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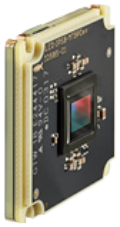
Alvium

1500 C-500



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

Embedded vision CSI-2 camera with AR0521 sensor

Alvium CSI-2 cameras enable new designs for embedded applications with improved image quality and reduced workload for the host. The innovative ALVIUM System on Chip (SoC) performs image corrections and preprocessing tasks onboard the camera instead of the embedded board. Unlike FPGAs commonly used in machine vision cameras, the ALVIUM SoC is extremely power efficient. With Alvium, integrating hardware and software can be done effortlessly, which ultimately reduces development time. The ON Semiconductor AR0521 CMOS sensor enables high-quality imaging at 5.1 megapixels. Color models ship with an IR cut filter, monochrome models ship without a filter or protection glass.

Benefits and features

- Monochrome (1500 C-500m) and color (1500 C-500c) models
- ALVIUM® Technology for onboard image processing
- MIPI CSI-2 interface with up to 4 lanes
- Platform concept that enables the operation of different Alvium camera models with a common software
- Hirose HR FHH55 FPC connector with minimum space requirements for a compact design
- Precise sensor-to-lens mount alignment
- Standard M3 mounting holes for top and bottom mounting, standard M2 mounting holes for front mounting
- Industrial performance for embedded vision applications
- Easy-to-install driver and code examples

Hardware options

- Housing: Alvium 1500 C cameras are available as bare board or open housing cameras.
- Various lens mounts: Select between S-Mount, CS-Mount, or C-Mount.

For more information on hardware options, including product codes and technical data, such as technical drawings and mass, see the Alvium Cameras Hardware Options document.

Available accessories

- Tripod adapter
- Adapter boards for Nitrogen6_MAX and Wandboard i.MX6
- FPC cables in 120 mm, 220 mm, and 420 mm length
- Various lenses and Allied Vision S-Mount lenses with focal lengths 2.97 - 12 mm

Specifications

Alvium	**1500 C-500**
Interface	MIPI CSI-2, up to 4 lanes
Resolution	2592 (H) × 1944 (V)
Spectral range	300 to 1100 nm
Sensor	ON Semi AR0521
Sensor type	CMOS
Shutter mode	Rolling shutter
Sensor size	Type 1/2.5
Pixel size	2.2 µm × 2.2 µm
Lens mounts (available)	CS-Mount, C-Mount, S-Mount
Max. frame rate at full resolution	67 fps using 1 to 4 lanes, RAW8
ADC	10 Bit
Non-volatile memory (Flash)	1024 KB
Output	
Bit depth	Max. 10 Bit
YUV color pixel formats	YUV422_10
RGB color pixel formats	RGB888, BGR888
Raw pixel formats	RAW8 (color or monochrome)
Operating conditions/dimensions	
Operating temperature	+5 °C to +65 °C housing temperature (with heat sink)
Power requirements (DC)	5 VDC over MIPI CSI-2
Power consumption	Typical: 1.7 W | Max. 1.8 W (at 20 °C)
Mass	10 g (bare board)
Body dimensions (L × W × H in mm)	7 × 26 × 26 (bare board)
Regulations	2011/65/EU, including amendment 2015/863/EU (RoHS)

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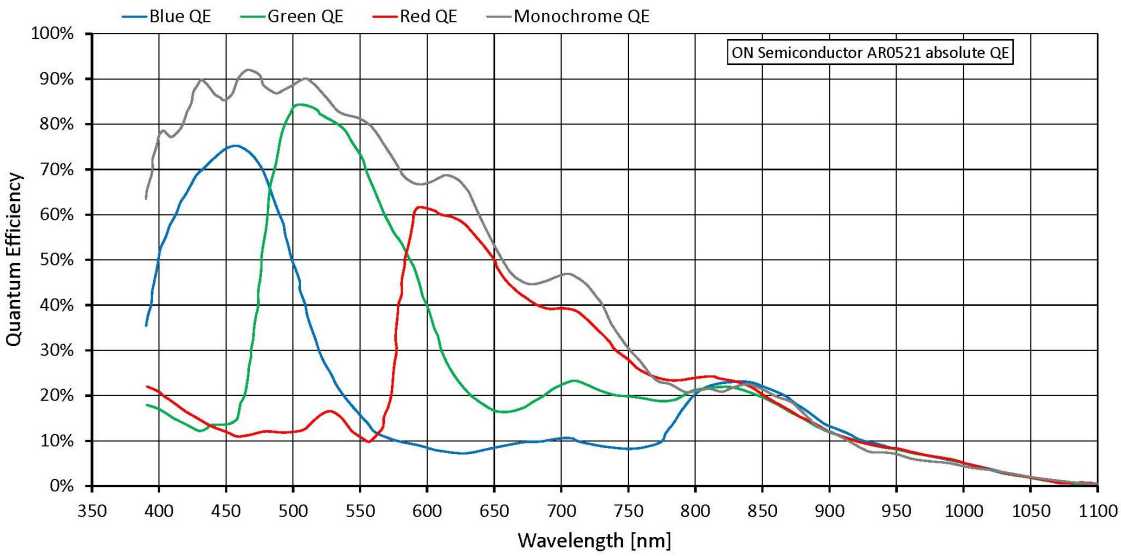
Quantum efficiency



Features

Image control

Auto control

- Auto exposure
- Auto gain
- Auto white balance

Other image controls

- Black level
- De-Bayering up to 5×5 (color models)
- Exposure time
- Gain
- Gamma

Camera control

- Firmware update

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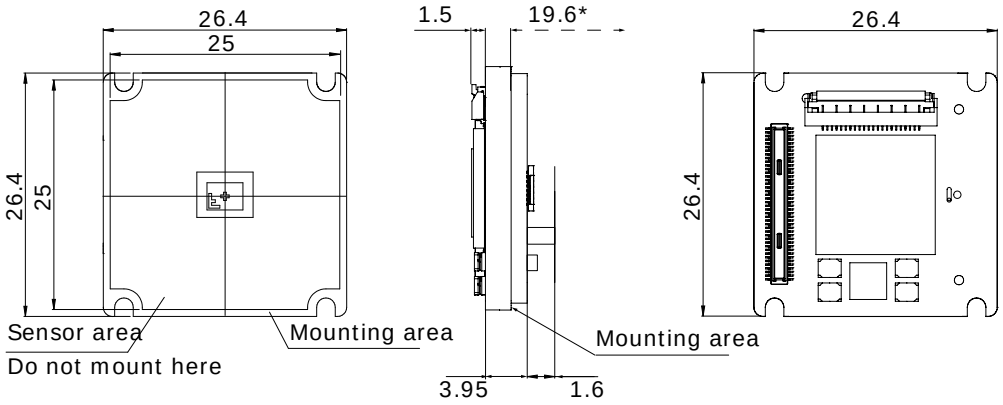
Technical drawing

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



*Mechanical distance from the mounting area to the C-Mount front flange

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Allied Vision

Applications

Powered by the ALVIUM® Technology, a unique System-on-chip designed by Allied Vision, the Alvium 1500 and Alvium 1800 Series deliver industrial performance to embedded vision with many benefits for system engineers.

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