



- AR0521 CMOS sensor
- GigE Vision
- High bandwidths
- 3 lens mount options

Model without hardware options

### **Alvium G1 – Reliability designed for the future**

Compact GigE camera for constant image quality

Alvium G1-500 with ON Semi AR0521SR runs 23.0 frames per second at 5.0 MP resolution.

Alvium G1 is the first GigE Vision camera powered by ALVIUM® Technology, Allied Vision's ASIC chip. It combines the advantages of the established GigE Vision standard with the flexibility of the Alvium platform. In addition to a comprehensive feature set and a broad sensor selection, it offers great versatility. With its very compact housing and industrial standard hardware, it can easily be integrated into any vision system while ensuring long-term availability and reliability.

Easy software integration with **Vimba X** and compatibility to the most popular third party image-processing libraries.

## Specifications

|                                    |                                           |
|------------------------------------|-------------------------------------------|
| Interface                          | IEEE 802.3 1000BASE-T, IEEE 802.3af (PoE) |
| Resolution                         | 2592 (H) × 1944 (V)                       |
| Spectral range                     | 300 to 1100 nm                            |
| Sensor                             | ON Semi AR0521SR                          |
| Sensor type                        | CMOS                                      |
| Shutter mode                       | RS (Rolling shutter)                      |
| Sensor size                        | Type 1/2.5                                |
| Pixel size                         | 2.2 $\mu\text{m}$ × 2.2 $\mu\text{m}$     |
| Lens mounts (available)            | C-Mount, CS-Mount, S-Mount                |
| Max. frame rate at full resolution | 23 fps at 122 MByte/s, Mono8              |
| ADC                                | 10 Bit                                    |
| Image buffer (RAM)                 | 32 MByte                                  |
| Non-volatile memory (Flash)        | 1024 KByte                                |

### 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 without optical filter.

|                                |                   |
|--------------------------------|-------------------|
| Quantum efficiency at 529 nm   | 79 %              |
| Temporal dark noise            | 5.9 $\text{e}^-$  |
| Saturation capacity            | 9890 $\text{e}^-$ |
| Dynamic range                  | 63 dB             |
| Absolute sensitivity threshold | 7.1 $\text{e}^-$  |

### Output

|                          |                                                       |
|--------------------------|-------------------------------------------------------|
| Bit depth                | 10-bit                                                |
| Monochrome pixel formats | Mono8, Mono10, Mono10p, Mono12, Mono12p, Mono12Packed |
| YUV color pixel formats  | YCbCr411_8_CbYYCrYY, YCbCr422_8_CbYCrY, YCbCr8_CbYCr  |
| RGB color pixel formats  | RGB8 (default), BGR8                                  |

Raw color pixel formats (Bayer)

BayerGR8, BayerGR10, BayerGR10p, BayerGR12, BayerGR12p, BayerGR12Packed

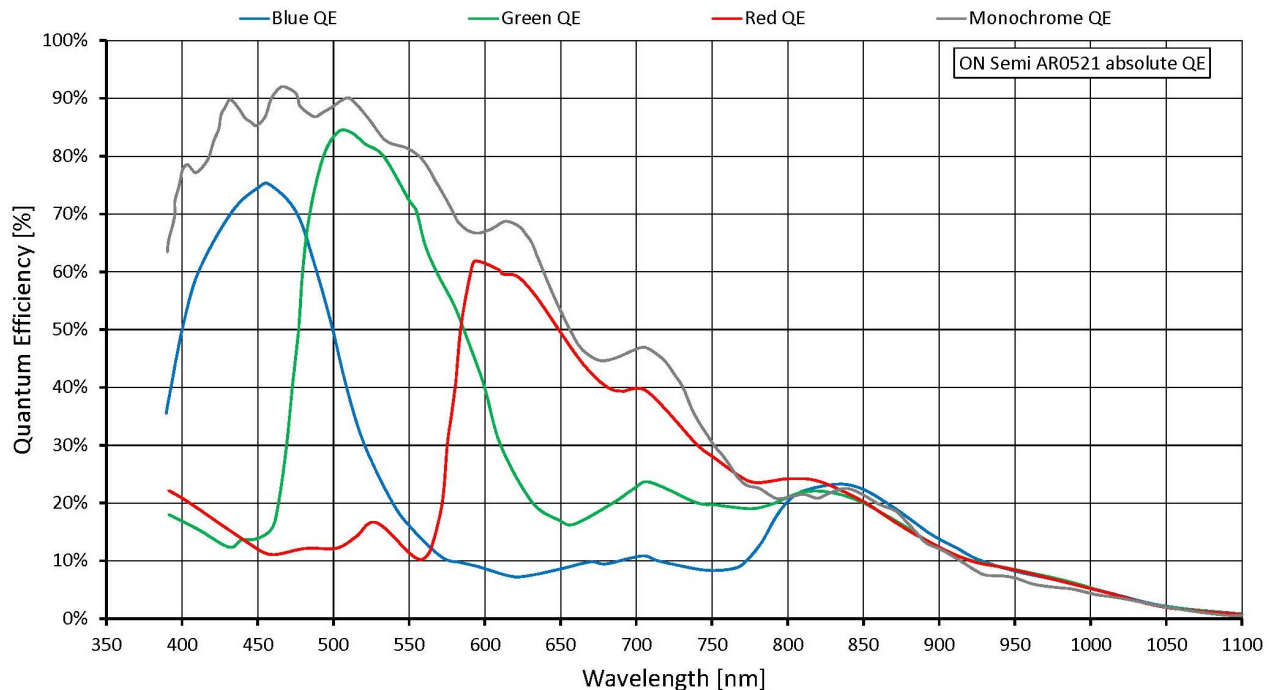
### General purpose inputs/outputs (GPIOs)

|                    |                   |
|--------------------|-------------------|
| TTL I/Os           | 2 GPIOs (LVTTTL)  |
| Opto-isolated I/Os | 1 input, 1 output |

### Operating conditions/dimensions

|                                   |                                                                                  |
|-----------------------------------|----------------------------------------------------------------------------------|
| Operating temperature             | -20 °C to +65 °C (housing)                                                       |
| Power requirements (DC)           | 10.8 to 26.4 VDC AUX   IEEE 802.3af, Power Class 0 PoE                           |
| Power consumption                 | External power: 2.9 W at 12 VDC (typical)   Power over Ethernet: 3.2 W (typical) |
| Mass                              | 70 g                                                                             |
| Body dimensions (L × W × H in mm) | 41 × 29 × 29                                                                     |

## Quantum efficiency



## Features

### Image control: Auto

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

### Image control: Other

- Adaptive noise correction
- Binning (digital)
- Binning (digital, sensor)
- Black level
- Color transformation (incl. hue, saturation; color models)
- Contrast
- Custom convolution
- De-Bayering up to 5×5 (color models)
- DPC (defect pixel correction)
- FPNC (fixed pattern noise correction)
- Gamma
- Lens shading correction
- LUT (look-up table)
- Reverse X/Y
- ROI (region of interest)
- Sharpness/Blur

### Camera control

- Acquisition frame rate
- Action commands, incl. ToE (trigger over Ethernet)
- Bandwidth control
- Burst mode
- Counters and timers
- Event channel
- Firmware update in the field
- I/O and trigger control
- Image chunk data
- Power Saving Mode
- PTP (IEEE 1588 Precision Time Protocol)
- Serial I/Os
- Temperature monitoring
- User sets

# Technical drawing

