

# IPV-100 In-Plane Vibrometer



## Polytec Laser Vibrometers

- Single Point Vibrometer
- Differential Vibrometer
- Rotational Vibrometer
- **In-Plane Vibrometer**
- 3D Vibrometer
- Remote Sensing Vibrometer
- Microscope System
- Scanning Vibrometer

## A Non-contact Sensor for In-Plane Vibration Measurements

**The In-Plane Vibrometer measures velocities perpendicular to the beam direction. This unique capability enables measurements on samples that feature primary in-plane motion where out-of-plane measurements from the side are not possible due to a limited thickness or restricted or even blocked line of sight.**

### High accuracy

The IPV-100 In-Plane Vibrometer measures stroking motions from the side with nm resolution. By using laser light to probe the sample it avoids any physical contact, hence the sample movement remains completely undisturbed by the measurement.

### Results in just a few minutes

Instrument set-up is easy and straightforward. The large depth of field of +/- 2.5 mm facilitates swift pointing of the laser. Intuitive controls provide for quick range and filter selection and allow the user to concentrate on the measurement task.

### Versatile tool ...

With its wide frequency range of 250 kHz and a velocity limit of 100 m/s, the IPV-100 is a flexible tool for demanding applications: shock measurements, material science applications, analysis of ultrasonic tools and of all moving parts where slippage, vibration and mass-loading can be a problem.

### Key Features and Benefits

- Easy set-up through sideways measurement of motion and large standoff
- Measures even thin wires with  $\mu\text{m}$  spot size laser probe
- Zero-mass loading does not disturb sensitive measurements
- Quick identification of ultrasonic tool performance
- Rugged design for in-line quality assurance

### ... for lab and production

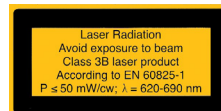
The IPV-100 is the right instrument not only for lab based measurement tasks. The rugged, IP-65 rated sensor head supports shop floor applications and quality control in production lines, guaranteeing reliable operation with laser precision.

## Technical Data

Sensor Head IPV-I-100-30			
Laser wavelength	670 nm		
Output power	<30 mW (Laser class 3B)		
Working distance	300 mm (fixed)		
Laser spot size	160 $\mu\text{m}$ x 340 $\mu\text{m}$		
Depth of field	Max. $\pm 2.5$ mm		
Vibrometer Controller IPV-E-100-01			
Frequency Range	0.5 Hz - 250 kHz		
Velocity Ranges	0.1 m/s	1 m/s	10 m/s
Peak Velocity	1 m/s	10 m/s	100 m/s
Resolution <sup>1) 2)</sup>	<10 $\mu\text{m/s}/\sqrt{\text{Hz}}$	<10 $\mu\text{m/s}/\sqrt{\text{Hz}}$	<50 $\mu\text{m/s}/\sqrt{\text{Hz}}$
Max. Acceleration	160,000 g	1,600,000 g	16,000,000 g
Filter	Low Pass: 1 kHz, 10 kHz, 100 kHz High Pass: 10 Hz, 100 Hz Tracking Filter: Slow, Fast		
Signal Output	Analog $\pm 10$ V (BNC Jack)		
Additional Interfaces	Control of settings (USB 1.1) Signal Level (BNC Jack)		
General Specification		IPV-E-100-01 Controller	IPV-I-100-30 Sensor Head
Dimensions (L x W x H)		320 mm x 235 mm x 150 mm (1/2 19")	256 mm x 120 mm x 64 mm
Weight		6 kg	2 kg
Protection rating		IP 20	IP 65
Power		100 V...240 VAC $\pm 10\%$ , 50/60 Hz, max. 75 W	
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	

1) The noise-limited resolution is defined as the signal amplitude (rms) at which the signal-to-noise ratio is 0dB with 1Hz spectral resolution, measured on matt metal.

2) The attainable resolution is frequency-dependent and is specified for frequencies above 10Hz.



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

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