Libra 3243 Pro Stacked BSI sCMOS Camera, 43 MP at 100 fps, 100G CoF

Model Libra 3243 Pro · waveqvanta.com/products/libra-3243-pro-scmos-camera

A 43 MP stacked BSI sCMOS camera for high-throughput, low-light imaging systems.



The Libra 3243 Pro uses a stacked back-illuminated sCMOS sensor with 8192 × 5232 pixels at 3.2 µm, covering a 31 mm diagonal. A single 100G CoaXPress-over-Fiber (CoF) link carries full 43 MP frames at 100 fps, with read noise down to 1.9 e^- and full-well capacity up to 21 ke^- depending on the readout mode. The balance of small pixels and well depth suits slide scanning, sequencing and other high-throughput instruments.

Key features

- Stacked BSI sCMOS sensor with peak QE above 80%
- 100 fps at 43 MP, about 4300 Mpixel/s, compared with 420 Mpixel/s for a typical 4.2 MP sCMOS camera at 100 fps
- 31 mm diagonal (26.2 × 16.7 mm), larger than the 18.8 mm format of conventional sCMOS cameras and matched to 30 mm optical systems
- 3.2 µm pixels for high-precision sampling with 40× optics
- Four readout modes: HDR (16 bit, 50 fps), compressed HDR (16 bit, 100 fps), high-speed low gain and high gain (14 bit, 100 fps)
- Single 100G CoF interface (QSFP28) with up to 100 Gbps bandwidth for simple integration
- Air or liquid cooling regulated to 5°C or -5°C; under 1 kg and 90 × 90 × 120 mm

Specifications

Sensor Type	Stacked BSI sCMOS
Sensor	GSENSE3243BSI
Color / Mono	Mono
Peak QE	> 80%
Resolution	8192 × 5232 (43 MP)
Pixel Size	3.2 µm × 3.2 µm
Effective Area	26.2 mm × 16.7 mm
Array Diagonal	31 mm
Full-Well Capacity	HDR 15.5 ke^-; HDR compressed 19 ke^-; low gain 21 ke^-; high gain 7.2 ke^-
Readout Noise	Median: HDR 2.4 e^-; HDR compressed 2.5 e^-; low gain 5.5 e^-; high gain 1.9 e^-
Dynamic Range	76 dB (typical)
Frame Rate	100 fps (HDR compressed, high-speed low gain and high gain); 50 fps (HDR)
Shutter Type	Rolling
Exposure Time	60 µs to 10 s (HDR mode)
Binning	2 × 2, 4 × 4
ROI	Supported
Cooling Method	Air cooling, liquid cooling
Cooling Temperature	Air: 5°C; liquid: -5°C (regulated)
Dark Current	< 0.5 e^-/pixel/s @ 0°C (air cooling)

Bit Depth	16 bit (HDR modes), 14 bit (high-speed modes)
Data Interface	QSFP28 (100G CoaXPress-over-Fiber)
Trigger	Hardware, software (Hirose 12-pin); outputs incl. exposure start/end, readout, any row
Optical Interface	T-mount, F-mount, C-mount
Power Supply	24 V / 6.6 A
Power Consumption	98 W
Dimensions	< 90 mm × 90 mm × 120 mm (H × W × L)
Weight	< 1 kg
Operating Environment	Working: 0°C to 40°C, 10–85% RH; storage: 0°C to 60°C, 0–90% RH
Software / SDK	LabVIEW, MATLAB, Micro-Manager 2.0; C/C++/C#/Python SDK; Windows, Linux

Typical applications

- High-speed slide scanning
- Gene sequencing
- Spatial omics
- High-throughput imaging
- High-speed industrial inspection