

HCVG viZual™

HIGH ENERGY X-RAY GANTRY SERIES WITH MATERIAL DISCRIMINATION



Feature Highlights

- Inspect loaded trucks, containers and vehicles at ports, airports and border crossings
- High throughput of up to 23 trucks per hour
- Steel Penetration up to 400mm (15.7in) @ 6MeV
- Small footprint and security perimeter
- Advanced technology, viZual, provides a high performance imaging capability with organic/inorganic material discrimination and colorization in a single scan

The HCVG viZual series of X-ray screening systems is designed to optimize security checks at ports, airports and border crossings. These systems are used to inspect whole trucks (cabin included), containers, and vehicles for threats such as explosives, narcotics, weapons of mass destruction (WMDs), contraband, as well as manifest verification, reducing the need for manual inspection.

The HCVG viZual series systems use an accelerator delivering an interlaced energy from 4/6 MeV, allowing for steel penetration ranging from 320mm (12.6in) to 400mm (15.7in) while providing a high throughput of up to 23 trucks per hour. 3 models are available: the HCVG 6032 viZual, the HCVG 6035 viZual and the HCVG 6040 viZual.

The system's high performance imaging capability, known as viZual technology, provides the operator with detailed radioscopic images of container or vehicle and its contents with organic and inorganic material discrimination and colorization based on atomic number, allowing for rapid and reliable results in a single scan.

When equipped with the optional iCmore radioactivity capability, the HCVG viZual simultaneously carries out both the X-ray inspection and an analysis to detect the presence of radioactive gamma and/or neutron materials within the container or vehicle.

The modular design of the HCVG viZual provides the ability for the system to be relocated, adapting to the customer's specific needs. The HCVG viZual is designed for ease of operation requiring a minimal footprint and external infrastructure while still integrating the most demanding international security screening requirements.

General specifications

Nominal energy (MeV)	4/6 MeV Interlaced
Scanning principle	The gantry X-ray system moves while the container or vehicle remains stationary

System specifications

Motorization	Electric motor piloted by frequency controller
Weight	27 tons (26.57 tons UK/29.76 tons/US)
Scanning speed	24m/min (80fpm)
Footprint [W x L x H]	11m x 31m x 6.5m (36' x 101.7' x 21.3')
Scanning height	From 0.4m to 4.7m (1.3' to 15.4') – no corner cut-off for 2.5m (8.2') width
Maximum height below gantry	4.8m (15.7')
Installation time	Six weeks (depending on configuration)
Inspection throughput	23 trucks/hour
Minimum crew requirement	1 image operator, 1 traffic controller
Operating temperature	-20°C to +40°C (-4°F to +104°F)
Relative humidity	Up to 100%
Electrical consumption	Average consumption 60 kVA
Max. dimensions [H x W x L]	4.7m x 3.5m x 19m (15.4' x 11.5' x 62.3') standard/up to 45m (148') long optional
viZual	Dual energy material discrimination. Organic/inorganic/mixed material colorization based on equivalent atomic numbers

Computer system

Image workstation (RIW)	2 workstations equipped with one 24in flat screen each
Image analysis tools	Contrast and edge enhancement, filters, marks and annotations, histogram equalization, review of stored images and manifest data for comparison, image conversion to standard formats, objects measurement
Database workstation (DBW)	SQL database
Data storage	RAID 5-up to 100.000 images
Supervision station (CMW)	One 24in flat screen
Printer	Color laser printer
Network	DMS Ready (Data Management System)

Radiation protection safety

Surveillance	Access controlled by infrared barriers
Markings	Three three-color indicator lamps, sirens & regulatory displays
Regulations	In compliance with WHO, ICRP 103 ('09 update of ICRP 60), EU & US regulations

Health & security

Dose in the environment	Less than 0.5µSv/hour (average outside safety area) and less than 1mSv/year
Dose rate in operator room	Less than 0.5µSv/hour (average) and less than 1mSv/year

Options

iCmore radioactivity gamma	Automatic radioactive material detection (gamma)
iCmore radioactivity gamma & neutron	Automatic radioactive material detection (gamma, neutron)
Radiation protection	Concrete walls, shielding doors
Operator bungalow	Air conditioned, natural lighting
Two-vehicle scan	Scan of two trucks in one pass
Image workstation (RIW)	Station(s) with 24in flat screen
Check-In workstation (CIW)	Station(s) with manifest and data recording scanner
Re-Check workstation (RCW)	Workstation to re-check suspicious images (easier searching)
Check-out workstation (COW)	Station(s) for recording and checking at end of treatment

Configurations	6032	6035	6040
Steel penetration	320 mm (12.6in)	350 mm (13.8in)	400 mm (15.7in)
Safety area fencing [W x L]	40m x 39 m (131' x 128')	N/A	N/A
Safety area [W x L] (walls optional)	11m x 39 m (36' x 128') w/ one wall	11.5 m x 57 m (38' x 187')	N/A
Safety area [W x L] (walls & door optional)	N/A	11.5 m x 33 m (38' x 109')	12 m x 34 m (39' x 112')
Safety volume [W x L x H]	45 m x 46 m x 23 m (147.6' x 150.9' x 75.5')	63 m x 54 m x 33 m (207' x 177' x 109')	88m x 127m x 60m (289' x 417' x 197')
Absorbed dose per scan @ 24m/min	Less than 10µSv	Less than 60µSv	Less than 400 µSv

For product information, sales or service, please go to www.smithsdetection.com/locations

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