

**MYK/3A/5LG/WA EO 48MP/LF EO 48MP 24X/640 IR/NIR**

**850nm/LRF/TA Tr**

**Three-axis Five-light Gimbal Camera**

## **1. Product Introduction**

MYK/3A/5LG/WA EO 48MP/LF EO 48MP 24X/640 IR/NIR 850NM/LRF/TA TR gimbal camera consists of a high-resolution uncooled thermal infrared camera, 48M-pixel wide-angle EO camera, 48M-pixel zoom EO camera (38X optical zoom, 300X hybrid zoom), 3km LRF, near-Infrared fill light, a three-axis servo-stabilized platform and a video processing unit (AI recognition and auto tracking). It features light weight, high stability accuracy, high integration, AI recognition and auto tracking. It can be integrated to the small and micro-sized UAV to complete tasks such as day and night reconnaissance and surveillance of target areas.

The gimbal camera has been adapted to a number of mainstream domestic flight control platforms, docked seamlessly with the flight control; and it can be accessed to the unit's MYK Vision Studio display and control software platform, which can assist the overall unit complete the development of the unmanned aircraft system.

The gimbal Camera can detect, identify, and track the ground targets for 24 hours both in daytime and nighttime. It also supports for infrared and visible light videos streaming in real time.

Application: Reconnaissance, Border patrol, Search and rescue, Forest fire prevention.

## 2. Product Photo



Fig 1 MYK/3A/5LG/WA EO 48MP/LF EO 48MP 24X/640 IR/NIR  
850NM/LRF/TA TR photo

## 3. Function

- a) AI recognition and auto tracking;
- b) Self-check and fault report;
- c) Output infrared camera and EO camera video;
- d) One key return zero, Look down mode;
- e) Target location;
- f) Photo taking and video recording;
- g) Quick-release;
- h) 48MP EO camera, 38X optical zoom, 300X hybrid zoom;
- i) EO camera have Optical zoom, auto-focus, manual focus, defog, Image enhance and low illumination;
- j) TI camera have 1~8X digital zoom, 6 kinds of color palette;
- k) It is equipped with near-infrared fill light function, enabling clear visible imaging within 100 meters at night;
- l) Large target 3km Laser range finder;
- m) Freely rotate in yaw, pitch and roll axis;
- n) Head lock / Manual search / Follow-up / attitude stabilization / tracking mode;
- o) Mechanical image stabilization;
- p) Supports manual target lock/unlock and automatic target lock.
- q) Auto track the target with powerful jamming-resistant;

- r) Memory tracking / Recapture / Adjust size of the tracking gate/Switch tracking point;
- s) Bidirectional communication with the ground station via UART/IP (UDP);
- t) IP video interface (RTSP / UDP/TS protocol).

## 4. Application platforms

Fixed wing UAV, Multi-rotor UAV, Tethered UAV, etc.

## 5. Specification

| Model                            | MYK/3A/5LG/WA EO 48MP/LF EO 48MP 24X/640 IR/NIR 850NM/LRF/TA TR                |
|----------------------------------|--------------------------------------------------------------------------------|
| <b>System Para</b>               |                                                                                |
| Net Weight                       | 1300g                                                                          |
| Size                             | 152mm×169mm×198mm                                                              |
| Input voltage                    | 3s~8s (12V~32VDC)                                                              |
| Consumption                      | Stable consumption 17W(Power-on peak current ≤ 5A)                             |
| Video interface                  | IP(RTSP / UDP/TS, H.265/H.264, 4K@30Hz)                                        |
| Control Method                   | UART/IP                                                                        |
| Local-storage                    | TF card(Up to 512G)                                                            |
| Picture storage format           | JPG(8000×6000)                                                                 |
| Video storage format             | MP4(4K@30Hz)                                                                   |
| Network read card                | HTTP read TF card online                                                       |
| Geotagging                       | Support, display time and GPS coordinate in picture exif                       |
| Function                         | AI recognition, Auto-tracking, Target location, One key return zero, Look down |
| Target location accuracy         | ≤30m(cep)@1km                                                                  |
| Mounting method                  | TJport-V2 quick-release                                                        |
| Support AutoPilot Protocol       | MAVLink,                                                                       |
| <b>Wide angle EO camera spec</b> |                                                                                |
| Sensor Type                      | 1/2" CMOS                                                                      |
| Resolution                       | 48MP(8000×6000)                                                                |
| Focal length                     | 4.49mm                                                                         |
| Digital zoom                     | 1~1.5X                                                                         |
| FOV                              | 83.5° ×67.4° (±5%)                                                             |
| Focus                            | athermalized fixed focus                                                       |

### Long-focus EO camera spec

|                             |                                                                                                                        |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Sensor Type</b>          | 1/2" CMOS                                                                                                              |
| <b>Resolution</b>           | 48MP(8000×6000)                                                                                                        |
| <b>Optical zoom</b>         | 24X                                                                                                                    |
| <b>Focal length</b>         | 15mm~50mm                                                                                                              |
| <b>Hybrid zoom</b>          | 300X                                                                                                                   |
| <b>FOV</b>                  | 48.5° × 28.5° ~ 2.1° × 1.2° (±5%)                                                                                      |
| <b>Focus</b>                | Manual zoom / Auto focus / Manual focus                                                                                |
| <b>DRI(visibility≥15km)</b> | Human target(1.7m×0.5m):<br>D≥6km; R(manual)≥3km; l≥1.5km<br>Vehicle target(6m×3m):<br>D≥27km; R(manual)≥13km; l≥6.8km |

### TI camera spec

|                         |                                                                                                                        |
|-------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Detector Type</b>    | Uncooled Focal Plane Detector                                                                                          |
| <b>Working Waveband</b> | 8μm~14μm                                                                                                               |
| <b>Resolution</b>       | 640×512                                                                                                                |
| <b>Pixel</b>            | 12μm                                                                                                                   |
| <b>Focal Length</b>     | 35mm                                                                                                                   |
| <b>Focus</b>            | athermalized fixed focus                                                                                               |
| <b>FOV</b>              | 12.5° × 10° (±5%)                                                                                                      |
| <b>Palette</b>          | 6 kind(WH / BH / Iron red etc.)                                                                                        |
| <b>Digital zoom</b>     | 1~8X                                                                                                                   |
| <b>NETD</b>             | ≤50mK                                                                                                                  |
| <b>MRTD</b>             | ≤500mk                                                                                                                 |
| <b>DRI(ΔT≥5K)</b>       | Human target(1.7m×0.5m):<br>D≥1.3km; R(manual)≥450m; l≥230m<br>Vehicle target(6m×3m):<br>D≥6.2km; R(manual)≥2km; l≥1km |

### Laser range finder(Eye safe)

|                         |                                                                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Wavelength</b>       | 1535nm                                                                                                                                              |
| <b>Maximum Distance</b> | Vehicle≥3km (under the condition of visibility<br>≥15Km, 2.3m2.3m×2.3m Car);<br>Vehicle≥5km (under the condition of visibility ≥15Km,<br>Building); |
| <b>Minimum Distance</b> | ≤20m                                                                                                                                                |
| <b>Accuracy</b>         | ≤±2m                                                                                                                                                |

|                                      |                                                                                                            |
|--------------------------------------|------------------------------------------------------------------------------------------------------------|
| Laser divergence                     | ≤0.7mrad                                                                                                   |
| Frequency                            | 1Hz～10Hz                                                                                                   |
| <b>Near-Infrared Fill Light spec</b> |                                                                                                            |
| Wavelength                           | 850nm                                                                                                      |
| FOV                                  | 8°                                                                                                         |
| Fill Light Distance                  | ≥100m                                                                                                      |
| <b>Gimbal spec</b>                   |                                                                                                            |
| Yaw                                  | 360°×n(360° continuous)                                                                                    |
| Pitch                                | -130°～+90° (upward is positive)                                                                            |
| Roll                                 | -60°+60°                                                                                                   |
| Frame Angle Accuracy                 | ≤0.1mrad (1σ)                                                                                              |
| Angular jitter                       | ≤0.003° (1σ)                                                                                               |
| Maximum Rotating Speed               | yaw≥60°/s, pitch≥60°/s                                                                                     |
| <b>Video Processing Module</b>       |                                                                                                            |
| AI recognition                       | The num of AI recognition human and vehicle targets<br>≥32                                                 |
| Recognition probability              | 85%                                                                                                        |
| Track Size                           | ≥16×16                                                                                                     |
| Target contrast                      | ≥5%                                                                                                        |
| Track speed                          | 48 pixel/frame                                                                                             |
| Tracking frame rates                 | 50HZ                                                                                                       |
| <b>Environment</b>                   |                                                                                                            |
| Working temperature                  | -20℃～+55℃                                                                                                  |
| Storage temperature                  | -40℃～+60℃                                                                                                  |
| Vibration                            | The acceleration is 2g; the three directions of vertical, horizontal and longitudinal are 30 minutes each. |
| Shocking                             | Max acceleration20g, lasting time 11ms                                                                     |
| IP                                   | IP54                                                                                                       |

## 6. Dimensions

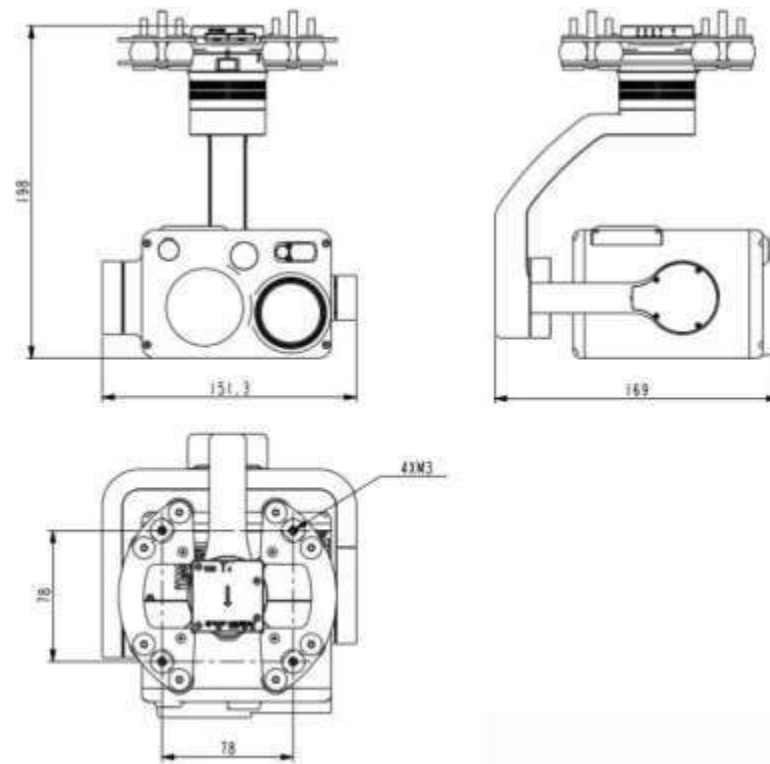


Fig2 Mechanical Dimensions