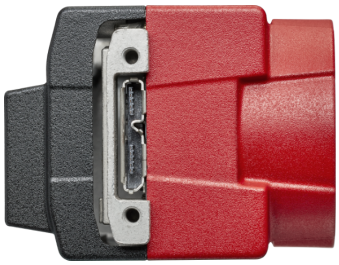
Allied Vision

Alvium
1800 U-501 NIRm



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

Hardware option: Closed Housing C-Mount 90°

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

Alvium 1800 U-501 NIRm Closed Housing C-Mount 90°	
Product code	14620
Interface	USB3 Vision
Resolution	2592 (H) × 1944 (V)

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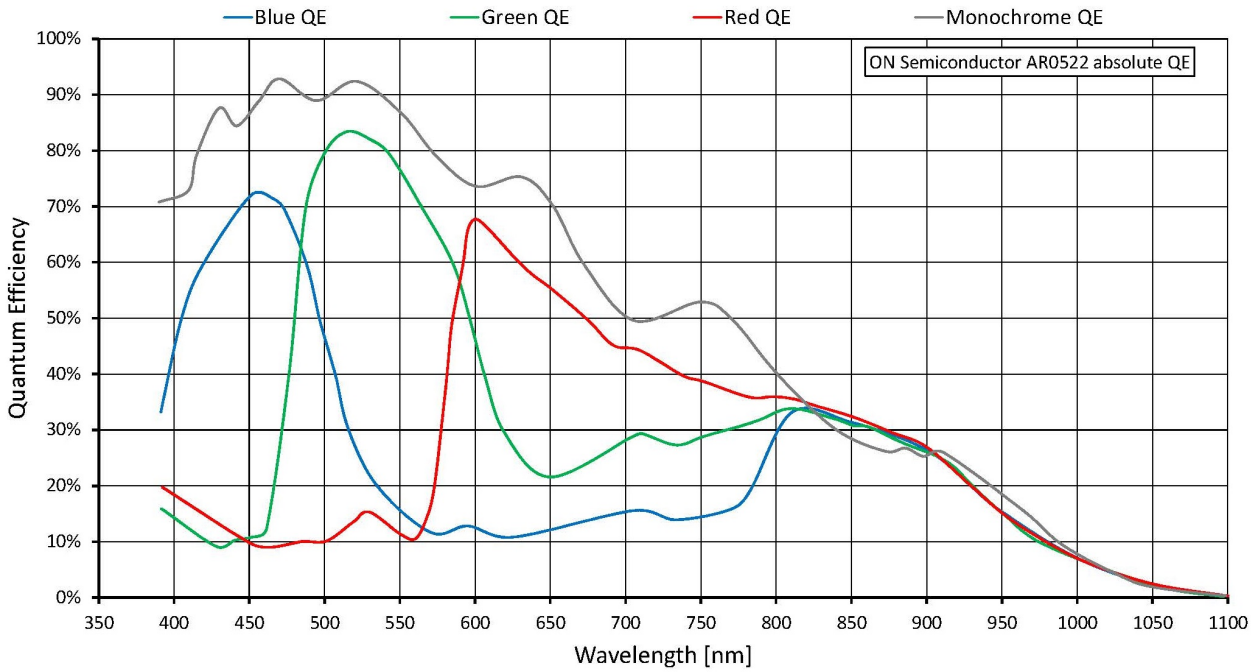
Alvium 1800 U-501 NIRm Closed Housing C-Mount 90°	
Spectral range	300 to 1100 nm
Sensor	ON Semi AR0522
Sensor type	CMOS
Shutter mode	Rolling shutter
Sensor size	Type 1/2.5
Pixel size	2.2 µm × 2.2 µm
Lens mount	C-Mount
Max. frame rate at full resolution	68 fps at ⩾ 375 MByte/s, Mono8
ADC	10 Bit
Image buffer (RAM)	256 KB
Non-volatile memory (Flash)	1024 KB
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	Max. 10 Bit
Monochrome pixel formats	Mono8, Mono10, Mono10p
General purpose inputs/outputs (GPIOs)	
TTL I/Os	4 programmable GPIOs
Operating conditions/dimensions	
Operating temperature	+5 °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

Alvium 1800 U-501 NIRm Closed Housing C-Mount 90°	
Body dimensions (L × W × H in mm)	38 × 32 × 29
Regulations	2014/30/EU; 2011/65/EU, incl. amendment 2015/863/EU (RoHS); FCC Class B digital device; CAN ICES-003 (B) / NMB-3 (B)

Quantum efficiency



Features

Image control

Auto control

- Auto exposure
- Auto gain
- Auto white balance (color models)
- Auto features regions control
- Auto features algorithms control

Other image controls

- Binning
- Black level
- Contrast
- De-Bayering up to 5×5 (color models)
- Exposure time
- Gain
- Gamma
- Hue (color models)
- Saturation (color models)
- DPC (factory calibrated)
- FPNC (factory calibrated)
- Region of interest (ROI)
- Reverse X/Y

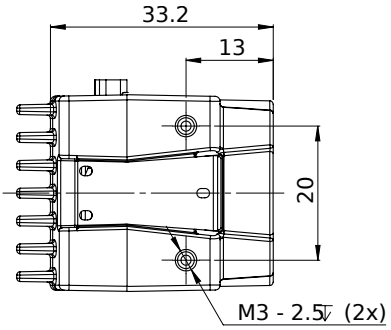
Camera control

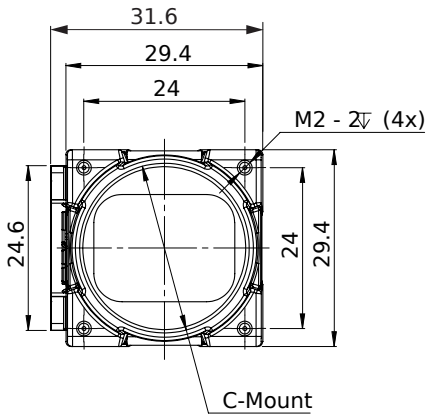
- Acquisition frame rate
- I/O and trigger control
- Temperature monitoring (sensor board)
- Status LED luminance control
- Firmware update in the field
- U3 Power Saving Mode

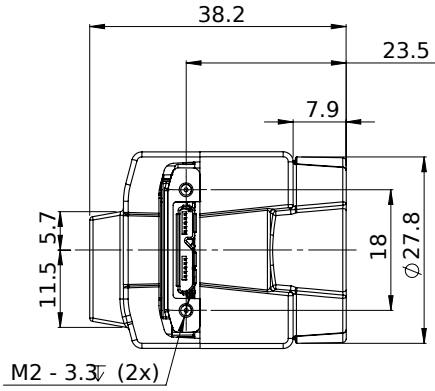
Technical drawing

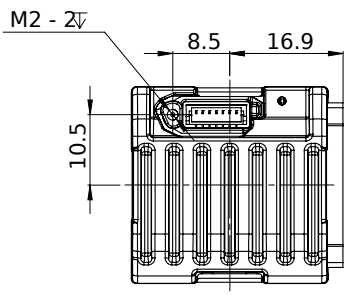
Camera hardware options

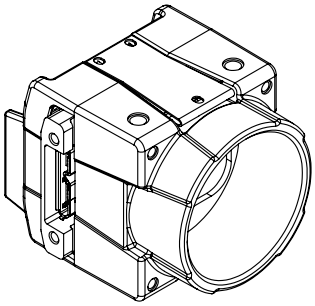
The Alvium Cameras Hardware Options document informs about submodels, such as bare board or open housing cameras with different lens mounts.

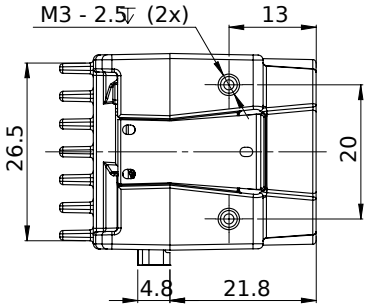

33.2
13
20
M3 - 2.5↧ (2x)


31.6
29.4
24
M2 - 2↧ (4x)
24.6
24
29.4
C-Mount


38.2
23.5 min. to 23.9 max.
7.9
11.5
5.7
18
⌀27.8
M2 - 3.3↧ (2x)


M2 - 2↧
8.5
16.9
10.5




M3 - 2.5↧ (2x)
13
26.5
20
4.8
21.8