

# X-Scan f5 Series

## X-ray linear array detector



**X-Scan f5 Series** | The X-Scan f5 Series is an enhanced product family of high performance linear array detectors for Food, Pharmaceutical and other Industrial Inspection applications.

Increased radiation hardness increases the lifespan of the detector, reducing the lifetime cost of the system.

### APPLICATIONS

- Food inspection
- Pharmaceutical inspection
- Raw material sorting
- Foreign particle detection
- Thickness measurement
- Tire inspection
- Foreign particle detection
- Non-destruction testing

### KEY FEATURES AND BENEFITS

- X-ray energy range: 30 – 160 kVp
- Active length options: from 102 mm to 1638 mm
- Pixel pitch options: 0.2 mm, 0.4 mm and 0.8 mm
- 14-bit AD, Dynamic range: > 4000
- New functionalities including pixel binning and temperature drift compensation
- CE marking (EMC standard compliance)
- High throughput design for maximum scanning speeds with long active detectors
- Increased radiation hardness for longer detector lifespan and reduced life time cost
- Industry leading image quality and speed with high performance DT proprietary photodiode and ASIC designs
- Increased sensitivity and reduced dark image noise for improved image quality
- USB 2.0 and frame grabber interfaces to meet a wide range of compatibility and performance requirements
- Rapid evaluation and software development with included X-View demo software, control library and sample source code



| <b>GENERAL CHARACTERISTICS</b>     |  |                     |                     |
|------------------------------------|--|---------------------|---------------------|
| <b>PRODUCT</b>                     | <b>X-Scan 0.2f5</b>  | <b>X-Scan 0.4f5</b> | <b>X-Scan 0.8f5</b> |
| X-ray tube voltage Vp range        | 30-160 kVp   |                     |                     |
| Scintillator material              | GOS  |                     |                     |
| Active area length                 | 102-1229 mm  | 102-1638 mm         | 256-1638 mm         |
| Number of pixels                   | 512-6144   | 256-4096            | 320-2048            |
| Pixel pitch (spacing)              | 0.20 mm  | 0.40 mm             | 0.80 mm             |
| Pixel height                       | 0.30 mm  | 0.60 mm             | 0.80 mm             |
| Pixel width                        | 0.15 mm  | 0.32 mm             | 0.72 mm             |
| Maximum scanning speed             |  |                     |                     |
| - Active lengths of (102-820 mm)   | 60 cm/s  | 166 cm/s            | 666 cm/s            |
| - Active lengths of (922-1229 mm)  | 32 cm/s  | 121 cm/s            | 333 cm/s            |
| - Active lengths of (1434-1638 mm) |  | 65 cm/s             |                     |
| Minimum Integration Time           |  |                     |                     |
| - Active lengths of (102-820 mm)   | 0.33 ms  | 0.24 ms             | 0.12 ms             |
| - Active lengths of (922-1229mm)   | 0.62 ms  | 0.33 ms             | 0.24 ms             |
| - Active lengths of (1434-1638 mm) |  | 0.62 ms             |                     |
| Maximum integration time           | 128 ms   |                     |                     |
| A/D resolution                     | 14 bits  |                     |                     |
| Dynamic range                      | > 4000   |                     |                     |
| Data digital interface             | 16 bits  |                     |                     |
| Interface                          | USB 2.0 or Frame grabber (Control: RS232, Image: RS422)                                  |                     |                     |
| Linearity                          | > 99 %   |                     |                     |
| Operational voltage                | +12 V DC, range: 10.5 V - 13.5 V   |                     |                     |
| Power consumption                  | 60 W max   |                     |                     |
| IP classification                  | IP50   |                     |                     |
| Operational temperature            | 0 - 40°C   |                     |                     |
| Operational humidity               | 30 - 80 %  |                     |                     |
| Storage temperature                | -10 - +60°C  |                     |                     |
| On-board calibration               | Yes  |                     |                     |
| Binning function                   | Yes  |                     |                     |
| AD Gain/Offset calibration         | Yes  |                     |                     |
| Averaging and summing function     | Yes  |                     |                     |
| Temperature drift compensation     | Yes  |                     |                     |
| Support multi USB detectors        | Yes  |                     |                     |
| CE marking                         | EMC standard compliance<br>(EN61326-1:2013, EN61000-3-2:2006+A1+A2 and EN61000-3-3:2008) |                     |                     |

| <b>ENCLOSURES OF THE X-SCAN F5 SERIES</b> |                      |                 |               |               |                |
|---|----------------------|-----------------|---------------|---------------|----------------|
| <b>PRODUCT MODEL</b>                      | <b>Active length</b> | <b>Length</b>   | <b>Width</b>  | <b>Height</b> | <b>Weight</b>  |
| X-Scan f5-102                             | 102 mm (4.0")        | 348 mm (13.7")  | 160 mm (6.3") | 50 mm (2.0")  | 6 kg (13 lbs)  |
| X-Scan f5-156                             | 156 mm (6.0")        |                 |               |               |                |
| X-Scan f5-205                             | 205 mm (8.1")        |                 |               |               |                |
| X-Scan f5-256                             | 256 mm (10.1")       |                 |               |               |                |
| X-Scan f5-307                             | 307 mm (12.1")       |                 |               |               |                |
| X-Scan f5-410                             | 410 mm (16.1")       | 450 mm (17.7")  | 160 mm (6.3") | 50 mm (2.0")  | 7 kg (15 lbs)  |
| X-Scan f5-512                             | 512 mm (20.2")       | 552 mm (21.7")  | 160 mm (6.3") | 50 mm (2.0")  | 10 kg (22 lbs) |
| X-Scan f5-614                             | 614 mm (24.2")       | 655 mm (25.8")  | 160 mm (6.3") | 50 mm (2.0")  | 12 kg (26 lbs) |
| X-Scan f5-717                             | 717 mm (28.2")       | 759 mm (29.9")  | 160 mm (6.3") | 50 mm (2.0")  | 13 kg (28 lbs) |
| X-Scan f5-820                             | 820 mm (32.3")       | 860 mm (33.9")  | 160 mm (6.3") | 50 mm (2.0")  | 15 kg (33 lbs) |
| X-Scan f5-922                             | 922 mm (36.3")       | 962 mm (37.9")  | 160 mm (6.3") | 50 mm (2.0")  | 16 kg (35 lbs) |
| X-Scan f5-1229                            | 1229 mm (48.4")      | 1270 mm (50.0") | 160 mm (6.3") | 50 mm (2.0")  | 21 kg (46 lbs) |
| X-Scan f5-1434                            | 1434 mm (56.5")      | 1474 mm (58.0") | 160 mm (6.3") | 50 mm (2.0")  | 25 kg (55 lbs) |
| X-Scan f5-1638                            | 1638 mm (64.5")      | 1678 mm (66.1") | 160 mm (6.3") | 50 mm (2.0")  | 28 kg (62 lbs) |

## DETECTION TECHNOLOGY PLC

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