

ARGOS nexus

automated scratch / dig inspection

ARGOS nexus is an automated scratch/dig inspection solution featuring a high-resolution imaging system with combined dark field and bright field illumination. There are different resolution options and large inspection areas which can be used for either individual large parts or batches of smaller components. Both dimensional and visibility-based standards are supported, including ISO 10110-7, MIL-PRF-13830B, and custom specifications. ARGOS nexus pro takes inspection of lenses to the next level with a tilt-enabled head that follows the surface slope, maintaining ideal inspection conditions for reliable defect detection on steep and complex optics.

System options	ARGOS nexus pro	ARGOS nexus
Dark field illumination	Surfaces up to hemispheres	Surface slopes up to 30 degrees
Bright field illumination	All geometries	Flats only
ISO 10110-7	All geometries	Surface slopes up to 30 degrees
MIL-PRF-13830B	All geometries	Flats only

Resolution options	S pro	S	M	L
Nominal resolution (Object-side pixel pitch)	2.74 µm	2.74 µm	5.48 µm	7.47 µm
Camera field of view	7 mm x 7 mm	12.3 mm x 12.3 mm	24.6 mm x 24.6 mm	33.6 mm x 33.6 mm
Smallest ISO 10110-7 size grade	0.004 (digs), 0.0025 (scratches)	0.004 (digs), 0.0025 (scratches)	0.0063 (digs), 0.004 (scratches)	0.01 (digs), 0.0063 (scratches)
Smallest visible defects^{1/2}	< 1 µm	< 1 µm	< 2 µm	< 3 µm
Reproducibility of the size measurement^{1/3}	< 1.5 µm	< 1.5 µm	< 3 µm	< 4.5 µm

Size options	200	300	400
Inspection area	200 mm x 200 mm	320 mm x 320 mm	400 mm x 600 mm
System size (L x W x H)	645 mm x 520 mm x 800 mm	845 mm x 720 mm x 800 mm	1510 mm x 1085 mm x 2322 mm

¹ These specifications can only be guaranteed with the original ARGOS calibration sample with known defects of defined width and depth.

² Smallest visible defects: Small defects will be assigned the minimum grade number 0.0025/0.004/0.0063.

³ Reproducibility of the size measurement: Mean standard deviation of measured defect sizes for 30 repetitions with the same calibration sample.

Surface materials	Polished, uncoated or coated glass surfaces with optical quality. Custom solutions can be offered for other surface types, e.g. metals, semiconductors, plastics, crystals.
Surface geometries	Flat, spherical, aspherical, freeform up to hemispheres with 90° surface slopes (ARGOS nexus pro) or up to 30° surface slopes (ARGOS nexus). See details below on ARGOS nexus pro.
Cleanroom compatibility	All systems are ISO 6 cleanroom compatible.

Surface geometries for ARGOS nexus pro

ARGOS nexus pro extends surface quality inspection capabilities to surfaces as steep as 90 degrees. Part geometry influences the stage range required for inspection with the tilted measurement head. The below plots outline what spherical geometries can be inspected with ARGOS nexus pro 200 and 300, as well as how many parts can be inspected per tray.

