



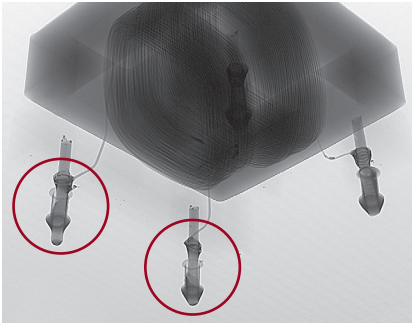
Automatic  
X-ray Inspection  
for Large  
Assemblies on  
Workpiece Carriers



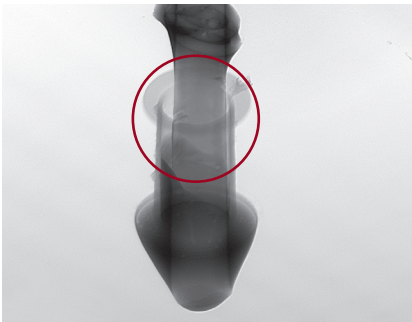
## **iX7059 Heavy Duty Inspection**

High-precision X-ray system with  
fast inline handling of heavy objects

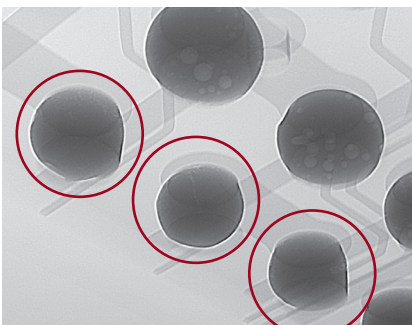
# Fully Automatic Inspection for Solid Inspection Objects on Workpiece Carriers



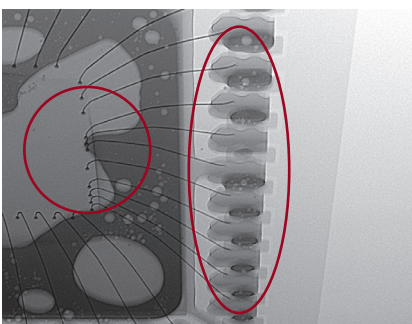
Transformer including THT terminals with varying fill levels



Poor THT solder joint, insufficient degree of filling



Head-in-pillow defect



Poor QFN, insufficient solder volume

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**Reliable inspection for heavy, solid and encased components thanks to powerful X-rays**

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**Precise solder joint inspection of power electronics protects against overheating**

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**Intelligent void check – identifying and measuring air inclusions for flawless heat dissipation**

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**Maximum-speed 3D X-ray technology combined with special handling concept meets the highest throughput requirements**

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**Inline system with minimal footprint**

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**Intuitive operating software for fast programming and extremely simple verification**

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**Service, hotline support and remote maintenance worldwide**

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Power electronics are a key component in the fields of electromobility, telecommunications and renewable energies. Fully automated 3D X-ray inspection is the first choice when it comes to ensuring that high-power electronics components function perfectly. Ultimately, targeted inspection is the only way to guarantee the flawless product quality needed to ensure the necessary high efficiency and functional reliability over the long term. iX7059 Heavy Duty Inspection is an advanced inline X-ray solution that uses innovative inspection technology and a special handling concept to inspect electronic assemblies and mechanical components on goods carriers.



**Invest in cutting-edge 3D X-ray technology, custom-designed for the requirements of power electronics, e.g. especially for electric vehicles (EV)**

The ix7059 Heavy Duty Inspection was designed especially for high-precision, rapid inspection of large assemblies including, for example, high-voltage/power electronics which are integrated in sensitive and safety-relevant end products. Essential criteria include here perfect safety, lasting functionality and high reliability. The machine is based on a compact system design, **perfect-fit transport** for large, heavy inspection objects on workpiece carriers and uniquely powerful 3D X-ray technology with **high levels of radiation**.



Special transport concept for handling assemblies on workpiece carriers or in solder frames

Depending on the application, the complex inspection objects can be irradiated with 130 kV or, as an option, up to 180 kV. As a result, the high-performance X-ray tube can be used to reliably inspect extremely solid electronics without damaging the components. The 3D technology produces the **best analysis results** based on the uniquely fast image acquisition approach **Evolution 5**.

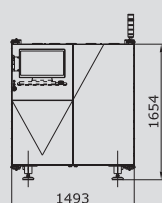
In cases where high currents are flowing or are converted, defective solder joints can subsequently lead to overheating if they are too slender, for example. Hollow areas, known as voids, in surface solder joints, can lead to overheating if there is an excessive number of them or their diameter is too large. The **broad inspection scope** of the ix7059 Heavy Duty Inspection system extends to damage, twisted, missing or incorrect components, concealed blow holes/voids as well as the degree of filling and pin heights of THT solder joints.

The high-precision system stands out thanks to a resolution of 8  $\mu\text{m}$  to 30  $\mu\text{m}$ , depending on the configuration. The **integrated computer tomography** (optional) delivers excellent images of layers in premium quality, making verification very easy. Inspection objects and workpiece carriers with dimensions of up to 500 mm x 500 mm and a **weight of up to 40 kg** can be inspected for all defects, completely automatically and at high throughput rates. The system can be seamlessly integrated into the production line or final assembly line, and networking to **implement smart factory concepts** is also an option.

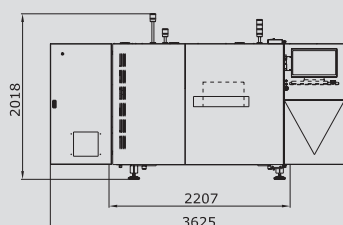
# Technical Specifications



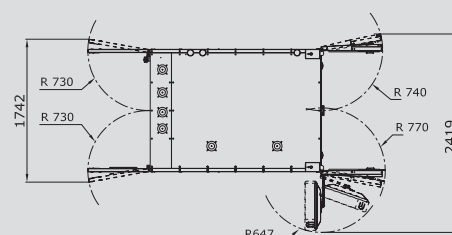
Front view



Side view



Top view



Dimensions in mm

## iX7059 Heavy Duty 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	300 µA (500 µA)
	Detector	Flat panel detector type FPD T2 (FPD T3 and T4 optional), 14-bit grayscale depth
	Resolution	8 - 30 µm/pixel*
	3D image capture mode	Evolution 4 as standard, Evolution 5 and Evolution 6 optional for unique dynamic image recordings
	X-ray cabinet	Designed to meet requirements for fully protected devices in accordance with German Radiation Protection Act (StrlSchG) and German Radiation Protection Ordinance (StrlSchV). Radiation leakage rate < 1 µSv/h
<b>Software</b>	Detector configuration	1 FPD on xy-table
	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®
<b>Inspection object/ workpiece carrier handling</b>	Processor	Intel® Core™ i7
	Inspection object size	Up to 500 mm x 500 mm (19.6" x 19.6") (L x W)*
	Inspection object weight	Up to 40 kg (88.2 lbs)
	Transfer height	860 - 980 mm ± 20 mm (33.8" - 38.5" ± 0.7")
	Width adjustment	Via manual adjustment
	Support area	50 mm (1.9")
<b>Other system data</b>	Transport clearance	150 mm (5.9") as standard, more on request
	Positioning unit	Synchronous linear motor
	Interfaces	SECS/GEM, 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 (58.7" x 65.1" x 86.8") (W x H x D)
	Line integration dimension	+30 mm (1.1") on both sides
	Weight	2500 – 3000 kg (5511.5 – 6613.8 lbs)*

Specifications and other system information are subject to change without notice and may differ from the information displayed at the time of ordering.

\*Depending on the configuration

Our international subsidiaries and representatives can be found at: