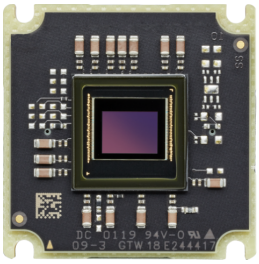
Allied Vision

Alvium
1800 U-501c NIR



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

Hardware option: Bare Board 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 Allied Vision's Vimba Suite and compatibility to the most popular third party image-processing libraries.

See the Alvium Cameras Hardware Options for lens mount and housing options, as well as the Customization and OEM Solutions webpage for additional options.

Specifications

Product code	15998
Interface	USB3 Vision
Resolution	2592 (H) × 1944 (V)
Spectral range	300 to 1100 nm
Sensor	ON Semi AR0522
Sensor type	CMOS
Shutter mode	Rolling shutter
Sensor size	Type 1/2.5
Pixel size	2.2 µm × 2.2 µm
Lens mounts (available)	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 e^-

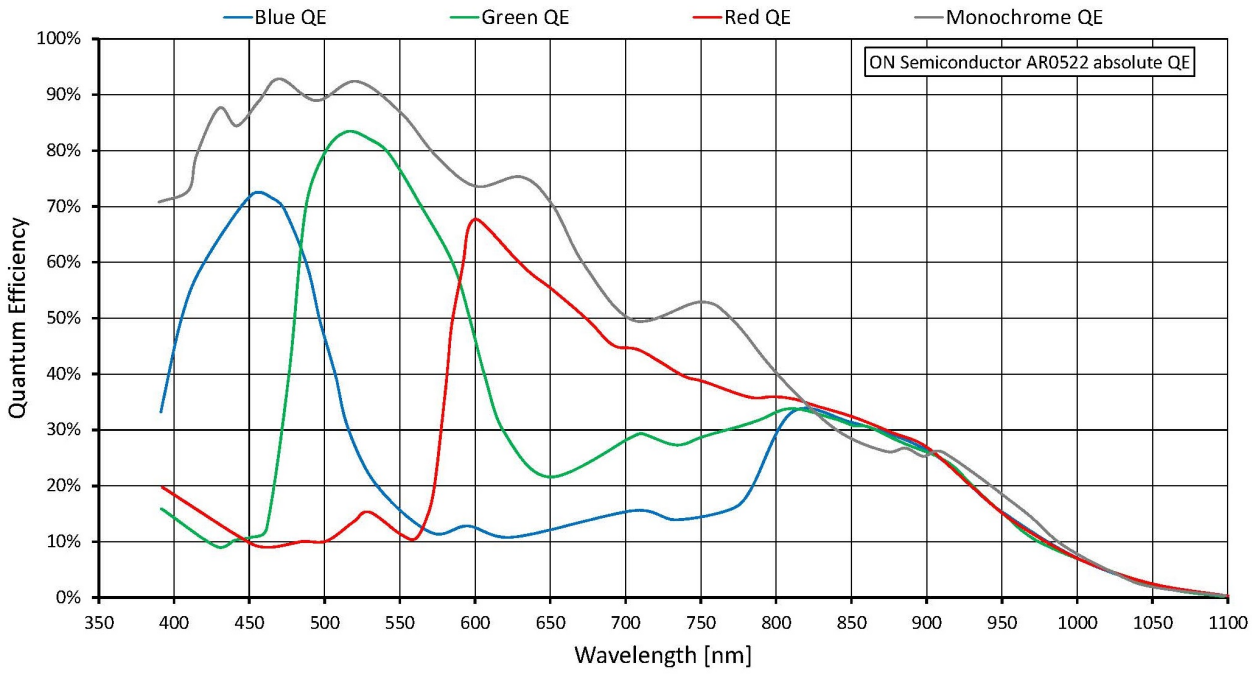
Output	
Bit depth	10-bit Bit
Monochrome pixel formats	Mono8, Mono10, Mono10p
YUV color pixel formats	YCbCr411_8_CbYYCrYY, YCbCr422_8_CbYCrY, YCbCr8_CbYCr

RGB color pixel formats	BayerRG8, BayerRG10, BayerRG10p, BGR8, RGB8 (default)

General purpose inputs/outputs (GPIOs)	
TTL I/Os	4 programmable GPIOs

Operating conditions/dimensions	
Operating temperature	-20 °C to +85 °C (cooling areas)
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	15 g
Body dimensions (L × W × H in mm)	7 × 26 × 26
Regulations	2011/65/EU, including amendment 2015/863/EU (RoHS)

Quantum efficiency



Features

Image control: Auto

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

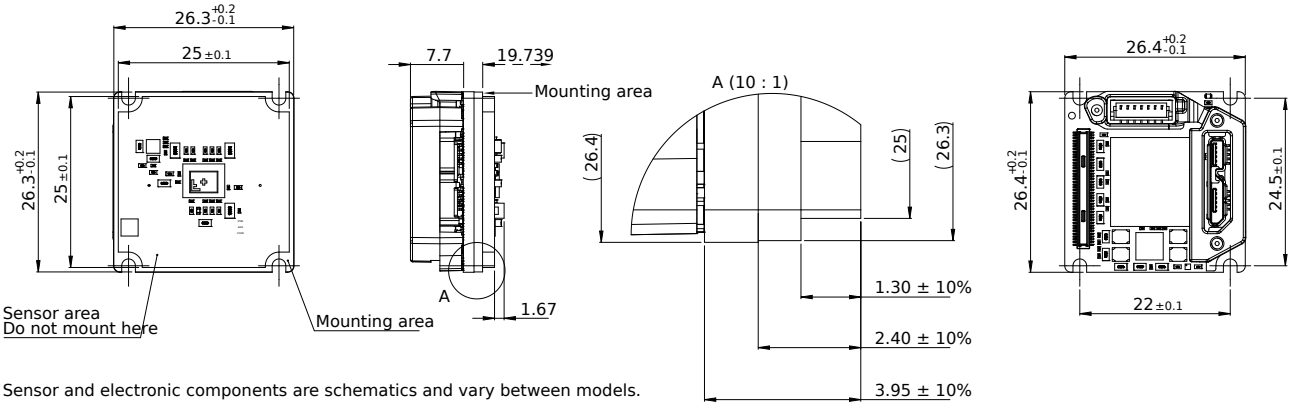
Image control: Other

- 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
- Image chunk data
- Serial I/Os
- Temperature monitoring
- U3 Power Saving Mode
- User sets

Technical drawing



Sensor and electronic components are schematics and vary between models.