



# NMM-1

## *Product information*

Positioning, manipulation, processing and measurement of objects and structures  
with nanometer accuracy

# Nanopositioning and Nanomeasuring Machine

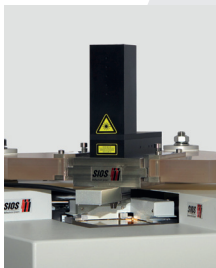
## NMM-1

The nanopositioning and nanomeasuring machine for three-dimensional coordinate measurement operates in a measuring range of 25 mm x 25 mm x 5 mm with a resolution of 0.1 nm. A special sensor arrangement ensures a measurement free of aberrations in all three coordinate axes. The measuring axes of three miniature interferometers intersect virtually at the point of contact between the probing sensor and the measured object. The measured object lies directly on a movable mirror corner. The position of the mirror corner is detected by the three fixed miniature interferometers. The mirror corner is positioned with a three-axis drive system. Two angle sensors are used to measure and compensate for angular deviations during positioning.

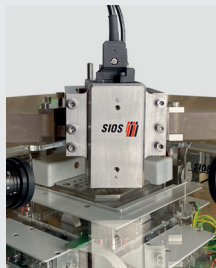
The light from one stabilized laser is transmitted from the electronics unit to the interferometer heads via optical fibers. This results in a compact and temperature-stable design of the nanopositioning and nanomeasuring machine.

The nanomeasuring machine is the only metrological system in the world that is safely suitable for measurements of macroscopic objects with sub-nanometer accuracy under normal conditions and is in use at several national metrological institutes.

1D-, 2D- and 3D-sensors for various measuring tasks.



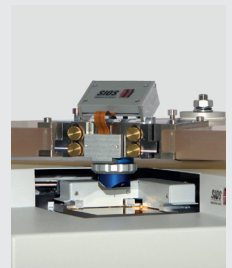
Fix Focus Sensor



Atomic Force Microscope



White Light Sensor



Tactile 3D Sensor

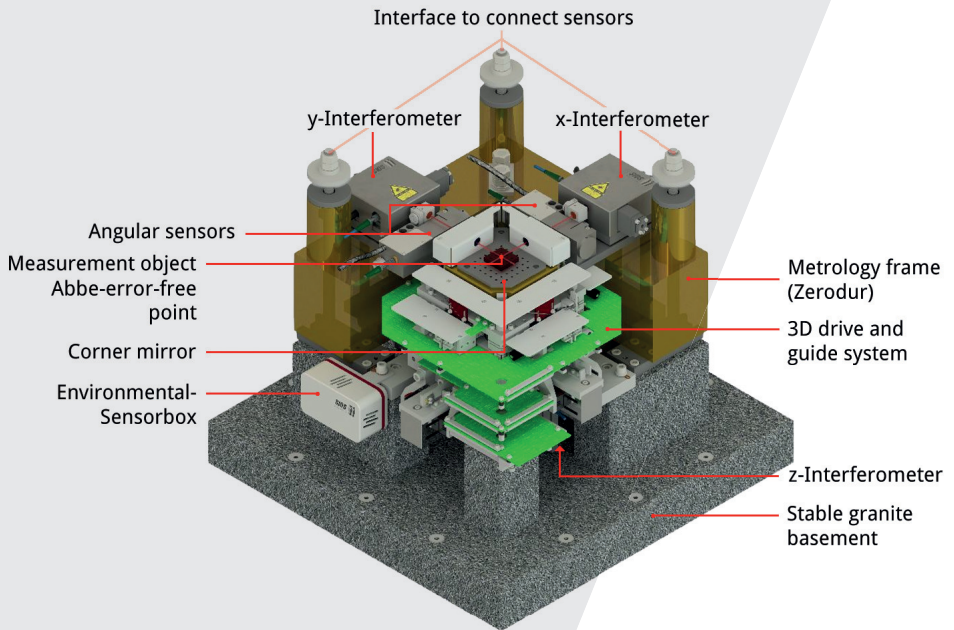


25 mm x 25 mm x 5 mm



<0.1 nm

## MEASUREMENT SETUP



### Areas of application:

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- positioning, manipulation, processing and measurement of objects of microelectronics, micromechanics, optics, microsystems technology with nanometer precision in large spatial ranges
- continuous AFM scans over large areas are possible
- measurement of precision parts, e.g. hardness indenters, membranes and microlenses
- calibration of step height standards and pitch standards
- Abbe-error-free positioning
- metrological measurement setup, suitable for calibration and qualification of sensors in development
- open device architecture, use of customer-specific probing sensors is possible

### Ideal for

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- calibration
- research / development

**PRECISION & QUALITY**  
MADE IN GERMANY

**For customer-specific versions, OEM applications or integration in special measuring stations, please contact us.**

**We will be happy to personally assist you in finding solution to your measuring tasks.**

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