ADANI BV6080

BAGGAGE X-RAY INSPECTION SYSTEM

INTENDED USE

The **ADANI BV6080** is especially designed for the visual inspection of check-in rolling baggage, handbags, boxes and parcels without opening them.

The **ADANI BV6080** is provided with dual energy features, threat detection algorithms, adjustable density alert function, enhanced archive and TIP features. An ergonomic workstation with operator console provides easy-of use operation.

The **ADANI BV6080** allows identification of weapons, explosives (including plastic explosives), drugs, primers and dangerous objects, which are safety hazard.

CONFIGURATION

The basic functional components of the system are:

Device body:
- Frame;
- Conveyor;
- Inspection tunnel;
- Distribution panel.

Digital X-ray image receiver:
- X-ray sensitive digital detector;
- Electronic interface unit.

X-ray unit:
- X-ray generator;
- Collimator.

Operator's workstation;
Set of control programs;
Set of spare parts, tools and accessories;
TIP software package;
Operational documentation;
Package.

Options:
- Exit / entry rollers;
- Operator's desk;
- Set of test objects;
- Ramp.

TECHNICAL DATA

CONVEYOR BELT

Maximum distributed load on the conveyor belt, kg, max	180
Conveyor speed, m / s	0,22±0,03

DIGITAL X-RAY IMAGE DETECTOR

Detector type	multiunit array
Type of x-ray sensitive element	solid-state photodiode with scintillation coating
Number of detection elements in array	1664
Wire detectability (minimum diameter of copper wire/standard operating mode) mm	0.08 (40 AWG)
Steel penetration, standard operation mode, mm	27
Steel penetration, high penetration mode, mm	32

X-RAY UNIT

Anode voltage, kV - Standard operating mode - High penetration mode	 140 160
Angle of radiation	60°
Cooling system	oil bath
Anode type	stationary

PHYSICAL PARAMETERS

Tunnel dimensions, mm - Width - Height	 610±3 810±5
Overall dimensions, not more than, mm - Width - Height - Length	 1280 1300 3030
Weight of scanner, kg, no more than	800

SOFTWARE FEATURES

The purpose of the system software is to control the operation of the Scanner as well as to provide the opportunity to acquire, visualize and process digital X-ray images. To facilitate the work of the operator, a control panel is provided. The panel makes it possible to access all the software features.

GENERAL PURPOSE FUNCTIONS:
- Password-protected logon.

SELF-TESTING AND PERFORMANCE SUPPORT FUNCTIONS:
- Automatic self-testing;
- Displaying messages about operating status of the Scanner;
- Warming up the X-ray generator (the process can be started both manually and automatically).

HARDWARE CONTROL FUNCTIONS:
- Controlling the conveyor belt drive, the protective shutter's drive, the X-ray generator;
- Automatic changing of generator's operating modes depending on the scanner idle time;
- Acquiring data from the X-ray detector;
- Automatically calibrating the X-ray detector;
- Turning off the X-ray generator in case of emergency;
- Indicating X-ray on.

DIGITAL X-RAY IMAGE ACQUISITION, VISUALIZATION, AND PROCESSING FUNCTIONS:
- Acquiring images without additional algorithmic processing;
- Highlighting optically dense objects;
- Adjusting contrast of strongly absorbing objects;
- Inverting images;
- Performing gamma–correction of images;
- Optimizing the overall contrast: combination of edge enhancement and local contrast enhancement algorithms;
- Coloring images according to calculated values of atomic numbers of substances which compose objects under inspection;
- Coloring substances with atomic numbers from a selected range;
- Pseudocoloring objects with a possibility of selection of various palettes;
- Displaying organic objects with atomic numbers equal to 7, 8, and 9;
- Displaying substances according to a selected range of signal strength;
- Magnifying one out of nine predefined areas of an image;
- Zooming images up to 96x;
- Automatically highlighting suspicious objects (which can be related to drugs, explosives, or arms).

ADDITIONAL FUNCTIONS:
- Saving X-ray images to files;
- Storing a predefined number of images;
- Browsing the image archive;
- Copying images on external storage media (CD/DVD disks and flash-drives);
- Viewing and copying images from a local area network;
- Automatic preparing, filing and printing service reports;
- Controlling quality of operator's performance with the TIP program module;
- Counting inspected baggage.

GENERAL LAYOUT OF THE ADANI BV6080