X-Scan P01 series

X-ray dual energy linear array detectors

- Optimized for industrial inspection, and material sorting applications
- Efficient material separation by dual energy and optimized sensors
- Sharp object detection by extremely fast and sensitive scintillator materials, and accurate alignment of low and high energy arrays
- Optimized for low to middle energy ranges (40-110kVp)
- Robust data transmission and fast synchronization between detector units and a system computer

X-Scan P01 series with the most accurate material separation capability and fast scanning speed is easily optimized for a variety of industrial inspection, and material sorting applications. The efficient material separation capability of the series is enabled by dual energy and optimized sensors.

The series has extremely fast and sensitive scintillator materials, enabling photodiodes to detect sharply, even the tiniest objects among materials close to them. The optimized scintillator layout assures good energy separation for X-ray ≤ 110 kVp. The precise alignment of low and high energy arrays enables utilization of very efficient algorithms for superior material discrimination.

X-Scan P series is optimized from low to middle energy ranges of 40–110 kVp. The plug-and-play type series comes in 0.4 and 0.8mm pixel pitches, with a standard 614mm length. Also other lengths available with short lead times.

Benefiting from the next-generation digital platform, and Gigabit Ethernet interface, X-Scan P01 series supports belt speeds of up to 4m/s. An optional camera link offers robust data transmission and fast synchronization between the detector unit and a system computer.

Superior low noise performance is achieved by digitizing the X-ray signal in the detector's front-end electronics. Furthermore, the power-up time recording, remote firmware updates, intelligent diagnostics functions, and bad pixel correction ease maintenance, and extend the lifetime of detector units.

Key features

- X-ray energy range: 40–110 kVp
- Active length 614mm
- Pixel pitches: 0.4mm and 0.8mm
- 16-bit image data
- High dynamic range up to 16000:1
- Gigabit Ethernet and Camera Link interfaces
- Power on-time recording to track detector life time
- Bad pixel correction
- Easy software design based on DT X-View2 software and development kit

Applications

- Food inspection and grading
- Quality control in clothing industry
- Sorting in mining industry

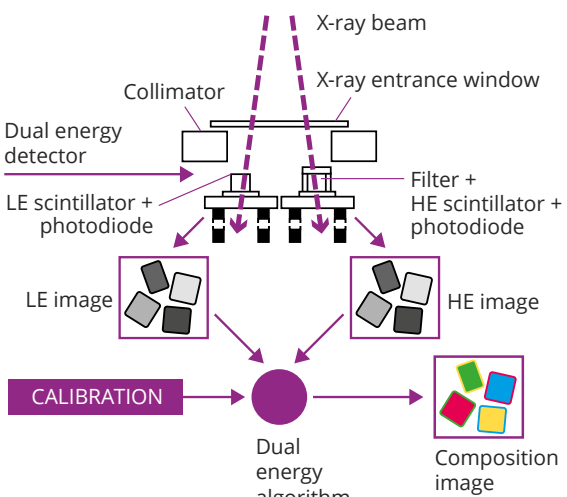
General characteristics

Product	X-Scan P0104	X-Scan P0108
X-ray tube voltage Vp range	40-110 kVp	
Scintillator material	Low energy: Phosphor screen; High energy: Pixelated ceramic	
Active area length	614mm/1331mm	512/614/820mm
Number of pixels	3072 to 6656	1280 to 2048
Pixel pitch (spacing)	0.4 mm	0.8 mm
Pixel size (photodiode)	0.32 x 0.6 mm	0.72 x 0.8 mm
Maximum scanning speed	200cm/s and 182cm/s	400 cm/s
Integration time range	0.2–128 ms	
A/D conversion resolution	16 bits	
Dynamic range	up to 16000:1	
Sensitivity settings	8 levels, Charge range 0.75 to 10.5 pC/Line, Separate setting for Low/High and for each sensor element.	
Interface	Gigabit Ethernet or Camera Link	
Linearity	> 99%	
Operational voltage and power	+12V or +24V DC, 25 W Max	
IP classification	IP50	
Operational temperature and humidity	0–40°C, 30–80% RH	
Storage temperature	-10 ... +50°C	
On-board calibration	Yes	
Bad pixel correction	Yes	
Pixel Binning	Yes, up to 4x	
Line averaging and summing	Yes, up to 256x	
Power on time recording	Up to 100,000 hours recording	
Remote firmware update	Yes	
LE/HE registration SDK	Yes	
EMC and RoHS compliance	Yes	

Enclosures Of The X-Scan P01 Series

Product model	X-Scan P01 (GigE)	X-Scan P01 (Camera Link)
Active Length	614 mm (24.2″)	614 mm (24.2″)
Length	655 mm (25.8″)	690 mm (27.2″)
Width	160 mm (6.3″)	170 mm (6.7″)
Height	50 mm (2″)	70 mm (2.8″)
Max Weight	12 kg (27 lbs)	13 kg (29 lbs)

Detector dual energy concept



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Detection Technology