ARGOS matrix
Automated batch inspection

DI⬤PTIC
thinking your optics

YOUR BENEFITS

- Automated inspection of hundreds of elements without user interaction
- Based on established ARGOS technology, perfectly adapted to the specific inspection task
- Combines multiple illumination configurations for improved defect detection

ESTABLISHED ARGOS TECHNOLOGY...

- Intuitive and easy-to-use ARGOS software for data processing, field-tested over years of professional use
- Detection of defects down to 1 µm in size with a well-tested calibration procedure
- Detailed and customizable inspection reports and analysis tools
- Integrated focus stacking technology for in-focus imaging of curved elements

...PERFECTLY ADAPTED!

- Testing with optimum resolution and speed by adapting the measuring head with modular system
- Particularly efficient for testing micro-optics: Compact system can test hundreds of elements with highest resolution
- Testing with a matrix camera and switchable dark-field illumination for reflection-free images with optimal defect visibility
- Combination of several illumination techniques: dark field, transmitted light, bright field, for even better defect detection and discrimination
- Evaluation according to ISO 10110-7 or custom specifications

TECHNOLOGY

- Special dark field illumination for curved test objects: Different lighting configurations are used sequentially. Direct reflections are suppressed in image processing.
- The combination of dark field, transmitted light or bright field illumination helps to detect defects in chrome masks or other coatings.
- An ionizing air nozzle removes dust and particles prior to testing.
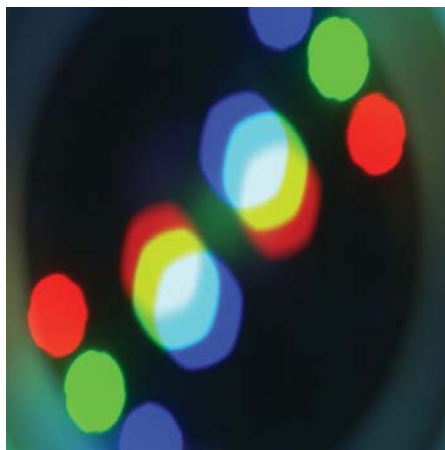
Top left Images with different illumination directions (shown as red, green, blue) are combined for a fused image without reflections.

Bottom left Combination of dark field (white) and transmitted light (red)

Right Dark field module and air nozzle for removing dust

SPECIFICATIONS

Parameters	ARGOS matrix S / M / L	Comments
Field of view	10 mm x 7.5 mm (S) 20 mm x 15 mm (M) 33 mm x 25 mm (L)	Larger sizes on request
Smallest specification according to ISO 10110-7*	5/1x0.016, L1x0.01, E0.04 (S) / 5/1x0.04, L1x0.025, E0.1 (M) / 5/1x0.063, L1x0.04, E0.2 (L)	Evaluation as required by the standard down to 16% of the specified dig size and 25% of specified scratch size
Smallest visible defects*	< 1 μm / < 2 μm / < 4 μm	Defects will be assigned the minimum grade number 0.0025/0.004/0.0063 due to the limited resolution.
Precision of the size measurement*	< 1.5 μm / < 3 μm / < 5 μm	Mean standard deviation at 30 measurement cycles with the same calibration sample
Surface material	Glass, metal, semiconductors, plastics, crystals	Polished surfaces with optical quality; others on request
Test duration flat substrate	ca. 1-2 s	The evaluation time depends on the specification and quality of the surface.
Example for lens test duration	ca. 15-20 s (for Ø 15 mm, R = 9 mm)	With ARGOS matrix M, depending on surface specification/quality
Size of sample tray	205 x 205 mm	With module „XY scan" Other solutions on request
Maximum part size	205 x 205 mm	With module „Multi-view stitching"

* The achievement of the specification can only be guaranteed with the original ARGOS reference sample, on which known defects with defined width and depth are present.