





- AR0521 CMOS sensor
- ALVIUM image processing
- USB3 Vision
- Various hardware options



Hardware option: Closed Housing S-Mount 90°

Alvium 1800 U - Your entry into high-performance imaging

Industrial USB cameras with attractive price-performance ratio

Alvium 1800 U-500 with ON Semi AR0521SR 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 <u>Customization</u> and <u>OEM Solutions</u> webpage for additional options.



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Product code 13624
Interface USB3 Vision

Resolution $2592 (H) \times 1944 (V)$

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 $2.2 \,\mu\text{m} \times 2.2 \,\mu\text{m}$

Lens mount S-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 monochrome models measured without optical filter.

Quantum efficiency at 529 nm 79 %

Temporal dark noise 5.9 e⁻

Saturation capacity 9890 e⁻

Dynamic range 63 dB

Absolute sensitivity threshold 7.1 e

Output

Bit depth 10-bit Bit

Monochrome pixel formats Mono8, Mono10, Mono10p

General purpose inputs/outputs (GPIOs)

TTL I/Os 4 programmable GPIOs



Operating conditions/dimensions

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

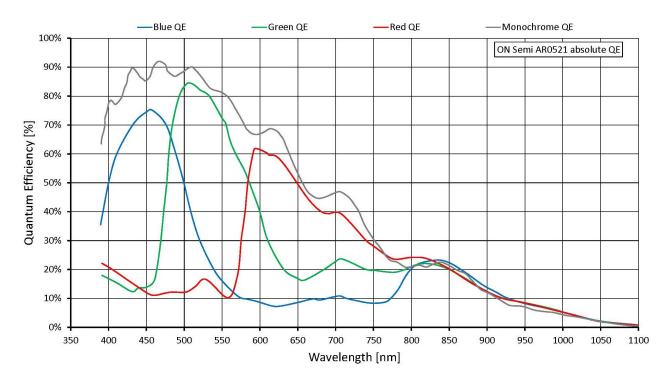
Power requirements (DC) Power over USB 3.1 Gen 1 | External power 5.0 V

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

Mass 65 g

Body dimensions (L \times W \times H in mm) 33 \times 32 \times 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

