Libra 536 Global Shutter Mono CMOS Camera, 8.1 MP, 152 fps, 10 GigE

Model Libra 536 · waveqvanta.com/products/libra-536-cmos-camera

An 8.1 MP global shutter camera with 10 GigE output for high-speed semiconductor and industrial inspection.



The Libra 536 uses the Sony IMX536 global shutter sensor (2856 × 2848, 2.74 µm pixels) and a 10 GigE interface to deliver full-resolution images at up to 152 fps. It is aimed at semiconductor production tasks such as wafer inspection and advanced packaging, and its compact 45 × 45 × 74.3 mm body simplifies instrument integration.

Key features

- Sony IMX536 mono sensor with 72% peak QE at 470 nm; response extends from the visible into the near-infrared
- Full 8.1 MP resolution at 152 fps (8-bit) and 100 fps (10-bit and 12-bit)
- Global shutter prevents skew and blur on fast-moving parts, reducing false or missed defect detections
- 10 GigE gives stable, lossless transfer for multi-camera setups and long cable runs; PoE supported
- External hardware trigger (Hirose 12-pin) synchronizes exposure with stage motion in step-scan and continuous-transport lines
- Readout noise down to 1.4 e^- RMS and dynamic range up to 72 dB (12-bit)
- 1 µs timestamp accuracy; DSNU 0.38 e^-, PRNU 0.52%

Specifications

Sensor Type	CMOS
Sensor	Sony IMX536
Color / Mono	Mono
Peak QE	72% @ 470 nm
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)	3.8 e^- RMS @ gain 1; 2.0 e^- RMS @ gain 15.7
Readout Noise (12-bit)	2.5 e^- RMS @ gain 1; 1.4 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, 2 × 1, 2 × 2

ROI	Supported
DSNU / PRNU	0.38 e^- / 0.52%
Timestamp Accuracy	1 µs
Bit Depth	8-bit, 10-bit, 12-bit
Data Interface	10 GigE
Trigger	Hardware, software; Hirose 12-pin connector
Trigger Output	Exposure Out, Readout, Trigger Ready, High, Low
Optical Interface	C-mount
Power Supply	12–24 V, 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, Linux

Typical applications

- Wafer inspection
- Advanced packaging and chip-package defect inspection
- Material classification
- Slide scanning
- Life sciences imaging