# Z BACKSCATTER® VAN (ZBV®) C-CLASS SPRINTER 515/516

#### MOBILE X-RAY SYSTEM FOR SCREENING CARGO AND VEHICLES





ZBV C-Class is the original ZBV system, built with a

custom coach on a Mercedes Sprinter cab chassis.

#### Non-intrusive, low-cost, highly mobile

With hundreds of systems sold, AS&E's mobile Z Backscatter Van is the top-selling non-intrusive cargo and vehicle inspection system in the world.

Low-cost, easy to use, and highly reliable, the ZBV system is built into a commercially available delivery van and can screen vehicles, sea containers, and other cargo for threats and contraband simply by driving past the objects.

The ZBV system's single-sided configuration and varied operating modes provide maximum maneuverability and flexibility for multiple applications, and it can be immediately deployed in response to security threats. With photo-like imaging for rapid analysis, the ZBV system enables highthroughput screening of vehicles and cargo. For personnel safety in dangerous environments, a remote console is available for operating the system in stationary scan mode from a distance of up to 500 meters.



#### Z Backscatter plus Forwardscatter®

The ZBV system employs Z Backscatter technology-pioneered and perfected by AS&E. Z Backscatter produces a clear, photo-like image and reveals threats and contraband that transmission X-ray systems miss, including explosives, currency, and drugs. It can also be equipped with Forwardscatter technology, which provides a second scatter perspective to display dense regions of images.

The ZBV system can image 10 lbs (4.5 kg) of organic material, such as C4 or cocaine, placed behind 0.24 inches (6 mm) of steel when scanned from a distance of 5 ft (1.5 m). The ZBV system's optional Radioactive Threat Detection feature is capable of identifying low levels of radioactivity from both gamma rays and neutrons. The ZBV system is ideal for screening vehicles for large quantities of concealed cigarettes, currency, drugs, car and truck bombs, and stowaways.

#### **APPLICATIONS**

- · Government and high-risk facilities
- · Event and VIP security
- Law enforcement
- · Security checkpoints
- Customs cargo screening
- Protection of military forces

Credited with countless threat and contraband seizures. the easy-to-use, highly flexible ZBV system is the mobile screening system of choice around the world.

# Also available\*:



ZBV R-Class is built on a Ford F550 chassis with crew cab for extra space and 4WD for additional ground clearance and rugged terrain.



ZBV S-Class, the newest addition to the ZBV line, is built in a standard Mercedes Sprinter panel van for a contemporary appearance with a reduced operational footprint for scanning objects in the tightest confines.

\* As determined by country of deployment



ZBV system drug seizure image



This ZBV image revealed smuggled alcohol, hidden to avoid paying duties.



Z Backscatter X-ray with RTD alert



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# TECHNICAL SPECIFICATIONS





#### **OPERATING FEATURES**

X-ray Source: 225 keV X-ray tube

Resolution: 0.28" (7 mm), normal to the side of the ZBV at a distance

of 5' (1.5 m) at a scan speed of 1 mph (1.5 kph)

Scan Speeds (Operator Selectable): 1, 3, and 6 mph (1.5, 5, and 10 kph) Scan Field of View: 12' (3.6 m) in height at 5' (1.5 m) from the side of the ZBV; or 14' (4.3 m) in height at 7.5' (2.3 m) to scan a hi-cube

container in one pass

#### VEHICLE SPECIFICATIONS

Manufacturer: Mercedes-Benz

Model\*: Sprinter 515 CDI 4x2 or 516 CDI 4x2

**Engine Type\*:** 4-cylinder (2,148 cm<sup>3</sup>) or 4-cylinder (2,143 cm<sup>3</sup>)

Steering: Power

Right- or left-hand drive

Fuel: Diesel\*\*

**Dimensions** 

Length: 21'4" (6.5 m)
Width: 8' (2.4 m)
Height: 9'1" (2.8 m)

**Weight:** 10,745 lbs (4,874 kg)

\*Determined by country homologation requirements.

\*\*Diesel fuel runs vehicle and X-ray equipment generator. System uses two gallons of diesel fuel per hour when scanning.

With mirrors extended To top of scanning lights

# SYSTEM OPTIONS

Stationary Scan Mode: Scans vehicles driven past parked ZBV; includes shore power (230 VAC +/-10, 50/60 Hz, 80 amps, single phase)

**Remote Operators Console:** Console can be located up to 1,640' (500 m)

from parked ZBV; includes stationary scan mode

**Forwardscatter Technology:** Provides a second scatter perspective to display dense regions of images; includes additional detectors and transport trailer. For use in stationary scan mode.

**Scan Area Monitoring Kit:** For applications where vehicle occupants may be scanned; designed for compliance with ANSI 43.172009 for personnel scanning; monitors the scan area and stationary scan mode exclusion zone to prevent exposure above the specified limits.

Radioactive Threat Detection: Automatically detects both gamma rays and

**Isotope Identifier:** Digital, handheld, multi-channel spectrometer providing gamma and neutron isotope identification

Color Printer: Located in ZBV cab Shipping Tie-Downs: Includes 10 D-rings

Diesel/JP8 Generator: For use with Remote Console, Cold Weather, and

Harsh Environment

Local Language: Available upon request Custom Paint Colors: Available upon request Dark Window Tint: Available upon request

**Backup Camera:** Displays area immediately behind ZBV **Wireless Networking Kit:** For use with ASE Connect

Four-Wheel Drive: Driver-selectable

#### SYSTEM SOFTWARE AND IMAGING TOOLS

Operators Console: 14.1" LCD high-intensity monitor

**Operating System:**Windows XP Professional

#### **ASEInspection Software and Features**

ASEInspection is the Windows-based application software used to convert X-ray data into images. ASEInspection contains a suite of tools for manipulating and enhancing images, and it is used for image storage and retrieval. **Mark and Annotate:**Attaches pointers and comment fields to images **Database Function:**Provides ability to create records relating to specific scans

**Quick Save:** Allows operator to save any part of a multi-target image as well as the entire image

Full Save: Automatically saves the current image to hard disk when its accompanying database record is saved

Suspect Save: Saves images identified as suspect

Archive: Manually saves stored image files on a CD/DVD-RW disk, and

creates a reference to the disk in the database

**Export Image:**Provides capability to export what-you-see-is-what-you-get (WYSIWYG) image or full image into TIF/JPEG formatted files

# **Image Analysis Tools**

Density Expand: Controls and continuously adjusts the contrast of the

displayed image, thus enhancing the differences in objects

Auto Enhance: Automatically optimizes contrast throughout the image

Sharpen: Accentuates the edges of objects in the image

**Reverse Video:** Displays the normal, positive image or the reverse

black-and-white negative image

High Contrast:Intensifies subtle differences in contrast

**Region of Interest:** Allows analysis tools to be applied to a selected region of the image

**Color Palettes:** Adds the ability to evaluate images in greater depth using up to 11 color palettes

**Historical Compare:**Side-by-side comparison of a current image to a saved image

**Zoom:** 2x, 3x, 4x, 8x, 16x magnification with the ability to roam continuously through full field of view

**Pan and Scroll:** Ability to examine any part of the image at preset display magnifications

# **HEALTH AND SAFETY**

Dose to Cargo: Less than 0.01 mR (0.1  $\mu$ Sv) per scan, at an average speed of 3 mph (5 kph) at 5' (1.5 m) distance

**Environmental/Operator Dose:** Less than 0.1 mR (1  $\mu$ Sv) in any one hour

Radiation Standard: Conforms to ANSI N43.32008 For General

Radiation Safety Installations using non-medical X-ray and sealed gammaray sources, energies up to 10 MeV

# **ENVIRONMENT**

Ambient Operating: 32°F to 108°F (0°C to 42°C)

**Storage:** -20°F to 140°F (-29°C to 60°C)

Operable in: rain, snow, high winds, and altitudes up to 9,845 ft

(3,000 m) nominally

Hot Weather Package (option): Guarantees operation up to 122°F (50°C) Cold Weather Package (option): Guarantees operation down to -20°F (-29°C) Harsh Environment (option): Includes hot and cold weather packages