

GE
Sensing & Inspection Technologies

The New X-Cube

Radioscopic Inspection System

Easy-to-use, flexible, fast and capable of producing high quality images.



NEW

Now with
phoenix|x-ray CT Technology



GE imagination at work

High Quality, Fast and Flexible X-Ray Inspection

The X-Cube is already well known as a complete radiographic system contained within a small footprint. It offers a choice of proven X-ray sources, a source manipulation system and a component clamping table within a shielded chamber, an ergonomically designed control desk, an image intensifier to convert the X-rays into a standard video image and the integrated image enhancement system VISTAPLUS.

However, this field-proven product has now been extensively redesigned and re-engineered to ensure that it is now even more strongly focused on improving user productivity. As a result, the new X-Cube is faster, more flexible and easier to use, while allowing simpler sharing of the high quality images it generates.

A Host of New Features ...

- **The new X-Cube is faster in virtually every step in the X-ray process**

Faster Cycle Times

Very fast drives, which are taken from the robotic systems of Fanuc, mean that workpiece manipulation is faster and the opening and closing of door is faster.



X-Touch® technology in the touch control panel, again from Fanuc, simplifies and speeds up all control operations. Automatic digital image processing offers real time savings. Consequently, overall cycle times are much faster.

Faster Set-Up Times

An absolute measuring system ensures that there is no need to reset to zero at the start up of the system. The measuring system is active from switch on.

User inspection programs are also easier, and hence faster, to write.

- **Greater flexibility to meet a wide variety of user inspection tasks**

Greater Manipulation Flexibility

The swivel arm can now be swivelled through a sweep of 90°.

Greater Resolution Flexibility

The X-Cube is available with either 225 kV or 160 kV X-ray tubes, as standard and there is a range of optional detectors. Consequently, resolution can be matched to suit particular user tasks.

- **Enhanced Image Quality and Image Sharing**

Latest Image Enhancement System

The X-Cube combines the Vistalux image intensifier with the versatile Vistaplus image enhancement system. This allows real-time integration and real-time averaging of very high quality images.

Latest Image Interpretation Tools

Efficient analysis of inspection results is ensured by the latest integrated application tools, including display of reference images, calculation of defect areas and interactive image measurement.

Network Compatible

The image enhancing software is LAN-compatible and also allows images to be sent by e-mail, so that remote expert assessment or storage can be carried out. Inspection documentation can be produced at the workstation or at some connected location.



• Easy-to-Use

Intuitive user guidance with teach and learn capabilities make the new X-Cube extremely easy to operate. New inspection programs are also very easy to input and can be put in place in less than 30 seconds.

• Low Operating Costs

Requiring a very small footprint and featuring plug-and-play installation, the X-Cube also needs very little maintenance, with its sealed-for-life gearboxes. It is totally electrically operated, with no pneumatics or hydraulics.

• Safe investment with CT ability

The new optional upgrade package for combined 2D / 3D (computed tomography) operation will convert the X-Cube into a versatile testing machine that uses 3D Cone beam-CT for detailed x-ray inspection. The acquisition-, volume reconstruction and visualisation software runs on the integrated computer platform and provides a detail resolution of about 0.1 mm depending on the sample size.

Feature Summary

- Faster operating speeds
- Greater flexibility
- Enhanced image quality
- Network compatible
- Intuitive user guidance
- Easily programmable for repetitive tasks
- Small footprint and easy installation
- Low maintenance

... For a Wide Range of Applications

The X-Cube finds application in all areas of industry where there is a need for fast and effective radiographic inspection of castings, steel components, plastics, ceramics and special alloys. Its versatility means that it can be used equally well in a production department or a research and development facility and in incoming materials inspection as well as for failure analysis. Its robust design and its rugged software cage fit it for use on busy shopfloors and it complies with all important international safety standards.

The X-Cube is available in two models, the X-Cube Compact and the X-Cube XL. Each model is offered in a 160 kV and a 225 kV version, has a choice of workpiece holding tables and can handle inspection workpieces up to 100 kg in weight. However, the XL has a larger inspection cabinet, so that it can be used to inspect parts up to 800 mm diameter by 1500 mm high, compared with the 600 mm diameter and 900 mm height capacity of the Compact model.

Whether inspecting valves for the oil and gas sector, turbine blades for aerospace or aluminium castings for the automotive industry, the new X-Cube offers the complete solution to effective and productive radiographic inspection.

Technical Specifications

TM-Family	X-Cube							
Type	Compact				XL			
Energy (Max.)	160 kV		225 kV		160 kV		225 kV	
Maximum Part Size (Ø x Height) (mm)	600 x 900 **		600 x 900 **		800 x 1500**		800 x 1500**	
Maximum Part Weight	100 kg *							
Cabine Size Incl. Backpack (W x D x H) (mm)	2540 x 1700 x 2450		2540 x 1700 x 2450		2800 x 2100 x 3240		2800 x 2100 x 3240	
Weight Cabinet (Approx.)	3900 kg		4800 kg		6300 kg		6300 kg	
Weight Control Panel (Approx.)	300 kg		300 kg		300 kg		300 kg	
	Travel	Speed	Travel	Speed	Travel	Speed	Travel	Speed
Horizontal Motion Across the X-Ray Beam (Max.)	650 mm	30 m/min.	650 mm	30 m/min.	850 mm	30 m/min.	850 mm	30 m/min.
External Loading/Unloading Position (Max.)	250 mm		250 mm		250 mm		250 mm	
Horizontal Motion, Magnification Axis (Max.)	650 mm	30 m/min.	650 mm	30 m/min.	850 mm	30 m/min.	850 mm	30 m/min.
Focus Detector Distance (FDD)	800 - 1000 mm		800 - 1000 mm		1000 - 1200 mm		1000 - 1200 mm	
Vertical Motion (Max.)	900 mm	28 m/min.	900 mm	28 m/min.	1500 mm	28 m/min.	1500 mm	28 m/min.
Tilt of C-Arm (max.)	± 45°	60°/sec.						
Rotation of Workpiece	n x 360°	200°/s						
Door Opening Time	< 2 sec.		< 2 sec.		< 3 sec.		< 3 sec.	

* Depends on the loading position.

** A higher length of the workpiece is possible, workpiece has to be reloaded and inspected at one loading position.

Connected Loads	3N PE 400/230V 50 Hz, 35 A, TN-S or TN-C-S network
Wattage	Approx. 11 kVA*
Grounding	Separate Grounding for X-ray Device and High-Voltage Generator (< 2 Ω) with a Minimum of 6 mm ²
Transport Means	Complete Radiation Protection Cabin with Fork-Lift Control Panel (On Palett) with Fork-Lift
Ambient Conditions	Ambient Temperature +10° C until +40° C
(Acc. to IEC 60 601-1)	Air Pressure 700 hPa until 1060 hPa

* Depending on Used X-ray Tube

Note: : The radiable test volume varies according to the total wall thickness and the material density

National and international norms

The **X-Cube family** complies among other things with the following national and international regulations and norms:

— CE conformity	— EN 1050	— DIN 54113 RøV
— EN 12100-1	— EN 60529	— UVV BGV A1
— EN 12100-2	— EN 60204-1	— UVV BGV A3
— EN 418	— EN 61000-6-2	— UVV BGV A4
— EN 574	— EN 61000-6-3	
— EN 954-1	— EN 61000-6-4	



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