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WG CP Full Body Security Screening Mobile Inspection Point



The WG CP Full Body Security Screening Mobile Inspection Point has been designed as rapid deployable and flexible full body scanner for outdoor events and sites.

It will assist in the detection both IN and ON the body for:

- Any objects that can be considered dangerous.
- Bladed articles;
- Cold arms and firearms, including those made of ceramics;
- Explosive gelatine;
- Inflammable materials;
- Liquid explosive;
- Paralysing liquids and gases;

It can be operational within 10-15 minutes of arrival at a location, ready or mass or selective body scanning of persons.

It is supplied with an autonomous electrical generator no other infrastructure is required.

It will operate in any weather conditions, under a wide range of ambient temperatures and humidity, including rain and snow.

The system is built into a minivan making it rapid deployable, the minivan is divided into three areas: cabin, scanning and operator by X-ray protected walls, for operation it requires two persons.



Digital X-Ray Imaging Technology

Digital full-length X-ray projection imaging of a person is performed using the S full body scanner slot-scan technology and comprises the following stages:

- The person being inspected stands in a fixed position on the movable platform, on the drawn footprints;
- When the scanning begins, the X-ray generator turns on and the platform starts to smoothly move perpendicular to the flat fan-shaped beam;
- In the process of the scanning the X-rays that passed through the human body are projected on the vertical multielement X-ray transducer which generates electric signals proportional to the degree of the X-rays attenuation by various body tissues and any objects on or inside the body;
- The registered electric signals are transferred, via the interface unit, to the computer for further processing;
- Upon the finishing of the scanning an X-ray image of the person under inspection is displayed on the PC monitor.

Slot – Scan Technology Enable

- Full-length X-ray imaging of people;
- Low radiation dose making it possible to repeatedly (up to 2,500 times) inspect the same person within a year;
- High detectability;
- Detection of any kinds of foreign objects (including explosive gelatine) hidden both on the body or in the clothes as well as inside the body (ingested or hidden in natural body cavities) in the process of one scanning;
- High through-flow rate (body search is not necessary);
- Image quality unaffected by the influence of non-informative scattered radiation.

Radiation Safety

The system operation modes are pre-set during the installation. The following design features of the system make it possible to minimise the personnel and the inspected people radiation doses:

- X-ray generator enclosed with the X-ray protection housing;
- Slit diaphragms system making it possible to obtain a narrow fan-shaped beam;
- X-ray protection shutter cutting off the X-ray radiation from the generator;
- Inbuilt X-ray radiation filter;
- Highly sensitive digital X-ray radiation converter;
- Inbuilt dosimeter purposed to monitor the dose rates people are exposed to under any mode of the X-ray generator operation;
- Emergency stop switch on the portal with the fixed position of the red mushroom shaped button cuts off the X-ray radiation from the generator with the X-ray protection shutter and stops the platform;
- Red signal lights on the portal indicate X-rays generation and platform movement.



The X-ray protection shutter cuts off the X-ray radiation from the generator in case of deviations from the system mechanisms and electronic devices operation parameters and conditions set by the manufacturer as well as in case of malfunctions.

In case of a failure of the X-ray protection shutter the high voltage is not supplied to the X-ray tube. The software tests the system upon its switching on and in the process of scanning. Detected faults messages are displayed on the operator monitor.

The driver's compartment is protected with the X-ray shield installed between the driver's compartment and the screening area.

Combined shields made of transparent X-ray protective plastic and lead-plated panels are installed near the portal of the whole-body security screening system to protect the operator compartment.

The transparent plastic panels can be covered with special film making it impossible to see the operator compartment from the screening area.

Screening People Dose Rate

Inspected person dose rate per one inspection does not exceed the pre-set value of $0.1 \mu\text{Sv}$.

The annual quota established for this system in respect of dose rate per person in case of repeated inspections is equal to 25% of the limit technogenic radiation dose for population, i.e. 0.25 mSv per year.

Taking into account the above characteristics of the system, it makes it possible to perform up to 2,500 inspections per year or 6-7 inspections a day (the dose rate per one scanning makes $0.1 \mu\text{Sv}$ of one and the same person).

When using the increased penetration mode with the aim to detect the ingested drugs the inspected person dose rate per one inspection does not exceed the manufacturer pre-set value of $0.3 \mu\text{Sv}$. The dose rate of $0.2 \mu\text{Sv}$ received by the inspected person per one inspection is comparable with the external radiation dose due to the average

Earth natural radiation background received within 48 minutes or within 1.5-2.5 minutes of a flight in a plane at the altitude of 8-10 km.

Protection Zone:

Personnel and population radiation protection near the opened door of the screening area is ensured by means of establishing a sanitary protection zone using road cones and barrier tape.

According to the requirements of the national law on radiation protection the user independently determines the dimensions of the restricted (controlled) sanitary protection zone.

Specifications

- The overall system dimensions do not exceed: length: 6,363 mm [250.5"] not including the back step] width: 2,050 mm [80.7"] not including the rear-view mirrors, height: 3,150 mm [124.0"]
- Power consumption: max. 4 kVA
- The power is supplied from: single-phase 230+- 10% VAC, 50/60 Hz general purpose electric mains generator, remote
- Time to enter the operating mode: Does not exceed 15 minutes after switching on the equipment
- The security screening unit is not intended for operation in explosive and fire-hazardous environments in accordance with the Rules for the Design and Operation of Electrical Installations

Applications

- Airports & Ports
- Prisons
- Law Enforcement Authorities
- Border Crossings
- Large Event Venues
- VIP Residence

Accessories & Features

- Automatic doors
- Scanning process visual control
- Surveillance cameras around the vehicle
- Air conditioner
- Automatic light
- Heater
- Diesel generator
- Fridge
- Electrical driven roof
- Intercom
- Wide range of vehicle accessories

Operating Conditions

- Operational temperature - From -10 to 45 °C [14 to 113 °F]
- Operational humidity - Not more than 90% at 25 °C [Not more than 90% at 77 °F]
- Storage temperature - From -10 to 45 °C [14 - 113 °F]
- Storage humidity - Max 90% at 25 °C [Max 90% at 77 °F]
- Power supply - 230 V, single, 50 Hz
- Power consumption, max - 4,0 kVA

SCANNER SPECIFICATIONS:

- Dimensions: - L2,260 mm x W1,840 mm x H2,500 mm [89" x 72" x 98"]
- Weight - 860 kg [1,896 lbs]
- Scanning speed - 7 seconds
- Platform capacity - 300 kg [661 lbs]
- Duty cycle - 100% - 24 hours of continuous operation
- Operating temperature - 0 to 45 °C [32 to 113 °F]
- Humidity - 10% - 90% [non-condensing]
- Power Supply - 110-230 VAC, 50/60 Hz, 1.5 kVA
- Image Display - 24" 1080P LED (Full body), 19" 1080P LCD (Torso), touch screen optional
- Image Enhancement - Automatic optimisation, zoom, b/w reverse, edge enhance, colour overlay, brightness/contrast
- X-Ray Dose per Inspection - X-Ray Fully adjustable 0.10 μ Sv – 4.5 μ Sv, 0.25 μ Sv (Full body), 2.0 μ Sv (Torso)
- Digital X-Ray Detector - 896 / 1344 pixel L-shaped (Full body), 448 pixel linear (Torso)
- Wire Detectability - 32 AWG typical (Full body), 38 AWG typical (Torso)
- Scanning Modes - 3 independently configurable modes plus on/off toggle of Dual View (6 total)
- Software - Windows compatible

