FEP ME 640
DEXGIL

EXPLOSIVE DETECTION
IMAGE ARCHIVING
SESSION ARCHIVING
REMOTE DIAGNOSIS
VARIABLE FLOW CONFIGURATION
VARIABLE PENETRATION
VIDEO PRINTER
TIP
TRAINING
UPS

AIMS
ROTOZOOM
OPERATOR MAT
SMART-CARD LOGIN
REVERSE

GILARDONI

SECURITY TECHNOLOGY

FEP ME 640 *DEXGIL* IS A BREAKTHROUGH CARRY-ON LUGGAGE X-RAY SECURITY SYSTEM.
IN RESPONSE TO THE NEW IMAGE QUALITY NEEDS OF THE SECURITY MARKET, GILARDONI'S EXPANDED PRODUCT LINE INTRODUCES AN ADVANCED TECHNOLOGICAL SYSTEM WITH SUPERIOR IMAGE QUALITY, EXPLOSIVES DETECTION, NETWORK CONNECTIVITY AND CONFIGURABILITY, WHILE STILL MAINTAINING A CONVENTIONAL FOOTPRINT.
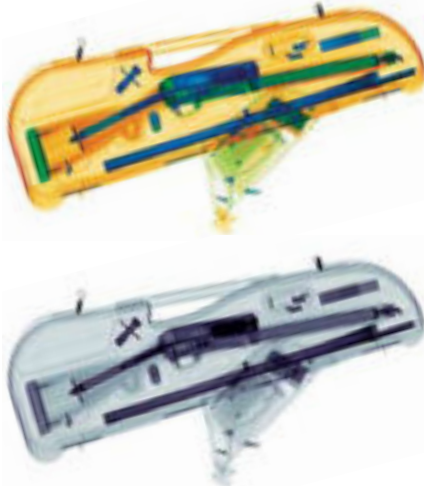
EXCELLENT IMAGE QUALITY

FEP ME 640 DEXGIL is a new benchmark X-ray system for carry-on luggage featuring informative image content, high performance wire resolution, variable X-ray penetration, image quality visualization and digital image processing. The high contrast and quality images are displayed on high resolution 17" or 19" LCD monitors (CRT monitors optional) to minimize operator eyestrain.
The acquisition features, data processing tools, real-time image representation and "energy separation" are boosted to the highest performance levels and represent state-of-the-art dangerous object detection for carry-on luggage. The STP test reference specifications are consistently matched or exceeded both in penetration and direct or metals filtered resolution.
Film-safe requirements are guaranteed.

Example of the excellent image quality obtained by FEP ME 640 DEXGIL. The materials are shown with the following colorations: orange for organic, blue for metals and green for amorphous materials.

EXPLOSIVE DETECTION

The neural software DEXGIL (optional), developed in our R&D laboratories in Mandello del Lario, provides the operator with an automatic explosives detection function, essential in the face of today's terrorism threats. DEXGIL was developed for FEP ME 640 DEXGIL to conform European E.D.S. (Explosive Detection System) requirements. DEXGIL provides the operator with real-time detection of different explosives (independent of luggage length) through colored outlines. DEXGIL can be configured to meet customers functional needs.

Example of DEXGIL automatic explosive alert in an apparently innocuous luggage

NETWORK CONNECTIVITY

The networked open architecture of the system guarantees the integration of today's advanced network solutions to meet customers needs for monitoring and remote control.

CONFIGURABILITY

FEP ME 640 DEXGIL can be configured to meet each customer's operative and budget needs. Among the newest and most important features offered either in the basic configuration (or as options) are:

* *DEXGIL*
  Optional software designed to comply with European E.D.S. standards. It performs and automatically displays explosives detection. The dangerous area is indicated with a rectangular red outline.
* *Density threat alert*
  Offers automatic recognition and display of objects with a density higher than a set (user adjustable) threshold. The high density area highlighted in yellow.

- *Variable penetration*
  This feature permits the selection of different penetration levels in order to optimize the visualization of materials with varied thickness and density.
- *Rotozoom*
  Allows the rotation of original or zoomed images in a range between -180° and + 180°. The improvement in perspective facilitates threat object discrimination.
- *Continuous 64X zoom*
  Features continuous zoom of displayed images up to a maximum of 64X by placing the zoom window on the desired area.
- *Variable flow configuration*
  FEP ME 640 *DEXGIL* can be integrated in a highly automated line with different screening levels. This maximizes throughput up to twice that of a conventional system.
- *TIP (Threat Image Projection)*
  The answer to customer needs for monitoring operator performance and training. This system was developed by Gilardoni according to DOT/TSA requirements and STAC, DfT specifications.
  TIP consists of integrated software that automatically inserts virtual pre-defined images of threat objects into the images of otherwise clean bags.
  TIP is useful for operator training and for monitoring attention and response levels.
- *Image archiving*
  Provides HD, or remote memory support, storage and archiving of images selected by the operator. The images are saved as .png files and are identified by: serial number of the machine, date and time of memorization, progressive image number and user ID.

NETWORK CONNECTIVITY
HIGH CONFIGURABILITY
EXPLOSIVE DETECTION
SUPERIOR IMAGE QUALITY

- *Session archiving*
  Provides automatic storage of all images acquired during a work session.
  Work sessions are defined as the time between login and logout. The images, stored in RAW format, can be reviewed and processed off-line.
- *AIMS*
  Archiving and Image Management System has been designed to handle image sessions generated by FEP ME 640 *DEXGIL* equipment and is available in both stand-alone and network version.
  It enables access and review of image sessions acquired and saved on a machine even from a remote administrator station.
  - *Net-Server*
    This package includes a remote control station with monitoring, settings, and diagnostic functions over networked inspection systems.
  - *Reverse*
    This kit provides the ability to acquire images with the belt running in either direction.
  - *UPS (Uninterrupted Power Supply)*
    Auxiliary integrated power supply able to sustain the calculation unit during temporary outages of standard supply.
- *Smart-card login*
  Controlled system access through smart-card.
- *Training*
  Software to train the operator off-line.
  The machine's operation is simulated through pre-saved bag inspection sessions. It is possible to insert threat images and to produce training session reports.
- *Tutorial*
  Offers off-line simulation of working sessions with luggage containing dangerous objects. It features feedback messages, reports and statistical analysis.

- *Remote diagnosis*
  Provides the ability to transmit, via LAN/modem, troubleshooting information and data to the Gilardoni S.P.A. remote assistance center in order to reduce down time.
- *Video printer*
  This feature permits printing of the current video screen as hardcopy for documentation.
- *Test STP*
  Standard STP test baggage and software with execution reminders.
- *Operator Mat*
  This sensor checks operator presence and prevents the system from working without human presence at the console.

TECHNICAL SPECIFICATIONS

Detection System
- Wire resolution: 41AWG guaranteed, 42AWG typical
- Steel penetration: 36mm guaranteed, 38mm typical
- Double L-shaped array: 1152 detectors

The ergonomic control console was completely redesigned in order to reduce operator stress and facilitate screening operations.

Example of automatic detection of luggage containing explosive (top image) and related image processing performed by the operator (bottom image).

X-ray Generator
- High frequency X-ray generator (30kHz, 500W)
- Anode voltage: 150kV

Inspection unit
- Dimensions:
  2250mm (L) x 900mm (W) x 1300mm (H)
- Weight: 550kg
- Tunnel size:
  605mm (W) x 410mm (H)
- Belt height:
  680mm (adjustable)
- Belt Speed: 0.2m/sec
- Max belt load:
  165kg
- System Power: single phase 230VAC or 110VAC +/- 10%;
  50/60Hz +/- 3Hz +/- 3Hz monophase
- Duty cycle: 100%

Control Unit
- Desk dimensions:
  1000mm (L) x 800mm (W) x 750mm (H)
- Weight: 30kg
- Controls:
  Switch on key
  Belt movement buttons
  Image processing buttons
  Programmable buttons
  Emergency push-button
  Pointer
- Monitor: 17″ LCD
  (1280x1024 pixels)
- Monitor: 19″ LCD
  (1280x1024 pixels)
- Monitor: 19″ CRT
  (1280x1024 pixels)

Health and safety
- All equipment complies with applicable international health and safety regulations.
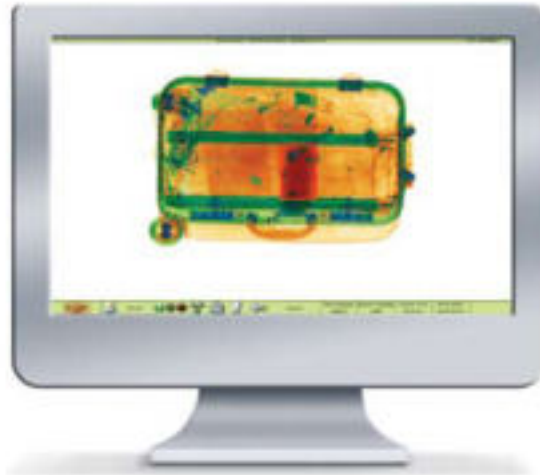- Leakage dose at 10cm: <1.0μSv / h (0.1mR/h)
- Film safe

Operative environment
- Operating temperature: 0°C - +40°C
- Storage temperature: -20°C - +60°C
- Relative humidity: 95% non-condensing
- Protection class: IP 22

Standard features
- Density threat alert
- Image archiving
- Session archiving
- Multi-energy technology
- Variable penetration
- "High penetration": optimum contrast in denser areas of the image using a dedicated key
- "Low penetration": optimum contrast in less dense areas of the image using a dedicated key
- Optimum contrast: provides the selection of optimum contrast obtained through histogram equalization

- Edge enhancement: provides the enhancement of edges and wires on the image
- Pseudo-color: this function assigns colors to different grayscale levels in the image to increase contrast between areas with similar absorption
- Energy stripping: this function permits the visualization of a single material family or different combination of families on the color monitor
- Contrast window: permits the expansion of gray levels within a window that can be positioned along the gray scale
- Reverse image
- Continuous zoom up to 64X
- Rotozoom
- Image recall
- Session recall
- Tutorial
- Info: provides the visualization of a diagnostic page which can help operators evaluate system performance
- UPS

Optional
- DEXGIL: explosive detection software developed according to E.D.S requirements
- TIP
- Net-Server
- AIMS
- Reverse
- Smart-card login
- Training
- Remote diagnostic
- 19″ LCD / CRT monitors (1280 x 1024 pixels)
- Video printer

Zoom function example: the bottom monitor displays the zoom of the area selected in the top monitor

- STP test
- Operator mat
- Variable flow configuration

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DEXGIL

2250

1290

680

1210

900

800

1000

750

Reserving the right to improve and modify

Acknowledged as "HIGHLY QUALIFIED LABORATORY" with decree D.M. 9-10-1985 - L.46/82 art.4

STANDARDS SPECIFICATIONS: TSA, ECAC
RULES: CEE
NORMS: IEC

CSQ
ISO 9001:2000

ACI
EUROPE
AIRPORTS COUNCIL
INTERNATIONAL

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