

Alvium

1800 U-501m NIR

- AR0522 CMOS sensor
- ALVIUM image processing
- USB3 Vision
- Mono and color models

Hardware option: Closed Housing C-Mount Standard

Alvium 1800 U – Your entry into high-performance imaging

Industrial USB cameras with attractive price-performance ratio

Alvium 1800 U-501 NIR with ON Semi AR0522 runs 68.0 frames per second at 5.0 MP resolution.

Alvium 1800 U is your entry into high-performance imaging with ALVIUM® Technology for industrial applications. Equipped with the newest generation of sensors, these small and lightweight cameras deliver high image quality and frame rates at the best price-performance ratio. With its USB3 Vision compliant interface and industrial-grade hardware, it is your workhorse for different machine vision applications whether it is on a PC-based or an embedded system.

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

In addition to lens mount and housing options, see [Customization and OEM Solutions webpage](#) for additional options.

Specifications

| | |
|------------------------------------|--------------------------------|
| Product code | 14613 |
| Interface | USB3 Vision |
| Resolution | 2592 (H) × 1944 (V) |
| Spectral range | 300 to 1100 nm |
| Sensor | ON Semi AR0522 |
| Sensor type | CMOS |
| Shutter mode | RS (Rolling shutter) |
| Sensor size | Type 1/2.5 |
| Pixel size | 2.2 μm × 2.2 μm |
| Lens mount | C-Mount |
| Max. frame rate at full resolution | 68 fps at ≥ 375 MByte/s, Mono8 |
| ADC | 10 Bit |
| Image buffer (RAM) | 256 KByte |
| 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 NIR models measured without optical filter.

| | |
|--------------------------------|----------------------|
| Quantum efficiency at 529 nm | 84 % |
| Quantum efficiency at 850 nm | 30 % |
| Temporal dark noise | 6.9 e ⁻ |
| Saturation capacity | 10600 e ⁻ |
| Dynamic range | 62 dB |
| Absolute sensitivity threshold | 8.0 e ⁻ |

Output

| | |
|--------------------------|--|
| Bit depth | 10-bit |
| Monochrome pixel formats | Mono8, Mono10, Mono10p, Mono12, Mono12p |
| Raw color pixel formats | BayerGR8, BayerGR10, BayerGR10p, BayerGR12, BayerGR12p |

General purpose inputs/outputs (GPIOs)

TTL I/Os 4 programmable GPIOs

Operating conditions/dimensions

Operating temperature -20 °C to +65 °C (housing)

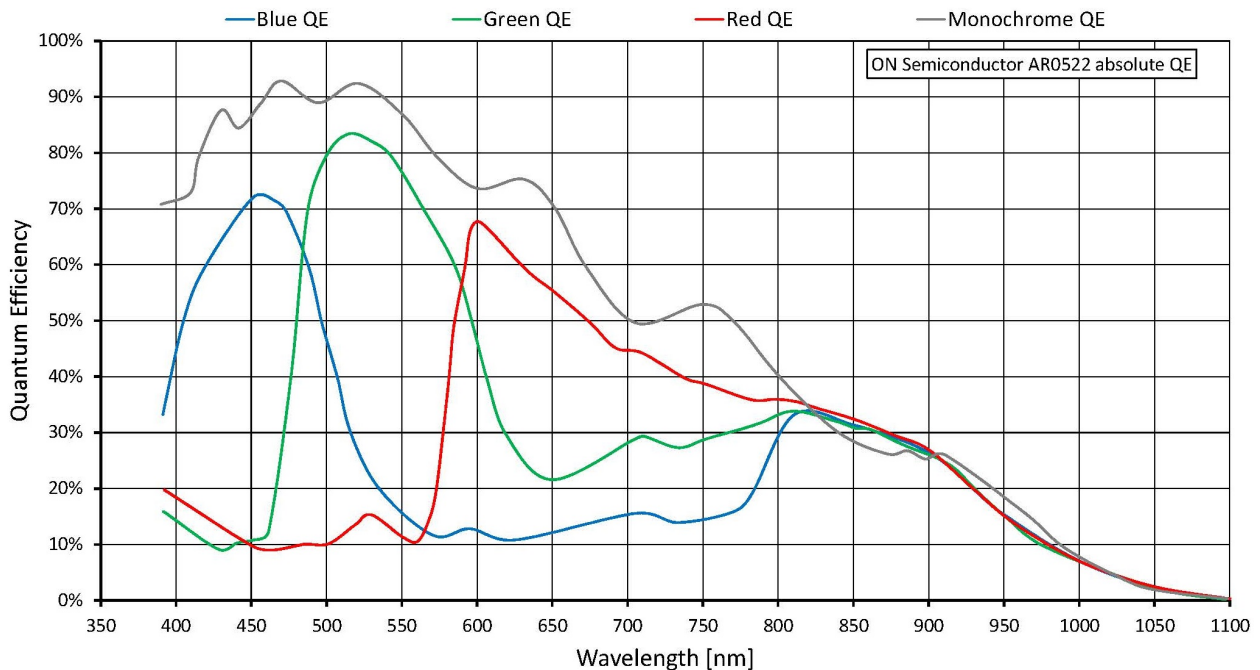
Power requirements (DC) Power over USB 3.1 Gen 1 | External power 5.0 V

Power consumption USB power: 2.2 W (typical) | Ext. power: 2.4 W (typical)

Mass 60 g

Body dimensions (L × W × H in mm) 38 × 29 × 29

Quantum efficiency



Features

Image control: Auto

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

Image control: Other

- Adaptive noise correction
- Binning
- 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
- LUT (look-up table)
- Reverse X/Y
- ROI (region of interest)
- Sharpness/Blur

Camera control

- Acquisition frame rate
- Bandwidth control
- Counters and timers
- Firmware update in the field
- I/O and trigger control
- Serial I/Os
- Temperature monitoring
- U3 Power Saving Mode
- User sets

Technical drawing

