

# HCVS™

## HIGH ENERGY X-RAY STATIONARY 9000 SERIES



### Feature Highlights

- **Inspect loaded trucks, containers, and vehicles at ports, airports and border crossings**
- **Available in single and dual-view configurations**
- **High throughput of up to 20 trucks per hour**
- **Steel penetration up to 410mm (16.1in) @ 9MeV**
- **Small footprint and security perimeter**

The HCVS 9000 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) and contraband, as well as manifest verification, reducing the need for manual inspection.

The HCVS systems use an accelerator delivering an energy of 9MeV, allowing a steel penetration of 410mm (16.1in) while providing a high throughput of up to 20 trucks per hour.

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

configuration, radiosopic images deliver container or vehicle loads with organic and inorganic material discrimination and colorization based on atomic number.

When equipped with the optional automatic radioactive material detection capability (ARD), the HCVS 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 HCVS is available in either single view or dual view. The dual view version provides both a top and a side X-ray image of the truck scanned, assisting in the detection and exact location of suspicious items.

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

# Technical Data **HCVS**

## General specifications

Nominal energy (MeV)	9MeV
Scanning principle	Container or vehicle is transported via conveyor through the stationary X-ray screening system

## System specifications

Inspection throughput	20 trucks / hour
Minimum crew requirement	1 image operator, 1 system operator & 1 check-in operator
Operating temperature	-20°C to +40°C [-4°F to +104°F]
Storage temperature	-30°C to +50°C [-22°F to +122°F]
Relative humidity	Up to 100%
Electrical consumption	Average consumption: 135 kVA minimum
viZual configuration	Material discrimination on side view only. Organic/inorganic/mixed/ material colorization based on atomic numbers

## Computer system

Image workstation (RIW)	Dual view - 3 x 24in flat LCD screen workstations • Single view - 2 x 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	8,500 images as standard (RAID disk) - 4,250 for the viZual version
Data archiving	DVD burner
Supervision station (CMW)	One 22in flat LCD screen
Printer	Color laser printer
Network	DMS ready (Dataset Management System)

## Radiation protection safety

Safety area [W x L]	17m x 47m (55.8' x 154.2')
Surveillance	Video surveillance (six color CCTV)
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 cabin	Less than 0.5µSv/hour (average) and less than 1mSv/year

## Building features

Building parts	Scanning building, operators premises, technical rooms & spare parts storage room
Optional building parts	Manual search area & check-in room
Conveyor system	Flat conveyor
Installation footprint [W x L]	17m x 47m (55.8' x 154.2')
Scanning height	4.7m (15.4')

## Inspected vehicle/container

Max. standard dimensions [H x W x L]	4.7m x 3.5m x 20m (15.4' x 11.5' x 65.6')
Max. total weight	60 tons

## Options

ARD™	Automatic radioactive material detection (gamma)
ARD n	Automatic radioactive material detection (gamma, neutron)
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)
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, 560 GB with autoloader

## Configurations

	<b>9041 viZual SV</b> (single view)	<b>9041 viZual DV</b> (dual view)
Side View Nominal energy (MeV)	9	9
Side View Steel penetration	410mm (16.1in)	410mm (16.1in)
Top View Nominal energy (MeV)	-	9
Top View Steel penetration	-	380mm (14.9in)
Absorbed dose per scan @ 24m/min	Less than 128µSv	Less than 256µSv
Radiation protection	Concrete building & shielding doors	Concrete building & shielding doors

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

Smiths Heimann S.A.S., 36, rue Charles Heller, 94400 Vitry sur Seine, France  
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