

High-speed CT X-ray automated inspection system
VT-X850

OMRON

The High Speed CT X-ray Inspection System Designed for Thick or Heavy PCB Assemblies



"Non-Destructive Cross-Section

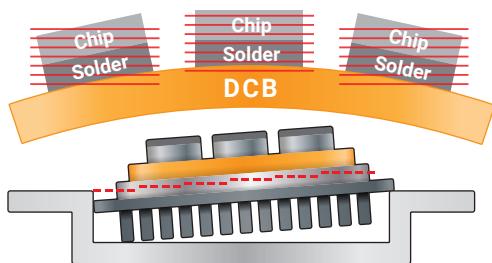
Increased Inspection Capability

The VT-X850 features a high-power X-ray tube capable of inspecting challenging components with thick heatsinks or shielding. Additionally, its heavy capacity conveyors allows for thick assemblies to be handled with ease.

Industry	SMT (ADAS/EV/5G/Generative AI/Data Center)	Assembly process (eAxe/OBC/IGBT)
Recommended type	VT-X750	VT-X850
Inspection object	 VT-X750	 VT-X850
		<p>VT-X850 Characteristics</p> <ul style="list-style-type: none">Top clearance max. 255mmBottom clearance max. 80mmCapable of transportation products  <p><small>*A jig may be required depending on the item being inspected.</small></p> <p><small>Max. load: 40.0kg, Workpiece size: 615 × 515 mm</small></p>

Intelligent Inspection

Enhanced warpage compensation behaves as a countermeasure against thermally warped substrates. High-quality and precise inspection is maintained by automatically adjusting the inspection planes.



Designed for Production

Driven by Omron's refined motion control, the VT-X850 captures fast 3D-CT inspection results regardless of sample complexity. The conveyor handling system allows for in-line installation.



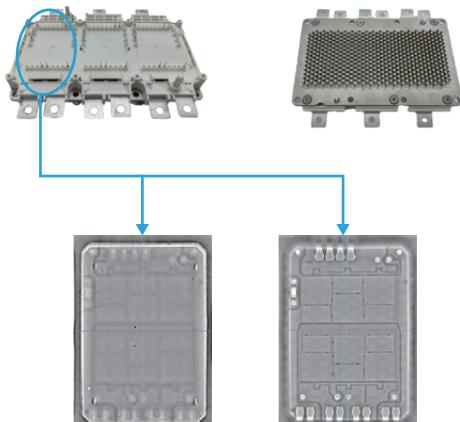
Inspection of hidden structures"

Unparalleled Capability

High-Powered Inspection Examples

The VT-X850 ensures accurate examination of TIM (thermally conductive layers) at the interface between the part and Pin-Fin. Sophisticated logic enables the inspection of multi-layered assemblies and complex structures.

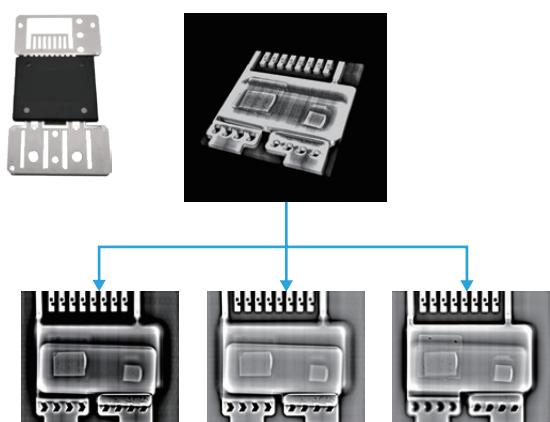
IGBT Modules with Pin-Fin



Precise inspection of the joint surface without being affected by Pin-Fin reflection noise, etc.

Accurate inspection of the interface between Pin-Fin and TIM layers

Power card



Capable of inspecting multiple layers throughout the sample in a single CT-scan

Complex Assembly Inspection

EV Power module



Enables solder filling inspection of substrate joints and inserted parts



Through-hole inspection (image diagram)

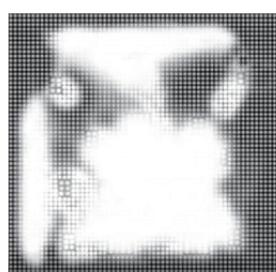
Barrel Fill and Wettability



AI Designed for X-ray Inspection

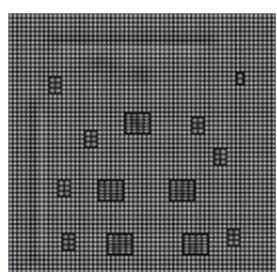
Omron's AI technology learns from provided data sets to effectively eliminate noise and identify crucial solder features producing reliable inspection results.

Before AI



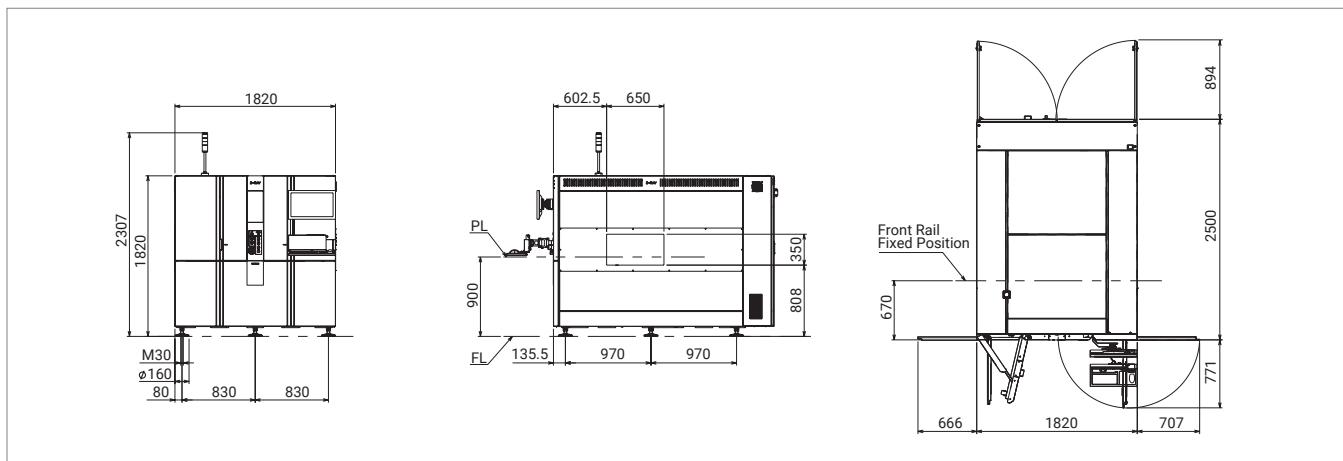
Accurate inspection is difficult due to the influence of noise.

After AI



Identify object only

Outline dimensional drawing



Hardware Configuration/Functional Specifications

Item	Description		
Model	VT-X850		
Type	T1	T2	T3
Inspection object	Power devices, etc.	Power device, Inserted components, Press-fit, Connectors, etc.	Inserted components, Press-fit, Connectors, etc.
Inspection items	Voids, bridges, through-hole solder filling, foreign matter/solder scraps, presence/absence of leads, etc. (selectable depending on the object to be inspected)		
Imaging system	Imaging system	3D-slice imaging by using parallel CT	
	Imaging resolution	15, 20, 25, 30µm Selectable by inspection target	25, 30µm Selectable by inspection target
	X-ray source	Micro-focus closed tube	
	X-ray detector	Flat panel detector	
Inspection target	Workpiece size	150×100±0.2 ~ 610×515±0.2mm	
	Workpiece thickness	1.00mm~5.00mm	
	Workpiece weight	Less than 40.0kg	
	Workpiece height*	95mm	230mm (Optional: 265mm)
Main body	Dimensions	1,820 (W) ×2,500 (D) ×1,820 (H) mm (excluding protrusions, signal towers, and displays)	
	Weight	Approx. 5,500kg	
	Conveyor height	900mm±20mm	
	Power supply	Single phase 200/208/220/230/240 VAC, 50/60Hz	
	Rated power	3.6kVA	
	X-ray leakage	Less than 0.5µSv/h	
	Air supply	0.4~0.6MPa	
	Safety standard	CE, UKCA, KC	

*(including the sum of top and bottom, warp, deflection, and internal board)

- The application examples described in this brochure are for reference only. Please check the functions and safety of the equipment before using it.
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