

## TECHNICAL DESCRIPTION – 05141105 FEP ME CARGO DV



FEP ME line systems are multi-energy X-ray devices for the control of suitcases, luggage and parcels in general – FEP ME CARGO is suitable for the screening of big pallets - they allow the identification of organic materials, including explosives and drugs and the identification of weapons, trigger and dangerous objects that can create security risks.

The machines are entirely designed and made in Italy and they are CE certified.

All systems are set up for the new software for automatic recognition of firearms and blunt objects.

The system:

- It does not damage food, drugs, and photographic films up to ISO 1600/33 DIN.
- Protects the operators from ionizing radiation, according to the provisions of the law.
- It is safe and easy to use.

The multi-energy technology allows to represent on a video, according to a colour code, the nature of the different materials that make up the objects contained in the luggage.

The organic materials are represented in ORANGE, the metallic ones in BLUE, the others inorganic materials in GREEN and non-penetrable materials in BLACK. A YELLOW alarm is available for high density materials.

The equipment consists of:

- MACHINE
- WORKSTATION

The MACHINE consists of:

- a. Tunnel, which contains the PC, the integrated X-Ray generator, acquisition electronics and image management and the L-shape array of photodiodes.

- b. At the entrance and at the exit of the tunnel there are anti-X leaded curtains to guarantee the maximum protection against ionizing radiation.
- c. Front / reverse conveyor belt driven by a motor and controlled by an inverter.
- d. High frequency X-ray generator, integrated in a leaded container (monoblock), with a low filtration X-ray tube. The monoblock is complete with a forced ventilation system, integrated on the container, to guarantee continuous operation of the generator. Tube, monoblock and generators are made by Gilardoni in Italy.
- e. Arrays of low-noise photodiode that capture the information contained in the X-rays.
- f. Emergency buttons to block the emission of X-rays and the movement of the tape in case of danger, placed at the entrance and exit of the tunnel.
- g. Computer for system management and image acquisition and processing.

The innovative operating system makes it possible to have an intuitive human-machine interface, multitasking activity, and network connection.

Access to the system is protected by user-id and password and is organized on different levels of privilege.

The WORKSTATION consists of:

- a. Ergonomic control console with keys, which manages the status (on / off) of the machine, the movement of the tape and the processing of images. The console is equipped with 4 USB hub ports to connect external devices.
- b. High-resolution LCD monitor/s for presenting images of the two views at the same time to facilitate the analysis of the luggage (1280x1024 – 24 bit).
- c. Working table.
- d. The standard cable length of the systems is 4,8m, but other lengths can be supplied according to the customer needs.

#### Physical properties

	<b>FEP ME CARGO DV</b>
<i>DIMENSIONS [cm]</i>	840 (L) x 308 (W) x 315 (H)
<i>WEIGHT [kg]</i>	5500
<i>NUMBER OF VIEWS</i>	2
<i>NUMBER OF X-RAY GENERATORS</i>	2
<i>NUMBER OF ARRAYS</i>	2
<i>TUNNEL DIMENSIONS [mm]</i>	1800 (W) x 1800 (H)
<i>MAX LOAD ON CONVEYOR [kg]</i>	3000
<i>BELT HEIGHT [mm]</i>	330
<i>BELT SPEED [m/s]</i>	0.2m/s
<i>MONITOR [nr]</i>	2
<i>POWER SUPPLY</i>	380Vac ± 10% 50/60Hz
<i>CONSUMPTION [kW]</i>	5
<i>OPERATING TEMPERATURE</i>	0 ÷ 40 °C
<i>STORAGE TEMPERATURE</i>	-20 ÷ 60 °C
<i>OPERATING HUMIDITY</i>	0 ÷ 95 %

### Imaging properties

	<b>FEP ME CARGO DV</b>
<i>TUBE VOLTAGE</i>	200kV
<i>TUBE CURRENT</i>	1.5mA
<i>COOLING</i>	Oil bath
<i>RESOLUTION</i>	38 AWG guaranteed, 40 AWG typical
<i>PENETRATION</i>	45 mm steel guaranteed, 50 mm steel typical
<i>HIGH DENSITY ALARM</i>	yes

### Other properties

- Automatic archiving of work sessions in raw format, to be able to review and rework them in a second time.
- Image archive chosen by the operator on HDD (up to 100.000 images) in PNG format.
- Saving images and sessions to external USB storage media.
- Self-diagnosis system showing the screen fault.
- Rays emission light signals in progress placed at the ends of the tunnel.
- Man-machine interface with time, date, 2 luggage counters (1 resettable, 1 total), duration time of the work session and operator ID.
- Manuals in pdf format that can be viewed in the software of the machine and outside.
- Import / export data with USB key.
- Setting system use parameters, even in remote mode.
- Export / import user database and export machine operation report.
- Possibility to change the sliding direction of the images.
- Ready to use 16:9 monitors.
- Ready for connection to a printer.

### Post-processing functions

- Black and White function.
- Contrast optimization.
- Exaltation of the contours in step and continuous.
- Energy Stripping.
- Negative of the image.
- Pseudo-Colours with 8 steps density.
- Three zoom modes: continuous zoom, roto-zoom and step zoom on numeric keypad up to x64 zoom.
- Contrast windows.
- High and low penetration, or variable.

### Reference standards

- CEI and IEC standards of competence, Italian standard 230/95 and its application decrees.
- ENAC certification according to the DD.MM. 263/02 - 85/99 of the Ministry of Transport and Navigation.
- European Regulation 781/2005

- European Regulation 185/2010
- European Regulation n. 272/09.
- European Regulation n. 300/08.
- European Directive 1998/2015 and related decision 8005/2015.
- CE marking.

#### Certifications

- STAC (ECAC)
- ENAC (ECAC)