Dhyana 95 V2 BSI sCMOS Camera, 95% QE, 11 µm Pixels

Model Dhyana 95 V2 · waveqvanta.com/products/dhyana-95-v2-scmos-camera

A back-illuminated sCMOS camera with large 11 µm pixels and 95% QE for very low-light imaging.



The Dhyana 95 V2 pairs a 2048 × 2048 back-illuminated sCMOS sensor with large 11 µm pixels, reaching 95% QE at 560 nm with 1.6 e^- median read noise. It gives low-light results comparable to EMCCD cameras without their gain ageing, signal drift or multiplication noise, and factory calibration keeps fixed-pattern noise in the bias background low. Fluorescence microscopy, spectroscopy and astronomy are typical uses.

Key features

- 95% peak QE at 560 nm with spectral response from 200 to 1100 nm (UV, visible and NIR)
- 11 µm pixels collect about 3× the light of standard 6.5 µm pixels
- 1.6 e^- median read noise; higher SNR than an EMCCD for signals above 3 photons
- Factory calibration that reduces fixed-pattern noise: DSNU 0.2 e^-, PRNU 0.3%
- 31.9 mm diagonal (22.5 × 22.5 mm) captures a wide microscope field in one frame
- 48 fps at 12 bit or 24 fps in 16-bit HDR mode, with 100 ke^- full well (STD mode)
- USB 3.0 and CameraLink outputs; air or liquid cooling to 45°C below ambient; C-mount or F-mount

Specifications

Sensor Type	BSI sCMOS
Sensor	GSENSE400BSI
Color / Mono	Mono
Peak QE	95% @ 560 nm
Spectral Range	200 nm to 1100 nm
Resolution	2048 × 2048
Pixel Size	11 µm × 11 µm
Effective Area	22.5 mm × 22.5 mm
Array Diagonal	31.9 mm
Full-Well Capacity	100 ke^- @ STD; 80 ke^- @ HDR (typical)
Readout Noise	1.6 e^- (median), 1.7 e^- (RMS)
Dynamic Range	90 dB (typical)
Frame Rate	48 fps @ 12 bit STD; 24 fps @ 16 bit HDR
Shutter Type	Rolling
Exposure Time	21 µs to 10 s
Binning	2 × 2, 4 × 4
ROI	Supported
Cooling Method	Air cooling, liquid cooling
Cooling Temperature	45°C below ambient (liquid cooling)
Dark Current	0.6 e^-/pixel/s @ -10°C

DSNU / PRNU	0.2 e^- / 0.3%
Bit Depth	12 bit, 16 bit
Data Interface	USB 3.0, CameraLink
Trigger	Hardware, software (SMA); outputs incl. exposure start, global exposure, trigger ready
Optical Interface	C-mount / F-mount
Power Supply	12 V / 8 A
Power Consumption	60 W
Dimensions	C-mount: 100 × 118 × 127 mm; F-mount: 100 × 118 × 157 mm (H × W × L)
Weight	1613 g
Operating Environment	Working: 0°C to 40°C, 10–85% RH; storage: 0°C to 60°C, 0–90% RH
Software / SDK	Acquisition and analysis software, LabVIEW, MATLAB, Micro-Manager 2.0; C/C++/C#/Python SDK

Typical applications

- Super-resolution microscopy
- Single-molecule imaging
- Astronomy and astrophysics
- Spectroscopy
- Soft X-ray imaging
- FPD and semiconductor wafer inspection