

Press Release

Date: May 2016

Encl.:

Reference number: PR-0010-CPE-200416-MPV

Modular Multipoint Vibrometer – 48 Eyes See More

Laser scanning vibrometry is a tried-and-tested tool in product development for measuring vibrations in a fast and non-invasive way, especially when it comes to lightweight structures and on hot and challenging surfaces. But it reaches its limits when transient – or, in other words, time-critical or “fleeting” – moments are to be captured. Impact, such as a door slam for example, and other single-event operations, cannot be recorded by means of sequential scanning. Polytec has now developed a multipoint vibrometer that simultaneously measures such non-stationary processes at multiple locations from different viewing directions. The MPV-800 boasts a modular design, so the costs remain manageable even when there are a multitude of measurement locations.

The basic system comprises eight vibrometer channels, eight reference channels (for accelerometers, for instance) and one workstation for data acquisition plus analysis software. It can be expanded as appropriate to include other optical units, resulting in a single vibrometer system with up to 48 channels. Each optical unit comprises one eight-channel interferometer, a shared laser light source and connections for eight fiber heads. A wide range of different measuring tasks can be completed, since the up to 48 fiber heads can be arranged in practically any way.

The multi-sensors can be arranged on a stand, for example, where both amplitude and phase distribution on the surface can be analyzed full-field. However, the sensor heads can also be freely arranged in the space around the sample if necessary. The findings obtained in this way often permit a better understanding of transient processes, as data from various directions and locations provide the full picture. If you focus the lasers from three sensors onto a single point, the in-plane and normal vibration components can be resolved, so even three-dimensional vibration measurements are possible

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too. The MPV software supports all tasks and offers plenty of practical features that add convenience to the measurements and ensure a high test quality.

Figure: The MPV basic system, which can be expanded in a modular fashion to a single vibrometer system with up to 48 optical channels, forms the basis of the multipoint vibrometer. (Figure: Polytec)

In the text box: About Polytec

Polytec is an innovative high-tech firm that has been developing, producing and selling measurement technology solutions for research and industry for more than 40 years. Building on its success in the distribution business, Polytec began developing and producing its own laser-based measuring devices in the 1970s. Nowadays, the company – which has its headquarters in Waldbronn near Karlsruhe, Germany – is a world leader in the field of laser vibrometry for optical vibration measurement. The company's now wide range of innovative in-house products also includes speed and length sensor systems, surface metrology solutions, analytical measuring technology and factory automation concepts. Another of Polytec's core skills is in distributing high-tech products from other innovative manufacturers.

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Text was produced by RBS – Redaktionsbüro Stutensee, Ms. Ellen Reiff (plt040)

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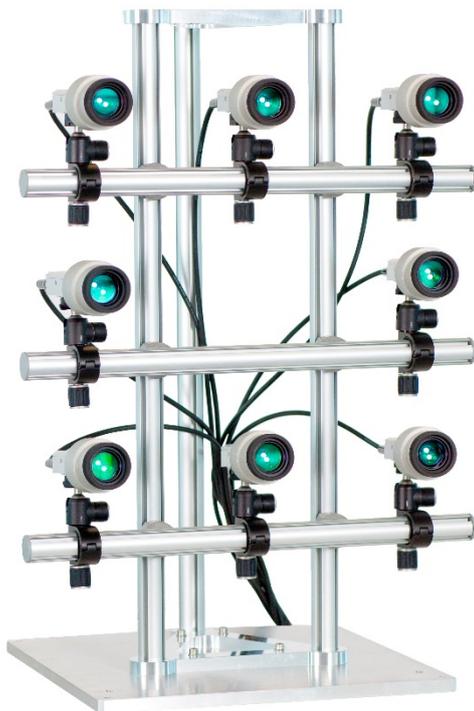
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