Allied Vision

Alvium
1500 C-500m

- AR0521 CMOS sensor
- ALVIUM image processing
- MIPI CSI-2 interface
- Various hardware options

Hardware option: Open Housing C-Mount

Alvium 1500 C – Powerful camera modules for embedded vision

Revolutionary MIPI CSI-2 camera module

Alvium 1500 C-500 with ON Semi AR0521SR runs 68.0 frames per second at 5.0 MP resolution.

Alvium 1500 C is a revolutionary MIPI CSI-2 camera optimized for embedded vision applications. The Alvium 1500 C offers the performance and versatility of industrial cameras for the embedded world. Equipped with industrial-grade CMOS sensors from ON Semiconductor, Alvium 1500 C cameras deliver excellent image quality and high frame rates.

The standardized CSI-2 driver ensures quick integration with the flexibility to change camera models easily.

To operate Alvium CSI-2 cameras on your vision system, Allied Vision provides different access modes: - Direct Register Access (DRA) to control the cameras via registers for advanced users. - Video4Linux2 Access allows to control the cameras via established V4L2 API and applications like GStreamer and OpenCV. Open-source CSI-2 drivers are available on GitHub for different boards and system on chips (SoCs).

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 1500 C-500m Open Housing C-Mount	
Product code	12891

| Alvium 1500 C-500m Open Housing C-Mount	
Interface	MIPI CSI-2, up to 4 lanes
Resolution	2592 (H) × 1944 (V)
Spectral range	300 to 1100 nm
Sensor	ON Semi AR0521SR
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 using 4 lanes, RAW8 (GREY)
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 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	Max. 10 Bit
Raw pixel formats	RAW8 (GREY), RAW10 (Y10) [MIPI CSI-2 (FOURCC)]
General purpose inputs/outputs (GPIOs)	
TTL I/Os	2 programmable GPIOs
Operating conditions/dimensions	
Operating temperature	-20 °C to +65 °C (housing)
Power requirements (DC)	5 VDC over MIPI CSI-2
Power consumption	Typical: 1.9 W

Alvium 1500 C-500m Open Housing C-Mount	
Mass	40 g
Body dimensions (L × W × H in mm)	26 × 29 × 29
Regulations	2011/65/EU, including amendment 2015/863/EU (RoHS)

Quantum efficiency
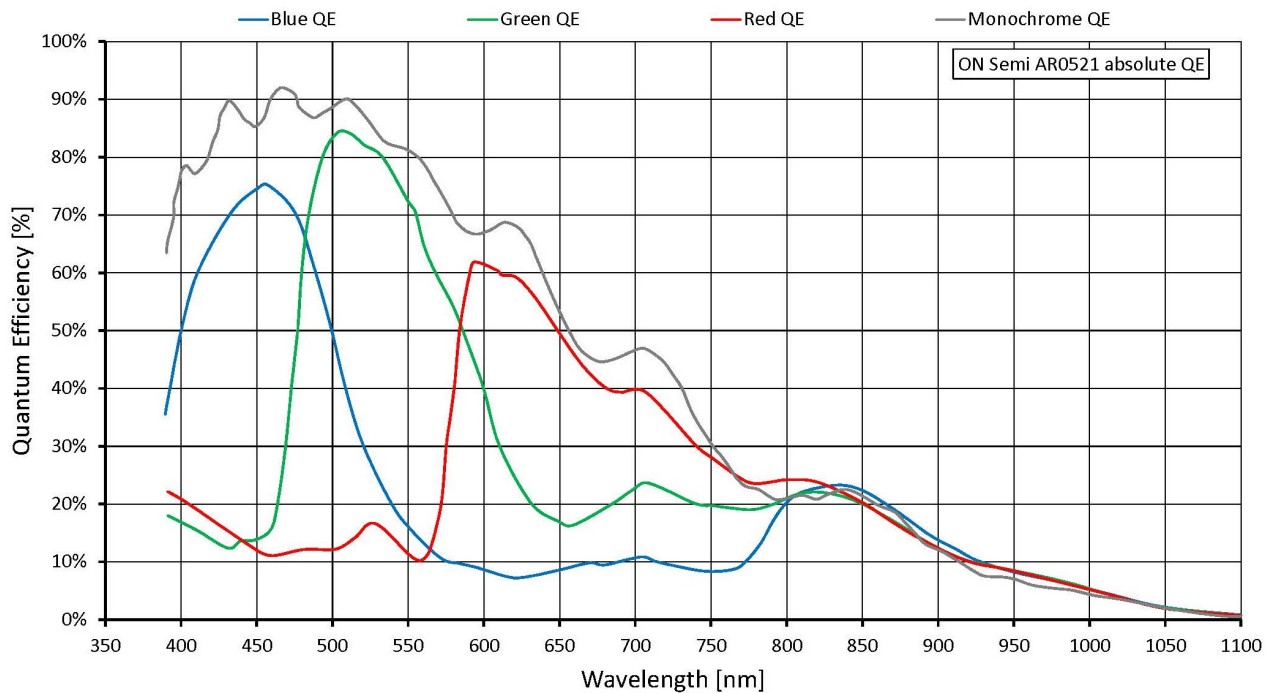
Features

Image control

Auto control

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

Other image controls

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

Camera control

- Acquisition Frame Rate
- Temperature monitoring (sensor board)
- Triggering (Frame Start)

Technical drawing

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M3 - 2.5 ⤓ (2x)

29.4

24

29.4

24

M2 - 2 ⤓ (4x)

C-Mount

23.5 min. to 25.5 max.

12.8

12.9

Ø 27.8

7.9

13

20

M3 - 2.5 ⤓ (2x)