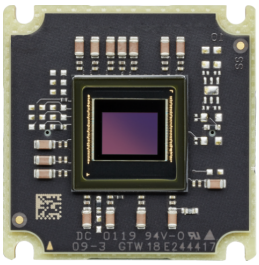
Allied Vision

# Alvium
## 1800 C-2050c



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

Hardware option: Bare Board

**Alvium 1800 C – High-performance camera modules for embedded vision**

Machine vision sensors for embedded system developers

Alvium 1800 C-2050 with Sony IMX183 runs 25.0 frames per second at 19.7 MP resolution.

The powerful Alvium 1800 C MIPI CSI-2 camera series gives embedded system developers access to Sony's high-performance image sensors popular in the machine vision industry. These sensors with resolutions up to 20 megapixels deliver excellent image quality and up to twice the frame rates compared to similar Alvium 1500 C models.

To operate Alvium CSI-2 cameras on your vision system, Allied Vision provides different access modes: - **GenICam for CSI-2 Access** controls the camera by GenICam features, using the Alvium CSI-2 driver and CSI-2 transport layer (TL) directly. Currently, Alvium 1800 C-234, C-235, C-500, C-507, C-511, C-1236, and C-2050 are supported. Please find FAQs and installation instructions in the Getting Started with GenICam for CSI-2 application note. - 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).

In addition to lens mount and housing options, see Customization and OEM Solutions webpage for additional options.

Allied Vision

## Specifications

| | |
|---|---|
| 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 |
| Lens mounts (available) | C-Mount |
| Max. frame rate at full resolution | 25 fps using 4 lanes, RAW8 (GREY) |
| 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 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 $e^-$ |

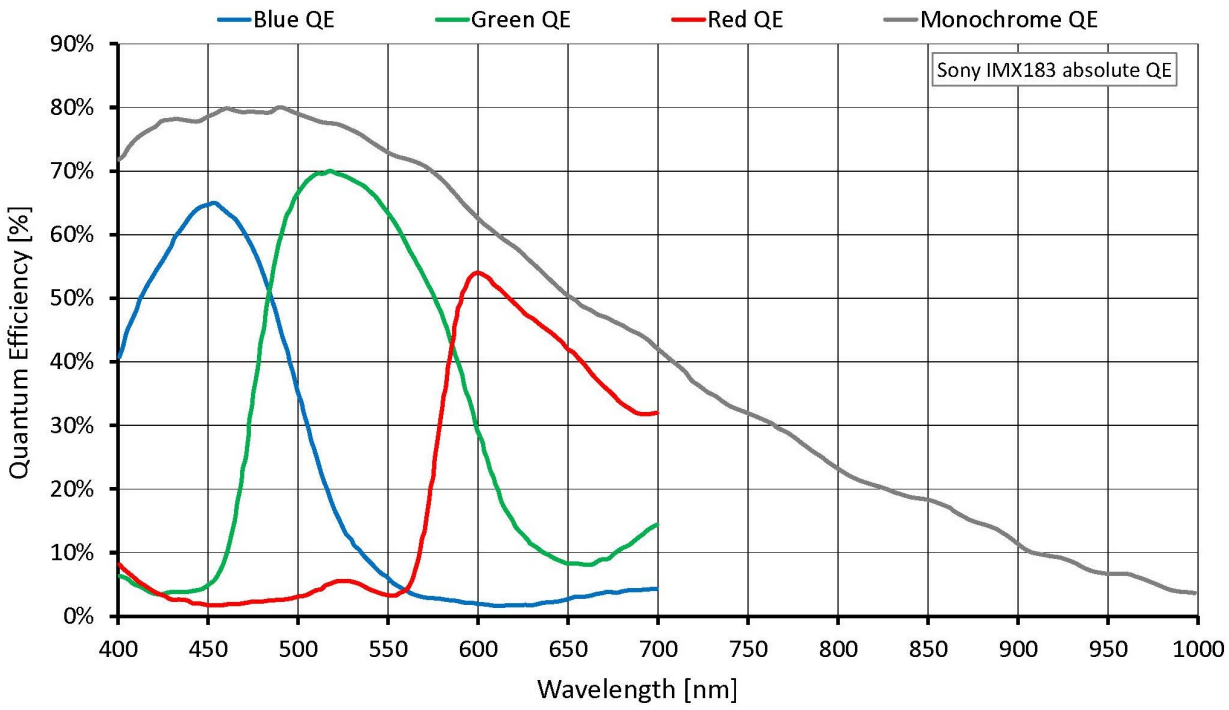
| **Output** | |
|---|---|
| Bit depth | 10-bit Bit |
| Monochrome pixel formats | GenICam for CSI-2 Access: Mono8, Mono10, Mono10p |
| YUV color pixel formats | YUV422 8-bit (UYVY) [MIPI CSI-2 (FOURCC)] \| GenICam for CSI-2 Access: YCbCr411_8_CbYYCrYY, YCbCr422_8_CbYCrY, YCbCr8_CbYCr |

| | |
|---|---|
| RGB color pixel formats | RBG888 (RGB3) [MIPI CSI-2 (FOURCC)] \| GenICam for CSI-2 Access: BayerRG8, BayerRG10, BayerRG10p, BGR8, RGB8 |
| 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 +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 |

## Quantum efficiency



# Features

## Image control: Auto

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

## Image control: Other

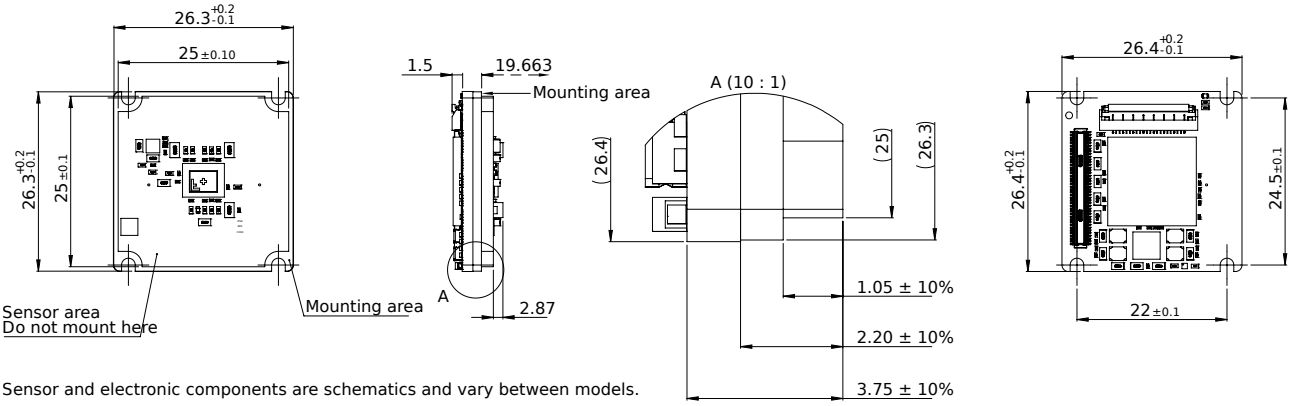
- Adaptive noise correction*
- Binning*
- Black level
- Color transformation (incl. hue, saturation; color models)
- Contrast*
- Custom convolution*
- De-Bayering up to 5×5 (color models)
- DPC (defect pixel correction)
- Gamma
- LUT (look-up table)*
- Reverse X/Y
- ROI (region of interest)
- Sharpness/Blur*

## Camera control

- Acquisition frame rate
- Bandwidth control*
- Counters and timers*
- Firmware update in the field
- I/O and trigger control
- Serial I/Os*
- Temperature monitoring
- User sets*

*GenICam for CSI-2 Access

# Technical drawing




Sensor and electronic components are schematics and vary between models.