

## AREAL CONFOCAL 3D MICROSCOPE CODE ISM-A7000

NON-CONTACT ROUGHNESS  
MEASUREMENT

SUB-NANOMETER  
Z-RESOLUTION

FOCUS  
STACKING

MOTORIZED  
STITCHING

WHITE LIGHT  
AREA CONFOCAL



- Used to wafers, substrates, HDI boards, flexible printed circuits, glass wafers, glass substrates, micropisms, PV panels, Li batteries and etc.
- Suitable for critical dimension measurement of semiconductor wafer patterns, solder ball, probe indentation and MEMS device
- Using structured light illumination and vertical axial scanning to realize micro-surface 3D topography
- Sub-nanometer vertical resolution
- Motorized XY stage
- The Z-axis motor driver and piezoelectric ceramic (PZT) are adjustable
- Including mountains analysis software; measurement results can be exported as reports
- The 3D tilt measurement angle is up to  $\pm 60^\circ$
- Supportint focus stacking, motorized XY stitching, and measurement after stitching
- Capable of measuring workpieces with a maximum aspect ratio of 1:10
- Supporting color imaging and 2D/3D observation, synchronously outputting 3D point cloud data, 2D color images and focus-stacked images
- Single-field-of-view measurement of multi-material and multi-color surfaces, compatible with reflective, metallic, highly reflective and transparent substrates

SPECIFICATION

|                           |                |                                                                      |
|---------------------------|----------------|----------------------------------------------------------------------|
| Measuring principle       |                | white light area confocal                                            |
| Vertical scanning device  |                | PZT, motor                                                           |
| Light source              |                | white light                                                          |
| Resolution of camera      |                | 1920×1200                                                            |
| Travel of Z-axis          |                | 30mm                                                                 |
| Scanning range of Z-axis  |                | 500μm (PZT), 30000μm (motor)                                         |
| Resolution of Z-axis      |                | 0.01μm (PZT), 0.1μm (motor)                                          |
| XY stage                  | size           | 160×110mm                                                            |
|                           | range          | 100×100mm                                                            |
|                           | resolution     | 0.1μm                                                                |
|                           | control method | motorized                                                            |
| Accuracy                  |                | ±(0.1+L/200)μm (L is measured height and μm is the unit)             |
| Environmental requirement |                | temperature: 5~40℃, relative humidity: 5~80%, isolation class: >VC-C |
| Power supply              |                | 220V                                                                 |
| Dimension (L×W×H)         |                | 380×410×750mm                                                        |
| Net weight                |                | 55kg                                                                 |

OBJECTIVES SPECIFICATION

|                    |               |                |                |                |                 |
|--------------------|---------------|----------------|----------------|----------------|-----------------|
| Objective          | 5X (optional) | 10X (optional) | 20X (included) | 50X (optional) | 100X (optional) |
| Numerical aperture | 0.15          | 0.3            | 0.45           | 0.8            | 0.9             |
| Working distance   | 23.5mm        | 17.5mm         | 4.5mm          | 1mm            | 1mm             |
| Field of view      | 2.24×1.4mm    | 1.12×0.7mm     | 0.56×0.35mm    | 0.22×0.14mm    | 0.11×0.07mm     |

STANDARD DELIVERY

|                      |      |
|----------------------|------|
| Main unit            | 1 pc |
| 20X objective        | 1 pc |
| Industrial computer  | 1 pc |
| Computer             | 1 pc |
| Handheld controller  | 1 pc |
| Acquisition software | 1 pc |
| Analysis software    | 1 pc |

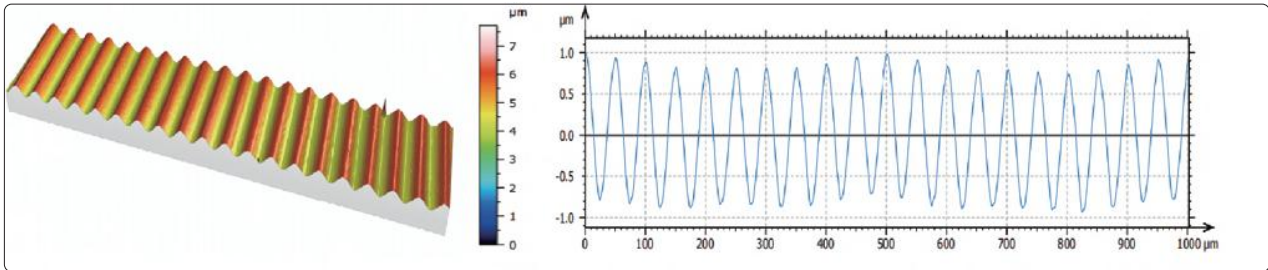
OPTIONAL ACCESSORY

|                |             |
|----------------|-------------|
| 5X objective   | ISM-A7-5X   |
| 10X objective  | ISM-A7-10X  |
| 50X objective  | ISM-A7-50X  |
| 100X objective | ISM-A7-100X |

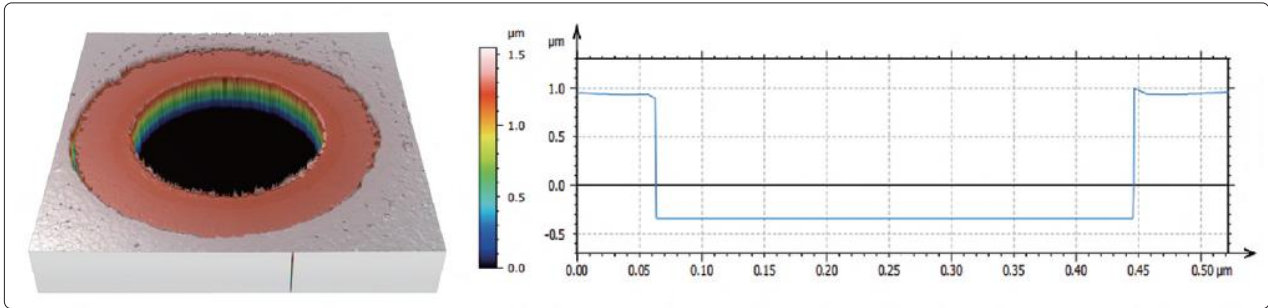
ANALYSIS FUNCTION

|                       |                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Software function     | auto focus, focus stacking, image stitching, confocal imaging                                                                                 |
| Measurement fuction   | automatic roughness software measurement module, capable of measuring Ra, Rq, Rz, Rp, Rv, Sa, Sq, Sz, Sp, Sv                                  |
|                       | profile height analysis module, vertical distance, horizontal distance, Pa, Pq, Pt                                                            |
|                       | laser vias, back-drilled vias, transparent coated vias, solder mask roughness, copper width, copper spacing, copper height, height difference |
| Chart & report output | point clouds, 3D topography chart, chromatogram height chart, cross-section profile, analysis chart, grayscale chart                          |

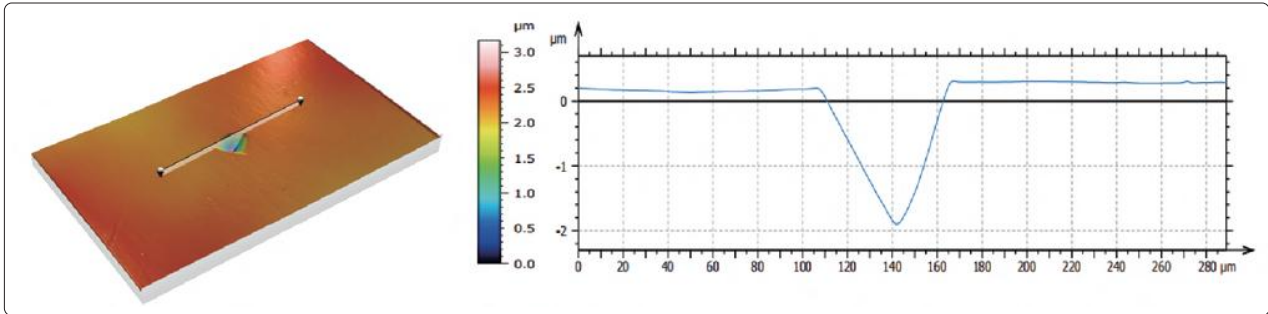
APPLICATIONS



roughness measurement



IC carrier board laser vias measurement



wafer dislocation measurement

SOFTWARE (INCLUDED)

toolbar

3D analysis chart

section view

measurement results

