WG IS100XD X-Ray Baggage Scanner

SA Air Cargo Screening Qualified Technology Listed (ACSQTL)

The WG IS100XD is an advanced X-Ray Baggage Scanner capable of detecting organic and inorganic items such as weapons, explosives and narcotics using unique 6 colour software which significantly enhances the operator's ability to identify suspicious items.

The WG IS100XD has a tunnel of 101cm width and 101cm height that will easily accommodate the inspection of luggage and large parcels. It uses a high-resolution x-ray detector array that increases detection sensitivity, improves image resolution and optimises image presentation.

It has a low conveyor height of only 300mm enabling heavy objects to be easily loaded on and off

Applications

- Airports;
- Border crossings;
- Commercial buildings;
- Courthouses;
- Embassies;
- Government buildings;
- Military installations;
- Prisons;
- Security checkpoints.

Real Time Diagnostics

All Westminster X-Ray Systems are equipped with Real-Time Diagnostics, a unique feature which allows users to monitor their machine health status, thus greatly increasing the system lifespan.

6 Colour Imaging

An exclusive standard feature, 6 Colour Imaging enables operators to view screened objects in 6 colours, with each colour correlating to a specific range of Atomic Z-Numbers. 6 Colour Imaging enables operators to achieve optimal material identification and improve throughput with more effective screening technology.

Standard Features

- 6 Colour image display (normal industry standard is only 3 colour);
- 9 Quadrant zoom;
- Auto image archiving 50,000 Images;
- Auto Z-Number measurement;
- Baggage counter;
- Colour and black / white imaging;
- Continuous Scanning;
- Continuous Zoom 2X to 32X;
- Density alert;
- Edge-Enhancement imaging;
- Geometric image distortion correction;
- High penetration function;
- Heavy duty roller castors;
- Image annotation;
- Image Review (100 Images);
- Manual archive;
- Material discrimination;
- Multi-Tier accessibility;
- Network ready;
- Operator training program;
- Organic / Inorganic imaging;
- Picture perfect;
- Print image capable;
- Pseudo Colour;
- Real-Time image manipulation;
- Real-Time self diagnostics;
- Reverse monochrome;
- Vertical zoom panning.

Specifications

Operational Penetration & Sensitivity

- Contrast Sensitivity: 24 Visible levels 4,096 Grey levels;
- Penetration: 37mm Steel typical, 35mm Standard;
- Sensitivity: 40 AWG typical, 38 AWG Standard;
- Spatial resolution: 1.6 mm horizontal, 1.6mm vertical.

X-Ray Generator

- Beam direction: Vertically Downward;
- Cooling: Sealed Di-electric oil bath with forced air;
- Detector: 2,034 Channels in an L-Shaped array;
- Duty Cycle: 100%, no warm-up procedure required;
- Tube current: 1.2 mA;
- Voltage: 180 kv Operating at 165 kv.

Computer

- Backup: Uninterrupted 20 minute power supply;
- Memory: 2GB Ram at 1333MHz;
- Platform: Windows XP Pro;
- Processor: Intel i5, 3.1 GHz, 1333MHz, 6 MB cache;
- Storage: 500 GB HDD;
- Video card: 1 GB Video card (Dual digital display).

Video Display

- Display resolution: 1,600 x 1,200, 24 pixel colour;
- Dual 24" LCD colour monitors.

Environment

- Humidity: Up to 95% Non-condensing;
- Operating temperature: 0°C to 40°C;
- Storage temperature: -20°C to 60°C.

Electrical Connection

- 120VAC, 60 Hz, 15 Amps maximum;
- 198-230VAC 50 Hz, 10 Amps maximum.

Physical

- Bi-Directional conveyor;
- Construction: Custom steel frame / panels;
- Conveyor belt : Seamless low maintenance ;
- Conveyor height: 300mm from floor;
- Conveyor maximum load: 200 kg evenly distributed;
- Conveyor Speed: 0.23 Metres per second in both directions;
- Levelling: Adjustable screw jack levelling feet.
- Motor: Sealed drum, maintenance free;
- Scanner dimensions: L 237cm x W 128cm x H 191cm;
- Scanner weight: 885 kg;
- Tunnel opening: Width 101cm x Height 101cm;

Shipping Crated

- Crated dimensions: L 298cm x W 150cm x H 224cm ;
- Crated weight: 1,105 kg.

Operators

- Operators must log on in order to operate the x-ray machine;
- If networked the operator photograph is automatically displayed on supervisor and system screen at all times while operator is logged on.

Safety / Standards

- Complies with published international health and Safety standards including the U.S. F.D.A. Centre for Devices and Radiation Health standards for cabinet x-ray devices (Federal Standard 21-CFR 1020.40);
- Complies with published international operational standards including the U.S. Federal Aviation Administration standards, "Use of X-Ray Systems" (Federal Standards 14 CFR 108.17 and 14 CFR 129.26);
- Dose per inspection: 0.1 mR typical;
- Film safety is guaranteed for high speed films up to ISO 1600;
- Typical radiation leakage is less than 0.1mR/hr.

Options

- Advanced image archiving 100,000 images;
- ASTM 10 Stepwedge;
- ASTM F0792-01e2 Test case;
- Custom paint finish;
- Entry / Exit roller conveyors, 1 metre & 1.5 metres;
- Foot mat;

- Heavy duty rubbers casters mobility kit;
- Local language support - Arabic, Chinese, French & Spanish & more;
- Radiation meter;
- Remote configuration;
- Remote workstation extension;
- Screener Assist threat detection software;
- Supervisor workstation;
- Suspect search station;
- Threat Image Projection software (TIP);
- Tropical kit up to 50°C operation.

Recommended Options

Threat Image Projection (TIP)

This randomly inserts artificial but realistic x-ray images during the routine baggage x-ray screening operation, When the scanner is in operation scanning a person's luggage and packages the TIP software will occasionally insert a suspicious item i.e. explosive, gun or knife into the scanned image of the item presently passing through the machine if the operator acknowledges the presence of the item, the programme will tell them it is merely a TIP image; if they miss the item the programme will record this against their login, each operator will have an individual logon.

The administrator can change the random frequency of the TIP image insertions' i.e. every 10, 20, 30, 60 items etc passing through the scanner. The TIP programme has a large library of suspicious images that it selects randomly from. At the end of the day / shift the administrator can check the efficiency of the individual operators. TIP is an excellent training and quality tool for continuously assessing individual operator performance.

Screener Assist

This is a real time threat identification operator alert software package that automatically screens for potential explosives and other threats by utilising advanced material classification and atomic density analysis by drawing a coloured ellipse around the area of suspicion. If multiple threats are perceived in a single image, the system will draw multiple ellipses in the suspect areas. The Screener Assist software is designed to assist vigilant operators in locating and identifying threats;

Networking

The WG IS100XD is supplied network ready; it can be easily integrated to any pre-existing operational infrastructure and allows the operation of the machine to take place regardless the distance and location.

Administrators have a choice in deciding how to best implement their connectivity without any compromise. The following Options require a networking capability:-

- Remote Operator Workstations;
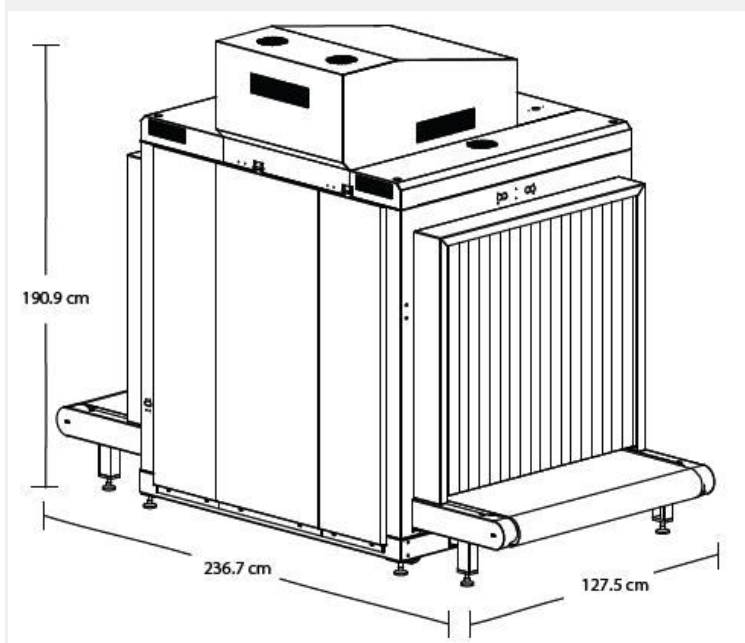- Supervisor Workstations;
- Suspect Search Stations.

Please see the associated Westminster document:- "Networking WG IS X-Ray Scanners" this document describes WG IS Networking and the three options above in detail.

Operator Image Analysis

- 2x to 32x zoom without pixel distortion;
- 5 steps for high penetration and 6 steps for Low Penetration modes;
- Automatic Density alert (Red colour display, Adjustable threshold);
- By selecting 'Screen 1' or 'Screen 2' operators can choose the screen they want to perform image manipulation, without affecting the image manipulation performed on the other monitor, operators can quickly manipulate and compare images with different imaging tools;
- High & Low energy detectors are used to identify specific materials / organic / inorganic / calculate atomic weight;
- Image retrieval based on bag number, time and date;
- Images are displayed on the monitors with a reduced geometrical distortion;

- Operator can annotate images in real time, images are saved with annotations;
- Operator can see standard images on one monitor and modified images on the other;
- Print on any standard printer.
- Retrieve last 100 images with single push of image retrieval button;
- Select and print any image that is displayed on the screen;
- Select images and record on a CD, USB key;
- Standard image manipulation on all retrieved images;
- The system displays on first monitor colour / organic / and inorganic images;
- The system displays on second monitor B/W, reverse, and pseudo colour images.

Dimensions

190.9 cm

236.7 cm
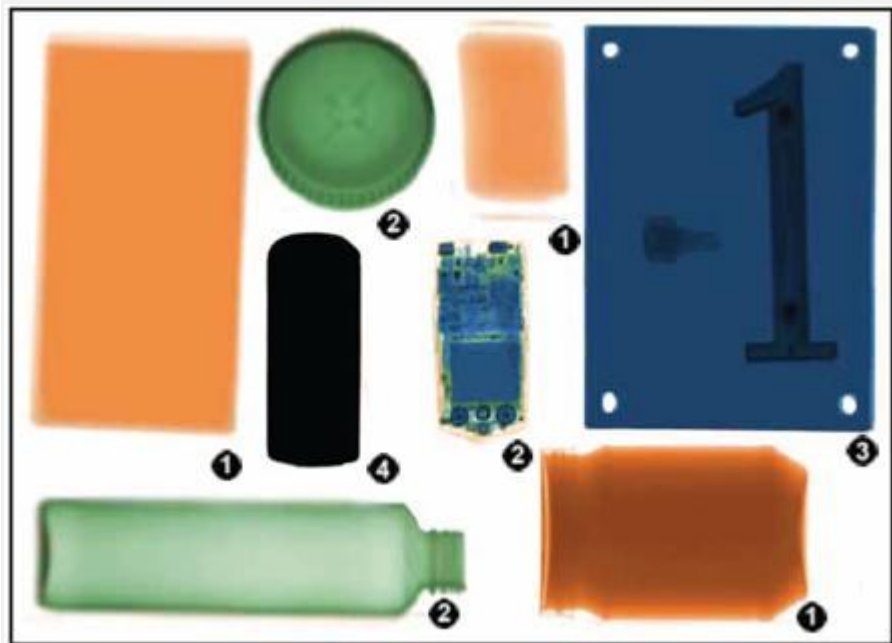
127.5 cm

Unique 6 Colour Imaging

The WG IS100XD six colour imaging software is a new and unique in the world of X-Ray Security scanning all other manufacturers' only use 3 colour imaging software.

Atomic Number Allocation 3 Colour Imaging & New Advanced 6 Colour Imaging Table

Atomic Z Number	Material Type	3 Colour Conventional Imaging	6 Colour Advanced Imaging	Examples	Possible Threats
0-8	Organic	1 - Orange	5 - Brown	Wood, Oil	C-4, TNT, Semtex
8-10	Low Inorganic	1 - Orange	1 - Orange	Paper, Alcohol	Cocaine, Heroin
10-12	High Inorganic	2 - Green	6 - Yellow	Glass	Propellants
12-17	Light Metals	2 - Green	2 - Green	Aluminium, Silicon	Gunpowder, Trigger Devices
17-28	Heavy Metals	3 - Blue	3 - Blue	Iron, Steel	Guns, Bullets, Knives
28+	Dense Metals	3 - Blue	7 - Violet	Gold, Silver	High-Value Contraband
-	Impenetrable	4 - Black	4 - Black	4 - Black	Shielding for above threats

Conventional 3 Colour Imaging - used by other Manufacturers

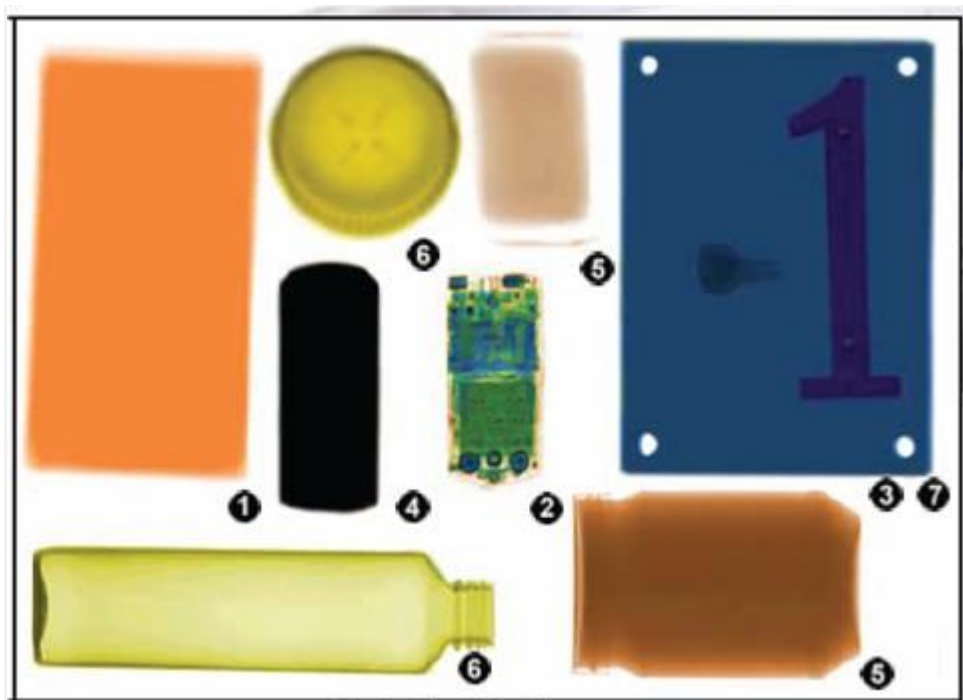Example of how objects are displayed to the X-Ray Scanner security operative.

Identification

1 - Peanut Butter, Bar of Soap, Small Stack of Paper;
2 - Mobile phone, Ashtray, Glass Bottle;
3 - Sheet of Metal, Set of Keys, Number Sign;
4 - Lead Curtain.

Advanced 6 Colour Imaging - Unique Westminster Feature

Example of how objects are displayed to the X-Ray Scanner security operative

Identification

1 - Stack of Paper;
2 - Mobile phone;
3 - Sheet of Metal, Set of Keys;
4 - Lead Curtain;
5 - Bar of Soap, Peanut Butter;
6 - Glass Bottle, Ashtray.
7 - Number Sign.

Six colour imaging software significantly enhances the X-Ray Scanner security operator's ability to distinguish and recognise all objects quickly and efficiently, and is also allows operators to identify potential threat objects that occur within particular Atomic Z-number ranges i.e explosives in the organic range.

The six colours can be specifically assigned to specific Atomic number ranges allowing the X-Ray Scanner to be targeted to find specific items / substances.

Other manufactures of X-Ray Scanning equipment only have 3 colour imaging available provided limited optimisation of imaging detection capability.

Product Options

Product name	Price	Quantity
X-Ray/Baggage Screening Trays	-	
X-Ray Tray GREEN - 10 Pack	£60.00 + VAT	0
X-Ray Tray BLUE - 10 Pack	£60.00 + VAT	0
X-Ray Tray RED - 10 Pack	£60.00 + VAT	0
X-Ray Machine Standard Test Piece (STP)	£750.00 + VAT	0
Threat Image Projection (TIP)	-	
Screener Assist	-	

Computer Based Training	-
WGIS100DXRC0.5S Entry/Exit Roller Conveyor 0.5 metre Steel	-
WGIS100DXRC1.0S Entry/Exit Roller Conveyor 1.0 metre Steel	-
WGIS100DXRC1.5S Entry/Exit Roller Conveyor 1.5 metre Steel	-

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