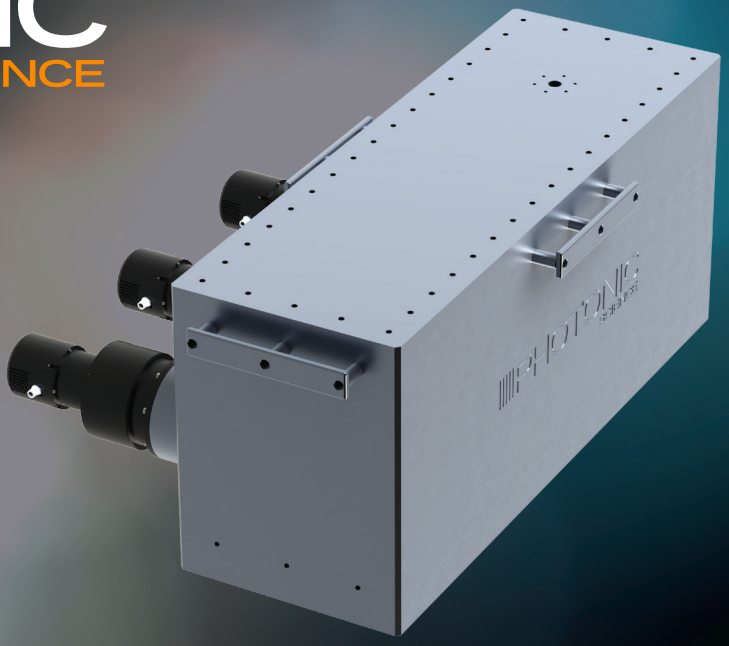
PHOTONIC
SCIENCE

Neutron ICCD + sCMOS Detectors



High Sensitivity

Our range of cooled neutron detectors employ LiF:ZnS:Ag scintillator screens read out by very low noise high sensitivity ICCD and sCMOS sensors.

Imaging applications use from 10cm x 10cm up to 43cm x 43cm active area high resolution scintillators, combined with a low noise fast read out 4096 x 4096 resolution sCMOS camera.

Diffraction and Small Angle Scattering applications employ 26cm x 20cm active area high efficiency scintillators combined with a 1306 x 1040 resolution ultra low noise ICCD camera, allowing single quantum detection capability. Larger detection areas can be obtained by tiling multiple cameras together.

Version for faster neutrons are available for both laboratory sealed sources as well as research reactor facilities.

Key Features

- Real time acquisition of 16 bit digitized image
- Single neutron equivalent read out noise
- Very high dynamic range up to 20,000:1
- Genicam compliance
- Multiplexed acquisition from tiled arrays

Applications

Neutron radiography / tomography

Neutron diffraction

Small angle neutron scattering

Protein crystallography

Neutron reflectometry

PHOTONIC SCIENCE

Neutron ICCD + sCMOS Detectors

Characteristics	Neutron ICCD	Neutron sCMOS
Scintillator	LiF:ZnS:Ag	
Pixel Size (µm)	200	105
Input Size (cm)	20 x 26	43 x 43
Frame Rate (fps)	0.6	5
Dynamic Range	>10,000:1	>20,000:1
Read Out Noise	<3	4
Internal Gain	>1000:1	N/A
Gating Time (ms)	<1ms @ 1 kHz	N/A
Sensor Temperature (°C)	Operating at -20	
Exposure Time (mins)	up to 30	up to 1
Camera Interface	Gigabit Ethernet	

scintacor
THE CENTRE OF SCINTILLATION

Lithium-6 based screens from our sister company Scintacor

Characteristics	Physical Properties
Screen Type	ND
Phosphor Type	Particulate blend
Emission Colour	Blue
Peak Emission (nm)	450
Decay to 10% (µs)	3.5
Peak Emission	<3e
After Glow	Low level
X-ray Absorption	Very low
UV Absorption	Broad band

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