

# iX7059 Module Inspection



More Process Efficiency with 3D X-ray and Integrated CT

## Strong Performance for Highest Quality Demands

As a result of their high degree of efficiency, power semiconductors such as IGBTs are successfully used in electric drives as well as for the transmission of high voltages / DC voltages in the field of renewable energies. Manufacturers and end customers alike place requirements on efficiency, performance and safety, so flawless, durable functionality is the key to ensuring these requirements can be met in equal measure.

The iX7059 Module Inspection 3D X-ray system offers seamless, reliable quality assurance in semiconductor production: The fully automated 3D X-ray inspection with integrated computer tomography uses powerful radiographic technology to deliver exact inspection images of layers that are easy to classify. Its broad inspection scope extends to damaged, twisted, missing and incorrect components, THT solder joints, and concealed blow holes (voids) in surface soldering. The quality of each individual solder joint of the wired components determines whether overheating and consequently short circuits could occur due to a lack of heat dissipation, which must be avoided.

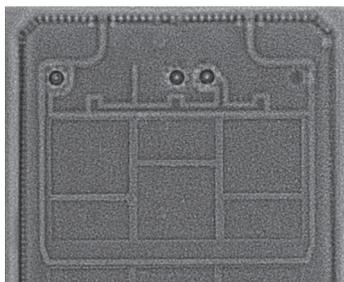
The compact X-ray system is designed for a space-saving inline setup and offers flawless handling of frame-based power modules or components on workpiece carriers. Thanks to the intelligent networking of the Viscom X-ray system within the production line, processes and quality are optimized over the long term – exactly as required in a smart factory.

**Reliable inspection for complex and encased power components thanks to powerful X-rays**

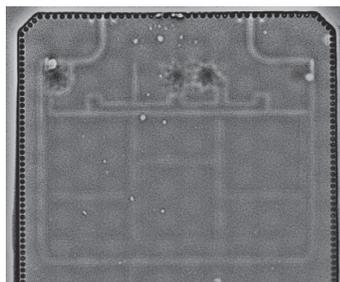
**Precise solder joint inspection on IGBT modules and SiC chips protects against overheating**

**Intelligent void check with measurement of the air inclusions for flawless heat dissipation**

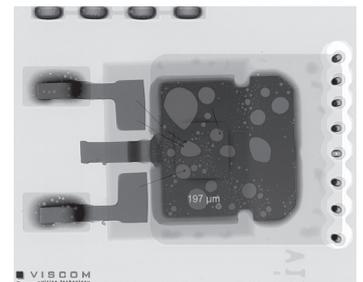
**Rapid handling of workpiece carriers and soldering frames enabling highest throughput rates**



Solder joint inspection of chip layers



Solder joint inspection of DCB layers

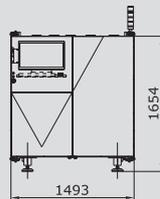


DPAK with orthogonal radiation

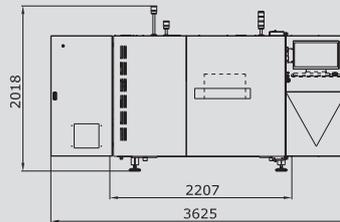
# Technical Specifications



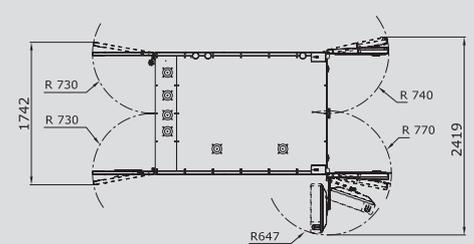
Front view



Side view



Top view



Dimensions in mm

## iX7059 Module Inspection

<b>X-ray technology</b>	X-ray tube	Sealed microfocus X-ray tube
	High voltage	130 kV (up to 180 kV optional)
	Tube current	500 $\mu$ A
	Detector	Flat panel detector type FPD T2 (FPD T3 optional), 14-bit grayscale depth
	Resolution	9.5 - 25 $\mu$ m/Pixel
	3D image capture mode	Evolution 4 as standard, Evolution 5 optional for unique dynamic image recordings
	X-ray cabinet	Designed to meet requirements for fully protected devices in accordance with the German Radiation Protection Act (StrlSchG) and the German Radiation Protection Ordinance (StrlSchV). Radiation leakage rate < 1 $\mu$ Sv/h
<b>Software</b>	User interface	Viscom vVision/EasyPro
	Statistical process control	Viscom vSPC/SPC, open interface (optional)
	Verification station	Viscom vVerify/HARAN
	Remote diagnosis	Viscom SRC (optional)
	Programming station	Viscom PST34 (optional)
	Operating system	Windows®
	Processor	Intel® Core™ i7
<b>Handling</b>	Inspection object size	Up to 1000 mm x 660 mm (39.4" x 26") (L x W)*
	Inspection object weight	Up to 15 kg (33 lbs)
	Transfer height	860 - 980 mm $\pm$ 20 mm (33.9" - 38.6" $\pm$ 0.8")
	Width adjustment	Automatic during setup
	Clamping	Pneumatic
	Support area	3 mm (0.1")
	Upper transport clearance	Up to 50 mm (2")
	Lower transport clearance	Up to 50 mm (2")
<b>Other system data</b>	Positioning unit	Synchronous linear motor
	Interfaces	SMEMA, IPC Hermes (optional)
	Power requirements	400 V (other voltages on request), 3P/N/PE, 8 A, 4 - 6 bar working pressure
	System dimensions	1493 mm x 1654 mm x 2207 mm (58.8" x 65.1" x 86.9") (W x H x D)
	Line integration dimension	+30 mm (1.2") on both sides
	Weight	2245 kg (4949 lbs), 2810 kg (6195 lbs) for 180 kV option

\*Depending on the configuration

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