Dhyana 400DC Cooled Color sCMOS Camera, 2048 × 2048, 16-bit, USB 3.0

Model Dhyana 400DC · waveqvanta.com/products/dhyana-400dc-scmos-camera

A cooled color sCMOS camera for low-light color microscopy with accurate color rendering.



The Dhyana 400DC is an air-cooled, front-illuminated color sCMOS camera using the GSENSE2020s sensor with 2048 × 2048 pixels of 6.5 µm. Its 16-bit output and 86.6 dB dynamic range preserve fine tonal and color differences, while 1.7 e^- read noise and cooling to 35 °C below ambient support imaging in low light. It is intended for color microscopy such as multicolor fluorescence, darkfield, DIC and pathology work.

Key features

- Color GSENSE2020s sensor with 2048 × 2048 pixels on an 18.8 mm diagonal
- 16-bit output for fine tonal gradation and faithful color rendering
- 1.7 e^- read noise (high gain) and 45 ke^- typical full well
- Air cooling to 35 °C below ambient; dark current 0.12 e^-/pixel/s at −10 °C
- 6.5 µm pixels suited to high-NA 40×, 60× and 100× microscope objectives
- 22 fps at 8 bit or 16 fps at 16 bit over USB 3.0; SMA trigger I/O

Specifications

Sensor Type	FSI sCMOS
Sensor	GSENSE2020s
Color / Mono	Color
Resolution	2048 × 2048
Pixel Size	6.5 µm × 6.5 µm
Effective Area	13.3 mm × 13.3 mm
Array Diagonal	18.8 mm
Full-Well Capacity	45 ke^- (typical)
Readout Noise	1.7 e^- (high gain)
Dynamic Range	86.6 dB (typical)
Frame Rate	22 fps @ 8 bit; 16 fps @ 16 bit
Shutter Type	Rolling
Exposure Time	21 µs – 10 s
Binning	2 × 2
ROI	Supported
Cooling Method	Air
Cooling Temperature	35 °C below ambient
Dark Current	0.12 e^-/pixel/s @ −10 °C
Bit Depth	16 bit
Data Interface	USB 3.0
Trigger	Hardware, software; SMA connectors
Trigger Output	Exposure Start, Global Exposure, Readout End

Optical Interface	C-mount
Power Supply	12 V / 8 A
Power Consumption	50 W
Dimensions	120 mm × 119 mm × 121 mm (H × W × L)
Weight	1853 g
Operating Environment	Working 0–40 °C, 10–85% RH
Operating System	Windows, Linux
Software / SDK Support	Acquisition and analysis software, LabVIEW, MATLAB, Micro-Manager 2.0; C/C++/C#/Python SDK

Typical applications

- Multicolor fluorescence imaging
- Darkfield and brightfield microscopy
- DIC microscopy
- Polarization imaging
- Pathology analysis