The Astrophysics MVCTC is a multi-view and computer tomography (CT or "3D" imaging) capable system for screening medium to high density pallets and inspecting challenging commodities. Astrophysics developed the MVCTC with support from the United States Department of Homeland Security, Science and Technology Directorate.

The MVCTC includes:

**MULTIPLE VIEWS:**
- 7 to 28 view transmission imaging
- Dynamically extendable number of views acquired
- Single X-ray source
- 7 high resolution detector arrays
- Operates as a "1st Level" transmission screening system with high throughput

**COMPUTER TOMOGRAPHY (CT):**
- Translate and rotate CT imaging
- Enhanced screening tool for instances when multi-view cannot resolve a pallet
- Reduces rejects and false alarms

- Optional automated threat detection

**FEATURES AND BENEFITS:**
- High resolution multi-view X-ray transmission imaging through up to 28 view angles and 180 degrees
- Unique volumetric (CT or "3D") pallet imaging
- Significant upgrade to pallet inspection & threat detection

The MVCTC’s screening operations are comparable to current X-ray pallet systems including 0.2 m/s conveyor speed in multi-view & CT modes, 1 to 4 passes in multi-view mode (as needed), and 4-pass scanning in CT mode, resulting in operational throughput greater than 20 pallets per hour.

The MVCTC unit cost is comparable to EDS CT baggage screening systems, and its operating cost is similar to dual-view 320 kV and 450 kV pallet X-ray transmission systems. It also includes optional X-ray source configurations to meet any screening mission: 200 kV X-ray monoblock, 320 kV and 450 kV generators, and betatron or linac.
GENERAL SPECIFICATIONS

- **Tunnel Size:** 125.7 cm x 181.6 cm
- **System Dimensions:** 49.5" x 71.5"
- **Max Pallet Dimensions:** 121.9 cm x 121.9 cm x 165.1 cm
- **Net Weight:** 37,600 kg estimated (82,894 lbs)
- **Roller Bed Capacity:** 1,600 kg (3,527 lbs) pallet
- **One Pass (7 View Transmission):** 40 seconds
- **Four Passes (CT Image):** 145 seconds
- **Minimum Throughput:**
  - 1 Pass (Transmission): 30 pallets/hour
  - 4 Passes (CT): 15 pallets/hour

TECHNICAL

- **2D Transmission & 3D CT Imaging:**
  - Exceeds all current U.S. and International regulatory standards for air cargo screening
  - **Steel Penetration:** Minimum 95 mm (Astrophysics' step wedge), 92 mm (ANSI N42.46-2008)
  - **Contrast Sensitivity:** 1% at 50% maximum steel penetration

X-RAY GENERATOR

- **Voltage:** 600kV (320kV and 450kV Options)
- **Current, Power:** 4.0 mA, 2.4kW
- **Cooling:** Separate Water Cooler Unit
- **Beam Direction:** Horizontal Side Shooters
- **Detectors:** 7 x 2560 Channels in L-Shaped Arrays

COMPUTER

- **Processor:** Intel® Quad Core i7
- **Memory:** 4 GB RAM
- **Storage:** 3 TB HDD, 250 GB SSD
- **Video Card:** 1 GB GDDR5 Nvidia
- **Platform:** Windows® 7 OS
- **Backup:** Uninterruptible Power Supply (Computer Operation - 20 Minutes)

VIDEO

- **Display Type:** Dual 24" LCD Color Monitors
- **Display Resolution:** 1920 x 1200, 24 Bit/Pixel Color

ENVIRONMENTAL

- **Operating Temperature:** 0°C - 40°C (32°F - 104°F)
- **Humidity:** Up to 95% Non-Condensing

ELECTRICAL

- **Power Requirements:** 50A, 200-250VAC, 3 Phase

HEALTH AND SAFETY

- **Compliant with USFDA, Center for Devices and Radiation Health Standards for Cabinet X-Ray Systems (21-CFR 1020.40)
- **Typical radiation leakage is less than 0.1 mR/hr (Leakage less than 0.5 mR/hr permitted by the Federal Standard)

STANDARD FEATURES

- 9 Quadrant Zoom
- Atomic Z-Number Measurement
- Auto Image Archiving
- Color and Black / White Imaging
- Continuous Zoom up to 64x
- Geometric Image Distortion Correction
- High Penetration Function
- Image Review
- JPEG Conversion
- Multi-Tier Accessibility
- Network Ready
- Operator Training Program (OTP)
- Organic/inorganic Imaging
- Picture Perfect
- Print Image Capable
- Pseudo Color
- Real-Time Image Manipulation
- Real-Time Self Diagnostics
- Reverse Monochrom
- Save Image (RGB)
- Scan Counter
- Vertical Zoom Panning

OPTIONAL FEATURES

- ASTM F792-08 Test Case
- Automated Threat Detection
- Custom Paint
- Density Alert
- Extended Entry / Exit Rollers
- Footmat Operator Interlock
- Local Language Support
- Radiation Meter
- Remote Workstation Configuration
- Threat Image Protection (TIP) Software
- Tropical Kit
- Wireless Barcode Scanning