

# Alvium

## 1800 C-235



- IMX174 CMOS sensor
- ALVIUM image processing
- MIPI CSI-2 interface
- Various hardware options

Model without hardware options

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

Machine vision sensors for embedded system developers

Alvium 1800 C-235 with Sony IMX174 runs 155 frames per second at 2.4 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. All Alvium 1800 C models 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.

## Specifications

|                                    |                                                        |
|------------------------------------|--------------------------------------------------------|
| Interface                          | MIPI CSI-2, up to 4 lanes                              |
| Resolution                         | 1936 (H) × 1216 (V)                                    |
| Spectral range                     | 300 to 1100 nm                                         |
| Sensor                             | Sony IMX174                                            |
| Sensor type                        | CMOS                                                   |
| Shutter mode                       | GS (Global shutter)                                    |
| Sensor size                        | Type 1/1.2                                             |
| Pixel size                         | 5.86 µm × 5.86 µm                                      |
| Lens mounts (available)            | C-Mount, CS-Mount                                      |
| Max. frame rate at full resolution | 155 fps GenICam for CSI-2 Access: Using 4 lanes, Mono8 |
| ADC                                | 12 Bit                                                 |
| Image buffer (RAM)                 | 256 KByte                                              |
| Non-volatile memory (Flash)        | 1024 KByte                                             |

## Output

|                                 |                                                                                                    |
|---------------------------------|----------------------------------------------------------------------------------------------------|
| Bit depth                       | 10-bit, 12-bit; Adaptive (10-bit, 12-bit)                                                          |
| Monochrome pixel formats        | PFNC: Mono8, Mono10, Mono10p, Mono12, Mono12p   CSI-2: RAW8, RAW10, RAW12   FOURCC: GREY, Y10, Y12 |
| YUV color pixel formats         | PFNC: YCbCr411_8_CbYYCrYY, YCbCr422_8_CbYCrY, YCbCr8_CbYCr   CSI-2: YUV422 8-bit   FOURCC: UYVY    |
| RGB color pixel formats         | PFNC: RGB8 (default), BGR8   CSI-2: RGB888 (default)   FOURCC: RGB3                                |
| Raw color pixel formats (Bayer) | PFNC: BayerGR8, BayerGR10, BayerGR10p, BayerGR12, BayerGR12p                                       |

## General purpose inputs/outputs (GPIOs)

|          |                      |
|----------|----------------------|
| TTL I/Os | 2 programmable GPIOs |
|----------|----------------------|

## Operating conditions/dimensions

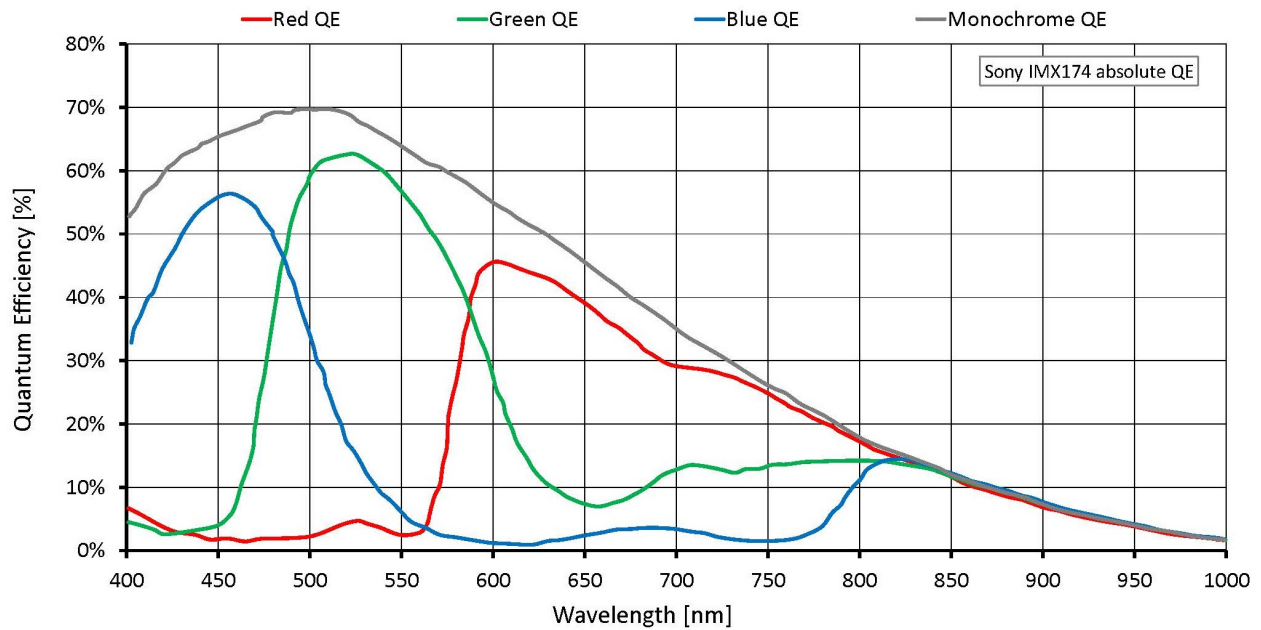
|                         |                            |
|-------------------------|----------------------------|
| Operating temperature   | -20 °C to +65 °C (housing) |
| Power requirements (DC) | 5 VDC over MIPI CSI-2      |

Power consumption Typical: 1.9 W

Mass 40 g

Body dimensions (L × W × H in mm) 26 × 29 × 29

## Quantum efficiency



## Features

### Image control: Auto

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

### Image control: Other

- Adaptive noise correction\*
- Binning (digital)
- 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
- Lens shading correction\*
- LUT (look-up table)\*
- Reverse X/Y
- ROI (region of interest)
- Sharpness/Blur\*

### Camera control

- Acquisition frame rate
- Counters and timers\*
- Firmware update in the field
- I/O and trigger control
- Image chunk data\*
- Readout modes (SensorBitDepth)\*
- Temperature monitoring
- User sets\*

\*GenICam for CSI-2 Access

# Technical drawing

