Allied Vision

Alvium
1800 U-291

- IMX421 CMOS sensor
- ALVIUM image processing
- USB3 Vision
- Various hardware options

Model without hardware options

Alvium 1800 U – Your entry into high-performance imaging

Industrial USB cameras with attractive price-performance ratio

Alvium 1800 U-291 with Sony IMX421 runs 141.0 frames per second at 2.9 MP resolution.

Alvium 1800 U is your entry into high-performance imaging with ALVIUM® Technology for industrial applications. Equipped with the newest generation of sensors, these small and lightweight cameras deliver high image quality and frame rates at the best price-performance ratio. With its USB3 Vision compliant interface and industrial-grade hardware, it is your workhorse for different machine vision applications whether it is on a PC-based or an embedded system.

Easy software integration with Allied Vision's Vimba Suite and compatibility to the most popular third party image-processing libraries.

See the Alvium Cameras Hardware Options for lens mount and housing options, as well as the Customization and OEM Solutions webpage for additional options.

Specifications

Alvium 1800 U-291	
Interface	USB3 Vision
Resolution	1944 (H) × 1472 (V)
Spectral range	300 to 1100 nm

Alvium 1800 U-291	
Sensor	Sony IMX421
Sensor type	CMOS
Shutter mode	Global shutter
Sensor size	Type 2/3
Pixel size	4.5 µm × 4.5 µm
Lens mounts (available)	C-Mount
Max. frame rate at full resolution	141 fps at 450 MByte/s, Mono8
ADC	12 Bit
Image buffer (RAM)	256 KByte
Non-volatile memory (Flash)	1024 KByte
Output	
Bit depth	8-bit, 10-bit, 12-bit; Adaptive (10-bit, 12-bit) Bit
Monochrome pixel formats	Mono8, Mono10, Mono10p, Mono12, Mono12p
YUV color pixel formats	YCbCr411_8_CbYYCrYY, YCbCr422_8_CbYCrY, YCbCr8_CbYCr
RGB color pixel formats	BayerRG8, BayerRG10, BayerRG10p, BayerRG12, BayerRG12p, BGR8, RGB8 (default)
General purpose inputs/outputs (GPIOs)	
TTL I/Os	4 programmable GPIOs
Operating conditions/dimensions	
Operating temperature	-20 °C to +65 °C (housing)
Power requirements (DC)	Power over USB 3.1 Gen 1 | External power 5.0 V
Power consumption	USB power: 1.9 W (typical) | Ext. power: 2.1 W (typical)
Mass	60 g
Body dimensions (L × W × H in mm)	38 × 29 × 29
Regulations	2014/30/EU; 2011/65/EU, incl. amendment 2015/863/EU (RoHS); FCC Class B digital device; CAN ICES-003 (B) / NMB-3 (B)

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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)
- FPNC* (fixed pattern noise correction)
- Gamma
- LUT (look-up table)
- Reverse X/Y
- ROI (region of interest)
- Sharpness/Blur

*The early production cameras do not support FPNC. Support will be available with future series models.

Camera control

- Acquisition frame rate
- Bandwidth control
- Firmware update in the field
- I/O and trigger control

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- Readout modes (SensorBitDepth)
- Temperature monitoring
- U3 Power Saving Mode
- User sets

Technical drawing