# LINX-SE - X-Ray Camera

SENS - TECH

## SALES DATA SHEET

## KEY FEATURES

- Perfect Faraday cage proven design
- Modular – Camera lengths up to 4m
- Fully configurable e.g. left or right handed
- 0.4-2.5mm - detector pitch
- Wide range of single energy scintillators
- Pluggable detector arrays
- Range of filter options
- Short integration time down to 50µs
- Low noise electronics with SNR up 38,000:1
- 31 steps of gain from 1.875 pC to 60 pC
- Continuous or externally triggered scan
- GIGE interface to workstation

## APPLICATIONS

- Food – Smallest foreign object detection
- Food – Highest separation to maximise yield
- Waste – AI library generation for Machine Vision
- Security – Medium dose vehicle scanning
- Steel – Maximum SNR thickness gauging
- Wood – Foreign object detection/Quality control

## DESCRIPTION

LINX single energy detectors are linear X-ray cameras for all line scan applications. LINX sensors are built up of Sens-Tech XDAS DH (Detector Head) and SP (Signal Processing) boards to provide an array of any length. Plug and play detector arrays can be selected for use with any application reducing time to market. Electronics can be set to cope with any line speed or sampling rates.

The XDAS electronics are housed in an aluminium alloy box of modular construction with a stainless steel lid and lead screening to protect the electronics from radiation damage. The unit has a collimator with a carbon fibre window, so that only a narrow X-ray beam can reach the detector, reducing scattered radiation and improving image quality.

## PRINCIPLES OF OPERATION

XRT X-ray signal is detected and measured using XDAS single energy scintillator and photodiode arrays and signal processing electronics. Pitch and chemistry is application specific to cover the energy range of 5 to 500KeV. **Please note:** Dual energy systems are also available.

Data acquisition time can be selected in the range 50µs to 50ms subject to the number of detector boards and the maximum read-out rate from the system of 48MB/s. Data is output in 16-bit format. The detector is linked to a client workstation via GIGE ethernet.

User settings to control integration times, gain and number of sub-samples can be set separately for each DH board. together with information on system configuration are transmitted over the selected interface and stored in non-volatile RAM so that at switch-on, the system is initiated in the last mode saved.

# LINX-SE - X-Ray Camera

SENS TECH

## SALES DATA SHEET

## SPECIFICATION

| | |
|---|---|
| **INTEGRATION TIME**<br>50µs to 50ms | **SUB SAMPLES**<br>1, 2 OR 4 |
| **SNR**<br>Up to 38,000:1<br>**POWER SUPPLY**<br>12V (9V to 30V), 100mV/p-p ripple | **NON-LINEARITY**<br><0.1% over 10 pC<br>**GAIN ADJUSTMENT**<br>31 steps, 1.875 pC to 60 pC |
| **A/D CONVERSION & OUTPUT**<br>16 BIT | **MAXIMUM READ-OUT RATE**<br>48MB/s |
| **DATA INTERFACE**<br>GIGE Ethernet / UDP protocol | **DETECTOR PITCH**<br>0.4-2.5mm |
| **DETECTOR ACTIVE LENGTH**<br>50mm to 4m | **SCINTILLATOR TYPES**<br>CsI, CdWO4, GOS, ZnSe, Si, and others |
| **OPERATING CASE TEMPERATURE**<br>+5 to +60°C | **STORAGE TEMPERATURE**<br>-40 to +70°C |
| **HUMIDITY (NON-CONDENSING) OPERATING**<br>30°C 93% | **HUMIDITY (NON-CONDENSING) NON-OPERATING**<br>40°C 93% |

## EVALUATION SYSTEM AND SOFTWARE

- XDAS XAPI and SDK software is supplied to demonstrate capability and for integration to host machine.
- The software enables setting of important acquisition parameters such as gain, offset correction and integration time.
- Data can be logged to a csv file and displayed in graphical form.
- Imaging application DLLs are also available – contact Sens-Tech for details.