Dhyana 6060 Large-Format FSI sCMOS Camera, 6144 × 6144, 44 fps

Model Dhyana 6060 · waveqvanta.com/products/dhyana-6060-scmos-camera

A 36 MP front-illuminated sCMOS camera with 10 µm pixels and a large full well for wide-field imaging.



The Dhyana 6060 uses a 6144 × 6144 front-side-illuminated sCMOS sensor with 10 µm pixels, giving a 61.4 × 61.4 mm field of view and an 86.8 mm diagonal. Its 123 ke$^-$ full well and 91 dB dynamic range allow bright and faint features to be recorded in the same frame, and a CoaXPress 2.0 interface supports up to 44 fps at 12 bit. It is aimed at astronomy, quantum imaging and other research that needs a very large sensor.

Key features

- 6144 × 6144 pixels (36 MP) at 10 µm on a 61.4 × 61.4 mm active area, 86.8 mm diagonal
- 123 ke$^-$ typical full-well capacity and 91 dB dynamic range
- 72% peak QE at 550 nm with 3 e$^-$ median read noise
- Up to 44 fps at 12 bit or 19 fps in 16-bit HDR mode over CoaXPress 2.0 (CXP-12 × 4)
- Air or liquid cooling, down to 45°C below ambient; dark current 0.15 e$^-$/pixel/s with liquid cooling
- GPS support and 1 µs timestamp accuracy for time-tagged observations
- Exposure times from 7 µs to 300 s

Specifications

Sensor Type	FSI sCMOS
Sensor	GSENSE6060
Color / Mono	Mono
Peak QE	72% @ 550 nm
Resolution	6144 × 6144 (36 MP)
Pixel Size	10 µm × 10 µm
Effective Area	61.4 mm × 61.4 mm
Array Diagonal	86.8 mm
Full-Well Capacity	123 ke$^-$ (typical)
Readout Noise	3 e$^-$ (typical, median)
Dynamic Range	91 dB (typical)
Frame Rate	44 fps @ 12 bit STD; 19 fps @ 16 bit HDR; 14 fps @ 14 bit STD
Shutter Type	Rolling
Exposure Time	7 µs to 300 s
Binning	2 × 2, 4 × 4
ROI	Supported
Cooling Method	Air cooling, liquid cooling
Cooling Temperature	45°C below ambient (liquid cooling)
Dark Current	0.25 e$^-$/pixel/s (air); 0.15 e$^-$/pixel/s (liquid)
DSNU / PRNU	1.5 e$^-$ / 0.2%

Bit Depth	12 bit, 14 bit, 16 bit
Data Interface	CoaXPress 2.0 (CXP-12 × 4)
Trigger	Hardware, software (SMA); outputs incl. exposure start, global exposure, readout end
Optical Interface	Customized to user requirements
Power Supply	12 V / 10 A
Power Consumption	< 100 W
Dimensions	Ø 160 mm × 164 mm
Weight	4 kg
Operating Environment	Working: -35°C to 40°C, 0–95% RH; storage: -35°C to 60°C, 0–95% RH
Software / SDK	Acquisition and analysis software; MaxIm DL, LabVIEW, MATLAB, EPICS; C/C++/C#/Python SDK

Typical applications

- Space debris detection
- Solar observation and astronomy
- Soft X-ray imaging
- Quantum imaging and quantum optics
- Flat-panel display (FPD) inspection