



Automatic Macro Inspection System

AMI-5700



Automatic Macro Inspection System **AMI-5700**

The AMI-5700 makes both high throughput and exceptional detection sensitivity very achievable. The aim of this device is to realize higher sensitivity and accuracy than previous models. It achieves high-speed measurement and inspection by performing batch imaging of the entire wafer surface. This is an innovative device that can perform inspection and measurement as a single unit.

Key Features

- Nikon's diffracted light detection system detects pattern variations along the Z-axis, especially focus error and poor coating, with high sensitivity. In addition, accurate recognition of the diffracted light only from the top pattern layer is possible, allowing defects in underlying patterns to be discriminated.
- High quality images with reduced chromatic aberration can be obtained by the newly developed optical system and improved collection mirror.
- An improved mirror tilting mechanism greatly contributes to the reduction of under-layer noise, realizing more accurate inspection, such as the accurate detection of changes in the top layer pattern.
- Detects particles and scratches as small as 5 μm by scattering inspection, achieving even higher sensitivity than previous models.
- Achieves high throughput of 180 wafers/hour, even when performing diffraction and scattering inspection as a batch inspection of the entire wafer. Also supports 3 load ports and enables efficient operation according to the line, greatly contributing to improved productivity.
- A high-speed measurement function has been implemented for the first time in the AMI series. CD measurement, film thickness measurement and focus measurement are possible at speeds that surpass previous methods.
- Complies with the RoHS directive and REACH regulations concerning the environment.
- A unique learning function utilizes AI image processing technology to quantify the characteristics of a good wafer.
- The versatile automatic recipe creation function allows even inexperienced operators to create optimal recipes in a short time.
- In addition to the Automatic Defect Classification (ADC) function, operators can specify their own rework criteria in a recipe in order to automate rework judgments.
- Hole process inspections are also supported.

Specifications

- Enables 3x, 2x, 1x nanometer lithography (supports EUV, DSA and Quad Patterning)
- Applicable for 3D Memory/LOGIC/CMOS image sensor devices
- Provided with pattern edge roughness (PER) function and mirror tilting optical system
- Inspection throughput: 180 or more wafers/hour (standard magnification: scattering and diffraction inspection or mirror reflection inspection)
- Measurement throughput: 25 wafers/25 minutes (when batch imaging of the entire wafer is implemented 3 times under different conditions with the shortest exposure time)
- Enables measurement of up to 75,000 points (26 mm \times 33 mm) in one capture.



WARNING

TO ENSURE CORRECT USAGE, READ MANUALS CAREFULLY BEFORE USING YOUR EQUIPMENT.

The export of this product is controlled by Japanese Foreign Exchange and Foreign Trade Law and International export control regime. It shall not be exported without authorization from the appropriate governmental authorities.

Performance and equipment are subject to change without any notice or obligation on the part of the manufacturer.

Products and brand names are trademarks or registered trademarks of their respective companies. October 2021

©2021 NIKON CORPORATION

<https://www.nikon.co.jp/pec/>

NIKON CORPORATION Semiconductor Lithography Business Unit Business Planning Department

Shinagawa Intercity Tower C, 2-15-3, Konan, Minato-ku, Tokyo 108-6290, Japan
Tel: +81-3-6433-3639

NIKON PRECISION INC.

1399 Shoreway Road, Belmont, CA 94002-4107, U.S.A.
Tel: +1-(650)-508-4674

NIKON PRECISION EUROPE GmbH

Robert-Bosch-Strasse 11, D-63225 Langen, Germany
Tel: +49-6103-973-0

NIKON INSTRUMENTS KOREA CO., LTD.

21F, City Air Tower, 36, Teheran-ro 87gil, Gangnam-gu, Seoul, 06164 Korea
Tel: +82-2-6288-1900

NIKON PRECISION TAIWAN LTD.

3F-1, NO.28, Taiyuan St., Zhubei City, Hsinchu County 302, Taiwan, R.O.C.
Tel: +886-3-552-5888

NIKON SINGAPORE PTE LTD.

Precision Division
18 Tai Seng Street #04-08, 18 Tai Seng, Singapore 539775
Tel: +65-6559-3618

NIKON PRECISION SHANGHAI CO., LTD.

12F, Tower 5, Crystal Plaza No. 36, Ping Jia Qiao Road, Pudong New District, Shanghai 200126, China
Tel: +86-21-5899-0266