

# HCVG™

## HIGH ENERGY X-RAY GANTRY



### 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 280mm (11in) @ 4MeV**
- **Small footprint and security perimeter**
- **Requires minimal system operators**

The HCVG 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 uses a 4MeV accelerator, providing up to 280mm (11in) of steel penetration and a high throughput of up to 23 trucks per hour.

The system's high performance imaging capability provides the operator with detailed radioscopic images of container or vehicle and its contents, allowing for rapid and reliable results.

When equipped with the automatic radioactive material detection - ARD (optional), the HCVG 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 provides the ability for the system to be relocated, adapting to the customer's specific needs. The HCVG is a standalone unit which requires limited external infrastructure. The system is designed for ease of operation with a minimal footprint, while still integrating the most demanding international security screening requirements.

The HCVG systems have proven to be an indispensable tool for Customs agencies and law enforcement authorities worldwide.

# Technical Data **HCVG**

## General specifications

Nominal energy (MeV)	4MeV
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 0.48m to 4.7m (1.6' 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 24kVA
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

## Computer system

Image workstation (RIW)	Two 24in flat LCD screen workstations
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	14,000 images as standard (RAID disk)
Data archiving	DVD burner
Supervision station (CMW)	One 22in flat LCD 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

ARD™	Automatic radioactive material detection (gamma)
ARD n	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 additional 24in LCD flat screen/manifest screen optional
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
Maintenance workstation (RMW)	Remote maintenance workstation
Training workstation (TS)	Integrated system dedicated to image operator training
Archiving	Portable hard disks, 35 to 90 GB/disk, 350 GB with autoloader
Extended Detection Column	Average scanning height to start 240mm (9.5in) from the ground

## Configurations

Nominal energy (MeV)	4
Steel penetration	280mm (11in)
Safety area (fencing) [W x L]	16m x 38m (53' x 125')
Safety area (optional walls) [W x L]	10.6m x 32m (35' x 105')
Safety volume [W x L x H]	25m x 38m x 15m (82' x 125' x 49')
Absorbed dose per scan	Less than 4µSv

For product information, sales or service, please go to [www.smithsdetection.com/locations](http://www.smithsdetection.com/locations)

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