CS6550 x-ray baggage scanner

Main Features

This product has the following features, which provides the users with more convenient and quicker service.

- **High definition image**

  Adopt a new generation of HD schema design, providing clear images and stable performance.
- **Intelligent alarm**

  User can set the alarm threshold, and realize acousto-optic alarming prompt when the impermeable items are detected.
- **Image management**

  The product has a built-in image management system, which enables users to browse the saved images quickly.
- **Dynamic processing**

  Dynamic processing, real-time display, optimization functions like edge enhancement, amplification and so on.
- **Green lead curtain**

  Wear-resistant, pollution-free, long service life.
- **Network interface**

  Use standard Ethernet port to transmit images with rapid processing and great anti-interference performance.
- **Shutdown with one key**

  When you try to turn off the equipment, just rotate the key, which is convenient and simple.
- **Self-diagnose**

  Automatically prompt when failure is detected, and be convenient to maintain.
- **Intelligent roller**

  Roller will automatically rotate when there is luggage on the conveyor belt, otherwise, the roller will stop rotating making this product environmental-friendly and energy-saving.

General Specifications

Tunnel dimensions /max object size	650*500mm/645*495
Conveyor height	610mm
Conveyor speed at mains frequency 50/60Hz	0.22m/s
Max. conveyor load (evenly distributed)	75kg
Resolution (wire recognition)	Dia 0.0787mm metal line
Penetration (steel step wedge)	>34mm steel
X-ray dose / inspection (typical)	<0.1μGy/h
Film safety	Guarantee ISO1600 Film
Duty Cycle	Oil Cooling /100%
X-ray Sensor	Multi-energy
Direction of ray beam	Upward
Spatial Resolution	Level:dia. 1.0mm, Vertical: dia.1.0mm
Operation Temperature/Humidity	0-45°/20%-95%（No Condensation）
Storage Temperature /Humidity	-20-60°/20%-95%(No Condensation)
Operation Power	220VAC(±10%) 50±3Hz
Power Consumption	0.8kw(Max)
Noise	<58DB
Penetration Resolution	Dia. 0.254mm

X- Ray Generator

Cooling /Housing	100%
Anode voltage	100-160kv(adjustable)
Anode current (typical)	04.-1.2ma(adjustable)
Beam divergence /beam direction	80°

Image Generating System

X-ray converter	L-Shaped Photodiode Array (multi-energetic), 16 bit Deep
Number of X-ray detectors	1152
Digitalization (dynamic resolution)	1440*900

Image Processing System

Image memory (minimum)	Store Any Image, Storage 500000 Pictures in Real Time And Process It in Operation Status, 64 G
Storage depth per picture element	130KB JPEG
Maximum image resolution	1280*800

Resolution	High Resolution, LCD Accord, 19 inch
Monitor	19”LCD
Computer Specifications (minimum)	CPU: Intel 2.7GHz dual core RAM: 4GB HDD: 64GB (6.5GB used by system) OS: Win 7 32-bit

Image Display Modes

Black/White Image	In the black and white image, scanned objects are represented according to the X-ray absorption. The X-ray absorption of the inspected material is assigned to 4096 grey levels, where high absorbing materials are represented in dark grey tones and weak absorbers in lighter shades of grey. More grey levels are used in the low and high areas of X-ray absorption that in the medium absorbing range. Therefore, more details are revealed in high and low absorbing areas.
Colour Image	This image representation translates gray values from the B/W image into colours. The 4096 grey levels are assigned to 256 colours. Since the human eye is able to differentiate more colors then grey levels, this form of pseudo color representation helps the detection of contours in the scanned object. The X-ray operator can choose between 6 colour designs, depending which colour selection best suits the image under analysis. The colours, however, do not allow any conclusions on the material origins of the inspected objects.
Multi Energy Method Material Classification	It offers the advantage of an improved recognition of items inside a piece of luggage by distinguishing material of different origins. Material information is evaluated by means of the multi-energy method, where high and low energy radiation signals obtained after penetration of the object are compared. Conclusions concerning material origins can be made. The classification of material is done according to the atomic numbers (Z).Three main groups of elements are distinguished by colours of a continuous color scale. 0< Z <10 – orange Lighter elements e.g. hydrogen , carbon, nitrogen, oxygen and the molecular compounds of the latter,

	the **organic materials** 10 < Z <15 – green Medium heavy elements: pure aluminum, sodium, chlorine, cooking salt 15 < Z <56 - blue Heavier elements: the metals titanium, chromium, iron, nickel, copper, silver etc.

Standard Features

Standard Functions	Insertion of date/time , luggage counter, user ID number, luggage marking system (acoustic), display of operating mode, REVIEW feature, programmable priority keys, standard network interface.
Zoom	Continuous electronic zoom, stepless enlargement up to 16x. Pixel interpolation (disengageable) Permanent display of a miniature image overview with zoom positioning.
Review	Approximately 8 images of previously scanned objects can be recalled on the monitor. Image processing functions be operated simultaneously
High	This function facilitates the identification of objects obscured by highly absorbing materials. The contrast of darker objects is increased and, at the same time low absorbing objects are filtered out. An image with a virtual higher penetration is created. Even thicker layers of light organic material (explosives, drugs) are significantly emphasized. HIGH is available in B/W image display modes.
Low	This function facilitates the identification of low absorbing objects. The contrast of brighter image sections is increased and, at the same time high absorbing objects are displayed in black. An image of virtually lower penetration is created. Details of low absorbing items become more clearly visible. LOW is available for B/W image display modes.
Neg	This function creates a negative image: highly absorbing objects appear bright and low absorbing objects appear dark. Smaller and slimmer objects of higher density (e.g. wires) become more visible NEG is available for B/W image display modes.
Organic Only (O2)	This function suppresses all non-organic material from the image by representing them in grey shades.

	Objects made of organic material are emphasized.
Organic Stripping (OS)	This function suppresses all organic material from the image by representing them in grey shades; Objects made of non-organic material are emphasized. The functions 02 and OS enable the selective inspection of objects by fading out in grey values non-organic or organic material respectively. This “stripping” of organic or non-organic material is especially advantageous when parts of objects, which do not belong to the material group sought after, appear on the screen and partially overlap the substance searched for. Unlike a regular image where all the objects are displayed independently of their X-ray absorption degree, allows X-ray operators to select a range of absorption. Only objects whose absorption degrees are within the selected range are displayed. They are displayed with highly increased contrast while all other objects are suppressed.

Optional Advanced Image Processing Functions

Super-Enhancement	This unique function supports the operator in evaluating X-ray images of inspected objects faster and more effectively than any other conventional enhancement filter. An optimum contrast throughout the image is achieved, independent of the prevailing image brightness. By means of electronic real time image processing, the contrast enhancement is calculated automatically for every single image section. As a result, an A-ray image with highest detailed resolution is obtained. Recognition of single objects like plastic weapons, explosives and drugs is significantly improved. Due to high penetration and resolution low density, objects can be clearly identified even if they are covered by metal sheets.
High Density Alert	This option automatically alerts screeners of the presence of high absorbing material by drawing a frame around such objects. An audible alarm can also be configured. An automated procedure for recognition of areas with

	high X-ray absorbing material. Detected areas are locally highlighted by the HIGH function. This function facilitates the identification of objects hidden behind highly absorbing objects.

Additional Options

Zoom	By pressing just one key, the option Zoom optimizes the magnification of the image to fit the screen size.
Image Management System	IMS is the image management system which allows users to save, archive, and organize X-Ray images. Up to 20,000 X-Ray images of scanned baggage can be stored on the local hard disk of the X-Ray inspection system. Various image recording and recall modes can be selected to meet the requirements of different applications. IMS provides a flexible image management library divided into categories, where folders can be added, edited or deleted. For archiving or training purposes, images can be saved on a variety of media or downloaded to external computers via network. Additionally, images can be copies to USB storage devices in TIF or JPG format.
Export	The Export function allows the automatic transmission of X-Ray images to an external computer via network. X-Ray images can be transferred as HIF files (Heimann Image Format) or as standard computer formats (jpg, tif,bmp)
Printer	Network printer interface
Threat Image Projection	This is a system that projects fictional threats on a random basis over real X-Ray images of scanned baggage. It aims at helping X-Ray operators improving their threat recognition skills. TIP is a process which is transparent to X-Ray operators. Their task is to recognize and mark threat objects. The full range of image enhancement functions in support to the evaluation process is available during this procedure. TIP is fully configurable by high level users, where parameters such as type of threats, frequency of projection, etc. can be configured. Complete reports on user's performance can be created. Conclusions as to the efficiency of the security checkpoint can be drawn.
Training System	The module offers a powerful on-the-job training

	system specially matched to the X-Ray inspection systems. The training system is based on the X-Ray system platform and therefore contains all the prerequisites for optimal operator training and effective monitoring of its success. This ensures that there is absolutely no difference between training and live operation in terms of system behavior and control features.

Installation Data

X-Ray Leakage	Meets all the applicable laws and regulations with respect to X-ray emitting devices Standard : dose rate < 2uSv/h (0.2mrem/h) at a distance of 5cm from external housing Optional : dose rate < 1uSv/h (0.1mrem/h) at a distance of 5cm from external housing in configuration with 0.6mm lead equivalent value lead curtains
Compliancy	In compliance with: Directive 2004/108/EC Electromagnetic Compliancy Directive 2006/42/EC Machinery Directive 2006/95/EC Low Voltage
Sound Level	<56 dB(A)
Operating /Storage temperature	0 - 40C/- 20 – +60 C
Humidity	10% - 90% (non – condensing)
Power supply	Standard: 230 VAC + 10% /-15% (50 Hz/ 60 Hz +_3 Hz) Optional: 100/120/ 230/ 240 VAC + 10% / -15% selectable (50Hz / 60 Hz+_ 3 Hz)
Power Consumption	Approx 0.4 kVA
Protection class system	IP20
Dimensions /Weight	2211 (L) X 965(W) X 1315 (H)[mm] /approx. 600 kg 87.0” (L) X 38.0” (W) X 51.8” (H) /approx. 1322.8 lbs
2300(L)X1070(W)X1500(H)[mm] /approx.750kg	2300(L)X1070(W)X1500(H)[mm] /approx.750kg
Mechanical construction	Steel contruction with aluminum panels, mounted on roller castors