Libra UV UV-Enhanced Global Shutter CMOS Camera, 200–1000 nm, 10 GigE

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

A UV-sensitive 8.1 MP global shutter camera for high-speed semiconductor inspection and UV spectral imaging.



The Libra UV is built around the Sony IMX487 sensor, giving a 200–1000 nm response with 48% QE at 365 nm and 56% QE at 500 nm. Full 8.1 MP frames are transferred over 10 GigE at up to 152 fps, and the camera is used in front-end wafer inspection, mask alignment, wafer bonding and back-end packaging defect detection.

Key features

- Sony IMX487 sensor covering 200–1000 nm, with 48% QE at 365 nm and 56% QE at 500 nm
- Full 8.1 MP (2856 × 2848) resolution at 152 fps (8-bit) and 100 fps (10-bit and 12-bit)
- Global shutter captures fast-moving samples without motion artifacts
- 10 GigE interface with uncompressed transfer and flexible cabling; PoE supported
- Readout noise down to 1.5 e^- RMS and dynamic range up to 72 dB (12-bit)
- Sum and average binning (1 × 2, 2 × 1) plus 2 × 2 sum binning; ROI and 1 µs timestamps
- Compact 45 × 45 × 74.3 mm body for embedding in inspection tools and optical systems

Specifications

Sensor Type	CMOS
Sensor	Sony IMX487
Color / Mono	Mono
Peak QE	56% @ 500 nm; 48% @ 365 nm
Spectral Range	200–1000 nm (UV/visible)
Resolution	2856 × 2848 (8.1 MP)
Pixel Size	2.74 µm × 2.74 µm
Effective Area	7.8 mm × 7.8 mm
Array Diagonal	11 mm (2/3")
Gain	Analog 1–15.7; digital 15.8–126
Full-Well Capacity (10-bit)	9000 e^- @ gain 1; 580 e^- @ gain 15.7
Full-Well Capacity (12-bit)	9250 e^- @ gain 1; 555 e^- @ gain 15.7
Readout Noise (10-bit)	3.9 e^- RMS @ gain 1; 2.1 e^- RMS @ gain 15.7
Readout Noise (12-bit)	2.4 e^- RMS @ gain 1; 1.5 e^- RMS @ gain 15.7
Dynamic Range (10-bit)	65 dB @ gain 1; 49.1 dB @ gain 15.7
Dynamic Range (12-bit)	72 dB @ gain 1; 52 dB @ gain 15.7
Frame Rate	152 fps @ 8-bit, 100 fps @ 10-bit, 100 fps @ 12-bit (full resolution)
Shutter Type	Global
Exposure Time	8-bit: 2 µs – 10 s; 10/12-bit: 3 µs – 10 s
Binning	1 × 2 (avg/sum), 2 × 1 (avg/sum), 2 × 2 (sum)

ROI	Supported
DSNU / PRNU	0.38 e^- / 0.52%
Bit Depth	8-bit, 10-bit, 12-bit
Data Interface	10 GigE
Trigger	Hardware, software; Hirose 12-pin connector
Trigger Output	High, Low, Trigger Ready, Readout, Exposure Out
Optical Interface	C-mount
Power Supply	12 V / 2 A, PoE supported
Power Consumption	≤ 12 W
Dimensions	45 mm (H) × 45 mm (W) × 74.3 mm (L)
Operating Environment	Operating 0 to 40 °C, 10–85% RH; storage −10 to 60 °C, 0–85% RH
Software / SDK Support	SDK: C, C++, C#, Python; Windows, OpenEuler

Typical applications

- Patterned wafer inspection
- Mask alignment and wafer bonding
- Semiconductor packaging defect detection
- Material classification and infrastructure testing
- Bio-spectral analysis and medical diagnostics
- Precision electronics inspection