Libra 3405UC Global Shutter Color CMOS Camera, 5 MP, 65 fps, USB 3.0

Model Libra 3405UC · waveqvanta.com/products/libra-3405uc-cmos-camera

Plug-and-play 5 MP global shutter color camera for microscope workstations and slide scanning over USB 3.0.



The Libra 3405UC is a compact, USB-powered color camera with a 5 MP global shutter CMOS sensor (GMAX 3405). It connects directly to standard microscopes and PCs over USB 3.0 and reaches 65 fps at 8 bit at the full 2448 × 2048 resolution. ISP auto white balance and AI-based color correction give dependable color for H&E-stained sections and teaching, while the global shutter avoids motion artifacts during fast scanning.

Key features

- Global shutter exposes all pixels simultaneously, avoiding motion blur and distortion during fast stage movement
- USB 3.0 plug-and-play connection; powered over USB at under 4 W
- ISP auto white balance and AI color correction for accurate color in H&E staining and teaching
- Acquisition and analysis software with real-time image stitching and depth-of-field fusion
- 3.4 µm pixels suited to optical systems below 40×, resolving fine detail in cell and tissue samples
- Three gain modes; readout noise down to 1.7 e^- in Sensitive mode (12 bit)
- Compact 45 × 45 × 60 mm passively cooled housing; C-mount or customized optical interface

Specifications

Sensor Type	CMOS (global shutter)
Sensor	GMAX 3405
Color / Mono	Color
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: 8.7 ke^- (High Capacity), 4 ke^- (Balanced), 0.5 ke^- (Sensitive)
Readout Noise	12 bit median: 3.7 e^- (High Capacity), 2.1 e^- (Balanced), 1.7 e^- (Sensitive)
Frame Rate	65 fps (8 bit), 44 fps (12 bit) @ 2448 × 2048
Shutter Type	Global
Exposure Time	1 µs – 10 s
Binning	1 × 1, 2 × 2, 4 × 4
ROI	Supported
Cooling Method	Passive cooling
Image Correction	Defect pixel correction (DPC); AI white balance
Bit Depth	8 / 12 bit
Data Interface	USB 3.0

Trigger	Hardware, software; Hirose 6-pin
Trigger Output	Exposure, Readout, Trigger Ready
Optical Interface	C-mount / customizable
Power Supply	USB bus power
Power Consumption	< 4 W
Dimensions	45 × 45 × 60 mm (H × W × L)
Operating Environment	Working: 0–40 °C, 10–85% RH; storage: -10–60 °C, 0–90% RH
Operating System	Windows, Linux
Software / SDK Support	Acquisition and analysis software; C / C++ / C# / Python SDK

Typical applications

- Pathology slide scanning
- Fluorescence slide scanning
- Bright-field microscopy
- H&E-stained section imaging and teaching
- Industrial inspection