Polytec

MSA-050 Micro System Analyzer

Full-field vibration measurement on small components

Product brochure

Highlights

- High-resolution vibration analysis
- Up to 2 MHz bandwidth
- Non-contact, fast measurement
- Simple operation with Polytec Software
- Meaningful animations of measured data
- Large and flexible workspace

The MSA-050 helps identify resonance frequencies, vibration amplitudes and operational deflection shapes of microstructures, MEMS and precision mechanics.

The MSA-050 is a table-top system designed for full-field vibration analysis, solving critical tasks in R&D and lab environments. Identification of resonance frequencies, vibration amplitudes and even deflection shapes is easy and straightforward. Its non-contact principle of operation leaves samples completely undisturbed, producing accurate data even when measuring very small and delicate objects. A digital single-point vibrometer constitutes the core of the system, providing real-time vibration data from any point on the sample with sub-picometer resolution. By traversing the sample, the MSA-050 acquires full-field vibration data, which are animated by the well proven Polytec Software.

Applications

MEMS

Whether they are sensors or actuators, the mechanical characteristics of MEMS are critical for their performance. The understanding and optimization of their operation are key steps in the development process. Typical MEMS devices are micromirrors, inkjet printheads, microphones and speakers. The MSA-050 with its minimum spot size of 1.5 µm is perfectly suited to studying the mechanical characteristics of structures with dimensions in the µm range. For the most demanding applications, the MSA-500 is available featuring even wider bandwidth and finer lateral resolution.

Precision mechanics

High precision mechanical components, assemblies and tools are essential elements in many industries ranging from semiconductor, medical, dental, watchmaking to aerospace and other high technology sectors. Easy, non-contact precision measurements lead to a thorough characterization of the dynamic properties of fine-mechanical parts and assemblies, helping to develop better products in less time.

Options and accessories

The MSA-050 includes a compact stand with manually actuated z-axis and a digital single point vibrometer, while the 19" rack contains the complete electronics. Full-field measurements are accomplished with the integrated xy-stage traversing the sample under software control.

Microscope objective

The 10x microscope objective, delivered as standard, assures the right balance between its field of view and laser spot size. For smaller structures a smaller spot size is available from the optional 20x microscope objective.

Illumination unit (option)

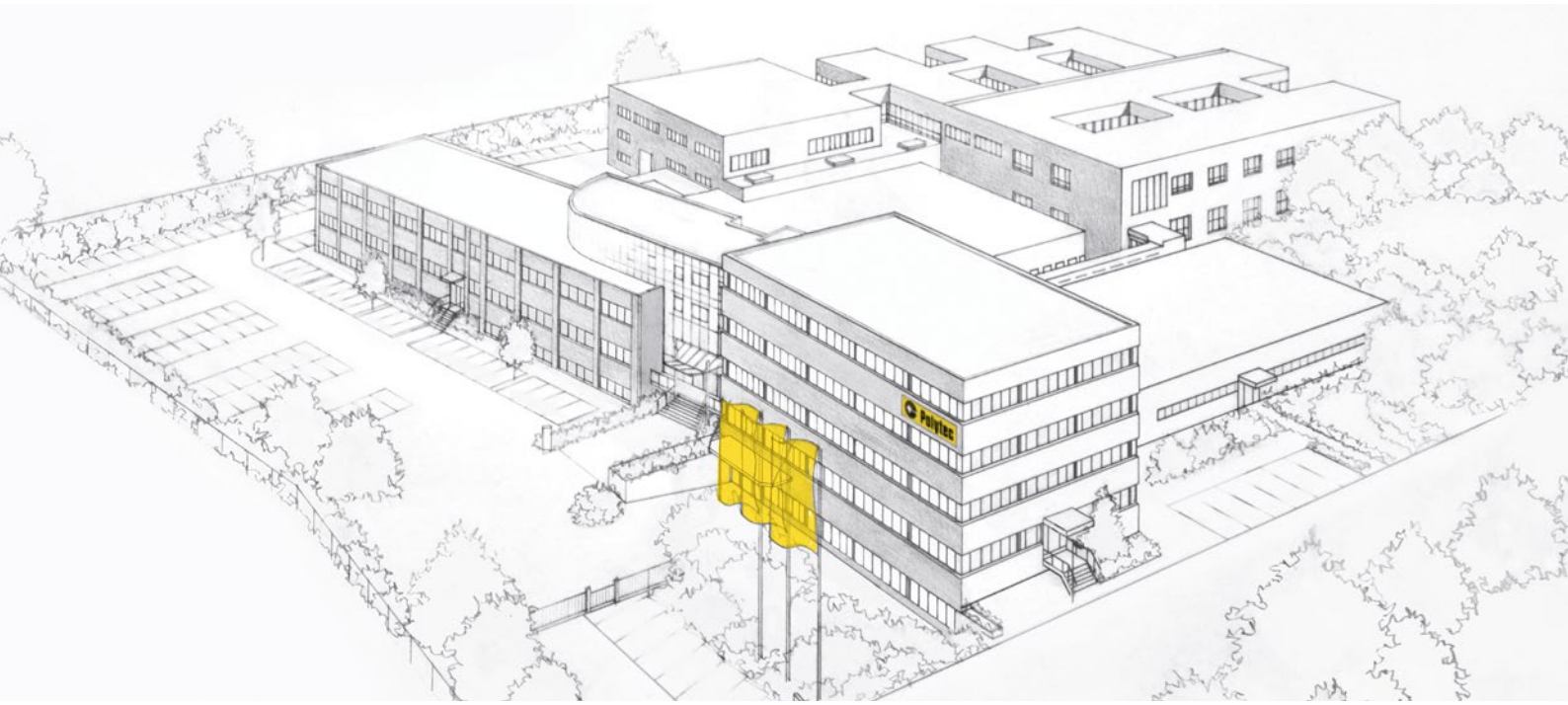
Inline illumination of the sample guarantees best video image quality and facilitates an accurate definition of the scan grid using Polytec software.

Desktop joystick (option)

Convenient and swift positioning of the xy-stage in addition to the method provided by Polytec's software.

Software

Optional software features greatly enhance the core functions of the Polytec Software package: Acquisition of time domain data allows animation of repeatable transient events like switching processes. The signal processor provides ample spreadsheet based post-processing means for measurement data.



Shaping the future since 1967

High tech for research and industry.
Pioneers. Innovators. Perfectionists.

Find your Polytec representative:
www.polytec.com/contact

Polytec GmbH · Germany
Polytec-Platz 1-7 · 76337 Waldbronn

www.polytec.com

OM_PB_MSA-050_E_42401
2019/05 – Technical specifications are subject to change without notice.