Libra 3405C Global Shutter Color CMOS Camera, 5 MP, 163 fps, 10 GigE

Model Libra 3405C · waveqvanta.com/products/libra-3405c-cmos-camera

Air-cooled 5 MP global shutter color camera with 10 GigE output for slide scanners and other instruments.



The Libra 3405C is a compact, air-cooled color camera with a 5 MP global shutter CMOS sensor (GMAX 3405), designed for integration into imaging instruments. Its 10 GigE interface carries full-resolution 2448 × 2048 images at up to 163 fps (8 bit), and on-camera AI color correction detects lighting and color temperature automatically. A spectral response of 350–1100 nm supports bright-field color imaging as well as many fluorescence applications.

Key features

- Global shutter exposes all pixels at once for distortion-free images of moving samples and high-throughput slide scanning
- 10 GigE interface: 163 fps at 8 bit, 162 fps at 10 bit and 100 fps at 12 bit at full 2448 × 2048 resolution
- On-camera AI color correction detects lighting and color temperature, removing manual white balance; no host upgrade required
- 350–1100 nm spectral response with near-infrared sensitivity, for bright-field color and most fluorescence imaging
- 3.4 µm pixels suited to optical systems below 40×, resolving fine detail in cell and tissue samples
- Air cooling to 10 °C at 25 °C ambient, dark current 0.5 e^-/pixel/s; readout noise down to 1.4 e^- in Sensitive mode
- Compact 60 × 60 × 100 mm housing (~489 g) for instrument integration; C / C++ / C# / Python SDK

Specifications

Sensor Type	CMOS (global shutter)
Sensor	GMAX 3405
Color / Mono	Color
Spectral Range	350–1100 nm
Resolution	2448 × 2048 (5 MP)
Pixel Size	3.4 × 3.4 µm
Effective Area	8.3 × 7.0 mm
Array Diagonal	10.9 mm (2/3")
Full-Well Capacity	12 bit: 8.9 ke^- (High Capacity), 4.2 ke^- (Balanced), 0.48 ke^- (Sensitive)
Readout Noise	12 bit median: 3.7 e^- (High Capacity), 2.3 e^- (Balanced), 1.4 e^- (Sensitive)
Frame Rate	163 fps (8 bit), 162 fps (10 bit), 100 fps (12 bit) @ 2448 × 2048
Shutter Type	Global
Exposure Time	1 µs – 10 s
Binning	1 × 1, 2 × 2, 4 × 4 (FPGA)
ROI	Supported
Cooling Method	Air cooling
Cooling Temperature	10 °C @ 25 °C ambient

Dark Current	0.5 e^-/pixel/s @ 10 °C
Image Correction	Defect pixel correction (DPC); AI white balance
Bit Depth	12 bit (High Depth), 10 bit (Standard), 8 bit (Speed)
Data Interface	10 GigE
Trigger	Hardware, software; Hirose 12-pin
Trigger Output	High, Low, Exposure Out, Readout, Trigger Ready
Optical Interface	C-mount
Power Supply	12 V / 8 A
Power Consumption	32 W
Dimensions	60 × 60 × 100 mm (H × W × L)
Weight	~489 g
Operating Environment	Working: 0–40 °C, 10–85% RH
Operating System	Windows, Linux
Software / SDK Support	Acquisition and analysis software; C / C++ / C# / Python SDK

Typical applications

- Pathology slide scanning
- Multi-channel fluorescence imaging
- Bright-field color microscopy
- Industrial inspection
- OEM instrument integration