



## Automated Optical Inspection System

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The nSpec® is a fully automated, precision optical inspection system for viewing, analyzing and reporting on defects in opaque, transparent and semi-transparent wafers. Defect reports are fully customizable.

The nSpec® system can image and analyze:

- Substrate wafers
- Epi wafers
- Patterned wafers
- Diced wafers
- Individual devices

The nSpec® system has multiple magnification settings making it easier for users to characterize defect types.

It also offers complete rapid scanning and wafer mosaicing.

Repeated quality control testing is easy to set up. There are settings for single image capture and scans. Configuration options include wafer size, defect types, and scan resolution.

Sample chucks are available to meet specific size needs, and users can pair the system with an automated wafer loader to speed up throughput and decrease damaged wafers caused by operator-handling errors.

The system is delivered fully functional and includes installation and user training.

## Stage

<b>Travel, typical</b>	200 mm X and Y direction
<b>Precision Lead Screws</b>	2 mm pitch, preloaded ball screws
<b>Centered Load Capability</b>	2.27 kg
<b>Repeatability</b>	+/- 5 $\mu$
<b>Construction</b>	a) Precision ground alum plates b) Stainless steel raceways
<b>Step Size</b>	0.04 $\mu$
<b>Travel Flatness</b>	30 $\mu$
<b>Weight</b>	5.44 kg
<b>Limit Switches</b>	Mechanical, non-adjustable
<b>Wafer Vacuum Chuck (optional)</b>	Adjustable to 50, 75, 100 or 150 mm

## Control

<b>Stage*</b>	*Fully automated control for all system components. System allows for manual user operation.
<b>Focus*</b>	
<b>Nosepiece*</b>	
<b>Illumination*</b>	
<b>Camera*</b>	

## Optics

<b>White Light Illumination</b>	LED (other options available)
<b>Brightfield/Darkfield Objectives</b>	5, 10, 20 or 50x, user selectable
<b>Differential Interference Contrast</b>	(Normarski)

## Camera

<b>Pixel Size, typical</b>	4.54 $\mu$
<b>Image Size, typical</b>	2752 x 2200 pixels
<b>Maximum Frame Rate</b>	17.4 fps

## Wafer Loader

<b>Runs one cassette at a time</b>	25 wafers/cassette
<b>Standard Wafer Sizes</b>	75, 100 or 150 mm
<b>Dimension (width x length)</b>	36 cm x 75 cm
<b>Weight</b>	34 kg
<b>Minimum Vacuum Requirement</b>	20 in. Hg
<b>Power supply</b>	110v/220v

## Options

<b>AFM</b>	Specs available upon request
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