



- ON Semi CMOS sensor
- Power over Ethernet
- Switchable shutter modes
- Ultra-compact design

Small and powerful

Ultra-compact GigE Vision cameras

Mako G-503 with ON Semi MT9P031 / MT9P006 runs 14.0 frames per second at 5.0 MP resolution.

Mako is an attractively priced GigE Vision-compliant camera in a compact rugged industrial housing. Many models include advanced functionalities such as Precision Time Protocol (PTP), Trigger over Ethernet (ToE) Action Commands, and Power over Ethernet (PoE). Screw mount RJ45 connector and multiple I/Os facilitate your straightforward system integration. Mako cameras are also available as Near Infrared (NIR) and polarizer variants.

Easy software integration with Allied Vision's [Vimba Suite](#) and compatibility to the most popular [third party image-processing libraries](#).

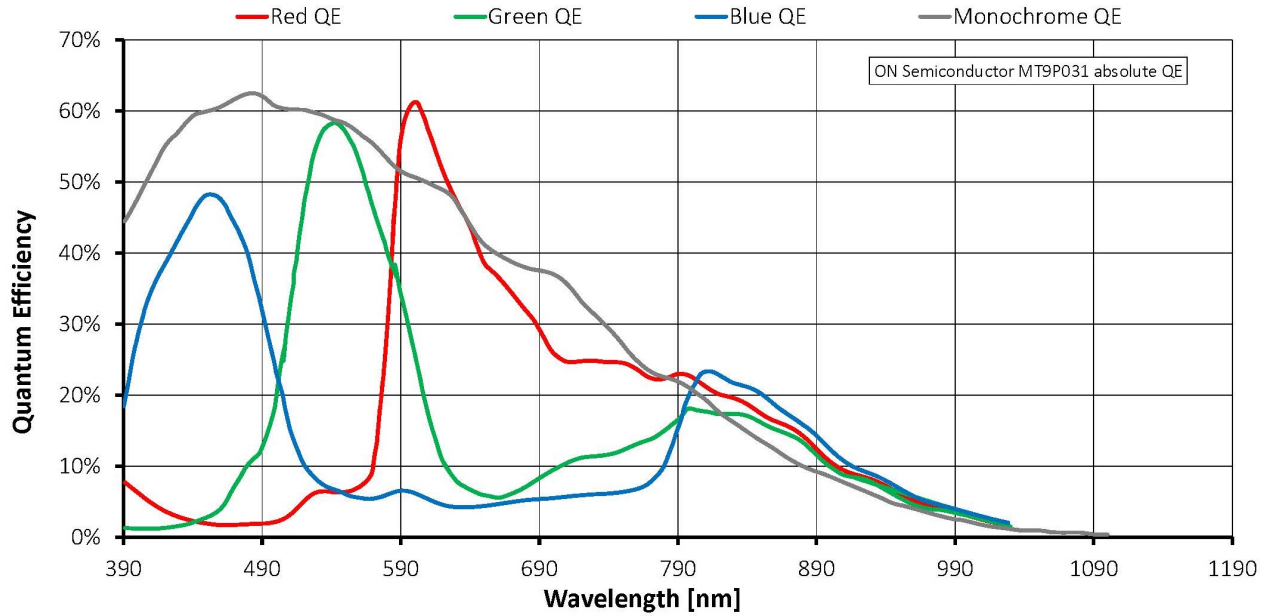
See the [Modular Concept](#) for lens mount, housing variants, optical filters, case design, and other modular options. See the [Customization and OEM Solutions](#) webpage for additional options.

Specifications

| Mako G-503 | |
|--------------|---|
| Interface | IEEE 802.3 1000BASE-T, IEEE 802.3af (PoE) |
| Resolution | 2592 (H) × 1944 (V) |
| Sensor | ON Semi MT9P031 / MT9P006 |
| Sensor type | CMOS |
| Shutter mode | Global reset and Rolling shutter |
| Sensor size | Type 1/2.5 |
| Pixel size | 2.2 μm × 2.2 μm |

| Mako G-503 | |
|--|---|
| Lens mounts (available) | C-Mount, CS-Mount |
| Max. frame rate at full resolution | 14 fps |
| ADC | 12 Bit |
| Image buffer (RAM) | 64 MByte |
| Imaging performance | |
| Imaging performance data is based on the evaluation methods in the EMVA 1288 Release 3.1 standard for characterization of image sensors and cameras. Measurements are typical values for monochrome models measured at full resolution without optical filter. Contact Sales or AE for more information. | |
| Quantum efficiency at 529 nm | 55 % |
| Temporal dark noise | 7.5 e ⁻ |
| Saturation capacity | 6000 e ⁻ |
| Dynamic range | 57.6 dB |
| Absolute sensitivity threshold | 8.0 e ⁻ |
| Output | |
| Bit depth | 8/12 Bit |
| Monochrome pixel formats | Mono8, Mono12, Mono12Packed |
| YUV color pixel formats | YUV411Packed, YUV422Packed, YUV444Packed |
| RGB color pixel formats | RGB8Packed, BGR8Packed |
| Raw pixel formats | BayerGR8, BayerGR12Packed, BayerGR12 |
| General purpose inputs/outputs (GPIOs) | |
| Opto-isolated I/Os | 1 input, 3 outputs |
| Operating conditions/dimensions | |
| Operating temperature | +5 °C to +45 °C housing temperature |
| Power requirements (DC) | 10.8 to 26.4 VDC AUX or 802.3at Type 1 PoE |
| Power consumption | 2.0 W at 12 VDC; 2.2 W PoE |
| Mass | 80 g (with C-Mount) |
| Body dimensions (L × W × H in mm) | 60.5 × 29.2 × 29.2 (including connectors) |
| Regulations | CE: 2014/30/EU (EMC), 2011/65/EU, including amendment 2015/863/EU (RoHS); FCC Class B; CAN ICES-003 |

Quantum efficiency



Features

Image control

Auto control

- Auto exposure
- Auto gain
- Auto white balance (color models)

Other image controls

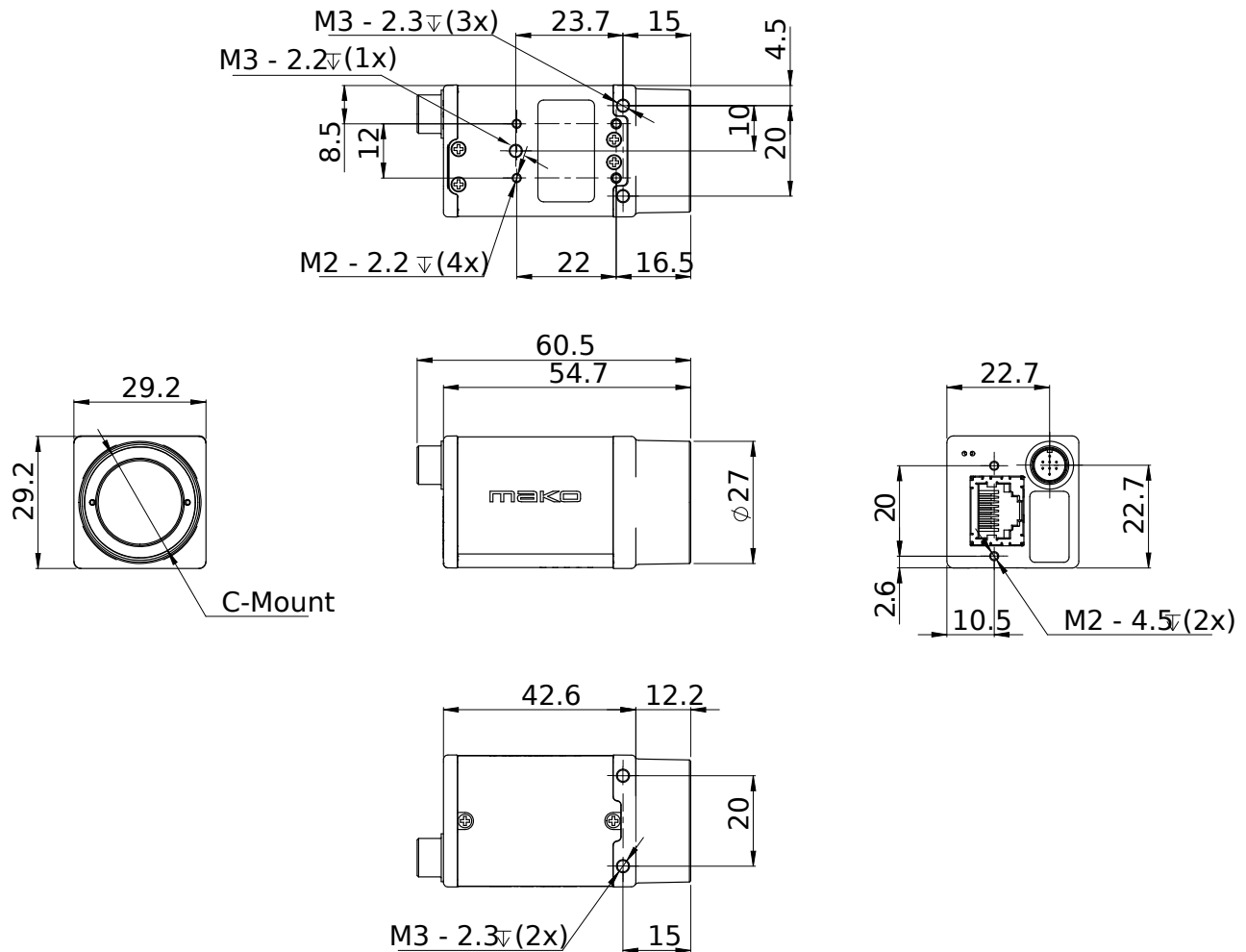
- Binning
- Black level
- Color transformation (incl. hue, saturation; color models)
- Decimation
- DPC (defect pixel correction)
- Gamma

- LUT (look up table)
- Reverse X/Y
- ROI (region of interest)

Camera control

- Acquisition frame rate
- Bandwidth control
- Event channel
- Firmware update in the field
- I/O and trigger control
- Image chunk data
- Stream hold
- Temperature monitoring
- ToE (trigger over Ethernet, action commands)
- User sets

Technical drawing



Applications

Mako G is suitable for all typical applications in machine vision:

- Robotics
- Quality control
- Inspection, surveillance
- Industrial imaging
- Machine vision
- Logistics