

X-Scan H01 series

High image quality for NDT applications



X-Scan H01 series of linear detector arrays (LDAs) provides superior image quality by optimized photodiode and electronics designs, and careful material selection. The high absorption scintillator material and perfectly matching photodiode, and readout electronics enable excellent X-ray sensitivity. X-Scan H provides low ring artifacts by uniform and linear X-ray response, together with the wide dynamic range. In addition, minimized pixel-to-pixel cross-talk and a unique pixel separation design eliminate scatter effects effectively.

This digital end-to-end solution is built on a proven concept enabling easy integration, and accelerated development time of X-ray systems. X-Scan H series has high radiation hardness extending lifetime of detectors significantly, and reducing total costs. The series is available in several standard lengths easily scalable to various configurations.

BENEFITS

- The best-in-class image quality
 - Excellent X-ray sensitivity by high absorption scintillator material with matching photodiode, and readout electronics
 - Low ring artifacts by uniform and linear X-ray response, together with wide dynamic range
 - Low pixel-to-pixel cross-talk with unique pixel separation design eliminating scatter effects
- End-to-end detector solution build on a proven concept
- Based on a digital platform
- High radiation hardness, enabling long detector lifetime, and reduced total cost
- Easily scalable, standard lengths available for various configurations

KEY FEATURES

- X-ray source energy range: 225-800 kVp
- Pixel pitch options: 0.2mm and 0.4mm
- Dynamic range >16 000:1
- Scintillator material pixelated CdWO₄
- Gigabit Ethernet interface
- Diagnostic functions
- Easy software design based on DT X-View2 software and development kit

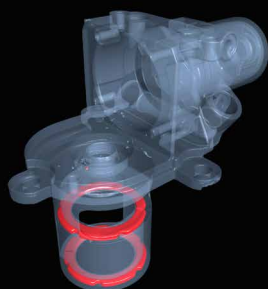
APPLICATIONS

- Industrial CT
- Non-destructive testing (NDT)
- Digital radiography (DR)
- Industries like aerospace, automotive, defense, mining, oil and gas

GENERAL CHARACTERISTICS

PRODUCT	X-Scan H0102	X-Scan H0104
X-ray tube voltage Vp range	225-800 kVp	
Scintillator material	Pixelated CdWO4	
Scintillator thickness	3.15 mm	
Active area lengths	256, 512, 614, 820, 922 mm	
Pixel pitch (spacing)	0.2 mm	0.4 mm
Pixel size (photodiode)	0.15 x 0.8 mm	0.32 x 0.6 mm
Pixel area (scintillator)	0.1 x 1.57 mm	0.25 x 1.57 mm
Scanning speed, continuous mode		
Maximum scanning speed	50 cm/s	200 cm/s
Integration time range	0.4 ms - 128 ms	0.2 ms - 128 ms
Line averaging and summing	1x ... 256x (resulting up to 32s/line)	
Pixel binning	Yes, up to 4x (equalling to 1.6mm pitch)	
A/D resolution	16 bits	
Saturation level of raw data	~ 51000 ADC counts@16-bit	
Overall uniformity, offset subtracted at X-card level	<±20%	<±20%
Overall uniformity, offset subtracted at detector level	<±25%	<±25%
Max number of dead pixels	None	
Channel electronic crosstalk	≤0.5%	
Dynamic range	>16 000:1	
Sensitivity settings	8 levels, Charge range 0.75 to 10.5 pC/Line,	
Interface	Gigabit Ethernet with UDP protocol	
EMC compliance	EN61326-1:2013, EN61000-3-2:2014 and EN61000-3-3:2013	
IP classification	IP50	
RoHS compliance	Yes	
Linearity	> 99 %	
Operational voltage and power	+12V or +24V DC, 20W max	
Operational temperature and humidity	0-40 °C, 30-80%	
Storage Temperature	-10-50 °C	
Lifetime under X-ray	10 MRads	
Weight	16 kg max	
Power on time recording	Up to 100,000 hours recording	

Example images taken by X-Scan H series.



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