FL 26BW Long-Exposure Cooled Mono CMOS Camera, 1.8-inch, 6240 × 4168

Model FL 26BW · waveqvanta.com/products/fl-26bw-cmos-camera

Deep-cooled monochrome camera for exposures of up to 60 minutes in luminescence and fluorescence imaging.



The FL 26BW is an air-cooled monochrome camera built around the Sony IMX571BLR-J back-illuminated CMOS sensor and designed for long-exposure work. The sensor is held at -25 °C (at 22 °C ambient) and dark current stays below 0.0005 e^-/pixel/s, so clean, even images can be recorded with exposures of up to 60 minutes. Its 28.3 mm (1.8-inch) diagonal, 92% peak QE and sealed cooling chamber make it a practical alternative to cooled CCD cameras in chemiluminescence and similar low-signal applications.

Key features

- Sony IMX571BLR-J BSI CMOS sensor: 92% peak QE at 530 nm and readout noise down to 0.85 e^- (Gain 3), with no amplifier glow
- Dark current below 0.0005 e^-/pixel/s with the sensor cooled to -25 °C at 22 °C ambient; the sealed chamber prevents condensation
- Exposure times from 34 µs to 60 min for chemiluminescence and other low-signal imaging
- Four gain modes (full well from 49 ke^- to 3 ke^-) and a 16000:1 dynamic range
- Defect pixel correction gives a uniform background for quantitative analysis
- Flexible binning from 2 × 2 up to 16 × 16 to raise sensitivity and dynamic range
- Compact 85 × 85 × 97 mm housing for instrument integration; supports LabVIEW, MATLAB and Micro-Manager 2.0

Specifications

Sensor Type	BSI CMOS
Sensor	Sony IMX571BLR-J
Color / Mono	Mono
Peak QE	92% @ 530 nm
Resolution	6240 × 4168
Pixel Size	3.76 × 3.76 µm
Effective Area	23.4 × 15.6 mm
Array Diagonal	28.3 mm (1.8")
Full-Well Capacity	49 / 15.7 / 7.8 / 3 ke^- (Gain 0 / 1 / 2 / 3)
Readout Noise	2.7 / 1.0 / 0.95 / 0.85 e^- (Gain 0 / 1 / 2 / 3)
Dynamic Range	16000:1
Frame Rate	6.5 / 3.4 fps (Standard / Low Noise) @ 6240 × 4168; 35.5 fps @ 3120 × 2084 (sensor bin)
Shutter Type	Rolling, Global Reset
Exposure Time	34 µs – 60 min
Binning	2 × 2, 3 × 3, 4 × 4, 5 × 5, 6 × 6, 8 × 8, 16 × 16
ROI	Supported

Cooling Method	Air cooling
Cooling Temperature	-25 °C @ 22 °C ambient
Dark Current	< 0.0005 e^-/pixel/s
Image Correction	Defect pixel correction (DPC)
Bit Depth	16 bit
Data Interface	USB 3.0
Trigger	Hardware, software; outputs: Exposure Start, Global, Readout End, High, Low; Hirose 6-pin
Optical Interface	M42 / customizable
Power Supply	12 V / 8 A
Power Consumption	≤ 50 W
Dimensions	85 × 85 × 97 mm (H × W × L)
Weight	945 g
Operating Environment	Working: 0–40 °C, 10–85% RH; storage: -10–60 °C, 0–85% RH
Operating System	Windows, Linux
Software / SDK Support	Acquisition and analysis software, LabVIEW, MATLAB, Micro-Manager 2.0
SDK	C / C++ / C# / Python

Typical applications

- Chemiluminescence imaging
- Bioluminescence imaging
- Digital PCR (dPCR)
- Fluorescence imaging
- Biochip readout