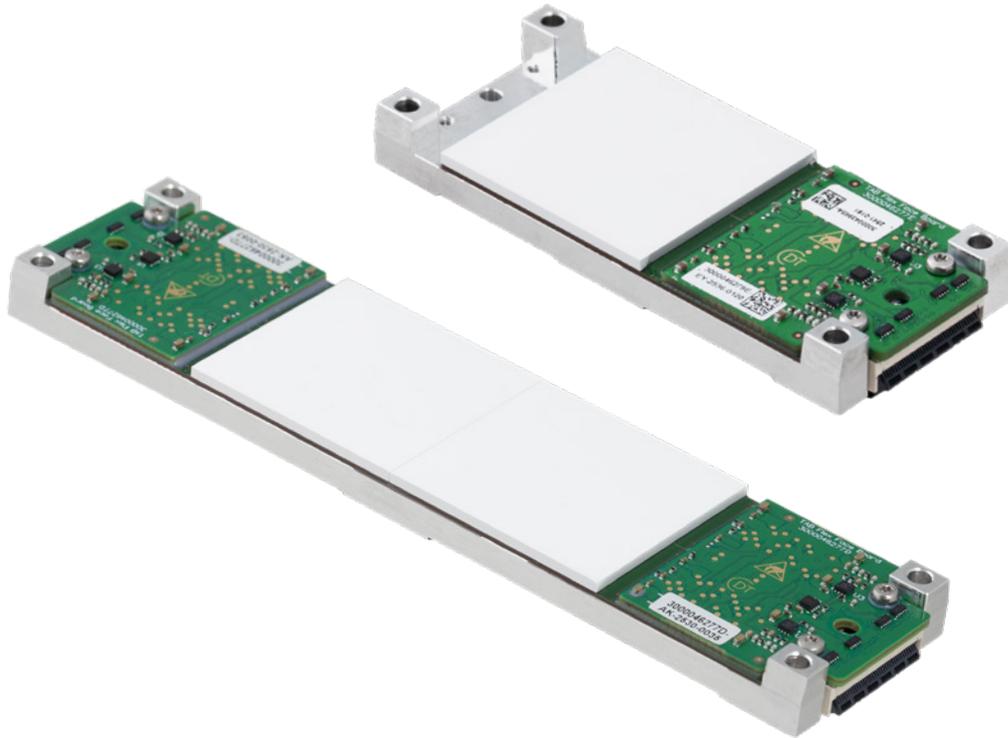


X-ACE HS



Off-the-shelf, high-speed medical CT detector series



- Reliable, high-quality CT imaging with low noise, high stability, and consistent slice-to-slice performance
- Supports fast scan speeds without compromising uniformity or detail
- Clean, predictable signal performance across a wide exposure range
- Reduced thermal drift and rotation-related artifacts
- Fast and accurate mechanical integration with pre-engineered mounting features
- Reliable high-speed data transfer and simplified system integration via digital interface
- Scalable 32- and 64-slice platform with shared interface, identical pixel pitch, and minimal redesign effort
- Validated detector-to-processing imaging chain through AIDA, reducing integration effort and time-to-market

Designed for next-generation CT systems requiring faster scan speeds, lower noise, high stability, and seamless subsystem integration, the X-ACE HS (high-speed) detector series provides reliability for advanced diagnostic imaging. The optical and electronic architecture ensures consistent signal linearity, temporal stability, and slice-to-slice uniformity — all essential for robust CT image quality.

A precisely defined pixel structure combined with a matched scintillator-photodiode-24-bit ADC design supports stable signal formation across all slices. The low-afterglow GOS scintillator, high-resolution photodiode, and low-noise digitization chain enable clean energy integration and predictable output across a wide exposure range — even during fast gantry rotation and short integration times.

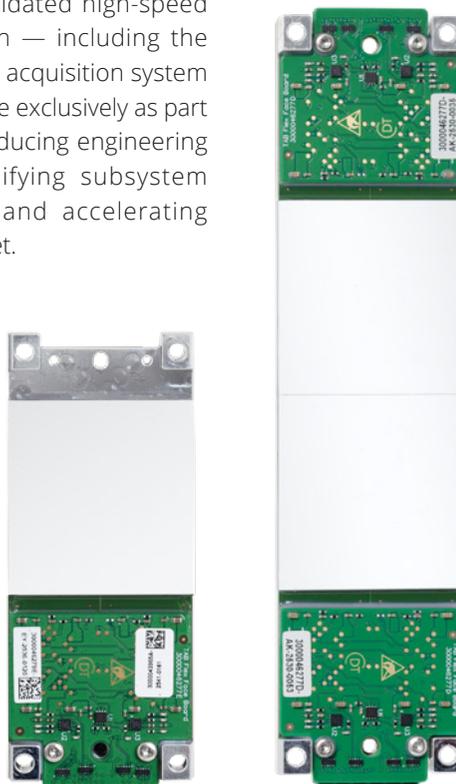
Integrated temperature monitoring and a mechanically robust structure minimize thermal drift and rotation-related artifacts during demanding CT duty cycles. A rigid aluminium bracket with integrated ASG mounting points and gantry guide features ensures accurate, repeatable installation and simplified alignment.

A high-speed LVDS digital interface enables reliable data transmission and straightforward system integration, supporting precise timing control.

The X-ACE HS family is built as a scalable platform. Both 32-slice and 64-slice modules share a common electrical interface, identical pixel pitch, and similar mechanical form

factor, enabling easy scalability with minimal redesign. This platform approach supports product-line expansion and faster development of new CT variants.

While fully functional as standalone modules, X-ACE HS detectors integrate seamlessly with the AIDA platform. The AIDA solution provides a complete, validated high-speed imaging chain — including the required data acquisition system (DAS), available exclusively as part of AIDA — reducing engineering effort, simplifying subsystem integration, and accelerating time-to-market.



Key features

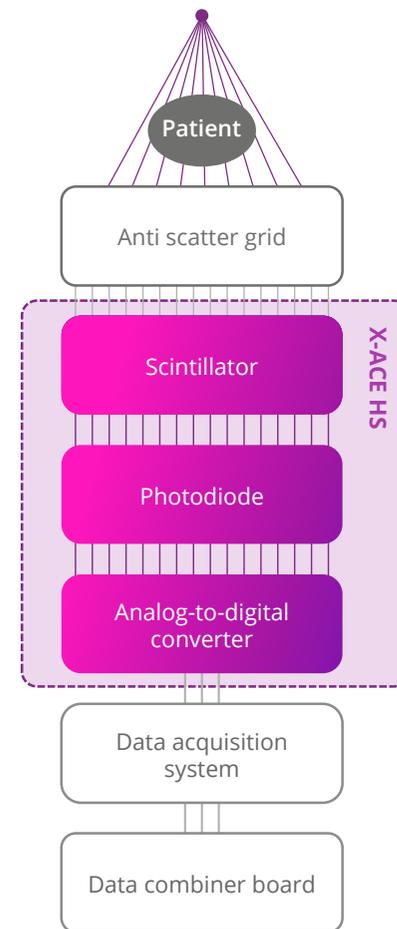
- Precisely defined pixel geometry with consistent pixel pitch (32- and 64-slice)
- Medical-grade, low-afterglow GOS scintillator matched to photodiode design
- Integrated BSI photodiode with high-resolution 24-bit ADC chain and calibrated full-scale charge range
- Onboard temperature sensors
- Rigid aluminum bracket with integrated ASG mounting points, reference edges, and CT-gantry guide features
- High-speed LVDS digital interface for pixel data and timing signals
- Common electrical and mechanical platform across slice variants
- AIDA-compatible subsystem interface
- Dedicated detector-side DAS provided through the AIDA platform with synchronized timing and high-speed data conditioning

Applications

- Medical CT imaging

Technical specifications: X-ACE HS detectors

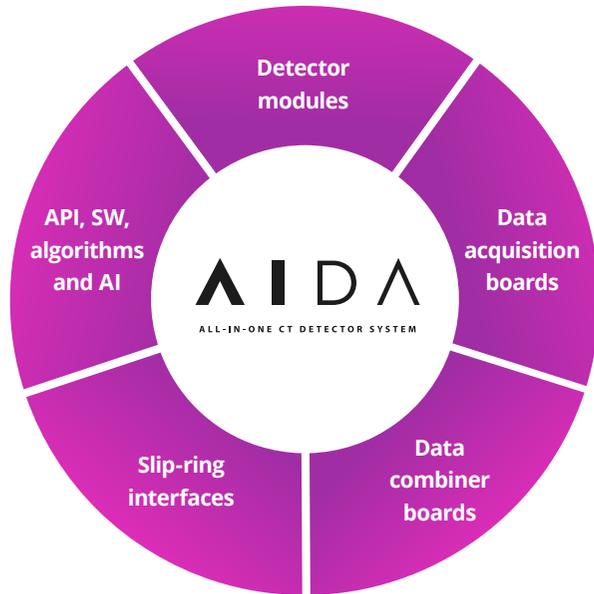
Product	X-ACE 32 HS	X-ACE 64 HS
		
Anatomical coverage in iso-center (mm)	20	40
Slices (pixels in Z-axis)	32	64
Pixels in X - axis	32	32
Total number of pixels	1,024	2,048
Pixel pitch in Z-axis (mm)	1.12	1.12
Pixel pitch in X-axis (mm)	1.06	1.06
Scintillator material	GOS	
AD conversion	24-bit	
FSR (pC)	320, autoscale	
Integration time (us)	50 - 1,600	
Electrical interface	High-speed digital LVDS	
Mounting	5 x mounting holes	
Thermal sensor	Included	
Mechanical footprint (mm)	33.8 (W) × 85 (L) × 9.5 (H)	33.8 (W) × 145.5 (L) × 9.5 (H)
Power consumption (W)	1.35 (typical)	2.7 (typical)
Power supply (V DC)	1.85	



Complete imaging chain with AIDA

While X-ACE HS delivers detector-level performance, AIDA provides the validated subsystem architecture that connects the detector seamlessly to the full CT imaging chain. It manages high-speed data handling, synchronization, timing control, and power distribution through a tightly integrated platform that includes a dedicated detector-side DAS.

AIDA delivers a complete and validated detector-to-processing imaging chain with deterministic synchronization and reliable high-speed data aggregation. Its scalable architecture supports both 32- and 64-slice systems while reducing subsystem development complexity, lowering integration risk, and accelerating system bring-up.



Technical specifications: HS DAS

Parameter	Value
Detector support	Up to 2 detector modules (either X-ACE 32 HS or X-ACE 64 HS)
Max pixel capacity	4,096
Input interface (Detector -> DAS)	High-speed LVDS digital data
Output Interface (DAS -> readout)	DT proprietary highspeed LVDS link
Power input	12-24 V \pm 10%
Power to detector	1.85 V AVDD, 1.25 V VREF
Power consumption (W)	~4.3 (typical) (detectors excluded)
Environmental specifications	Operating: 10-50°C, 10-80% RH (non-condensing)
Mounting	Four standard fixing points
Mechanical footprint (mm)	55 (W) x 60 (L) x 9.12 (H)