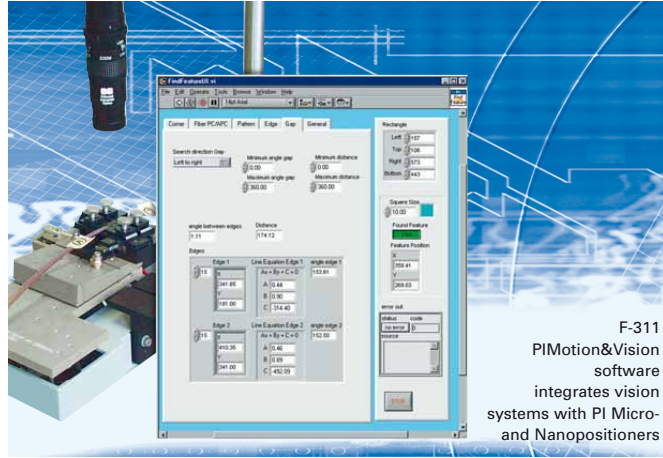


F-311 PIMotion&Vision

Integration of Vision System and Micro-/Nanopositioning



F-311 PIMotion&Vision software integrates vision systems with PI Micro- and Nanopositioners

Ordering Information

F-311.LV
PIMotion&Vision LabVIEW
Driver Set

Software Interface to Micro- and Nanopositioners

PIMotion&Vision offers a large number of LabVIEW drivers for continuous monitoring and processing of the image information, including standard procedures for gap measurement, autofocus, aligning edges all the way to complex alignment routines in six degrees of freedom with an unlimited number of axes of motion, switching functions and read-in of analog signals (e.g. photometer signals for optical fiber alignment).

Motion is commanded using the PI General Command Set, which is supported by all PI multi-axis micropositioning and nanopositioning controllers.

- Vision System for Integration with PI Micro- and Nanopositioning Systems
- Controls Motion Axes with Sub- μm or Sub-nm (Sub- μrad) Resolution
- National Instruments Compatible Vision System
- Multi-Channel Vision for a Mix of Resolutions and/or 3D Observation
- Powerful LabVIEW VIs

PIMotion&Vision offers an integrated solution for difficult tasks such as automated positioning of optics, semi-conductor wafers, microsystems technology MEMS fabrication or alignment and scanning of samples under a microscope:

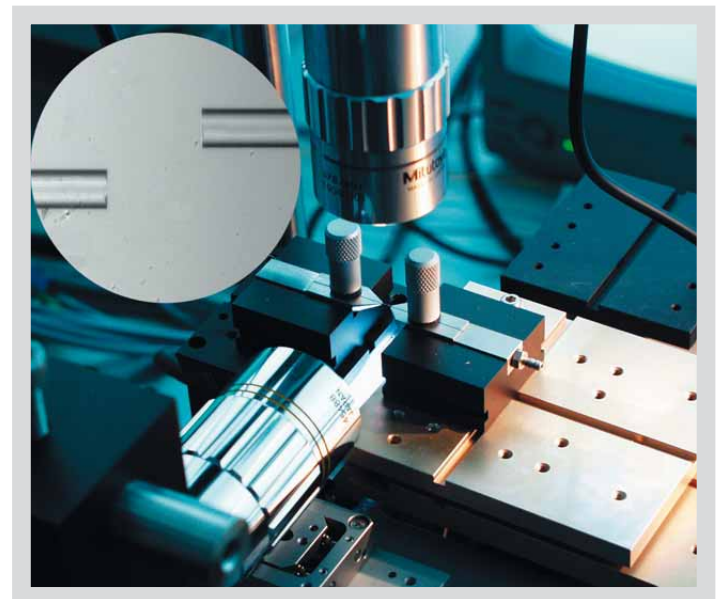
- Basic functions such as autofocus, edge and pattern

Application Examples

- Optical 6D alignments
- Autofocussing
- Gap measurements
- Pattern recognition in
 - Semiconductor industry
 - Biotechnology
 - Life science
 - MEMS Manufacturing/MST
 - Photonics

recognition, and gap measurement.

- Intelligent automated procedures.

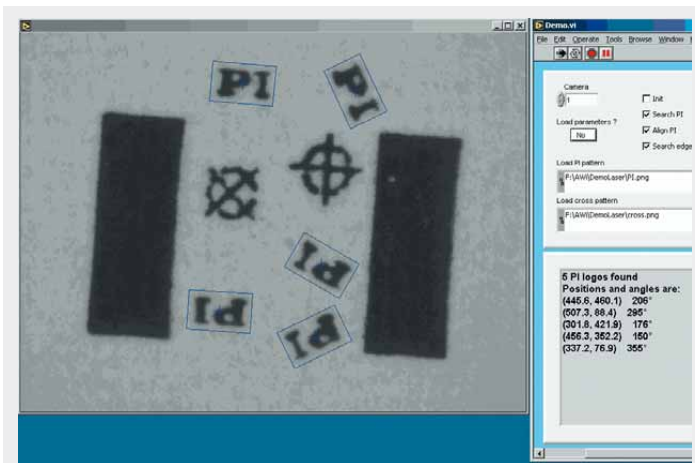


Optical fiber-alignment with F-206 6-axis-alignment system and P-611 NanoCube[®] 3D piezo nanopositioning / scanning system. Two cameras allow a 3-dimensional visual automated coarse alignment

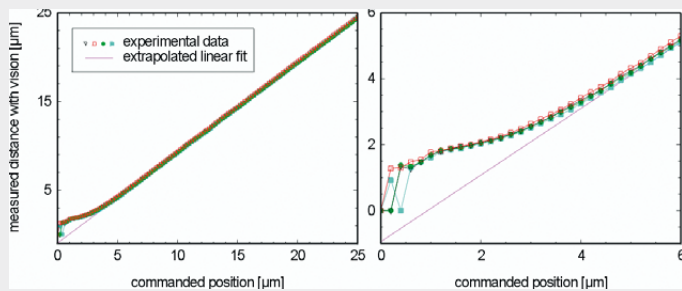


NI
Compatible

Simple setup with a single camera, two M-111 stages in an XY configuration and an M-116 rotary platform (all controlled from a C-843 PCI card). This sample setup can be used for pattern recognition, as can be seen in the next graphics



PIMotion&Vision sample pattern recognition task. The sample program searches for PI logos, counts and aligns them. The logos are 1 x 0.5 mm in size



Example of a gap measurement with PIMotion&Vision. The measurement is linear down to 5 μm , depending on the used camera, and at separations down to 1 μm the values provided can be used with correction. Optical gap measurement then begins to be limited by refraction and optical imperfections. The reference measurements were made with a P-611 NanoCube® Piezo-NanoPositioning system