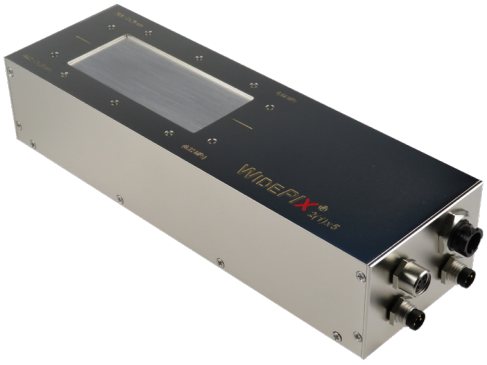
ADVACAM
Imaging the Unseen

Photon Counting Detectors for NDT Applications



WIDEPIX 2(1)x5 MPX3

Sensor Material:	Si or CdTe
Sensitive Area:	28 (14) x 70.4 mm
Number of Pixels:	512 (256) x 1280
Pixel Pitch:	55 µm
Readout Speed:	50 (1x5 tiles) and 20 (2x5 tiles) frames/s
Time-Delayed-Integration:	Yes, hardware based (1x5 tiles)
Thresholds per pixel:	1 or 2
Min Detectable Energy:	4 keV (Si) and 5 keV (CdTe)
Readout Chip:	Medipix3
Pixel Mode of Operation:	Counting in Single Pixel Mode (SPM) or Charge Summing Mode (CSM)
Counter depth:	12 or 24 bits (confi gurable)
Connectivity:	USB 2.0

WIDEPIX L 2(1)x10 MPX3

Sensor Material:	Si or CdTe
Sensitive Area:	28 (14) x 140.8 mm
Number of Pixels:	512 (256) x 2560
Pixel Pitch:	55 µm
Readout Speed:	170 (1x10 tiles) and 80 (2x10 tiles) frames/s
Time-Delayed-Integration:	Yes, hardware based (1x10 tiles), 1.5 m/s
Thresholds per pixel:	1 or 2
Min Detectable Energy:	4 keV (Si) and 5 keV (CdTe)
Readout Chip:	Medipix3
Pixel Mode of Operation:	Counting in Single Pixel Mode (SPM) or Charge Summing Mode (CSM)
Counter depth:	12 or 24 bits (confi gurable)
Connectivity:	2x Ethernet RJ-45

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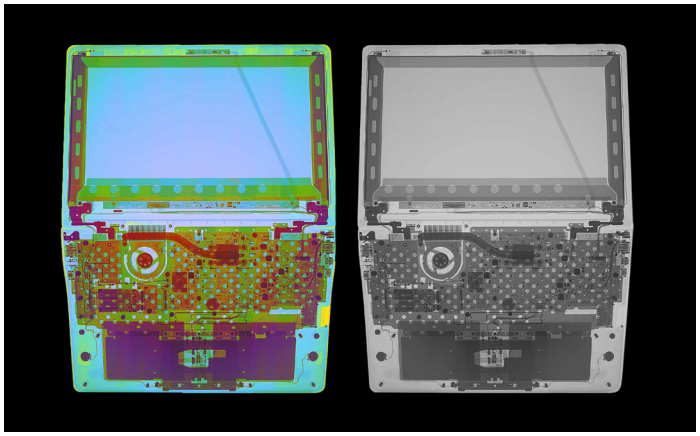
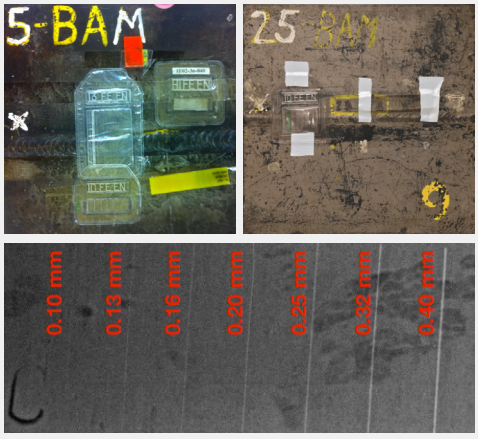
Photon Counting Detectors for NDT Applications

Non-Destructive Testing

ADVACAM's X-ray digital radiography imaging detectors are an ideal solution for many Non-Destructive Testing (NDT) applications. The photon counting detectors provide improved sensitivity, spatial resolution, contrast and signal-to-noise ratio. The broad range of detectable X-ray energy starting from 5 keV up to hundreds of keV or even MeV let the detectors capture from very light composite materials up to thick welded parts.



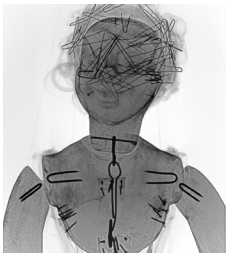


Testing of welds and heavy objects

The ADVACAM detectors, according to standard ISO 17636-2, achieve the Class B image quality. The detectors can be either operated in frame mode or in time-delayed-integration mode. The spatial resolution was measured using DIQI. The narrowest wire pair resolved was the D13 (50µm wide wires with gap of 50µm). Detector contrast was evaluated using the 10FEEN IQI. All wires, including the wire 16 (0.1 mm thick), were resolved behind the 8.3 mm thick steel sample wall.

Light materials and composites non-destructive testing solutions

ADVACAM brings to the market a new range of X-ray imaging cameras that are optimized for composite material testing. The sensitivity to low energies is useful for non-destructive testing of modern light materials. Combining the low X-ray energy detection, high sensitivity with the very high dynamic range of photon counting detectors creates a powerful tool for NDT in the aerospace industry and elsewhere.



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