

# Mako G G-503



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

## Description

### Gigabit Ethernet camera, ON Semiconductor CMOS sensor, 14 fps

Mako G-503 is a 5.0 megapixel GigE machine vision camera that incorporates the high quality Type 1/2.5 (7.13 mm diagonal) ON Semiconductor MT9P031 (monochrome) / MT9P006 (color) CMOS sensor. At full resolution, this camera runs 14 frames per second. With a smaller region of interest, higher frame rates are possible.

Mako G cameras have an ultra-compact form factor and the same mounting positions as many analog cameras. All models include Power over Ethernet (PoE), three opto-isolated outputs, and a 64 MB image buffer. The image quality profits from the precisely aligned sensor. By default monochrome models ship with no optical filter and color models ship with IRC Hoya C-5000 IR cut filter.

### Benefits and features:

- Monochrome (G-503B) and color (G-503C) models
- GigE Vision interface with Power over Ethernet
- Screw mount RJ45 Ethernet connector for secure operation in industrial environments
- Supports cable lengths up to 100 meters (CAT-5e or CAT-6)
- Comprehensive I/O functionality for simplified system integration
- Popular C-Mount lens mount
- Easy camera mounting via standard M3 threads on top and bottom of housing or optional tripod adapter
- Easy software integration with Allied Vision's [Vimba SDK](#) and compatibility to the most popular [third party image-processing libraries](#).

## Options:

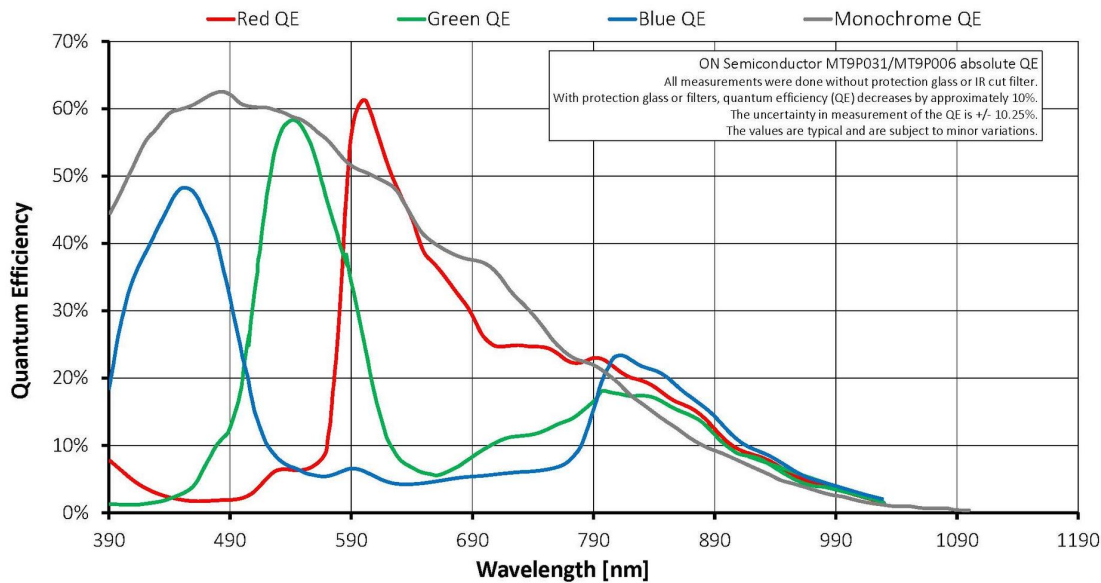
- Available with CS-Mount or M12-Mount adapter
- Available with Protection glass B 270 (ASG), IRC type Jenofilt 217 (IR cut filter), IRC Hoya C-5000 (IR cut filter), IRP RG715 (IR pass filter), IRP RG830 (IR pass filter)

See the [Modular Concept](#) for lens mount and optical filter options.

See the [Customization and OEM Solutions](#) webpage for additional options.

## Specifications

Mako G	G-503
インターフェイス	IEEE 802.3 1000BASE-T, IEEE 802.3af (PoE)
解像度	2592 (H) × 1944 (V)
センサー	ON Semi MT9P031 / MT9P006
Sensor type	CMOS
センサーサイズ	Type 1/2.5
ピクセルサイズ	2.2 μm × 2.2 μm
レンズマウント (標準搭載)	C-Mount
フレームレート (フル解像度)	14 fps
ADC	12 bit
Image buffer (RAM)	64 MByte
	Output
Bit depth	8/12 bit
ビデオフォーマット(Mono)	Mono8, Mono12, Mono12Packed
ビデオフォーマット(YUV)	YUV411Packed, YUV422Packed, YUV444Packed
ビデオフォーマット(RGB)	RGB8Packed, BGR8Packed
ビデオフォーマット(Raw)	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)	12 to 24 VDC; PoE
消費電力	2.0 W at 12 VDC; 2.2 W PoE
Mass	80 g
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



## Features

### Image optimization features:

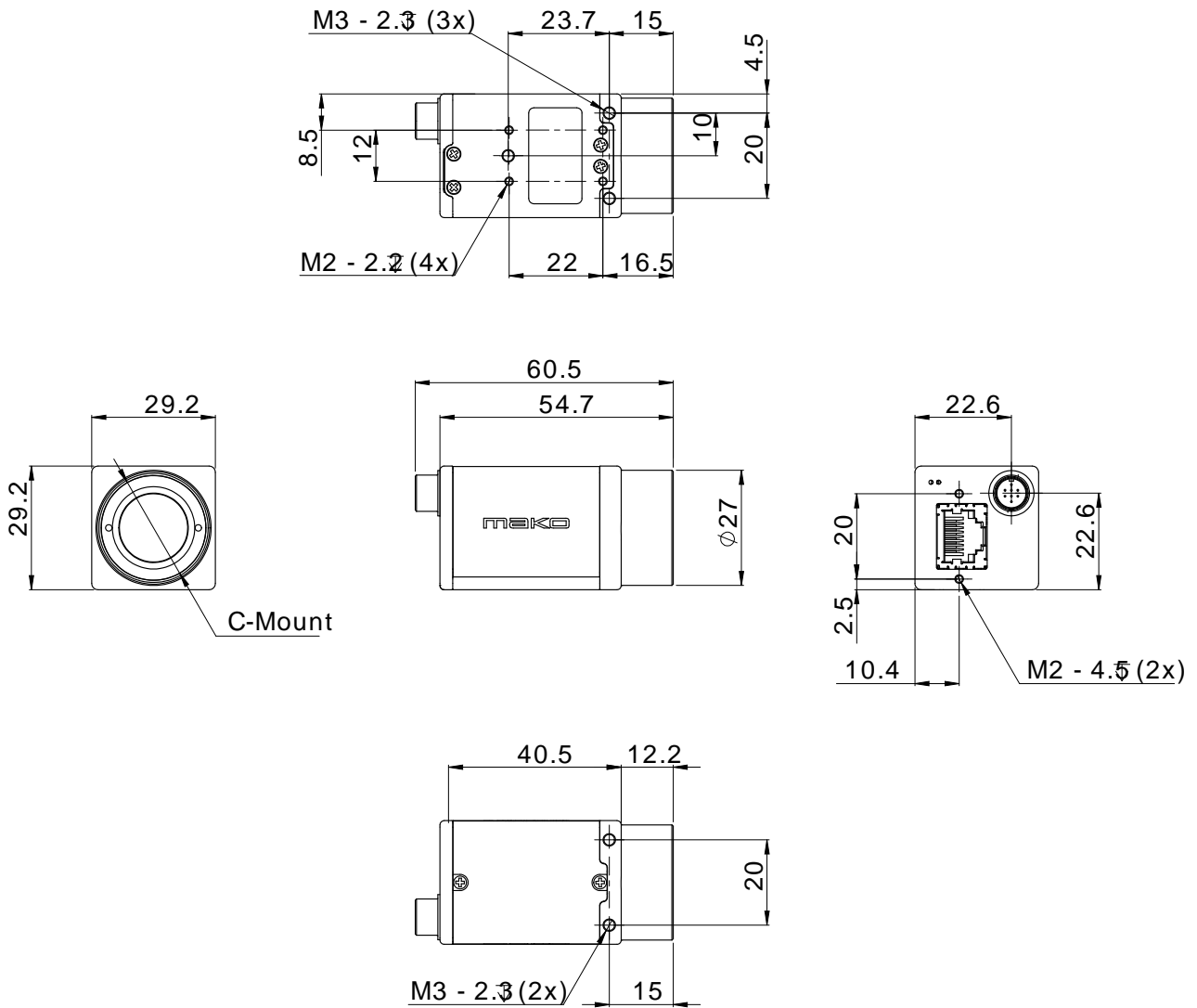
- Auto gain (manual gain control: 0 to 24 dB; 1 dB increments)
- Auto exposure (31  $\mu$ s to 1 s; 36.4  $\mu$ s increments)
- Auto white balance (G-503C only)
- Binning
- Color transformation, hue, saturation (G-503C only)
- Decimation
- Gamma correction
- One look-up table (LUT)
- Pixel defect masking
- Region of interest (ROI), separate ROI for auto features
- Reverse X/Y

### Camera control features:

- Event channel
- Image chunk data
- Storable user sets
- StreamBytesPerSecond (bandwidth control)
- Stream hold
- Switchable Rolling/GlobalReset shutter modes
- Sync out modes: Trigger ready, input, exposing, readout, imaging, strobe, GPO

- Temperature monitoring (main board only)

## Technical drawing





## Applications

Mako G-503 is suitable for a wide range of applications including:

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