

# MappIR II

## AT A GLANCE

- ▶ Automated, multi-position measurements and mapping of semiconductor wafers
- ▶ 8" (200-mm) semiconductor wafer handling
- ▶ Specular reflection and transmission sampling – standard
- ▶ Optional inserts for wafer sizes 2 to 8"
- ▶ Integrated purge enclosure
- ▶ EPI, BPSG, oxygen and carbon determination



FULLY AUTOMATED  
WITH AUTOPRO SOFTWARE



The MappIR II is an automated sampling accessory for semiconductor wafer analysis, fitting seamlessly into the sample compartment of your FTIR instrument. With its mapping stage, this accessory is an invaluable tool for the semiconductor industry by analyzing EPI, BPSG, and measuring oxygen/carbon content of silicon wafers ranging in size from 2 to 8 inches (50 to 200 mm).

## DESIGN

The redesigned MappIR II features precision micro-stepper motors and mechanical components for exceptional positional repeatability and accuracy. The optical design of the accessory was preserved for those upgrading from the legacy MappIR.

Ease of use is exceptional. Switching between the two measurement modes is done by means of a single-slide transmittance/ reflectance control knob. The beam size at the wafer sampling position is 1.5X larger than the corresponding beam size in the sample compartment, which depends on the J-stop setting. The angle of incidence of MappIR II is 15°.

Semiconductor wafers are held in place by spring-loaded Delrin® retaining clips and are never in contact with the aluminum stage of the accessory. Individual wafers are rotated and/or translated by micro-stepper motors in a sequence pre-programmed by the system operator.

To minimize interferences of water vapor and carbon dioxide with infrared measurements, the optical path of the MappIR II is equipped with an integrated purge enclosure.

## AUTOPRO SOFTWARE

The MappIR II is controlled by AutoPRO software which provides a simple user interface for multiple point wafer analysis (mapping). The software provides ample flexibility in setting up various experiments.

## KEY FEATURES

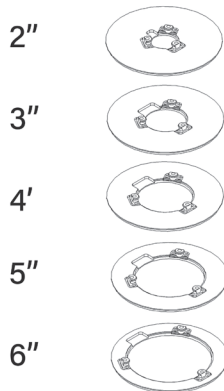
- ▶ Easy user interface for setting up mapping patterns
- ▶ Operator-selectable or pre-defined multiple point maps
- ▶ Polar and/or Cartesian coordinates options
- ▶ Real-time display of the experiment status
- ▶ Ability to save and recall various experimental patterns
- ▶ COM-enabled interface for use with macros/scripting
- ▶ KLA and CSV file importer



The MappIR II automated sampling accessory for semiconductor analysis.

Data collection and processing is provided by the spectrometer software. A number of FTIR manufacturers offer dedicated packages which fully integrate the accessory with the spectrometer. If such an option is not available, AutoPRO can be controlled by the spectrometer's program via macros.

PIKE automated wafer accessories are compatible with most commercial FTIR spectrometers and software packages.



Optional inserts for wafer sizes from 2 to 6 inches.

PART NUMBER	DESCRIPTION
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016-31XX	MappIR II Accessory for 8" Wafers Includes wafer mount, motion control unit, AutoPRO software, and mount for your FTIR.
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**Notes:** Replace XX with your spectrometer's Instrument Code listed in the back of the catalog.

Options for MappIR II	
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073-3860	Insert to Support 6" Wafer
073-3850	Insert to Support 5" Wafer
073-3840	Insert to Support 4" Wafer
073-3830	Insert to Support 3" Wafer
073-3820	Insert to Support 2" Wafer

**Note:** Contact PIKE Technologies for custom inserts or additional information.



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