smiths detection

HCVT™60

RAIL CARGO X-RAY INSPECTION SYSTEM

Feature Highlights

- Helps to intercept dangerous goods and contraband transported by rail
- Automates processes and links to Customs EDI networks and other HCV systems
- Inspects rail cars and wagons travelling at a max speed of 30 km/h
- Ergonomic operator interface, delivering separate images for each wagon
- No radioactive source used to emit X-ray

HCVT 60 is an X-ray inspection solution for analysing rail cars and wagons, providing Customs and security organisations with the tools they need to reveal dangerous or illegal cargo, such as cigarettes, explosives, narcotics and weapons.

With its powerful 6MeV generator, the HCVT 60 can scan trains, travelling at an optimal speed of 15km/hr and can see through 300mm (11.8") of steel.

Our powerful DaiSy software provides operators with access to a variety of customizable image treatments, options and comparison tools to support effective interpretation of images and verification of cargo.

Our Cargo Vision™ operating platform can also be upgraded with additional options, such as automatic container number recognition, for the quick retrieval of associated dataset information.

HCVT 60 can be networked with Customs EDI networks and other HCV systems, to support remote analysis, comparison and knowledge sharing.

General specifications

Nominal energy (MeV)	6 MeV
Scanning principle	Pass through mode. The HCVT 60 remains fixed and the train moves.

Train

Train	One or two locomotives at the front of the train
Track	Single track configuration
Wagon gauge	UIC gauge A, B and C. AAR plate B, C, D, E and F
Maintenance gauge	5m (H) per 2,5m (W)
	3.5m wide, no height limit

System specifications

Train speed during the scan	5 to 30 km/h. The optimal speed is 15km/h.
Behaviour in the wind	Operating system up to 80 km/h, picture scanning degraded for wind speeds above 80 km/h
Minimum height of scanning	0.2m (7¾in)
Wagon gauge scanned without corner cut-off	UIC gauge A, B and C AAR plate B, C and E
X-ray emission duration	5m (H) per 2,5m (W). 5min/h to 60 min/h, to be defined according to the train speed and the maximum length scanned: Maximum train length inspected per hour

X-ray emission duration / Scanning speed	10 min/h	20 min/h	30 min/h
5km/h	830m	1,600m	2,500m
15km/h	2,500m	5,000m	7,500m
30km/h	5,000m	10,000m	15,000m

Throughput	Typical 10 minutes per hour as standard, or 2.5km long train inspected per hour at 15km / h
Staff	1 supervisor, 1 image selection operator and 2 operators for image analysis
Operating temperature	-20 to 40°C (-25 to 40°C or -20 to 55°C in option),-4 to 104°F (-13 to 104°F or -4 to 131°F in option)

Computer system

Image selection workstation (ISW)	1 workstation with one 27in flatscreen
Image analysis workstation (RIW)	2 workstations equipped with one 24in flatscreen each
Image analysis tools	New DaiSy CargoVision software with contrast and edge enhancement, filters, marks and annotations, histogram equalization, review of stored images and manifest data comparison, image conversion to standard formats, objects measurement.
Database workstation (DBW)	SQL database
Data storage	Raid 5 - up to 150.000 images
Printer	A4 color laser printer

Radiation protection safety

Surveillance	6x cameras + radio intercom
Markings	3x color safety lights + siren
Regulations	Compliant with WHO, ICPR-103, EU regulations

Health & security

Dose in the environment	Average <0.5µSv/h <1mSv/year
Dose rate in operator cabin	Average <0.5µSv/h <1mSv/year
Dose rate for locomotive driver	<30nSv/scan @ 15km/h
Dose rate for wagon	<32µSv/scan @ 15km/h

Options

OCR container id	OCR 2 sides

Configurations

Steel penetration (mm) @ 15km/h	300
Safety area (ground to 2,5m) to scan train during 10 min/h maxi 0.5µSv/h in average	30 x 17m (99 x 56ft) with 2 concrete walls
Safety area (ground to 2,5m) to scan train during 10 min/h maxi 0.5µSv/h in average	68 x 97m (224 x 319ft) with a fenced perimeter

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

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