

nSpec™ CPS

300mm Fully Automated Optical Inspection System
with nTelligence™



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The nSpec™ CPS includes Nanotronics' proprietary Artificial Intelligence Software, nTelligence™. The platform is highly flexible in its ability to detect defects on a variety of wafers, substrates, and materials. Any defects observed using the system's various imaging modalities can be labeled and used to train custom-specific automatic classification models.

Nanotronics' sophisticated AI adds the ability to not only detect defects but also classify them, helping to assign causality and provide fast feedback to correct the manufacturing process. Tuned for speed and high-quality inference from limited data, the software utilizes customized enhancements for deep learning and convolutional networks. In addition to nTelligence™, the nSpec™ CPS also includes a suite of computer vision analyzers.

nSpec™ CPS is the ideal system for fully automated high-volume manufacturing environments. User-friendly software makes configuring recipes next to effortless and as needs evolve, recipes are easy to save and modify.

This 300 mm design supports:

- HEPA air filtration
- Air ionizers
- Single or Multiple load ports: 200mm and/or 300mm

Features:

- Automatic wafer handling
- Multiple resolution settings, ranging from 0.3 µm and greater
- Rapid scanning
- Computer vision analyzers
- nTelligence™ defect classification
- Customizable defect reports
- Customizable export formats
- Flexible settings for single image capture and scans
- Variety of sample chucks to meet specific needs and manual loading applications
- Robust analysis for defect or feature of interest detection and classification
- Inspection and review procedures
- Small footprint and minimal facilities requirements
- Rack mount controls
- Door interlocks
- Automatic prealignment by notch or flat
- Mapping for wafer presence, cross slot detection, and double stacked wafers

SYSTEM

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Weight	1180 kg
Dimensions (W x D x H)	240 cm x 194 cm x 262 cm
Min. Vacuum Requirement	-21 in. Hg (-70 kPa)
Power Supply	208-230VAC, 15A, 50-60Hz
Min. Clean Dry Air	60PSI (415 kPa)

OPTICS

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Illumination Modes	Brightfield, Darkfield, Automated DIC (Nomarski)
Light Source	Green LED (other options available)
Objectives	5x included, 1.25, 2, 2.5, 10, 20, 50x, user selectable (5-position turret)

STAGE

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Travel, typical	350 mm X and Y direction
Positioning	Linear servo motors with closed loop encoders (50 nm resolution)
Repeatability	+/- 2 µm
Travel Flatness	20 µm
Centered Load Capacity	5 kg

OPTIONS

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SECS/GEM
12-Position Filter Wheel
OCR (Frontside and/or Backside)
Air Ionizers
200mm cassette adapter for Load Port
Sample Specific Fixtures
Offline Workstations