Laser vibrometers
Optical measurement solutions for vibration
Product brochure
Laser Doppler vibrometry

Single point vibrometers

- Modular sensor solution that grows with your needs
- Resolve sub-pm vibration and velocities up to 30 m/s
- Configurable front-end from DC to 24 MHz
- Choose from sensor heads (compact design, fiber-optics, with HD+ camera) and patented QTec® technology for best SNR on technical surfaces

- Compact sensor head with remote controller for frequencies from DC up to 3 MHz
- Integrated camera for visually monitoring the sample (optional)
Polytec has been providing light in the darkness for more than 50 years. With nearly 500 employees worldwide, the company develops, produces, and distributes optical measurement systems for research and industry. The products enjoy an outstanding reputation in the international professional world.

The company manufactures a range of laser vibrometers that have become the accepted gold standard for non-contact vibration measurement.

The laser Doppler vibrometer is a precision optical sensor used for determining vibration velocity and displacement at a fixed point. The technology is based on the Doppler effect, sensing the frequency shift of back scattered light from a moving surface.

Whether the application is for 100% Q.A. inspection of motors or bearings on a production line, optimizing of ultrasonic tools, confirming the characteristics of MEMS resonators and other microstructures or identifying torsional modes in a vehicle’s drive-train and many more, there is a Polytec system that can provide the measurement solution.

- **Robust and wear-free sensor for vibro-acoustic quality inspection in-line up to 100 kHz**
- **Clear pass/fail decisions for production testing based on reliable vibration measurement**
- **Best signal quality and flexible working distances with auto and remote focus**

**IVS Industrial Vibration Sensor**

**VibroGo®**

- **Truly portable, compact laser sensor enabling non-contact vibration analysis**
- **On-board data analysis for condition monitoring, research and vibration measurement in the field**
- **Extended frequency range up to 320 kHz, 30 m large stand-off distance and up to 6 m/s velocities**
Full-field vibrometers

PSV Scanning Vibrometer 1D & 3D

- For comprehensive, full-field analysis for NVH, acoustics, structural dynamics, ultrasonics and FEM validation up to 25 MHz

- PSV Software package provides detailed vibration data analysis and 3D animation of deflection shapes with full export compatibility

- Available as compact notebook-based model, 1D or 3D rack type and as fully automated structural test station RoboVib®

- Patented QTec® multi-path interferometry for 10x faster measurements and best SNR on technical surfaces

- Powerful accessories like the geometry scan unit for direct detection of geometry data or the optical derotator enabling measurements on rotating parts
MPV Multipoint Vibrometer

- Capture transient and non-stationary events in a single synchronous measurement
- Gather time- and frequency-resolved deflection shapes in 3D
- Flexible and user-configurable sensor array with up to 48 optical channels plus 8 reference channels for other sensors
Microscope-based vibrometers

- Microscope-based vibrometers for a reactionless characterization of microsystems, MEMS, BAW/SAW, biological probes, etc.

- From intuitive entry-level to combined vibration and topography measurement systems, as 3D dynamics analyzer or ultra-high frequency workstation with 6 GHz

- For measuring dynamics, securing microsystems functionality, modal analysis or FE model updating

- Integrated microscope optics for highest lateral resolution and image quality

- Patented MSA IRIS technology measuring capped MEMS through Si-encapsulation
Special application vibrometers

**RLV Rotational Laser Vibrometer**
- For torsional vibration and rotational speed variation measurement, e.g. automotive engine and drivetrain torque, motors and pumps, etc.
- Provides angular velocity, displacement and rpm outputs

**RSV Remote Sensing Vibrometer**
- Robust and portable vibrometer for mobile outdoor measurements over long distances with high sensitivity
- Also for challenging measurements in the R&D lab using optional short range lenses

**IPV In-Plane Vibrometer**
- Transverse (in-plane) vibration measurement
- Lateral examination of stroke movements

**Differential vibrometers**
- Optical subtraction of ambient vibrations
- Specially suited for microsystems and material science (e.g. piezoelectric materials)
- High-speed (up to 40 m/s) and multi-channel measurements of valve train dynamics
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High tech for research and industry.
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