

Press release

Kistler presents world's lightest triaxial IEPE accelerometer for 100 g and higher

Patented KiVibe Miniature triaxial accelerometer sets benchmark for structural dynamics testing

Winterthur, April 2025

The new KiVibe Miniature triaxial accelerometer (6 mm, 0.236 in) from Kistler, equipped with PiezoStar crystals, is the world's lightest triaxial IEPE accelerometer available on the market for acceleration ranges starting at 100 g. Weighing just 0.9 grams, this low outgassing accelerometer offers a broad frequency range and is specifically designed to perform structural dynamic tests. Thanks to the minimal mass loading and the flexible cable, it is beneficial for applications such as modal analysis, powertrain testing, and NVH (noise, vibration and harshness).

Structural dynamics testing is essential in many engineering fields where space is limited and lightweight structures are required especially in automotive and aerospace applications. Accelerometers are mounted on key points of a test object – for instance on satellite components such as frames, antennas or optics or on various points of an electric powertrain of a car – to measure vibrations during product testing. However, lightweight structures with tight spaces pose a major challenge: if a sensor is too heavy, the frequency response of the unit under test can be distorted – creating misleading results. The new KiVibe Miniature triaxial IEPE accelerometer provides a superior solution for such applications.

High performance in demanding environments

This groundbreaking miniature triaxial accelerometer combines IEPE (Integrated Electronics Piezo-Electric) technology, internal case isolation, and low magnetic field sensitivity. These features ensure an excellent signal-to-noise ratio and reliable operation in harsh environments, including powertrain applications. The broad frequency bandwidth (0.3 to 10.9 kHz $\pm 5\%$) of KiVibe Miniature enhances vibration analysis with 10 kHz response ($\pm 5\%$) on the main axes, the new miniature triaxial IEPE accelerometer ideally supports high frequency resonance evaluation. Furthermore, it features low base strain and an ultra-low thermal sensitivity shift ($\pm 5\%$) over a temperature range of -55°C to 125°C (-67°F to 257°F).

Ultra-compact, high-performance miniature triaxial IEPE accelerometer

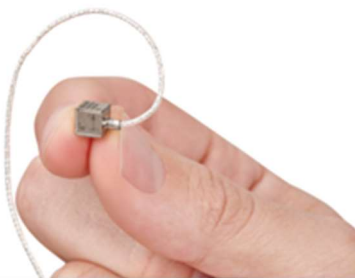
The innovative triaxial IEPE accelerometers in the KiVibe Miniature series – with measuring ranges of 100, 250, 500, and 1,000 g – owe their high performance to special piezoelectric crystals and low-noise cabling. The lab-grown PiezoStar crystals from Kistler provide exceptional benefits, minimizing thermal sensitivity shift and ensuring stable measurements even under temperature variations. The specially engineered cable was chosen for its strength, lightweight design, and flexibility, ensuring easy installation in tight spaces. This cable features a very small bending radius and a specially developed cable attachment enabling effortless mounting.

The KiVibe Miniature triaxial accelerometer comes with a sealed titanium housing and supports – thanks to the low-outgassing features (accelerometer, cable and connector) – vacuum and space testing applications. Additionally, the accelerometer is TEDS-compatible (Transducer Electronic Data Sheet), streamlining configuration and calibration with signal conditioning and DAQ devices. This reduces installation time and prevents manual input errors.

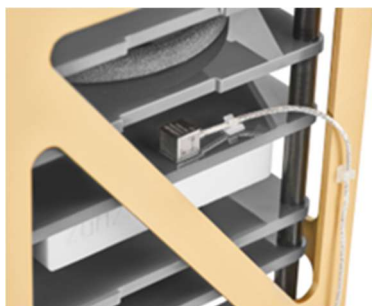
Image material (please name the Kistler Group as picture source)



The new KiVibe Miniature triaxial accelerometer from Kistler features low weight, smallest dimensions and a flexible, low outgassing cable.



The new triaxial IEPE accelerometers in the KiVibe Miniature series are equipped with a durable and lightweight cable that ensures flexibility in tight spaces thanks to a small bending radius and a specially developed cable attachment.



Designed for complex structures with limited space, the KiVibe Miniature triaxial IEPE accelerometer from Kistler ensures flexible and efficient mounting.



The KiVibe Miniature triaxial IEPE accelerometer from Kistler is the perfect fit for tight spaces and lightweight structures and features a variety of outstanding properties.

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About the Kistler Group

Kistler is the global market leader for dynamic pressure, force, torque and acceleration measurement technology. Cutting-edge technologies provide the basis for Kistler's modular solutions. Customers in industry and scientific research benefit from Kistler's experience as a development partner, enabling them to optimize their products and processes so as to secure sustainable competitive edge. Unique sensor technology from this Swiss corporation helps to shape future innovations not only in automotive development and industrial automation but also in many newly emerging sectors. Drawing on our extensive application expertise, and always with an absolute commitment to quality, Kistler plays a key part in the ongoing development of the latest megatrends. The focus is on issues such as electrified drive technology, autonomous driving, emission reduction and Industry 4.0. Some 2,000 employees at more than 60 facilities across the globe are dedicated to the development of new solutions, and they offer application-specific services at the local level. Ever since it was founded in 1959, the Kistler Group has grown hand-in-hand with its customers and in 2024, it posted sales of mCHF 448. About 9 percent of this figure is reinvested in research and technology – with the aim of delivering innovative solutions for every customer.