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Press Release Laser 2007

The Whole World of Micro- and Nanopositioning

Optics and photonics require the highest levels of positioning accuracy. At the Laser the German company PI (Physik Instrumente) will present a wide range of micro- and nanopositioning systems. The extremely precise positioning systems, from single piezo actuators to six-axis Hexapod robots will be presented in Munich, 18 to 21 June in Hall B1 - 457:

For high dynamics and very precise alignment of laser beams, piezo tilt mirrors are ideally suited. In multi-axis versions they offer the smallest dimensions and can provide a linear optical path with zero offset. These fast systems, with up to three axes, feature optical tilt angles up to 100 mrad and resolutions to 0.02 μrad .

Positioning with nanometer resolution and speed constancy are needed for optical inspection applications. For the first time this combination of features is available, provided by novel hybrid positioning systems. Consisting of integrated piezo systems piggy-backed on precise linear DC-motor stages with a common servo-loop and command interface, they offer extremely uniform velocities over the whole travel range (to 100 mm) and a repeatability to 0.008 μm .

Micro translation stages for photonics and automation are subject to modular design. Thus 48 linear stage versions with various combinations of base profiles, motors and spindles cover different requirements on travel range, load and maximum velocity. They offer travel ranges up to 300 mm and minimal incremental motion to 0.1 μm . A especially cost-effective combination consists of stepper-motor linear stages and MercuryTM Step controllers.

An alternative to motor-spindle combinations are PILINE[®] piezo linear drives. They offer small dimensions, a low profile as well as high velocities of up to 600 mm/s with a resolution of 0.1 μm . Available in different integration levels, the drives can be easily integrated into a multitude of OEM applications.

PI, a global market leader in the field of micro- and nanopositioning technology, has been developing and manufacturing standard, custom and OEM products with piezoelectric and motor drives for over 35 years. In addition to its three manufacturing centers in Germany, PI is present worldwide with eight subsidiaries, among these three in China, and total staff of more than 400.

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