Ground-breaking parcel inspection
AS&E’s ground-breaking Gemini parcel X-ray inspection system combines dual-energy transmission with patented Z Backscatter technology for the most comprehensive threat detection available for parcel, baggage, and mail screening. The Gemini system’s unique capability to detect both metallic and non-metallic threats—even in cluttered environments—makes it an invaluable inspection tool for security officials.

Powerful combination of technologies
The power of the Gemini system lies in its ability to simultaneously detect both inorganic and organic materials by combining dual-energy transmission and Z Backscatter X-rays—two complementary, advanced, and commercially proven technologies. Together, they provide the most information available about the contents of a parcel.

Multi-technology
The Gemini system’s dual-energy transmission X-rays generate a high-resolution image in which metallic threats, such as guns and knives, are easily detected and fine details, such as tiny wires that could indicate an improvised explosive device, can be discerned. Dual-energy transmission technology uses two X-ray energy levels to determine the “effective” atomic number of objects in the parcel and then colorizes the image based on material type.

The Gemini system’s Z Backscatter X-rays generate a photo-like image in which organic materials—such as sheet, bulk, and liquid explosives, narcotics, and plastic weapons—are bright white. The easy-to-interpret images produced by Z Backscatter technology also help to reduce operator fatigue.

American Science and Engineering, Inc. 829 MIDDLESEX TURNPIKE | BILLERICA, MA 01821 USA TEL: +1 978.262.8700 | FAX: +1 978.262.0533 | www.as-e.com

www.as-e.com/gemini7555
TECHNICAL SPECIFICATIONS

Operating Features

X-ray Sources
- Dual-energy source: 170 keV
- Z Backscatter source: 160 keV

Tunnel Opening
- Width: 78 cm (30.7 in)
- Height: 58 cm (22.8 in)
- Length: Unlimited
- Conveyor: Continuous operation in normal mode. Auto-return allows one-person operation.
- Width: 78 cm (30.7 in)
- Height: 75 cm (29.3 in)
- Capacity: 160 kg (352 lbs) distributed
- Speed: 23 cm/s at 60 Hz; 20 cm/s at 50 Hz

System Dimensions
- Length: 75 cm (29.3 in)
- Width: 105 cm (41.4 in)
- Height: 150 cm (58.9 in)
- Weight: 1000 kg (2200 lbs)

Transmission beam orientation: Diagonally upwards
Z Backscatter beam orientation: Vertically upwards
Portability: Swivel castors allow convenient relocation of unit.

Temperature
- Operating: 0°C to 40°C (32°F to 104°F)
- Storage: -20°C to 60°C (-4°F to 140°F)
- Humidity: 5% to 95% relative humidity (non-condensing)

Power
- 120 VAC +/- 10%
- 20 AMP single-phase dedicated line
- 220/240 VAC +/- 10%
- 10 AMP single-phase dedicated line
- 50 Hz/60 Hz

Image Analysis Tools

Auto Enhance: Improves resolution of the image by optimizing contrast throughout, thereby enhancing subtle differences in the image.

Color Palette: Adds the ability to evaluate images and areas of interest in greater depth using color.

Continuous Zoom: Zooms images to 16x magnification.

Density Expand: Adjusts the contrast of the displayed image, thus enhancing the differences in objects.

Edge Enhancement: Accentuates the edges of objects in the image, enabling the operator to recognize objects faster and more readily.

Image Save and Restore: Saves images to the hard-drive.

Mark and Annotate: Attaches pointers and comment fields to mark an area of interest in an image.

ASE Frame: Automatically frames areas of high density where X-rays do not penetrate.

High: Changes image contrast so details of high penetration are more defined.

Metallic Stripping: Strips out inorganic material, leaving only those colored orange or green and enabling the operator to better identify organic materials.

Organic Stripping: Strips out organic material, leaving only those colored green or blue and enabling the operator to better identify inorganic materials.

View Z: Toggles the image between black-and-white and Zeff-associated colors, allowing the operator to better discriminate different materials in the image.