Nanopositioning and Nanomeasuring Machine

NMM-1
The Nanopositioning and Nanomeasuring Machine is used for three-dimensional coordinate measurement in a range of 25 mm x 25 mm x 5 mm with a resolution of 0.1 nm. Its unique sensor arrangement provides Abbe error-free measurements on all three coordinate axes. The measurement axes of three miniature plane mirror interferometers for length measurements intersect virtually with the contacting point of the probe sensor with the measuring object at a single point.

The object to be measured is placed directly on a movable mirror corner. The position of this mirror corner is monitored by the three fixed miniature interferometers. The mirror corner is positioned by a three axis driving system. Any angular deviations that may occur during the positioning process are measured and corrected by two angle sensors.

The light of three stabilized lasers is guided from the electronics unit to the interferometer heads by optical fibers, providing a compact, thermally stable set-up of the Nanopositioning and Nanomeasuring Machine. The heart of its electronics unit is a digital signal processor (DSP) that processes all incoming signals, controls its drive system and governs the course of measurement procedures.

**Applications**

- Positioning, manipulation, processing and measurement of objects in the fields of micromechanics, microelectronics, optics, molecular biology and Microsystems engineering with nanometric precision within a large range
- Measurement of precision parts, such as the tips of hardness testing probes, membranes and micro lenses
- Calibration of step height standards and pitch standards

**Sensors for the NMM-1**

- Laser Focus Sensor
- Atomic Force Microscope
- White Light Sensor
- 3D-Micro Probes

We reserve the right to alter products and their specifications without prior notice.