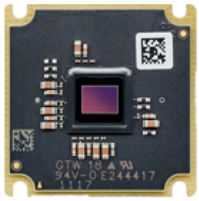
Allied Vision

Alvium 1800 C

-2050C



- IMX183 CMOS sensor
- ALVIUM image processing
- MIPI CSI-2 interface
- Various hardware options

Hardware option: Bare Board

Embedded vision CSI-2 camera with IMX183 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 host computer. 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 Sony IMX183 CMOS sensor enables imaging at 19.7 megapixel and 26 frames per second. Color models ship with an IR cut filter, monochrome models ship without a filter or protection glass.

Benefits and features

- Monochrome (1800 C-2050m) and color (1800 C-2050c) models
- ALVIUM® Technology for on-board 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: Bare board or open housing
- Various lens mount: 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

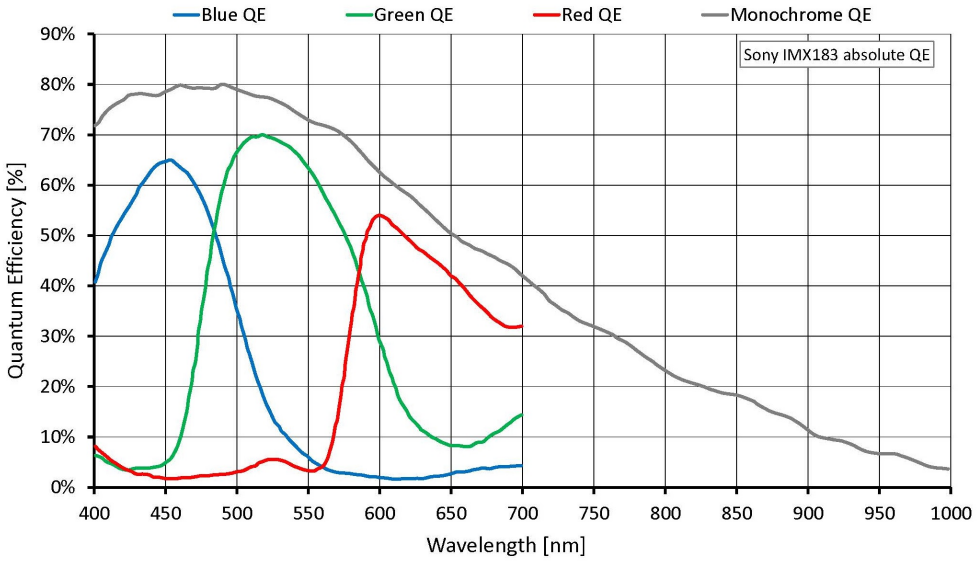
- Tripod adapter
- Adapter boards connect to various embedded boards.
- FPC cables in 120 mm, 220 mm, and 420 mm length
- Various lenses

Specifications

Alvium 1800 C	**-2050c Bare Board**
Product code	14865
Interface	MIPI CSI-2, up to 4 lanes
Resolution	5376 (H) × 3672 (V)
Spectral range	300 to 1100 nm
Sensor	Sony IMX183
Sensor type	CMOS
Shutter mode	Rolling shutter
Sensor size	Type 1
Pixel size	2.4 µm × 2.4 µm
Max. frame rate at full resolution	26 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	80 %
Temporal dark noise	6 e^-
Saturation capacity	14900 e^-
Dynamic range	65 dB
Absolute sensitivity threshold	7.9 e^-
Output	

Alvium 1800 C	-2050c Bare Board
Bit depth	Max. 10 Bit
YUV color pixel formats	YUV422 8-bit (UYVY) [MIPI CSI-2 (FOURCC)]
RGB color pixel formats	RBG888 (RGB3) [MIPI CSI-2 (FOURCC)]
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	+5 °C to +85 °C (cooling areas)
Power requirements (DC)	5 VDC over MIPI CSI-2
Power consumption	Typical: 2.9 W
Mass	10 g
Body dimensions (L × W × H in mm)	8 × 26 × 26
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

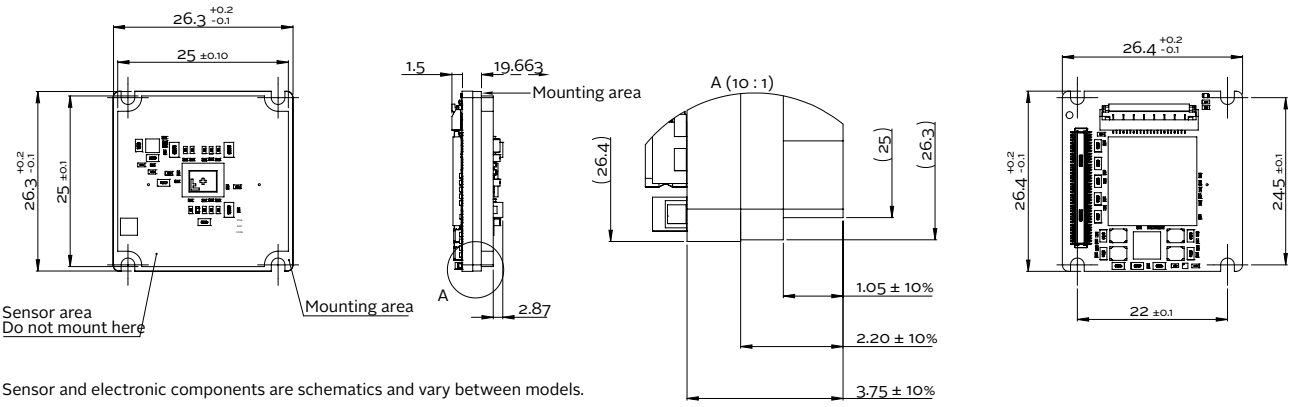
- Black level
- De-Bayering up to 5×5 (color models)
- DPC (factory calibrated)
- Exposure time
- Gain
- Gamma
- Hue (color models)
- Region of interest (ROI)
- Reverse X/Y
- Saturation (color models)

Camera control

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

Technical drawing

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



Sensor and electronic components are schematics and vary between models.