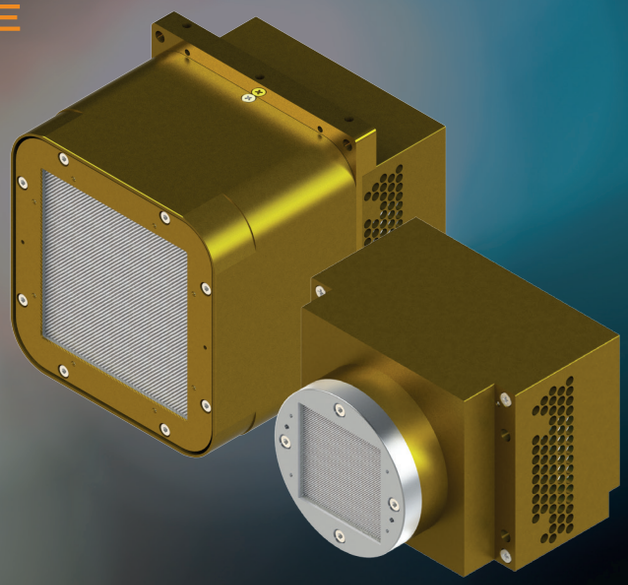
PHOTONIC SCIENCE

X-ray sCMOS 16MP Detector (Lightly Cooled)



Lightly cooled compact high resolution X-ray imaging

Photonic Science high resolution X-ray imaging detector incorporates the latest, state-of-the-art sCMOS technology providing ultra-low read noise, making it the ideal solution for even the most demanding applications.

The 16MP sensor is coupled with a fibre optic plate with active areas up to 66.5mm square. This, combined with a scintillator, optimised to suit the x-ray energy of interest provides a high sensitivity and high resolution system.

This compact design, lightly cooled version of our standard range of 16MP cameras has the addition of brass shielding which limits direct detection of scattered x-rays and is optimised for short exposures typically less than 10 seconds.

Key Features

- Standard input sizes:
  36.9 x 36.9mm up to 66.5 x 66.5mm
- Scintillator:
  Gadox:Tb for operation from 3-100 keV,
  Structured CsI scintillator from 20-300 keV
- Brass shielding
- Device server driver allows remote acquisition through existing GUI interface
- Window SDK and Viewer software provided allowing both image corrected acquisition and control of the hardware. Correction functions include bright pixel, flat fielding and dark current removal. Robust basic camera control is also available using GEV commands.
- Labview and Linux support available on request

Applications

X-ray microtomography

X-ray PCB testing

Phase contrast imaging

X-ray source qualification

X-ray radiography

X-ray coherent diffraction imaging

Specialist Camera Solutions Industrial | Surveillance | Scientific

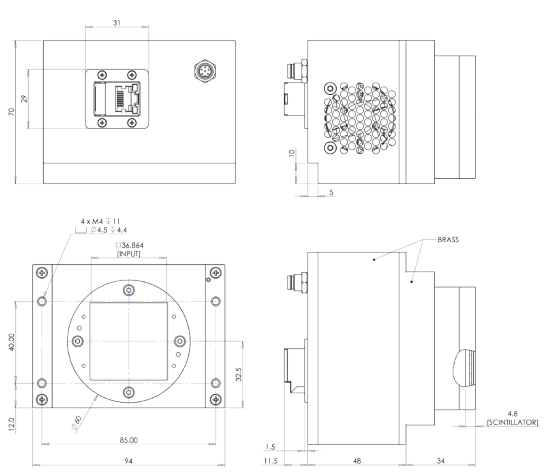
PRECISOMETER
Official representative of Photonic Science

info@precisometer.com
precisometer.com/photonic-science

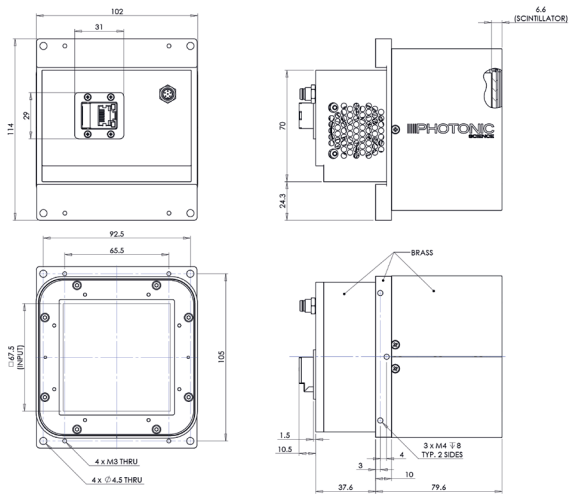
X-ray sCMOS 16MP Detector (Lightly Cooled) standard models

Characteristics	sCMOS 16MP_52	sCMOS 16MP_95
Resolution	4096 x 4096	
Input Size (mm)	36.9 x 36.9	66.5 x 66.5
Effective Pixel Size (µm)	9 x 9	16.4 x 16.4
Dynamic Range	13,000:1 (in HDR mode)	
Frame Rate	**1GigE:** 4.5 fps at full resolution, 18 fps in binning 2x2 **5GigE:** 20 fps at full resolution, 80 fps in binning 2x2	
Full Well Capacity	64,000 electrons in binning 1x1, 130,000 electrons in binning 2x2	
Read Out Noise	<5.5 electrons rms in binning 1x1, <11 electrons rms in binning 2x2	
Dark Current	**1GigE:** <6 electrons/pixel/second **5GigE:** <8 electrons/pixel/second	
Sensor Temperature (°C)	Typically 5°C below ambient	
Digitization	12/16-bit	
Exposure	50 microseconds up to 1 minute (gain mode dependent) but optimised for between 1 millisecond and 10 seconds	
Line Spread Function (FWHM)	32µm (Gadox:Tb) 45µm (Structured CsI)	75µm (Gadox:Tb) 75µm (Structured CsI)
Detector Interface	1 GigE or 5 GigE	
Energy Range	3keV-100keV with Gadox:Tb / 20keV-300keV with CsI	

sCMOS 16MP_52 (1:1)



sCMOS 16MP_95 (taper)



Please Note: All specifications in this document are typical and subject to change without notice.

T +44 (0)1424 444883
E info@photonicscience.com
www.photonicscience.com

22 Theaklen Drive, Saint Leonards-on-sea, TN38 9AZ, UK

Part of Tibidabo Scientific Industries

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Official representative of Photonic Science

Product selection, configuration & integration support

Office & enquiries
Precisometer B.V.
Eisingastraat 9
2201 DJ Noordwijk, Netherlands

Talk to Precisometer
info@precisometer.com
precisometer.com/photonic-science

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