



*X-Cargo*  
**RAPID.**  
**RAZOR-SHARP.**  
**MeV SCANS.**



Scanning made smart

# X-Cargo

## Multirow detector series



**X-Cargo** is an advanced multirow X-ray detector family engineered to redefine performance standards in high-speed, high-energy imaging for MeV-level security and industrial applications. Purpose-built for demanding inspection environments, X-Cargo delivers exceptional speed, resolution, and system scalability through a modular, software-configurable platform-based design.

Capable of supporting scanning speeds up to 70 km/h in single energy and 36 km/h in dual energy configurations, it features up to eight photodiode rows—far exceeding the conventional one- or two-row setups and enabling superior imaging resolution and advanced post-processing. A high-speed, optical 10Gbps control board architecture allows a single unit to manage up to 80 detectors, enabling streamlined integration into large-scale, multi-view systems while reducing complexity and improving serviceability.

X-Cargo is designed for use in truck and train cargo scanning at ports, border crossings, and customs checkpoints, as well as in emerging industrial applications such as dense metal waste sorting, non-destructive testing of complex automotive assemblies, and battery systems. With its cadmium-free composition and service-friendly modular structure, X-Cargo also aligns with modern sustainability goals, offering a responsible and future-proof solution for the next generation of X-ray imaging systems.

## Benefits

- High-speed scanning: Up to 70 km/h (SE) / 36 km/h (DE)
- High resolution and rich imaging data for post-processing
- Scalable architecture: Modular design enables multi-view setups and large system builds
- Streamlined integration: A single board controls up to 80 detectors, reducing system complexity
- Flexible & serviceable: SW-configurable platform with swappable modules for quick upgrades and maintenance
- Eco-friendly design: Cadmium-free and compliant with global environmental standards

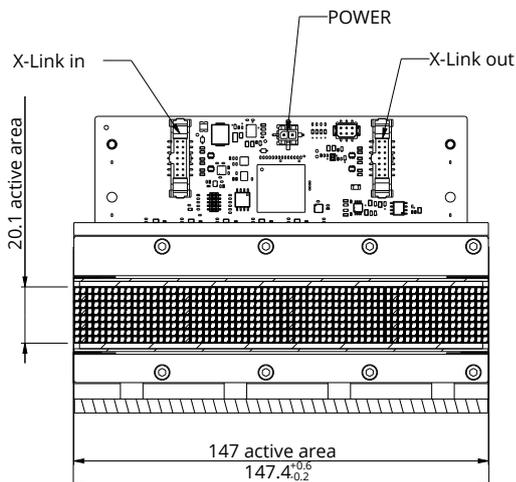
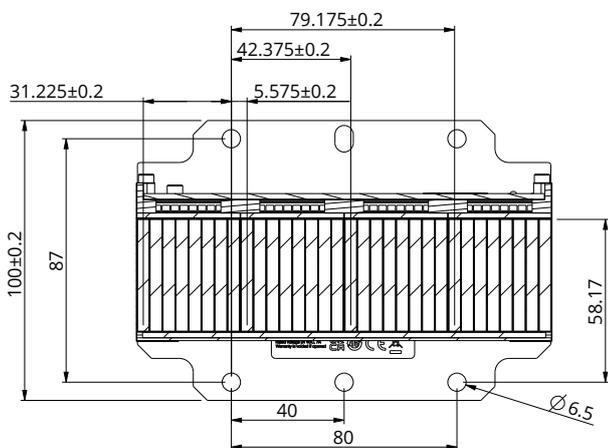
## Key features

- Max object scanning speed 70 km/h
- Max scanning speed 1,000 lines/sec (1 kHz pulse rate)
- Software-configurable platform
- Single and dual energy modes
- Matrix structure, up to 8 photodiode rows
- 127 gain settings
- Active area / detector module 147.2x20 mm
- 20-bit ADC
- 10GbE optical fiber interface
- Application-optimized CsI scintillator
- Cadmium-free

## Technical specifications

Parameter	X-Cargo 8R23	X-Cargo 4R46
Pixel pitch (mm)	2.3	4.6
Number of rows per DM (pcs)	8	4
Number of read-out channels per DM (pcs)	512	128
Max DM quantity	80	
Max number of read-out channels for the system @ max 80 DMs (pcs)	40,960	10,240
DM active area length (X) (mm)	147.2	
DM active area width (Z) (mm)	20.1	
Pixel absorption length (Y) (mm)	40	
Max object scanning speed (km/h)	70 / 36	
Max scanning speed	1,000 lines/sec (1 kHz pulse rate)	
Min integration time (per pulse)	100 us	
Scintillator material	Cesium Iodide, CsI (TI)	
Min. range (pC/pixel)	0.75	3
Max. range (pC/pixel)	95.25	381
Range step (pC/pixel)	0.75	3
Number of sensitivity setting steps (pcs)	127	
A/D resolution (bits)	20	
Data interface options	Gigabit Ethernet / 10GbE Optical Fiber	

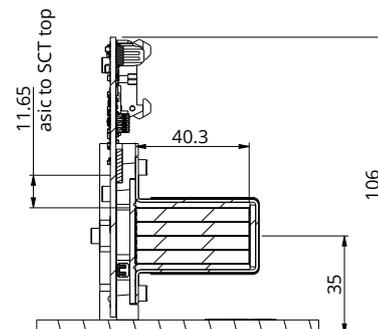
## Detector module dimensions



## Applications

MeV-level security and industrial inspection, including:

- Cargo scanning at ports, border crossings, and customs facilities
- Sorting of dense metal waste
- Non-destructive testing (NDT) of electric vehicle components and battery packs





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