



WESTMINSTER
INTERNATIONAL LTD

Excellence through Service
Protecting your world



WGIS 100XDV X-Ray Baggage Scanner

TSA Approved Air Cargo Screening Qualified Technology List (ACSQTL)

The WGIS 100XDV 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 WGIS 100XDV uses **Dual View Technology** that allows for viewing of objects from two angles - an "up shooting" view from beneath the object and a "side shooting" view from the side. The benefit is an improved ability to view odd-shaped objects (i.e. triangular or L-shaped), allowing operators to identify potential threats more quickly and easily than by using a single-view system. The tunnel size of 1,016mm (40.0") wide x 1,016mm (40.0") allows for scanning of larger parcels at airports and other government offices and applications.



The WG IS100X has a 100cm width x 100cm height tunnel 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.

Applications

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



Standard Features

- ▶ 6 Colour image display (normal industry standard 3 colour);
- ▶ Auto image archiving 50,000 Images;
- ▶ Auto Z-Number measurement;
- ▶ Baggage counter;
- ▶ Colour and black / white imaging;
- ▶ Density alert;
- ▶ Edge-Enhancement imaging;
- ▶ Geometric distortion correction;

WI Code: 11011

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- ▶ High penetration;
- ▶ Horizontal and vertical imaging;
- ▶ Image annotation & Image review;
- ▶ Manual archive (Bitmap);
- ▶ Multi-Tier accessibility;
- ▶ Network ready;
- ▶ Operator training program;
- ▶ Organic / Inorganic imaging;
- ▶ Picture perfect;
- ▶ Print image;
- ▶ Programmable contrast and Programmable Penetration;
- ▶ Pseudo Colour;
- ▶ Real-Time image manipulation;
- ▶ Reverse monochrome;
- ▶ Suspect image archive;
- ▶ User defined access;
- ▶ Zoom 2x to 64x.

Specifications

Operational Penetration & Sensitivity

- ▶ Sensitivity: 42 AWG typical, 40 WG guaranteed;
- ▶ Spatial resolution: 1.0mm horizontal and vertical;
- ▶ Penetration: 37mm steel typical, 35mm guaranteed;
- ▶ Contrast Sensitivity: At least 24 levels visible as measured by a step wedge, 4,096 grey scale levels.

X-Ray Generator

- ▶ Voltage: 160 kv Operating at 148 kv;
- ▶ Tube current: 1.2mA;
- ▶ Cooling: Sealed Di-electric oil bath with forced air;
- ▶ Beam direction: Diagonally upward;
- ▶ Detector: 2304 Channels in an L-Shaped array.

Computer

- ▶ Intel Core II Duo. 3.0 Ghz, 1333 MHzFSB;
- ▶ Memory: 2GB Ram at 800 MHz;
- ▶ Storage: 500 GB HDD;
- ▶ Video card: 256 MB Video card (dual digital display);
- ▶ Platform: Windows XP Pro;
- ▶ Backup: Uninterrupted power supply – 20 minutes.

Video Display

- ▶ Two x 19" LCD high resolution colour monitors;
- ▶ Display resolution: 1,280 x 1,024, 24 pixel colour.

Environment

- ▶ Operating temperature: 0°C to 40°C;
- ▶ Storage temperature: -20°C to 60°C;
- ▶ Humidity: Less than 95% non-condensing.

Electrical Connection

- ▶ 110VAC, 96-132 VAC, 60 Hz, 15 Amps maximum;
- ▶ 220VAC, 183-253 VAC, 50Hz, 10 Amps maximum.

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Physical

- ▶ Bi-Directional conveyor;
- ▶ Tunnel opening: 1016 mm x 1016 mm / 40.0" x 40.0";
- ▶ Scanner dimensions: L 2771mm x W 1372mm x H 1919mm;
- ▶ Conveyor belt : Seamless low maintenance ;
- ▶ Conveyor height: 715mm;
- ▶ Conveyor maximum load: 200 kg evenly distributed;
- ▶ Conveyor Speed: 0.23 m/s in either direction;
- ▶ Approximate weight: 1708 Kg. / 3758 lbs.;
- ▶ Motor: Sealed drum, maintenance free;
- ▶ Moving: Heavy duty castors;
- ▶ Levelling: Adjustable screw jack levelling feet.

Dimensions

- ▶ (L x W x H) 3015 mm x 1369 mm x 1897 mm / 118.7" x 53.9" x 74.7";

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.

Options

- ▶ Advanced image archiving 100,000 images;
- ▶ Threat Image Projection software;
- ▶ Screener assist threat detection software;
- ▶ Local language support - Arabic, Chinese, French & Spanish;
- ▶ Entry / Exit roller conveyors, 1 metre & 1.5 metres;
- ▶ Barriers for roller conveyors;
- ▶ Custom paint finish;
- ▶ 24" LCD monitors (Replaces 17" LCD monitors);
- ▶ Tropical kit;
- ▶ Radiation meter;
- ▶ Extended remote workstations;
- ▶ Suspect search station;
- ▶ Supervisor workstation;
- ▶ Real time continuous self diagnostics;
- ▶ Foot mat;
- ▶ Polar heating kit;
- ▶ ASTM F0792-01e2 Test case;
- ▶ ASTM 10 Stepwedge.

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.

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- ▶ Screener Assist real time threat identification operator alert software package 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;
- ▶ Computer Based Training (CBT) incorporated into system, the operator can train on machine when not in use; Improving operator detection, operation and overall knowledge.

Networking

The WG IS100X is supplied network ready, it can be easily integrated to any pre-existing operational infrastructure and allow 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.

Safety / Standards

- ▶ Film safety is guaranteed for high speed films up to ISO 1600;
- ▶ Dose per inspection: 0.1 mR typical;
- ▶ Typical radiation leakage is less than 0.1mR/hr;
- ▶ 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).

Operator Image Analysis

- ▶ Operator can see standard images on one monitor and modified images on the other;
- ▶ 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;
- ▶ The system displays on first monitor colour / organic / and inorganic images;
- ▶ The system displays on second monitor B/W, reverse, and pseudo colour images;
- ▶ Images are displayed on the monitors with a reduced geometrical distortion;
- ▶ Operator can annotate images in real time, images are saved with annotations;
- ▶ Automatic Density alert (Red colour display, Adjustable threshold);
- ▶ High & Low energy detectors are used to identify specific materials / organic / inorganic / calculate atomic weight;
- ▶ Up to 32X to 8X zoom without pixel distortion;
- ▶ 5 steps for high penetration and 6 steps for Low Penetration modes;

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- ▶ Retrieve last 100 images with single push of image retrieval button;
- ▶ Image retrieval based on bag number, time and date;
- ▶ Standard image manipulation on all retrieved images;
- ▶ Select images and record on a CD, USB key;
- ▶ Select and print any image that is displayed on the screen;
- ▶ Print on any standard printer.

Unique 6 Colour Imaging

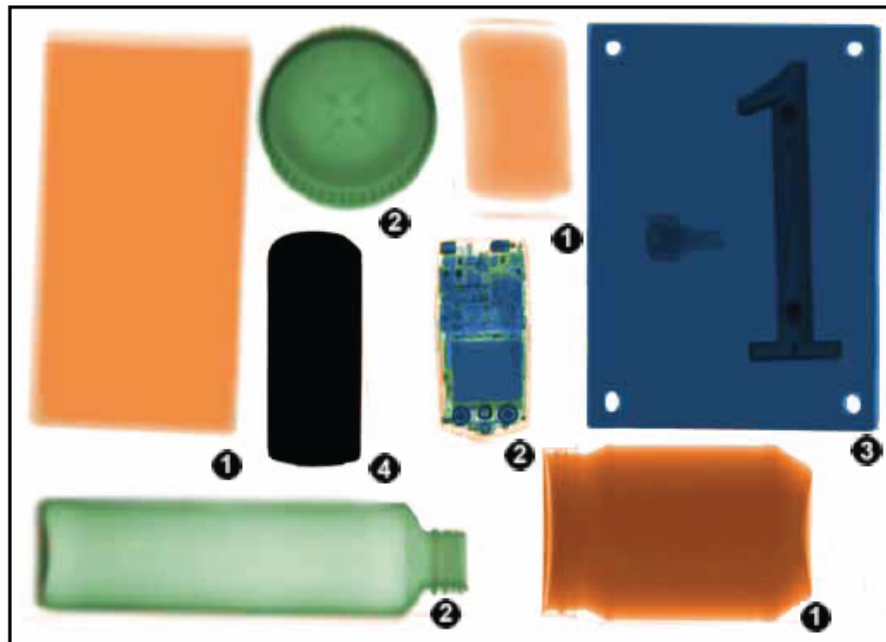
The WGIS100X six colour imaging software is a new and unique in the world of X-Ray Security scanning all other manufacturers' only use 3 colour imaging software.

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	Lead	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.

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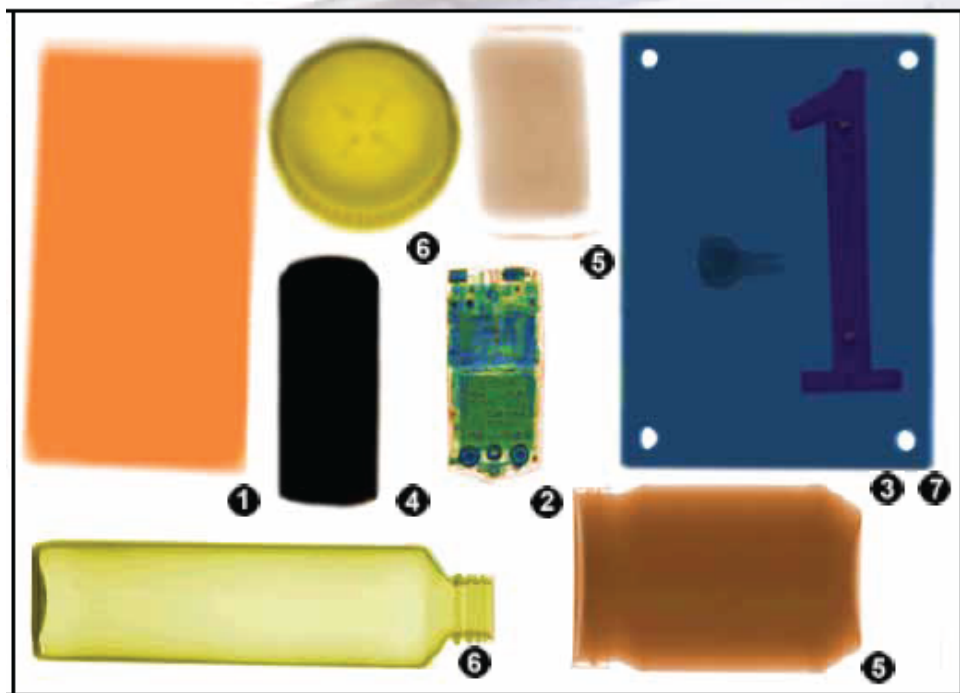
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Advanced 6 Colour Imaging – Unique Westminster Feature

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

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