

X-ray Line-Scan Camera Series



Crane XIRH High Energy Detector

The X-Scan Imaging XIRH8800 series of linear array x-ray cameras offer high performance for high-energy x-ray and gamma-ray scanning applications in a compact form factor. A heavy-metal housing shields diode arrays and electronics ensuring long-life reliability under extreme radiation conditions. A wide selection of scintillation material converts high-energy photons into visible light, fiber optics convey the visible light to a shielded, off-axis CMOS imaging linear diode array (LDA) while providing a wide dynamic

range, optimization of sensitivity and resolution, and solid-state reliability. The close proximity of the analog-to-digital converters (ADC) to the detector chips and the use of low-voltage-differential-signal technology minimize interference noise. A collection of hardware for interfacing to computers and software including drivers, an intuitive application programming interface (API), and example code software expedite developments of x-ray scanning systems.

Key Features

Off-axis, fiber-optic design for high-energy reliability in a compact form factor

50 KeV to 15 MeV energy range

Choice of scintillators: GOS:Tb, CsI:Tl, CWO

Wide range of resolutions & selection of lengths

Incorporates X-Scan Imaging's proprietary photodiode arrays

- Selectable resolution
- Low noise, wide dynamic range, high sensitivity
- High MTF

16-bit analog-to-digital conversion

Supports variable scan speed with position synchronization

Software development kit

Device drivers, libraries, standard API

GigE/Camera Link/USB3 interface



Applications

Industrial non-destructive testing (NDT)

Weld and corrosion inspection

Fan-beam computed tomography (CT)

Model: XIRH88_{LLL}-[LLL]ⁱ

Model series	XIRH8850	XIRH8801	XIRH8802	XIRH8804	XIRH8808	XIRH8816
Resolution	50 μ m	0.1 mm	0.2 mm	0.4 mm	0.8 mm	1.6 mm
Number of pixels	LLL \times 512	LLL \times 256	LLL \times 128	LLL \times 64	LLL \times 32	LLL \times 16
Maximum line rate	550 Hz	1500 Hz	3 KHz	6 KHz	12 KHz	23 KHz

ⁱ Active Length is (25.6 mm \times LLL) where LLL is a multiple of 6 and LLL \geq 12 (minimum length is 308 mm and no maximum length limit).

The maximum line rate is available for LLL \leq 18 (461 mm). Also depending in scintillator choice, image quality may be degraded at line rates greater than 1 KHz.

Standard Options

Part Numbering:

Example: XIRH8802W15/600-024-GX-FGE

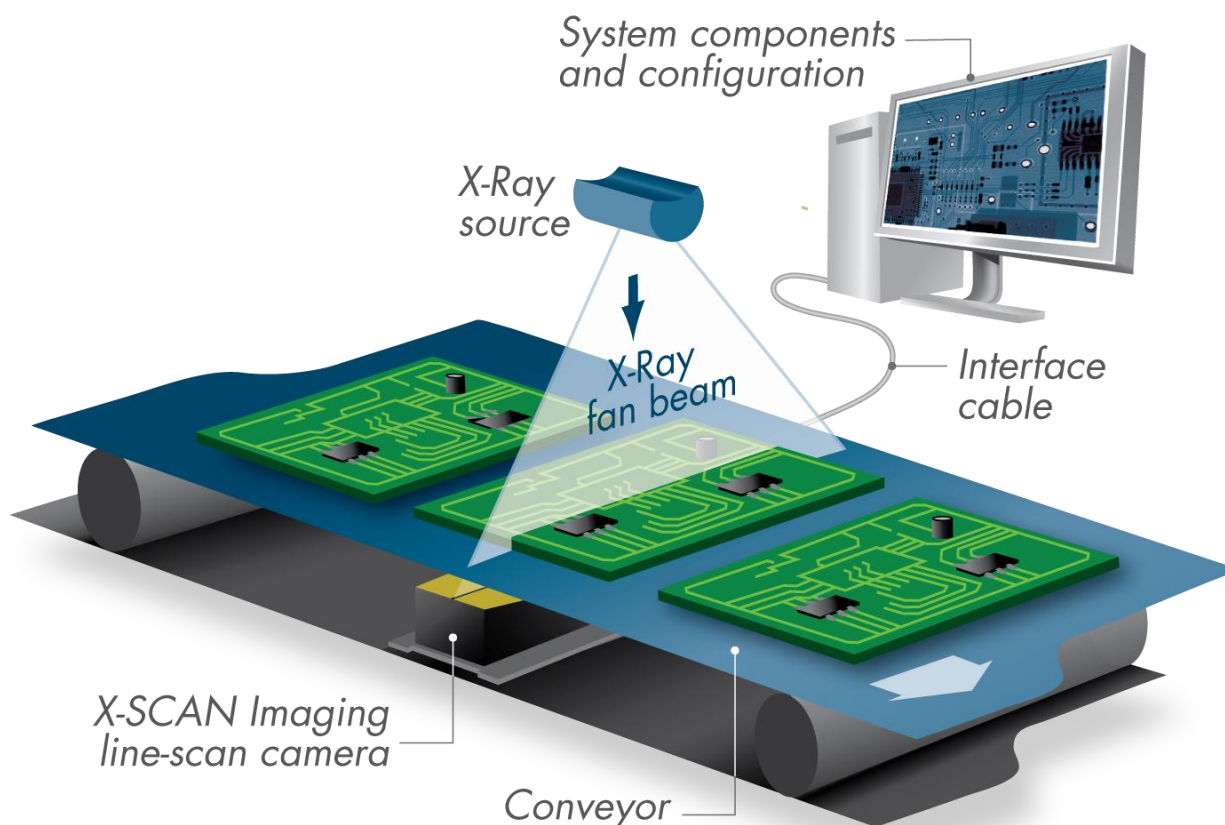
Definitions:

X I RH 88 02 W15 / 600 - 024 - DS - GX - FGE
 [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12]

Position	Description	Position	Description
[1]	Product Family	[7]	Scintillator Code
[2]	Array Type	[8]	Energy Rating
[3]	Shape	[9]	Detector Length (Inches)
[4]	Energy Option H= With FOP	[10]	Housing Aspect
[5]	Array Series	[11]	Interface G=GigE C=CameraLink U=USB
[6]	Pixel Pitch 02=200um, 04=400um, etc	[12]	PC Frame Grabber Card

Setup

The XIRH8800 series camera system includes a camera unit, a software development kit, power adapter and cabling. The frame-grabber to be installed in the computer is provided optionally. The objects to be scanned should be passed between the x-ray source and the camera.



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