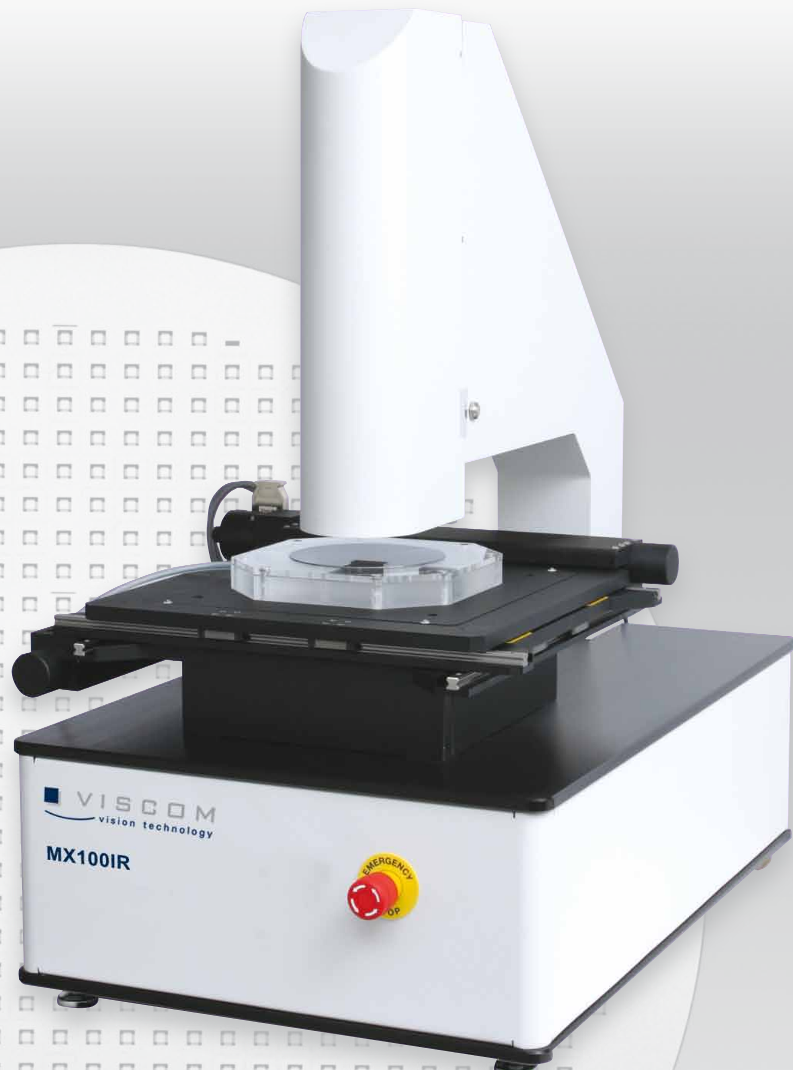
VISCOM
vision technology

MX100IR

Automatic, High Accuracy Desktop Wafer Inspection



Wafer AOI

Desktop Wafer AOI

High Accuracy Surface and Interior Wafer Inspection

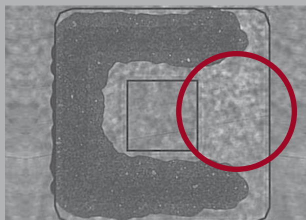
Infrared illumination – transmitted light and reflected light

Very high resolution

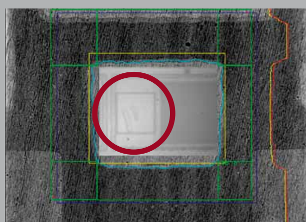
Complete inspection of the wafer

Complete statistical analysis for wafer applications

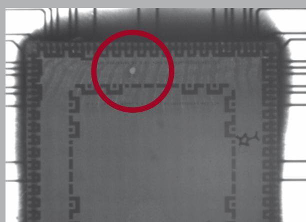
Void



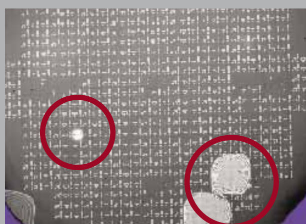
Missing seal



Defective die



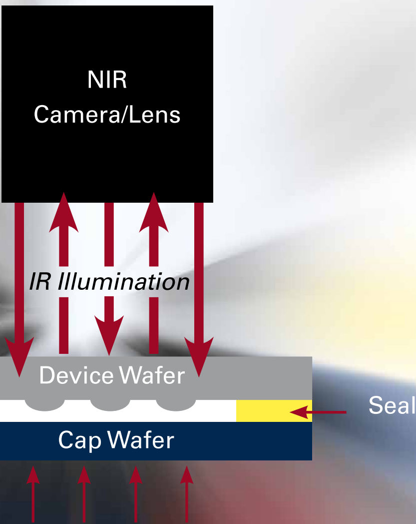
FlipChip underfill void



Wafer defects

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

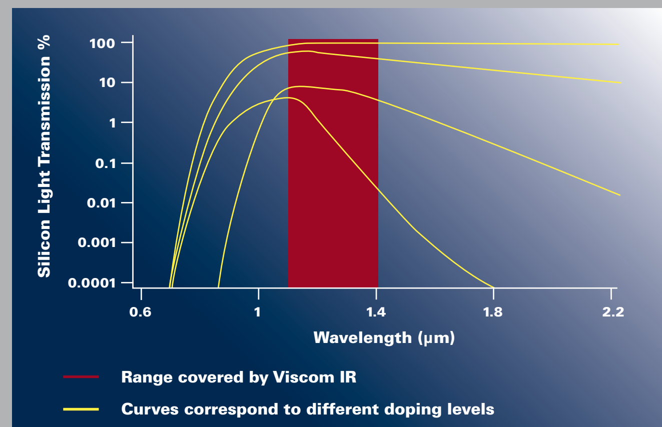


The desktop system MX100IR is the ideal solution for the inspection of **bare wafers, chips, MEMS, wafer bonds, SOI and FlipChips, as well as applications in the photovoltaic area**. Wafers inspected can be composed of various materials: silicon, gallium arsenide, III-V materials and others. In just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

The heart of the **Si-Thru technology** are its **infrared light sources (Semiconductor Light Matrix: SLM)**. These light sources emit light at a specific wavelength (around 1 µm), 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.



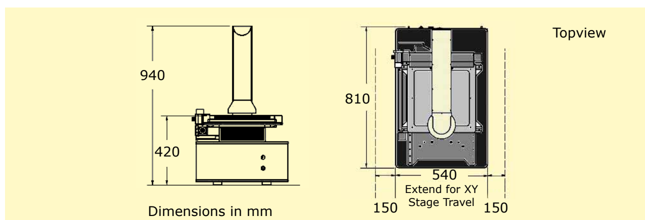
Optimal wavelength range for best transmissibility through silicon

VISCOM vision technology

Technical Specifications

MX100IR

Application		
		Bare wafer, chips, MEMS, wafer bond, SOI, FlipChip, photovoltaics
Inspection mode		
		Automatic inspection algorithms using user-defined pass/fail criteria
		Possibility of „Pass/Fail“ for each device and wafer, defect classification
		Wafer-level scanning mode
Camera technology		
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
Die-level inspection		
	Device size	Flexible
Wafer		
	Diameter	Up to 300 mm
	Thickness	Up to 2000 µm
	Wafer alignment	Referencing to fiducials with adjustment for rotation and translation
Inspection speed		
		Several minutes per wafer
Options		
		Configurable image size
		Configurable illumination, multiple options
		Customer-specific vacuum chuck or other mechanical fitting
Other system data		
	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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