

# MER2-1220-32U3M/C(-L)

MERCURY2 Series 12.2MP CMOS USB3.0 Area Scan Camera



The MER2-1220-32U3M/C(-L) camera is a monochrome/color USB3.0 Vision camera with the Sony IMX226 CMOS sensor. Thanks to the extremely compact (29mm × 29mm), robust metal housings and locking screw connectors, the MERCURY2 cameras can secure the reliability of cameras deployed in harsh environments. The MER2-1220-32U3M/C(-L) camera is powered over the USB3.0 interface. Compared to the MER2-1220-32U3M/C, the MER2-1220-32U3M/C-L has no I/O interfaces, so it is more light and handy. The camera has an outstanding price/performance ratio.

## Applications

Suitable for machine vision applications such as industrial inspection, medical, scientific research, education and so on.

## Features

- Trigger mode: Frame Start /Frame Burst Start
- Decimation, Binning, Digital Shift and Black Level
- Adjustable Gamma for optimizing the brightness of images
- Color models support Light Source Preset, Color Transformation Control and Saturation
- Monochrome models support Noise Reduction and Sharpness
- Sequencer Control
- Support Global Reset Release shutter mode
- Programmable LUTs and User Set Control
- Support Timer and Counter
- Support Remove Parameter Limit to expand the range of exposure, gain and so on
- 16KB data storage area for saving algorithm coefficients and parameter configuration

## Specifications

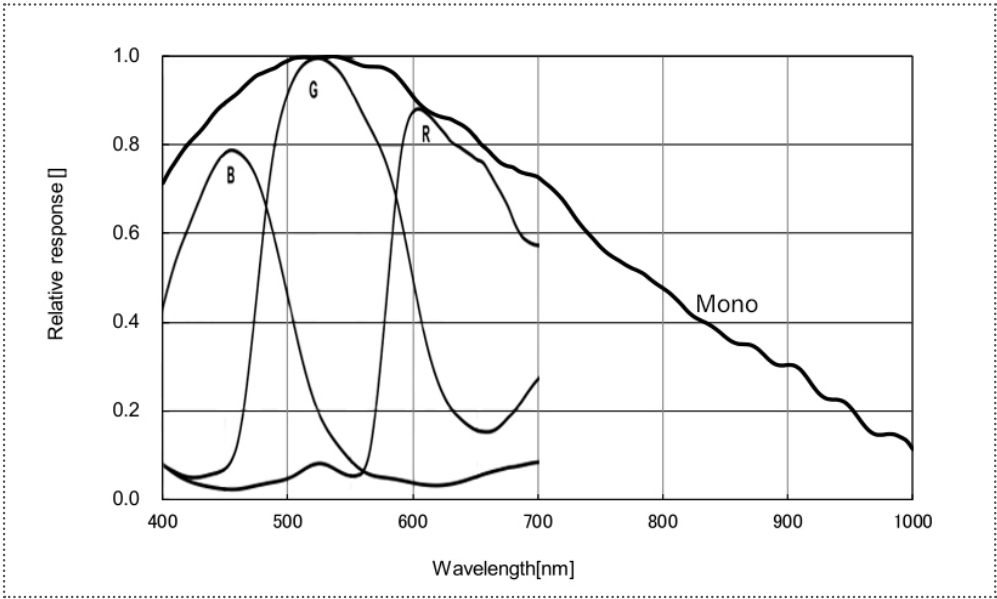
| Model              | MER2-1220-32U3C                                                                | MER2-1220-32U3C-L | MER2-1220-32U3M | MER2-1220-32U3M-L |
|--------------------|--------------------------------------------------------------------------------|-------------------|-----------------|-------------------|
| Resolution         | 4024(H) × 3036(V)                                                              |                   |                 |                   |
| Sensor             | Sony IMX226 Rolling shutter CMOS                                               |                   |                 |                   |
| Sensor Format      | 1/1.7"                                                                         |                   |                 |                   |
| Pixel Size         | 1.85μm × 1.85μm                                                                |                   |                 |                   |
| Frame Rate         | 32.3 fps                                                                       |                   |                 |                   |
| ADC                | 12 bit                                                                         |                   |                 |                   |
| Pixel Bit Depth    | 8 bit, 12 bit                                                                  |                   |                 |                   |
| Mono/Color         | Color                                                                          |                   | Mono            |                   |
| Pixel Formats      | Bayer RG8 / Bayer RG12                                                         |                   | Mono8 / Mono12  |                   |
| SNR                | 40.61 dB                                                                       |                   | 40.77 dB        |                   |
| Exposure Time      | Standard: 10μs ~ 1s, Actual Steps: 1 row period                                |                   |                 |                   |
| Gain               | 0dB ~ 24dB; Default: 0dB, Steps: 0.1dB                                         |                   |                 |                   |
| Binning            | 1×1, 1×2, 1×4, 2×1, 2×2, 2×4, 4×1, 4×2, 4×4                                    |                   |                 |                   |
| Decimation         | FPGA: 1×1, 1×2, 1×4, 2×1, 2×2, 2×4, 4×1, 4×2, 4×4                              |                   |                 |                   |
| Synchronization    | Hardware trigger (MER2-U3-L: N/A), software trigger                            |                   |                 |                   |
| Acquisition Mode   | Single frame, Continuous, Software trigger, Hardware trigger (MER2-U3-L: N/A)  |                   |                 |                   |
| Reverse X/Y        | Reverse X/Y                                                                    |                   |                 |                   |
| I/O Interface      | 1 input and 1 output with opto-isolated, 2 programmable GPIOs (MER2-U3-L: N/A) |                   |                 |                   |
| Data Interface     | USB3.0                                                                         |                   |                 |                   |
| Power Supply       | Power through USB3.0 interface                                                 |                   |                 |                   |
| Typical Power      | 1.79 W @ 5 VDC                                                                 |                   |                 |                   |
| Operating Temp.    | 0°C ~ +45°C                                                                    |                   |                 |                   |
| Storage Temp.      | -20°C ~ +70°C                                                                  |                   |                 |                   |
| Operating Humidity | 10% ~ 80%                                                                      |                   |                 |                   |
| Lens Mount         | C / CS                                                                         |                   |                 |                   |
| Dimensions         | 29(W) × 29(H) × 29(L) mm (without lens adapter or connectors)                  |                   |                 |                   |
| Weight             | MER2-U3: 65 g; MER2-U3-L: 61 g                                                 |                   |                 |                   |
| Software           | 3rd-party software such as HALCON, MERLIC and LabVIEW                          |                   |                 |                   |
| OS                 | 32bit / 64bit Windows, Linux, Android, ARMv7, ARMv8                            |                   |                 |                   |
| Conformity         | CE, RoHS, FCC, ICES, UKCA, UL, USB3.0 Vision®, GenICam®                        |                   |                 |                   |

I/O Interface

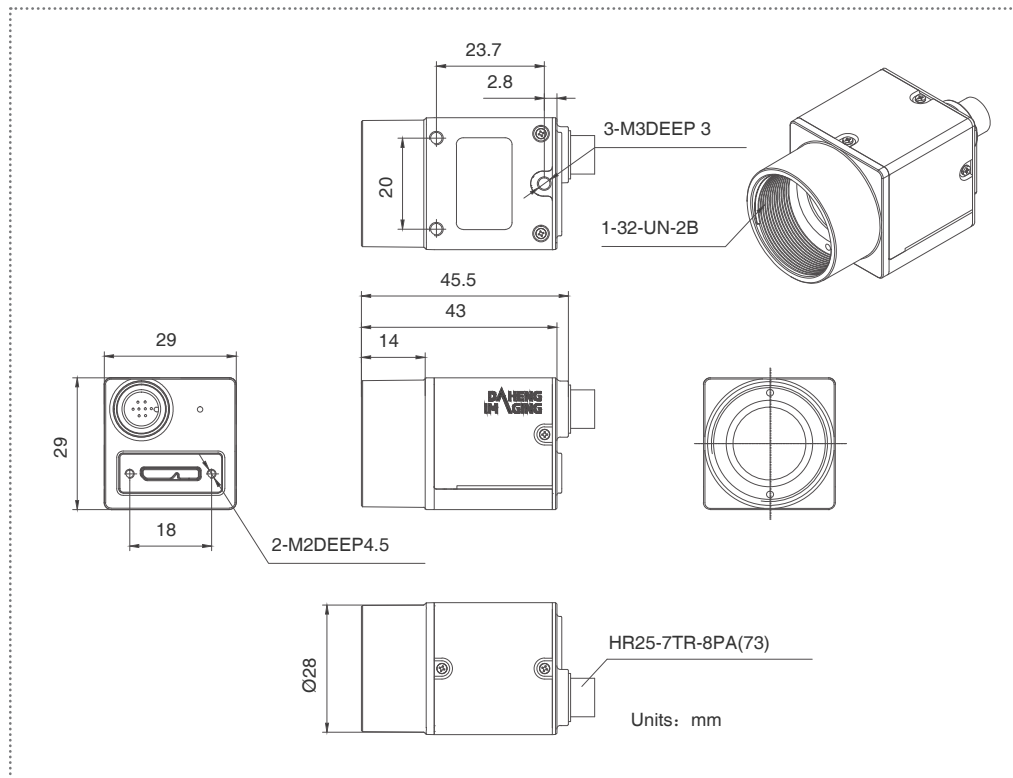


| Pin | Definition | Description            |
|-----|------------|------------------------|
| 1   | Line0+     | Opto-isolated input +  |
| 2   | GND        | GPIO GND               |
| 3   | Line0-     | Opto-isolated input -  |
| 4   | NC         | NC                     |
| 5   | Line2      | GPIO input/output      |
| 6   | Line3      | GPIO input/output      |
| 7   | Line1-     | Opto-isolated output - |
| 8   | Line1+     | Opto-isolated output + |

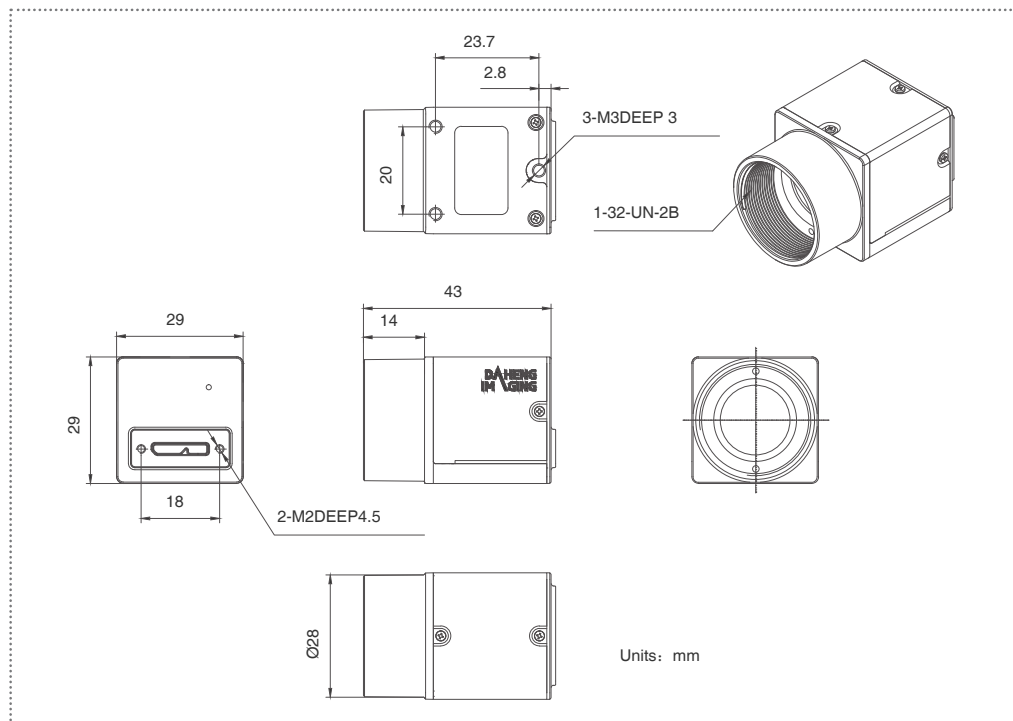
Spectral Response



## Technical Drawing



MER2-1220-32U3M/C



MER2-1220-32U3M/C-L

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