

# Alvium 1800 U

## -1240m



- IMX226 CMOS sensor
- ALVIUM image processing
- USB3 Vision
- Various hardware options

**Hardware option:** Bare Board 90°

## Versatile USB camera with IMX226 sensor

Alvium USB cameras are designed for use in both machine vision and embedded applications. Offering high image quality and reducing workload for the host, Alvium enables innovation among system designers. 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 IMX226 CMOS sensor enables high-quality imaging at 12.2 megapixel and 29 frames per second. Color models ship with an IR cut filter, monochrome and S-Mount models ship without a filter or protection glass.

## Benefits and features

- Monochrome (1800 U-1240m) and color (1800 U-1240c) models
- ALVIUM® Technology for on-board image processing
- USB3 Vision interface for GenICam SFNC features
- Platform concept that enables the operation of different Alvium camera models with a common software
- Micro-B USB 3.1 Gen 1 connector with screw locks for industrial applications
- 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 both embedded and machine vision applications



## Hardware options

- Housings: Bare board, open housing, or closed housing
- Various lens mounts: C-Mount, CS-Mount, or S-Mount
- USB connector position: Select between the back panel or the left side of the camera (seen from the sensor side).

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
- USB 3.1 Gen 1 cable with screw connectors in various lengths
- I/O cables in various lengths
- Various lenses and Allied Vision S-Mount lenses with focal lengths 2.97 - 12 mm

## Specifications

<b>Alvium 1800 U</b>	<b>-1240m Bare Board 90°</b>
Product code	14814
Interface	USB3 Vision
Resolution	4024 (H) × 3036 (V)
Spectral range	300 to 1100 nm
Sensor	Sony IMX226
Sensor type	CMOS
Shutter mode	Global reset and Rolling shutter
Sensor size	Type 1/1.7
Pixel size	1.85 $\mu\text{m}$ × 1.85 $\mu\text{m}$
Max. frame rate at full resolution	29 fps at $\geq 375$ MByte/s, Mono8
ADC	10 Bit
Image buffer (RAM)	256 KB
Non-volatile memory (Flash)	1024 KB

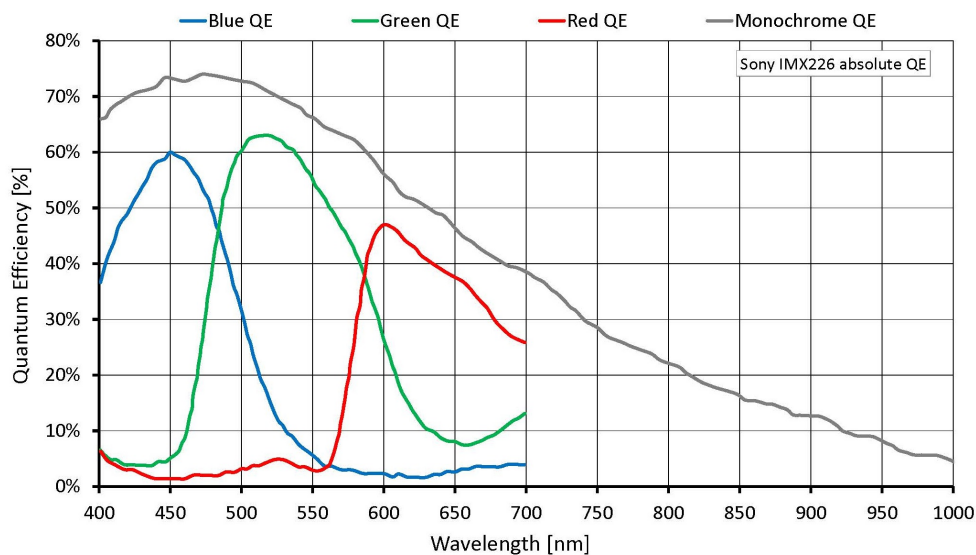
### Imaging performance

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	74 %
Temporal dark noise	4.8 $\text{e}^-$
Saturation capacity	10500 $\text{e}^-$
Dynamic range	65 dB

<b>Alvium 1800 U</b>		<b>-1240m Bare Board 90°</b>	
Absolute sensitivity threshold		6.3 e <sup>-</sup>	
		Output	
Bit depth		Max. 10 Bit	
Monochrome pixel formats		Mono8, Mono10	
		General purpose inputs/outputs (GPIOs)	
TTL I/Os		4 programmable GPIOs	
		Operating conditions/dimensions	
Operating temperature		+5 °C to +85 °C (cooling areas)	
Power requirements (DC)		Power over USB 3.1 Gen 1   External power 5.0 V	
Power consumption		USB power: 3.1 W (typical)   Ext. power: 3.3 W (typical)	
Mass		15 g	
Body dimensions (L × W × H in mm)		14 × 30 × 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)
- Auto features regions control
- Auto features algorithms control

#### Other image controls

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

### Camera control

- Sync out modes: Trigger ready, input
- Temperature monitoring (sensor board)
- LED luminance control
- Firmware update

## 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.

