hexagon type tripod adapter for VIB-A-T02, 2x M6 thread



## PSV-500 Xtra Metrological Specifications

Model	# of ranges	Full scale m/s (peak) <sup>4</sup>	Decoder frequency range	Resolution $\mu\text{m s}^{-1}/\sqrt{\text{Hz}}$	# of reference channels	# of signal generator channels <sup>3</sup>
PSV-500-B High Resolution	13	0.0025 ... 30	0 Hz ... 50 (100) kHz	0.01 ... 0.5	1 (4)	1 (4)
PSV-500-B Enhanced	10	0.025 ... 25	0 Hz ... 50 kHz	0.02 ... 0.5	1 (4)	1 (4)
PSV-500-H, -3D-H	13	0.0025 ... 30	0 Hz ... 100 kHz	0.01 ... 0.5	8	4
PSV-500-M, -3D-M	13	0.0025 ... 30	0 Hz ... 1 (2) MHz	0.01 ... 2.5	3 (1 with -3D-M)	1
PSV-500-HV, -3D-HV in V mode	13	0.0025 ... 30	0 Hz ... 25 MHz	0.02 ... 15	3 (1 with -3D-HV)	1
PSV-500-HV, -3D-HV in H mode	13	0.0025... 30	0 Hz ... 100 kHz	0.01 ... 0.5	8	4

## Compliance with Standards

Electrical safety	IEC/EN 61010-1:2011-07
	IEC/EN 61326-1:2013-07; Emission: FCC Class A; IEC/EN 61000-3-2 and 61000-3-3; Immunity: IEC/EN 61000-4-2 to 61000-4-6 and IEC/EN 61000-4-11
Laser safety	IEC/EN 60825-1:2008-05 (CFR 1040.10, CFR 1040.11)

<sup>1</sup> Depending on model: optional  
<sup>2</sup> All 3D systems are retrofitted with two additional PSV-I-570 Scanning Heads without camera, weight 9.0 kg.  
<sup>3</sup> Bandwidth corresponding to acquisition bandwidth.  
<sup>4</sup> Range dependent.

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