



The X-Scan iHE2 Series is an enhanced product family of high-resolution linear array detectors for high-energy X-ray Industrial Inspection applications utilizing X-ray energies of up to 15MeV.

Increased radiation hardness increases the lifespan of the detector, reducing the lifetime cost of the system. Industry-leading image quality with reduced dark image noise and increased dynamic range and sensitivity.

Available with 0.2mm, 0.4mm and 0.8mm pixel pitches and in several standard lengths. Upon request may be customized to different lengths as well as for high-energy tomography applications utilizing Linear Accelerators as the radiation source.

Features:

- x X-ray source energy range: 50 kVp - 600 kVp
- x Active length: from 410 mm to 820 mm
- x Pixel size options: 0.2 mm and 0.4 mm
- x Integration time: 0.8 ms at minimum
- x 16-bit AD, Dynamic range: > 16000
- x Significantly improved radiation hardness
- x Support Ethernet interface
- x Pixelated Cadmium Tungstate (CdWO4) scintillator

Benefits:

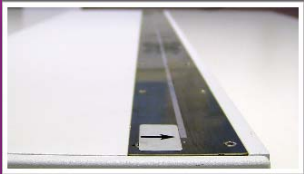
- x High conversion efficiency, dynamic range and sensitivity for demanding high energy applications
- x Increased radiation hardness for longer detector lifespan and reduced lifetime costs
- x Cost efficient solution for industrial CT application
- x Applicable for both continuous and non-continuous X-ray sources
- x Customized solutions available upon request
- x Ethernet and frame grabber interfaces to meet a wide range of compatibility and performance requirements
- x Rapid evaluation and software development with included X-View demo software, control library and sample source code

Enclosures of the X-Scan iHE2 Series

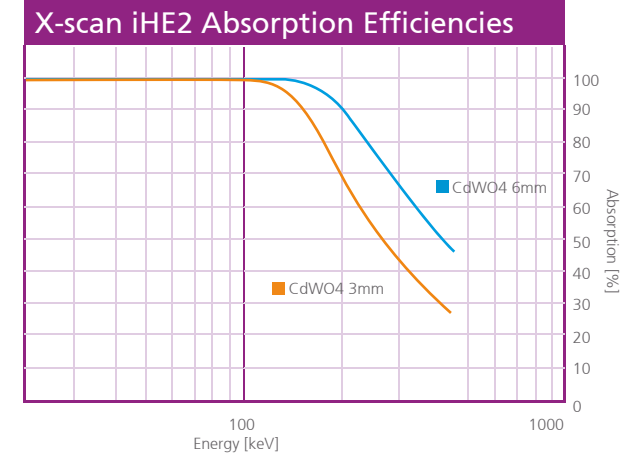
Enclosure Model	Active Length	Length	Width	Height	Max Weight
X-Scan 0.xiHE2-410	410 mm (16.1")	450 mm (17.7")	160 mm (6.3")	50 mm (2")	6 kg (13 lbs)
X-Scan 0.xiHE2-512	512 mm (20.2")	552 mm (21.7")	160 mm (6.3")	50 mm (2")	10 kg (22 lbs)
X-Scan 0.xiHE2-614	614 mm (24.2")	655 mm (25.8")	160 mm (6.3")	50 mm (2")	12 kg (26 lbs)
X-Scan 0.xiHE2-820	820 mm (32.3")	860 mm (33.9")	160 mm (6.3")	50 mm (2")	15 kg (33 lbs)
X-Scan 0.xiHE2-922	922 mm (36.3")	962 mm (37.9")	160 mm (6.3")	50 mm (2")	16 kg (35 lbs)



X-Scan iHE2 Series



General Characteristics						
General Characteristics	X-Scan 0.2iHE2	X-Scan 0.4iHE2	X-Scan 0.8iHE2	X-Scan 0.4iHE2-M	X-Scan 0.8iHE2-M	Notes
X-ray Voltage Vp Range	100-800 kVp			100-15 MeV		
Scintillator Material	Pixelated CdWO4					
Scintillator Absorption Length	3.15 mm			10 mm		
Active Area Lengths	410-820 mm					1)
Pixel Pitch (spacing)	0.2 mm	0.4 mm	0.8 mm	0.4 mm	0.8 mm	2)
Pixel Height (PD)	0.8 mm	0.6 mm	0.8 mm	0.6 mm	0.8 mm	
Pixel Width (PD)	0.15 mm	0.32 mm	0.7 mm	0.32 mm	0.7 mm	
Pixel Height (scintillator)	1.57 mm					
Pixel Width (scintillator)	0.1 mm	0.25 mm	0.65 mm	0.25 mm	0.65 mm	
Continuous Mode						
Maximum Scanning Speed	5-10 cm/s	20-26.7 cm/s	53.6 cm/s	20-26.7 cm/s	53.6 cm/s	
Minimum Integration Times	2.0-4.0 ms	1.5-2.0 ms	1.5 ms	1.5-2.0 ms	1.5 ms	
Maximum Integration Times	128 ms					
Non-continuous Mode						
Integration Time Range	200 us - 1024 us					
Maximum Scanning Time (depending on integration time setting)	20 cm7s - 32 cm/s					
Maximum Integration Time	128 ms					
Saturation level of raw data	~ 54000 ADC counts@16-bit					
A/D Resolution	16 bits					
Overall Uniformity without offset at X-card level	<±20%	<±15%				
Overall Uniformity without offset at detector level	<±25%	<±20%				
Electronic Crosstalk of Each Channel	≤0.5%					3)
Dynamic Range	>16000					4)
Data Digital Interface	16 bits					5)
Interface	Ethernet (Control: TCP/IP, Image: UDP) or Frame grabber (Control: RS232, Image: Rs422)					6)
Non-linearity	<1%					7)
Operational Voltage	+12V DC					8)
Power Consumption	60W max					
Operational Temperature	0 - 40°C					
Relative Humidity	30 - 80%					
Storage Temperature	-10 - 50°C					



Note 1) Different active lengths may also be available upon request.

Note 2) Pixel pitch of 1.5mm, 1.6mm and 2.5mm may be available upon request.

Note 3) The electronic crosstalk of each channel is measured in ASIC level.

Note 4) Dynamic Range is defined as Saturation signal/RMS Noise, with lowest gain setting (feedback capacitance is 3.5pf) of ASIC.

Available gain options are listed below:

GS0	0	1	0	1	0	1	0	1
GS1	0	0	1	1	0	0	1	1
GS2	0	0	0	0	1	1	1	1
Cf [pf]	0.25	3.5	3	2.5	2	1.5	1	0.5

Note 5) Digital interface uses 16-bit per pixel, but user can select actual output data to be 16, 14, 12, 10 or 8 bits. The default value is 16-bits.

Note 6) The limitation of total pixel number with Ethernet interface is 3072.

Note 7) Non-Linearity is defined as max deviation from ideal response line defined by zero offset and signals at 80% of dynamic range.

Note 8) The Operational voltage to be supplied to module. External power supply for 100-240 AC is provided with the module.