

# Photon M615D

## MWIR Cooled Infrared Camera Core

• Pixel Pitch 15  $\mu\text{m}$  • Resolution 640  $\times$  512



### PRODUCT OVERVIEW

The Photon M615D is a mid-wave infrared (MWIR) cooled camera core that features a high-performance MCT (Mercury Cadmium Telluride) cooled infrared focal plane array (FPA) detector. It is equipped with a new long-life cryocooler, offering a long lifespan (MTTF  $\geq$  18,000 h) and low noise, with a Noise Equivalent Temperature Difference (NETD) as low as 15 mK. Upgraded with a new generation of proprietary image processing algorithms, it is optimized for special scenarios such as forests, sea surfaces, sky, and adverse weather like rain and fog, providing customers with clear and sharp infrared imagery. It supports athermalized fixed-focus lenses and continuous zoom lenses, enabling features such as motorized focus, continuous zoom, auto-focus, and athermalization compensation. It is widely used in long-range observation applications, including situational awareness and perimeter security.

### PRODUCT HIGHLIGHTS



#### High Sensitivity, Fine Imagery

- NETD as low as 15 mK to meet the demand for long-range observation of small targets



#### Long Lifespan, Low Noise

- Equipped with a new long-life cryocooler, offering a long lifespan (MTTF  $\geq$  18,000h) and low noise, supporting 7x24h all-weather imaging



#### Proprietary Algorithms, Intelligent Imaging

- Features new proprietary image algorithms, supporting wide dynamic range and adaptive integration time to deliver optimal imaging performance across different scenarios



#### Versatile Options, Easy Integration

- Optional digital video interfaces such as Cameralink, SDI, and Ethernet, with a wide selection of lenses including 15-300 mm, 18-275 mm, 25-460 mm, 33-660 mm, and 88-1,100 mm

## Specifications

| Product Model                   |                                                                                                                    | Photon M615D |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------|
| Specifications                  |                                                                                                                    |              |
| Detector Type                   | Mercury cadmium telluride refrigerated infrared focal plane detector                                               |              |
| Resolution                      | 640×512                                                                                                            |              |
| Pixel Pitch                     | 15μm                                                                                                               |              |
| Frame Rate                      | 50Hz/30Hz                                                                                                          |              |
| F #                             | F4.0/F5.5                                                                                                          |              |
| Response Band                   | 3.7~4.8μm                                                                                                          |              |
| NETD                            | ≤15mK@25°C                                                                                                         |              |
| Detector Dead-pixel Rate        | ≤0.5%                                                                                                              |              |
| Cooled Time@25°C                | ≤7min                                                                                                              |              |
| Optional Lens                   | Straight-tube Focus free : 50mm, 100mm                                                                             |              |
|                                 | Straight-tube continuous zoom: 15~300mm, 18~275mm, 25~460mm, 33~660mm, 88~1100mm                                   |              |
|                                 | Folded-path continuous zoom: 88~1100mm                                                                             |              |
| Image Adjustment                |                                                                                                                    |              |
| Brightness/Contrast Adjustment  | Automatic/manual                                                                                                   |              |
| Polarity                        | Black hot / white hot (default)                                                                                    |              |
| Cross Cursor                    | Display/hide/move                                                                                                  |              |
| Electronic Zoom                 | 1.0–8.0× continuous zoom (step 0.1×)                                                                               |              |
| Image Processing                | Non-uniformity correction, digital filtering noise reduction, digital detail enhancement                           |              |
| Image Flip                      | Left/right, up/down, diagonal flip                                                                                 |              |
| Power Source                    |                                                                                                                    |              |
| Power Supply Range              | 11~13V DC (without spacer plate), typical voltage: 12V                                                             |              |
| Typical Power Consumption @25°C | Stable power consumption ≤ 15W, peak power consumption ≤ 25W                                                       |              |
| Interface                       |                                                                                                                    |              |
| Analog Video                    | PAL format                                                                                                         |              |
| Digital Video                   | Cameralink/SDI/Ethernet                                                                                            |              |
| Serial Communication Interface  | RS422 (default baud rate: 115200)                                                                                  |              |
| External Synchronization        | Internal synchronization (default)/external synchronous output/external synchronous input/adaptive synchronization |              |
| Physical Properties             |                                                                                                                    |              |
| Dimensions (no lens)            | 104mm×102mm×55mm (without spacer plate)                                                                            |              |
| Weight (no lens)                | ≤572g (without spacer plate)                                                                                       |              |
| Environmental Adaptability      |                                                                                                                    |              |
| Operating Case Temperature      | -40°C~-60°C                                                                                                        |              |
| Storage Case Temperature        | -45°C~+65°C                                                                                                        |              |
| Temperature Shock               | -45°C~+65°C (≤5°C/min)                                                                                             |              |
| Random Vibration                | 4.2g                                                                                                               |              |
| Shock                           | Sawtooth waveform, 40g, 11ms (3 axes/ 6 directions, 3 times each)                                                  |              |
| MTTF                            | ≥18000h                                                                                                            |              |
| Storage Life                    | ≥10years                                                                                                           |              |

## Applications



Situational Awareness



Handheld Devices



Perimeter Security

## Company Profile

Raytron Microelectronics Co., Ltd. is a wholly-owned subsidiary of Raytron Technology Co., Ltd., providing global customers with infrared detectors, core modules, and industry solutions.

Our products are widely used in various fields, including infrared temperature measurement, night vision observation, machine vision, intelligent driving, Commercial Drone, smart industry, security monitoring, Internet of Things, medical epidemic prevention and gas detection.

With the mission of "to create incremental value for customers with technological advancements", we are committed to leaving a name in the history of constantly expanding human perception capabilities.



Official Website



LinkedIn Official Account

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