

**MX100IR**

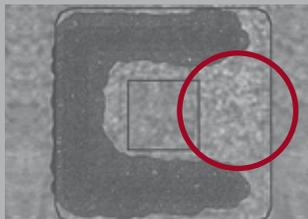
Automatic, High Accuracy  
Desktop Wafer Inspection



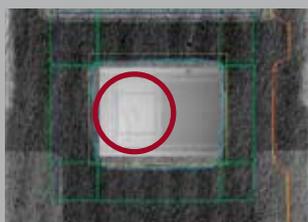
**Wafer AOI**

# Desktop Wafer AOI

## High Accuracy Surface and Interior Wafer Inspection



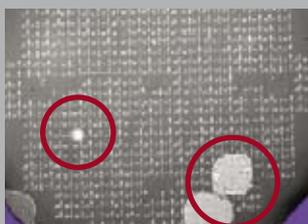
Missing seal



Defective die



FlipChip underfill void



Wafer defects

**Infrared illumination –  
transmitted light and  
reflected light**

**Very high resolution**

**Complete inspection  
of the wafer**

**Complete statistical analysis  
for wafer applications**

Void

*For semiconductor assemblies, the requirement for a precise, thorough inspection for damage and defects during the production process is especially high. Wafers need non-destructive inspection for surface purity and planarity. Furthermore, inspecting for defects beneath the surface is especially important, as is the measurement of the die and the sealant adhesive on MEM components (e. g., sensors). The Viscom MX100IR was designed to take on these tasks. An especially important application area is the 100 % quality control of safety-critical components.*

# Flexible and reliable wafer inspection for small lot sizes

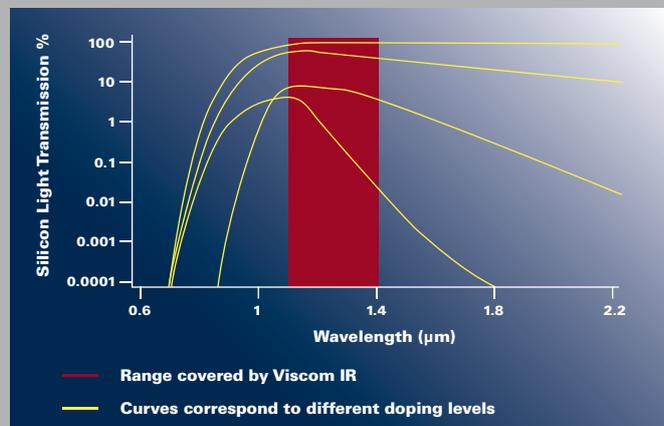
The desktop system MX100IR is the ideal solution for the inspection of **bare wafers, chips, MEMS, wafer bonds, SOI and FlipChips, as well as applications in the photovoltaic area**. Wafers inspected can be composed of various materials: silicon, gallium arsenide, III-V materials and others. In just minutes the MX100IR can, utilizing transmitted and reflected IR light, provide structural analysis and foreign body data for MEMS devices.



The heart of the patented **Si-Thru™ technology** are its **infrared light sources (Semiconductor Light Matrix: SLM)**. These light sources emit light at a specific wavelength (around 1  $\mu\text{m}$ ), a highly efficient infrared light in a narrow spectrum that is superbly adapted to semiconductor inspection applications. The light sources have a **long service life**, are **scalable**, have **very high performance** and guarantee a **high resolution**. They facilitate a **unique detection of embedded defects**. The IR camera head is precisely positioned for image capture by an X/Y/Z unit.

The MX100IR system is especially tailored for manual loading and inspection of smaller lot sizes.

The **graphical user interface** makes **program generation and maintenance quick and easy**. Many different languages can be chosen on the **off-line programming station**. Evaluation is based on specialized inspection algorithms to localize defects including **voids, bond widths, delaminations** and others. **Statistical analysis process control** is also provided.

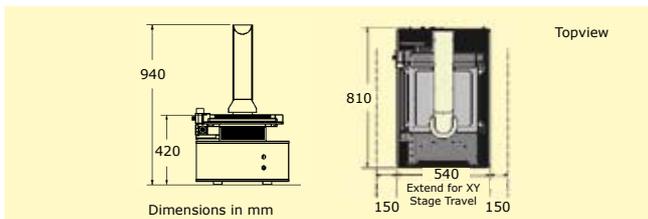


Optimal wavelength range for best transmissibility through silicon

# Technical Specifications

## MX100IR

<b>Application</b>	Bare wafer, chips, MEMS, wafer bond, SOI, FlipChip, photovoltaics	
<b>Inspection mode</b>	Automatic inspection algorithms using user-defined pass/fail criteria Possibility of „Pass/Fail“ for each device and wafer, defect classification Wafer-level scanning mode	
<b>Camera technology</b>	High resolution near-infrared (NIR) CCD-camera	
	Illumination	Infrared light source (Semiconductor Light Matrix (IR-SLM))
	Resolution	3.5 µm/pixel standard; 0.7 - 10 µm/pixel available depending on application and customer requirements
<b>Die-level inspection</b>	Device size	Flexible
<b>Wafer</b>	Diameter	Up to 300 mm
	Thickness	Up to 2000 µm
	Wafer alignment	Referencing to fiducials with adjustment for rotation and translation
<b>Inspection speed</b>	Several minutes per wafer	
<b>Options</b>	Configurable image size Configurable illumination, multiple options Customer-specific vacuum chuck or other mechanical fitting	
<b>Other system data</b>	Voltage	100-240 VAC, 50/60 Hz
	System dimensions	540 x 810 x 940 mm (21.3" x 31.9" x 37.0") (W x D x H)
	Weight	150 kg (330 lbs)



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