NEW

VT-X700-E, VT-X700-L

OMRON

Best quality @min.Q-cost

High-speed automated X-ray CT inspection system

realizing

Market Trends and Issues

Miniaturization

Lightweighting

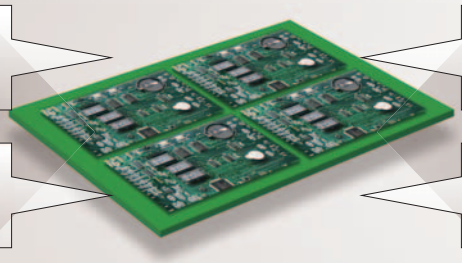
Density enhancement

The higher the engineering demands,
the greater the challenge in Jisso (surface mounting) design.

Compromised solder joint strength

Miniaturized chips

Narrow pitches



Bottom surface electrodes (BGA or CSP)

Shield mounting

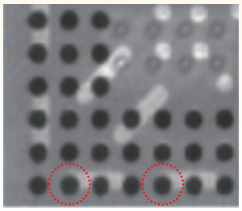
Enhanced need of hidden joint inspection

Solder joint reliability must be ensured
while overcoming various design constraints.

Omron's X-Ray Inspection System with 3D-CT Method

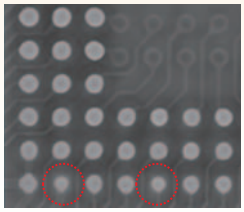
The 3D-CT method enables the inspection of indistinct shapes which 2D or pseudo CT cannot detect.

2D method (transparent) image

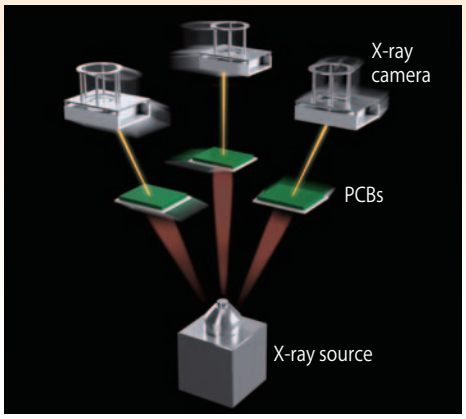


No difference
from quality product

VT-X700 CT image



Clear difference
from quality product



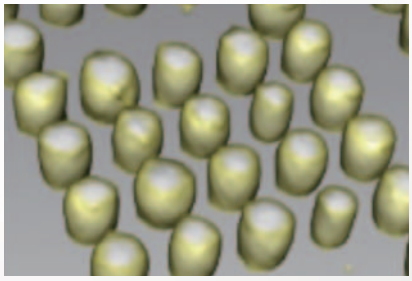
Making the impossible in design a reality!

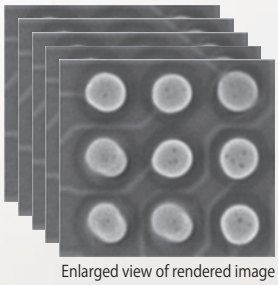
- Bottom surface mounting (Partial mounting e.g. on a BGA bottom is now possible)
- Sufficient solder fillet shape is ensured even for hidden joints
- Enhanced application of packaged components

Pinpoint Inspection

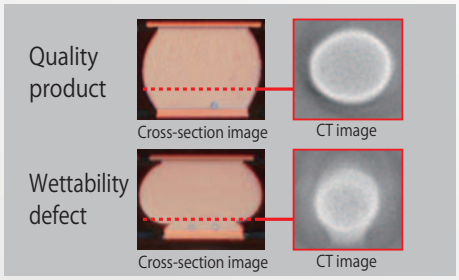
3D-CT Method

The cross-sectional images of relevant inspection targets can be easily selected from abundant camera-image libraries to ensure precise fault detection.





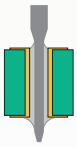
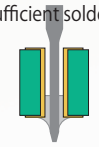
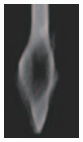
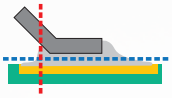
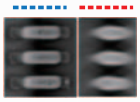
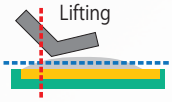
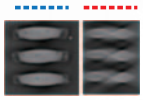
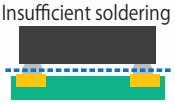
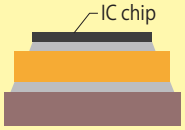
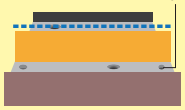
Enlarged view of rendered image



Full coverage

High-Output X-Ray Source

Inspection of large-thickness PCBs and power devices is possible by combining a proprietary CT structuring technology with a high-output X-ray source.

Component types	Normal	CT image	Defect	CT image
Through Hole Device (THD)			Insufficient soldering 	
Lead components Transistors, gull-wing type (SOP • QFP)			Lifting 	
QFN			Insufficient soldering 	
Chips			Insufficient soldering 	
Power devices (e.g. IGBT, MOS-FET)	IC chip 	* 3D graphic image 	Void 	

: Imaging cross section

* The 3D graphic images used in this catalog were created using "VGStudio" from Volume Graphics GmbH.

Compatibility with L-Sized (610 mm × 610 mm) PCBs

Compatible with large-sized PCBs such as those used by network base stations.

High-speed

10% Reduction in Inspection Tact Time (Internal Comparison)

World's highest CT speed* thanks to our patent-approved technologies.
New imaging system reduced inspection tact times by 10% compared with conventional systems.
Enabled the complete inspection of all components (almost impossible by visible light-based inspection).

* Based on an internal research conducted in January 2015.

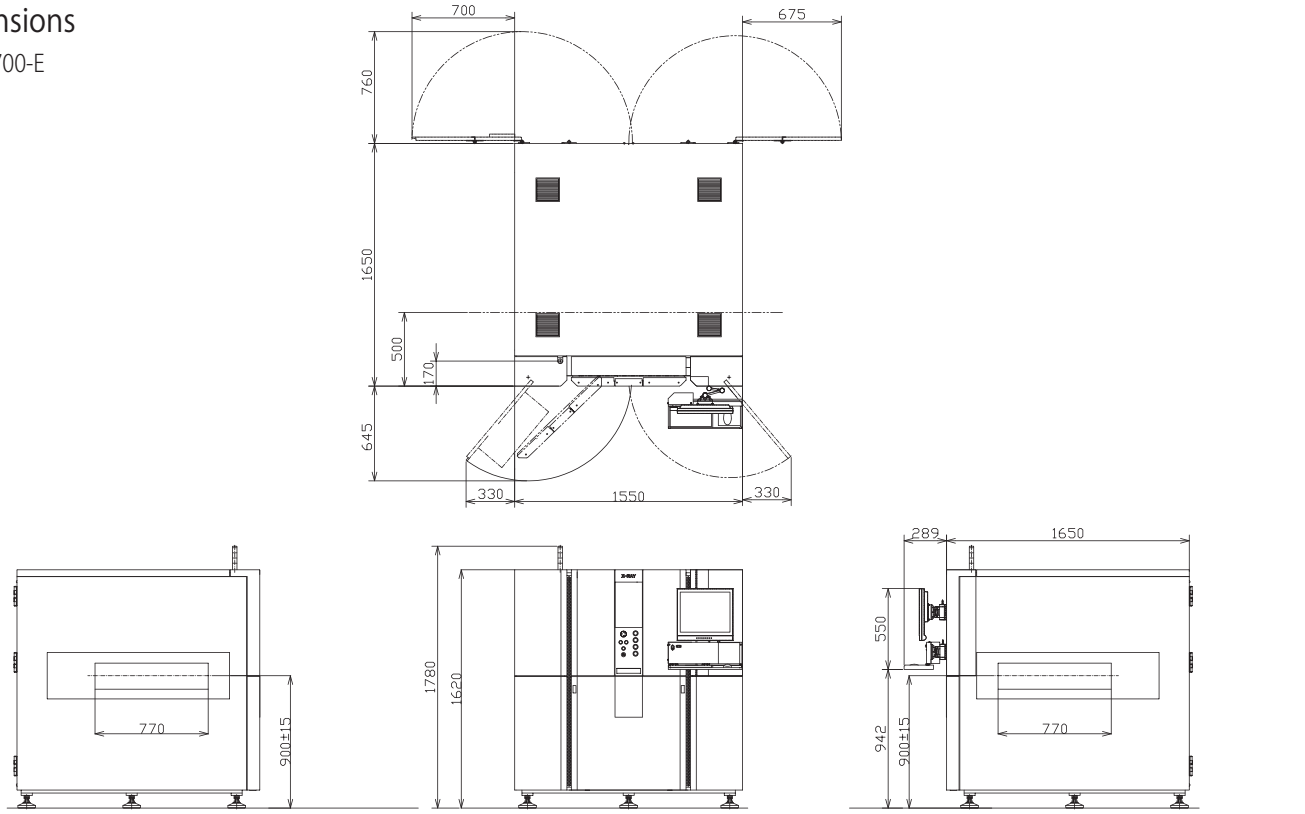
Specifications

■ Hardware configuration/function specifications

Item		Description	
Model		VT-X700-E	VT-X700-L
Inspected components		BGA/CSP, inserted components, SOP, QFP, transistors, R/C chips, bottom-side terminal components, QFN, Power devices	
Inspected items		Openings, non-wet, solder amount, shifting, foreign object stuck, bridging, lead presence, etc. (selectable to suit detected item)	
Imaging specifications	Imaging method	3D-slice imaging using parallel CT	
	Resolution	10, 15, 20, 25 or 30 μm (selectable to suit detected item)	
	X-ray source	Micro-focus closed tube (130 kV)	
	X-ray detector	Flat panel detector	
Inspected PCBs	Size	M-size PCB (50 mm x 50 mm to 330 mm x 255 mm); thickness: 0.4 mm to 3.0 mm	PCB (50 mm x 50 mm to 610 mm x 610 mm); thickness: 0.6 mm to 7.0 mm
	Weight	2.0 kg or lighter (with components mounted)	12.0 kg or lighter (with components mounted)
	Mounted component height	Top: 50 mm or shorter; bottom: 20 mm or shorter	
	Warpage/Flexure	2.0 mm or less	3.0 mm or less
Device specifications	Dimensions	1,550(W) x 1,650(D) x 1,620(H)mm	2,180 (W) x 2,500 (D) x 1,720 (H) mm
	Weight	Approx. 2,920 kg	Approx. 5,250 kg
	PCB transfer height	900±15 mm	
	Power supply voltage	Single phase, 200/210/220/230/240 VAC (± 10%), 50/60 Hz	3 phase, 200/210/220/230/240 VAC, 380/405/415/440 VAC (± 10%), 50/60 Hz
	Rated power	3.1 kVA	4.7 kVA
	X-ray leakage	Less than 0.5 μSv/h	

Dimensions

■ VT-X700-E



* Contact Omron's sales representative for the VT-X700-L external dimensions.

- **This document provides information mainly for selecting suitable models. Please read the Instruction Sheet carefully for information that the user must understand and accept before purchase, including information on warranty, limitations of liability, and precautions.**
- **This product may cause interference if used in residential areas.**

OMRON Corporation

INDUSTRIAL AUTOMATION COMPANY
INSPECTION SYSTEMS BUSINESS DIVISION
SALES DEPARTMENT
Shinagawa Front Bldg. Conference 7F
2-3-13 Kounan Minato-ku Tokyo
108-0075 JAPAN
TEL +81-3-6718-3550 FAX:+81-3-6718-3553

OMRON INDUSTRIAL AUTOMATION (CHINA) CO., LTD.
F20,TowerA,NEO Building,6011ShennanAvenue,
Futian District, Shenzhen, Guangdong
518048, China
TEL: +86-755-8359-9028 FAX: +86-755-8359-9628

Omron AOI Business Europe, Omron Europe B.V.
Zilverenberg 2, 5234 GM 's-Hertogenbosch, The Netherlands
TEL:+31 (0)736-481811 FAX: +31 (0)736-481879

OMRON ELECTRONICS LLC
2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A
TEL:+1-847-843-7900 FAX:+1-847-843-7787

OMRON ELECTRONICS KOREA CO.,LTD.
21F, KyoboTower B Wing, 465, Gangnam-daero,
Seocho-gu, Seoul, Korea 137-920
TEL: +82-2-3483-7789 FAX: +82-2-3483-7788

OMRON ASIA PACIFIC PTE LTD
438A Alexandra Road #05-05/08 (Lobby 2)
Alexandra Technopark Singapore 119967
TEL:+65-6835-3011 FAX:+65-6835-2711

Authorized Distributor:

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