



XC-TDIX

PHOTON COUNTING X-RAY DETECTOR



Inline Inspection | Food | Pipeline CUI | Process Control

FAST INDUSTRIAL PHOTON COUNTING DETECTOR

The XC-TDIX range of photon counting X-ray detectors is ideal for line scan applications demanding high throughput.

The detectors enable accurate inspection with high spatial resolution, even at fast scanning speeds. The XC-TDIX detector packs the full power of the proprietary photon counting technology into a modular design.

Extreme sensitivity, combined with efficient TDI scanning, maximises the use of available X-rays in generating high quality images, thereby decreasing X-ray tube power requirements. The radiation hardness of CdTe translates into long detector life.

FEATURES

Ideal for line scan applications

High resolution at high speed

Different energy range options

Multiple length options available

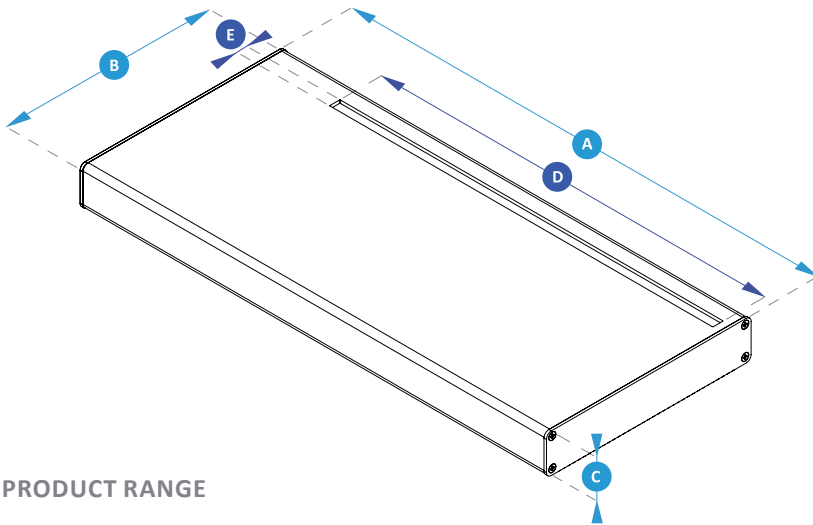
Gigabit Ethernet and CameraLink options

Long lifetime

TECHNICAL SPECIFICATIONS

Direct Conversion X-ray detectors, unless specified otherwise, are components intended to be integrated into products by X-ray system manufacturers.

System manufacturers are responsible for qualifying and validating their products for their intended uses and meeting all applicable regulatory requirements.



PRODUCT RANGE

| XC-TDIX | 150x6 | 200x6 | 300x6 | 350x6 | 400x6 | 450x6 | 600x6 | 750x6 |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| ACTIVE AREA D x E mm ² | 154 x 6 | 205 x 6 | 308 x 6 | 359 x 6 | 411 x 6 | 462 x 6 | 616 x 61 | 770 x 6 |
| PHYSICAL DIMENSIONS A x B x C mm ² [1] | 236 x 165 x 32 | 275 x 165 x 32 | 376 x 165 x 32 | 429 x 165 x 32 | 480 x 165 x 32 | 583 x 165 x 32 | 684 x 165 x 32 | 838 x 165 x 32 |
| WEIGHT (kg) | 1.5 | 2.1 | 3.5 | 4.2 | 4.9 | 5.6 | 7.7 | 9.8 |
| PIXEL MATRIX | 1541 x 60 | 2055 x 60 | 3083 x 60 | 3597 x 60 | 4111 x 60 | 4625 x 60 | 6167 x 60 | 7709 x 60 |
| MAX SPEED (lps) [2] | 20000 | 20000 | 20000 | 20000 | 20000 | 20000 | 20000 | 20000 |
| POWER CONSUMPTION (w) | 30 | 35 | 40 | 45 | 50 | 60 | 75 | 100 |
| INTERFACE | | | | | | | | |
| GigE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| CameraLink | | | | ✓ | | | | |
| ENERGY RANGE (kVp) [3] | | | | | | | | |
| 160X = 40 – 160 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 300X = 40 – 300 | | ✓ | ✓ | | | | | |
| VARIANTS | | | | | | | | |
| A = Air Cooling | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

[1] Not including fans. Fans add 35 mm to thickness C

[2] 8-bit pixels, single energy

[3] Beam and scatter must be contained within the active area

COMMUNICATIONS

| | |
|--------------------------|-----------------------|
| Data Interface | See PRODUCT RANGE |
| Power Supply | 12 V |
| External Trigger Signals | Start, Frame, Encoder |

REGULATORY

CE pending

ENVIRONMENTAL TYPICAL

| | |
|-----------------------------------|---------------|
| Ingress Protection | IP20 |
| Operating Temperature | 0 to +50 °C |
| Operating Humidity Non-condensing | 30 to 85 % |
| Storage Temperature | -10 to +50 °C |
| Storage Humidity Non-condensing | 10 to 95 % |

SENSOR

| | |
|---------------------|---------------------------------|
| Technology | Photon Counting |
| Modes | Single Energy High Speed TDI |
| Converter | Cadmium Telluride (CdTe) |
| Pixel Pitch | 200 µm |
| Pixel Fill-factor | 100 % |
| Tile Gap | 100 µm |
| Count Rate | 200 Mcnts / s / mm ² |
| Pixel Depth | Up to 18 bits / frame |
| Active Area | See PRODUCT RANGE |
| Imaging Speed | See PRODUCT RANGE |
| Binning | 2x2, 4x4 |
| Temperature Control | Fan Cooling |

IMAGE QUALITY * High Speed Spectral

| | | |
|-------------------|--------------------------------|------|
| MTF @ 1.0 lp / mm | 95 % | 90 % |
| MTF @ 2.5 lp / mm | 70 % | 70 % |
| MTF @ 4.0 lp / mm | 50 % | 60 % |
| DQE @ 1.0 lp / mm | 70 % | 75 % |
| DQE @ 2.5 lp / mm | 55 % | 55 % |
| DQE @ 4.0 lp / mm | 40 % | 35 % |
| Lag | 0 % (after X-ray 6 µGy) | |
| Ghosting | < 0.1 % (1 min after 6 µGy) | |

* Typical values (actual values depend on configuration)

MECHANICAL

| | |
|------------------|----------------------|
| Dimensions | See PRODUCT RANGE |
| Housing Material | Aluminum / Copper |
| X-ray Window | Aluminized Polyester |

SOFTWARE INTERFACE

| | |
|----------------------|---------------------|
| Direct | TCP / IP Based |
| SDK Operating System | Windows 7 (onwards) |



Direct Conversion
A VAREX IMAGING COMPANY

This datasheet contains typical information specific to products manufactured at the time of its publication. Direct Conversion AB. reserves the right to amend the specifications at any time. Contents herein do not constitute a warranty. © Direct Conversion

DC-TDIX Product Data Sheet 001.01_ver1.0_20210525

