

# Libra 3405UM / 3412UM

The Libra 3405UM / 3412UM feature global shutter monochrome CMOS sensors, delivering high speed and high resolution imaging. Covering a wide spectral range of 350 nm–1100 nm, they provide excellent performance for multi-channel fluorescence applications. With a USB 3.0 interface, these cameras offer plug-and-play operation with high-speed, low-latency data transfer, enabling direct connection to standard microscopes and computers for efficient workflows.



## Key Features

## Benefits

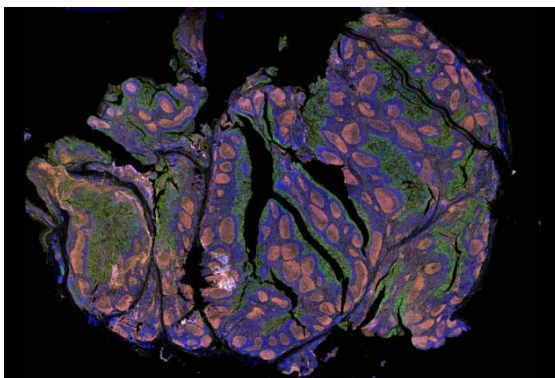
|                              |                                                                                                 |
|------------------------------|-------------------------------------------------------------------------------------------------|
| Global Shutter               | High-speed, artifact-free imaging, ideal for high-throughput slide scanning.                    |
| 350 nm–1100 nm Wide Spectrum | Suitable for multi-channel fluorescence and near-infrared detection.                            |
| 3.4 $\mu$ m Pixel Size       | Optimized for < 40X optical systems, enables higher resolution for cellular and tissue imaging. |
| USB 3.0 Interface            | Plug-and-play, enabling highly efficient microscopy workflows.                                  |
| Mosaic V3 Software           | Provides advanced image processing and real-time quantitative analysis to boost lab efficiency. |

## Typical Applications

- Fluorescence Slide Scanning <sup>[1]</sup>
- Microscopy Imaging

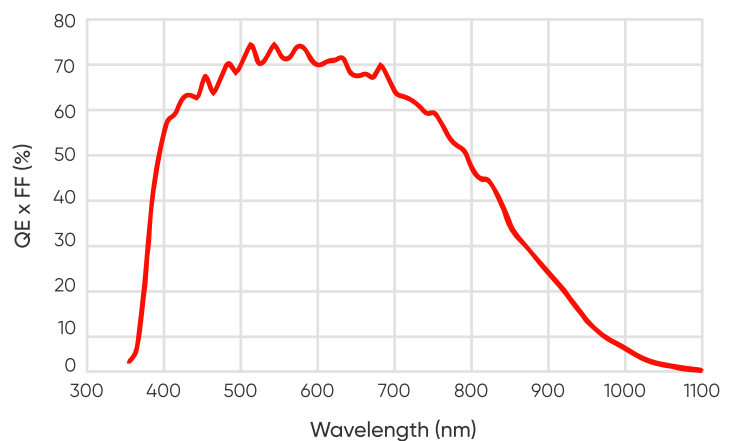
## Noted Examples

[1]The Libra 3405UM / 3412UM deliver high-resolution imaging with excellent NIR sensitivity, ideal for tissue fluorescence slide scanning applications.

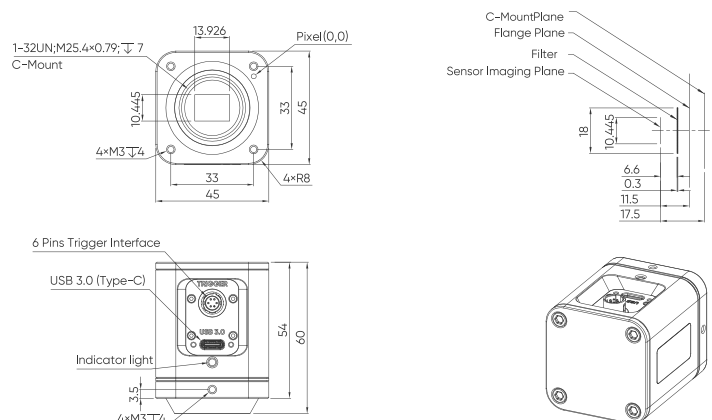


Fluorescence section scanning and stitching example of mouse gastric tissue

## Quantum Efficiency



## Dimensions (Unit: mm)



# Specifications

|                                  |                                                                             |        |                                                                    |        |
|----------------------------------|-----------------------------------------------------------------------------|--------|--------------------------------------------------------------------|--------|
| Product Name                     | Libra 3405UM                                                                |        | Libra 3412UM                                                       |        |
| Model                            | L3405UM                                                                     |        | L3412UM                                                            |        |
| Sensor Type                      | CMOS                                                                        |        |                                                                    |        |
| Sensor Model                     | Gpixel GMAX 3405                                                            |        | Gpixel GMAX 3412                                                   |        |
| Chrome                           | Mono                                                                        |        |                                                                    |        |
| Array Diagonal                   | 10.9 mm (2/3")                                                              |        | 17.4 mm (1.1")                                                     |        |
| Effective Area                   | 8.3 mm x 7.0 mm                                                             |        | 14.0mm x 10.5mm                                                    |        |
| Pixel Size                       | 3.4 μm x 3.4 μm                                                             |        |                                                                    |        |
| Resolution                       | 2448 (H) x 2048 (V)                                                         |        | 4096 (H) x 3072 (V)                                                |        |
| Peak QE                          | 75%@540 nm; 47%@800 nm                                                      |        |                                                                    |        |
| Gain Mode                        | High Capacity, Balanced, Sensitive                                          |        |                                                                    |        |
| Full Well Capacity               | 12bit: High Capacity 8.7 Ke-,<br>Balanced 4.3 Ke-, Sensitive 0.5 Ke-        |        | 12bit: High Capacity 9 Ke-,<br>Balanced 4.5 Ke-, Sensitive 0.7 Ke- |        |
| Frame Rate                       | 12 bit                                                                      | 8 bit  | 12 bit                                                             | 8 bit  |
|                                  | 45 fps                                                                      | 65 fps | 18 fps                                                             | 28 fps |
| Readout Noise<br>12 bit (Median) | 3.6 e-@High Capacity,<br>2.3 e-@Balanced,<br>1.6 e-@Sensitive               |        | 3.9 e-@High Capacity,<br>2.6 e-@Balanced,<br>1.3 e-@Sensitive      |        |
| Shutter Mode                     | Global                                                                      |        |                                                                    |        |
| Exposure Time                    | 1 μs~10 s                                                                   |        |                                                                    |        |
| Image Correction                 | DPC                                                                         |        |                                                                    |        |
| ROI                              | Support                                                                     |        |                                                                    |        |
| Binning (FPGA)                   | 1x1, 2x2, 4x4                                                               |        |                                                                    |        |
| Cooling Method                   | Passive Cooling                                                             |        |                                                                    |        |
| Trigger Mode                     | Hardware, Software                                                          |        |                                                                    |        |
| Trigger Output                   | Exposure out, Readout, Trigger Ready                                        |        |                                                                    |        |
| Trigger Interface                | Hirose-6-Pin                                                                |        |                                                                    |        |
| Data Interface                   | USB 3.0                                                                     |        |                                                                    |        |
| Bit Depth                        | 8 bit, 12 bit                                                               |        |                                                                    |        |
| Optical Interface                | C Mount / Customization                                                     |        |                                                                    |        |
| Power Supply                     | USB                                                                         |        |                                                                    |        |
| Power Cons.                      | < 4 W                                                                       |        |                                                                    |        |
| Dimensions                       | 45 mm (H) x 45 mm (W) x 60 mm (L)                                           |        |                                                                    |        |
| Weight                           | ~162.5 g                                                                    |        |                                                                    |        |
| Software                         | Sample Pro, Mosaic V3                                                       |        |                                                                    |        |
| SDK                              | C / C++ / C# / Python                                                       |        |                                                                    |        |
| Operating System                 | Windows, Linux                                                              |        |                                                                    |        |
| Environment                      | Working: Temp. 0°C~40°C, HUM 10%~85%, Storage: Temp. -10°C~60°C, HUM 0%~90% |        |                                                                    |        |

\*Specifications in this manual are subject to changes without prior notice.



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