

# MER3-501-59G3M/C-P

## MERCURY3 Series 5MP CMOS 2.5GigE Area Scan Camera



GEN< i >CAM



The MER3-501-59G3M/C-P camera is a monochrome/color GigE Vision camera with the Sony global shutter CMOS sensor and high performance FPGA. The MER3-501-59G3M/C-P camera is capable of 2.5Gbit/s maximum transfer data rate, and has opto-isolated I/Os that adapt to specific needs. Four-side mounting holes provide maximum installation flexibility for camera. Thanks to the extremely compact (29mm × 29mm), robust metal housings and locking screw connectors, the MERCURY3 cameras can secure the reliability of cameras deployed in harsh environments.

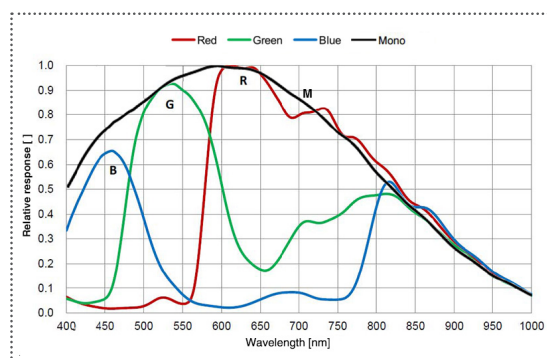
### Applications

Suitable for machine vision applications such as industrial inspection, rail traffic, scientific research, 3D reconstruction and so on.

### Features

- Two exposure modes: Standard / UltraShort
- Decimation, Gamma, Digital Shift and Black Level
- Burst Acquisition
- Timed exposure mode and TriggerWidth exposure mode
- Color models support Light source preset, Color Transformation Control and Saturation
- Timer, Counter, LUTs and User Set Control

### Spectral Response



## Specifications

| Model              | MER3-501-59G3C-P                                                                                                                                                                              | MER3-501-59G3M-P |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Resolution         | 2448(H) × 2048(V)                                                                                                                                                                             |                  |
| Sensor             | Sony Global shutter CMOS                                                                                                                                                                      |                  |
| Sensor Format      | 2/3"                                                                                                                                                                                          |                  |
| Pixel Size         | 3.45μm × 3.45μm                                                                                                                                                                               |                  |
| Frame Rate         | 56.05fps @ 2448 × 2048<br>Adjust the packet length to 8164 and reserve bandwidth to 5, the frame rate is 58.60fps.<br>When in Acquisition Burst Mode, the frame rate can reach up to 67.90fps |                  |
| 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                                                                                                                                                                                      | 40.57 dB         |
| Exposure Time      | UltraShort: 1μs~100μs, Actual Steps: 1μs    Standard: 20μs~1s, Actual Steps: 1 row period                                                                                                     |                  |
| Gain               | 0dB ~ 24dB, Default: 0dB, Steps: 0.1dB                                                                                                                                                        |                  |
| Binning            | 1×1, 1×2, 1×4, 2×1, 4×1, 2×2, 4×4                                                                                                                                                             |                  |
| Decimation         | FPGA: 1×1, 1×2, 1×4, 2×1, 4×1, 2×2, 4×4                                                                                                                                                       |                  |
| Synchronization    | Hardware trigger, software trigger                                                                                                                                                            |                  |
| Acquisition Mode   | Single frame, Continuous, Software trigger, Hardware trigger                                                                                                                                  |                  |
| Reverse X/Y        | Reverse X/Y                                                                                                                                                                                   |                  |
| I/O Interface      | 1 input with opto-isolated, 2 programmable GPIOs                                                                                                                                              |                  |
| Data Interface     | 2.5GigE                                                                                                                                                                                       |                  |
| Power Supply       | PoE (Power over Ethernet, IEEE802.3af compliant) or 12VDC-10% ~ 24VDC+10%                                                                                                                     |                  |
| Power Consumption  | < 5.1 W @ 12V / PoE                                                                                                                                                                           |                  |
| Operating Temp.    | 0°C ~ +50°C                                                                                                                                                                                   |                  |
| Storage Temp.      | -20°C ~ +70°C                                                                                                                                                                                 |                  |
| Operating Humidity | 10% ~ 80%                                                                                                                                                                                     |                  |
| Lens Mount         | C                                                                                                                                                                                             |                  |
| Dimensions         | 29(W) × 29(H) × 50.6(L) mm (without C lens or connectors)                                                                                                                                     |                  |
| Weight             | 67 g                                                                                                                                                                                          |                  |
| Software           | 3rd-party software such as HALCON, VisionPro and LabVIEW                                                                                                                                      |                  |
| OS                 | 32bit / 64bit Windows, Linux, Mac OS                                                                                                                                                          |                  |
| Conformity         | CE, RoHS, FCC, GigE Vision®, GenICam®                                                                                                                                                         |                  |

A diagram of a circular connector with six pins. The pins are numbered 1 through 6 in a circular arrangement. Pin 1 is at the top, pin 2 is at the top-left, pin 3 is at the bottom-left, pin 4 is at the bottom, pin 5 is at the bottom-right, and pin 6 is at the top-right.

| Pin | Definition | Description                            |
|-----|------------|----------------------------------------|
| 1   | POWER_IN   | Camera external power, +12V DC~+24V DC |
| 2   | Line0+     | Opto-isolated input +                  |
| 3   | Line2      | GPIO0 input/output                     |
| 4   | Line3      | GPIO1 input/output                     |
| 5   | Line0-     | Opto-isolated input -                  |
| 6   | GND        | PWR GND & GPIO GND                     |

Technical drawing of the MER3 series photo eye, showing front, side, and top views with dimensions and a parts list table.

**Dimensions (mm):**

- Overall width: 56.8
- Mounting hole spacing: 50.60, 45.60
- Mounting hole diameter:  $\phi 28$
- Mounting hole offset: 16xM3 DEEP3
- Front view dimensions: 5, 20, 8.75, 7.20, 17.50
- Side view dimensions: 4.50, 20, 4.5
- Top view dimensions: 45.60, 4.5, 20
- End view dimensions: 29, 29
- Bottom view dimensions: 45.60, 4.5, 20

**Parts List:**

|   | MER3-501 | MER3-1220 | MER3-2000 |
|---|----------|-----------|-----------|
| L | 8.65     | 8.55      | 8.75      |

**Other Labels:**

- 2x M2DEEP5
- HR10A-7R-6PB(73)
- 1-32-UN-2B

E-mail: [isales@daheng-imaging.com](mailto:isales@daheng-imaging.com)