



ADANI BV100100TB

**BAGGAGE AND SMALL CARGO
X-RAY INSPECTION SYSTEM**

INTENDED USE

The **ADANI BV100100TB** is especially designed for customers requiring the inspection of checked baggage and small cargo without opening them. The low conveyor belt allows for easy loading and unloading of parcels and small cargo. Dual energy imaging provides automatic color coding of materials with different atomic numbers so that screeners can easily identify objects within the parcel.

The **ADANI BV100100TB** 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	200
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	2560
Wire detectability (minimum diameter of copper wire/standard operating mode) mm	0.1 (38 AWG)
Steel penetration, standard operation mode, mm	27
Steel penetration, high penetration mode, mm	32

X-RAY UNIT

Anode voltage, kV	
- Standard operating mode	140
- High penetration mode	160
Angle of radiation	70°
Cooling system	oil bath
Anode type	stationary

PHYSICAL PARAMETERS

Tunnel dimensions, mm	
- Width	1010±3
- Height	1010±5
Overall dimensions, not more than, mm	
- Width	1280
- Height	1870
- Length	3540
Weight of scanner, kg, no more than	1080

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 BVI00100TB

