Libra 22 Large-FOV Cooled Mono CMOS Camera, 22 mm, 2048 × 2048, 92% QE

Model Libra 22 · waveqvanta.com/products/libra-22-cmos-camera

Cooled monochrome camera with a 22 mm square sensor for mainstream fluorescence microscope platforms.



The Libra 22 is a TEC air-cooled monochrome BSI CMOS camera for fluorescence microscopy. Its square 15.40 × 15.40 mm sensor (22 mm diagonal) matches the maximum field of view of classical C-mount optics and of many microscope and spinning-disk systems. With 92% peak QE, 1.0 e^- readout noise in high-gain mode and 38 fps in high-sensitivity mode, it handles both low-light acquisition and fast, lag-free focusing.

Key features

- 22 mm diagonal square sensor that fills the full C-mount field of view used by many microscopes and spinning-disk systems
- 92% peak QE at 530 nm and 1.0 e^- readout noise (high gain) for weak-signal imaging
- Two pixel modes: 7.52 µm (high sensitivity, 2048 × 2048) or 3.76 µm (high resolution)
- High-gain (3 ke^- full well) or low-gain (48 ke^-) operation for low signals or high dynamic range scenes
- 38 fps in high-sensitivity mode for smooth live focusing
- Hardware triggering with five output signals (Hirose 6-pin) to synchronize illumination in multichannel experiments
- Dark current below 0.01 e^-/pixel/s with stable cooling to 0 °C; DPC, DSNU and PRNU correction

Specifications

Sensor Type	BSI CMOS
Color / Mono	Mono
Peak QE	92% @ 530 nm
Resolution	2048 × 2048 (High Sensitivity mode)
Pixel Size	7.52 µm (High Sensitivity mode), 3.76 µm (High Resolution mode)
Effective Area	15.40 × 15.40 mm
Array Diagonal	22 mm (1.4")
Full-Well Capacity	3 ke^- (High Gain) / 48 ke^- (Low Gain)
Readout Noise	1.0 e^- (High Gain)
Frame Rate	38 fps (High Sensitivity mode)
Shutter Type	Rolling
Exposure Time	6 µs – 60 s
Binning	2 × 2, 4 × 4
ROI	Supported
Cooling Method	TEC (air cooling)
Cooling Temperature	Stable at 0 °C (26 °C ambient)
Dark Current	< 0.01 e^-/pixel/s
DSNU / PRNU	DSNU and PRNU correction; defect pixel correction (DPC)
Bit Depth	14 / 16 bit

Data Interface	USB 3.0
Trigger	Hardware, software; Hirose 6-pin
Trigger Output	Exposure Start, Global, Readout End, High, Low
Optical Interface	C-mount
Power Supply	12 V / 6 A
Power Consumption	25 W
Dimensions	85 × 85 × 97 mm (H × W × L)
Weight	945 g
Operating Environment	Working: 0–40 °C, 0–85% RH; storage: 0–60 °C, 0–90% RH
Operating System	Windows, Linux
Software / SDK Support	Acquisition and analysis software, Micro-Manager 2.0; C / C++ / C# SDK

Typical applications

- Fluorescence imaging
- Tissue slide scanning
- High-throughput imaging
- Live-cell imaging
- Spinning-disk confocal microscopy