Alvium
GM2-1240

- IMX226 CMOS sensor
- ALVIUM image processing
- GMSL2 interface
- Various hardware options

Model without hardware options

Alvium GM2: Benefit from greater flexibility in speed and range

CSI-2 based Alvium cameras with GMSL2™ interface

Alvium GM2 cameras with GMSL2™ (Gigabit Multimedia Serial Link) interface have been designed to overcome the limitations of standard CSI- 2 cameras. With a large choice of over 30 high-quality CMOS global and rolling shutter sensors Allied Vision is offering the broadest variety of GMSL2™ cameras in the market. The CSI-2 based cloused housing cameras come with an integrated serializer, 2 GPIOs (General Purpose Input/Output) on the camera and two rugged interface connectors to choose from.

To operate Alvium GM2 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. Alvium GM2 models with equivalent 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	GMSL2, based on MIPI CSI-2, up to 4 lanes
Resolution	4024 (H) × 3032 (V)
Spectral range	300 to 1100 nm
Sensor	Sony IMX226
Sensor type	CMOS
Shutter mode	RS, Global reset shutter (GRS)
Sensor size	Type 1/1.7
Pixel size	1.85 µm × 1.85 µm
Lens mounts (available)	C-Mount, CS-Mount, S-Mount
Max. frame rate at full resolution	Mainly depends on hardware and register settings
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	74 %
Temporal dark noise	4.8 e^-
Saturation capacity	10500 e^-
Dynamic range	65 dB
Absolute sensitivity threshold	6.3 e^-

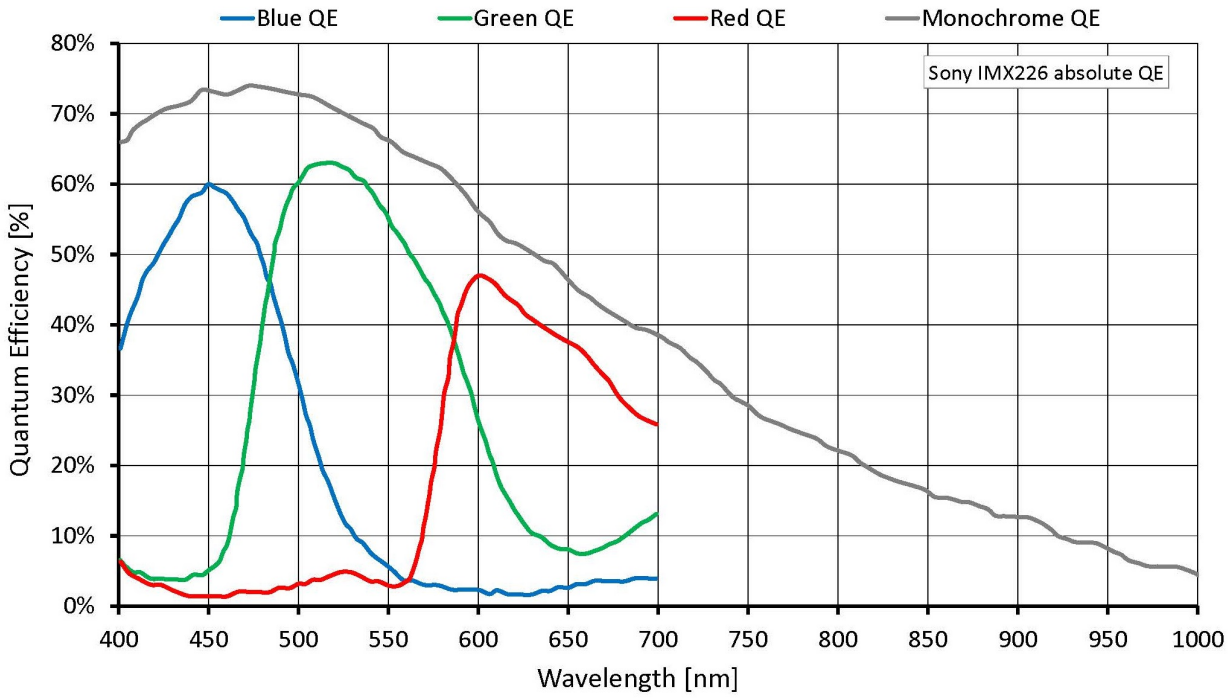
Output	
Bit depth	10-bit
Monochrome pixel formats	PFNC: Mono8, Mono10, Mono10p, Mono12, Mono12p | CSI-2: RAW8 , RAW10, RAW12 | FOURCC: GREY, Y10, Y12
YUV color pixel formats	PFNC: YCbCr411_8_CbYYCrYY, YCbCr422_8_CbYCrY, YCbCr8_CbYCr | CSI-2: YUV422 8-bit | FOURCC: UYVY
RGB color pixel formats	PFNC: RGB8 (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	Value for the integrated serializer adds to CSI-2 model value.
Mass	70 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)
- FPNC (fixed pattern noise correction)
- Gamma
- Lens shading correction*
- LUT (look-up table)*
- Reverse X/Y
- ROI (region of interest)
- Sharpness/Blur*

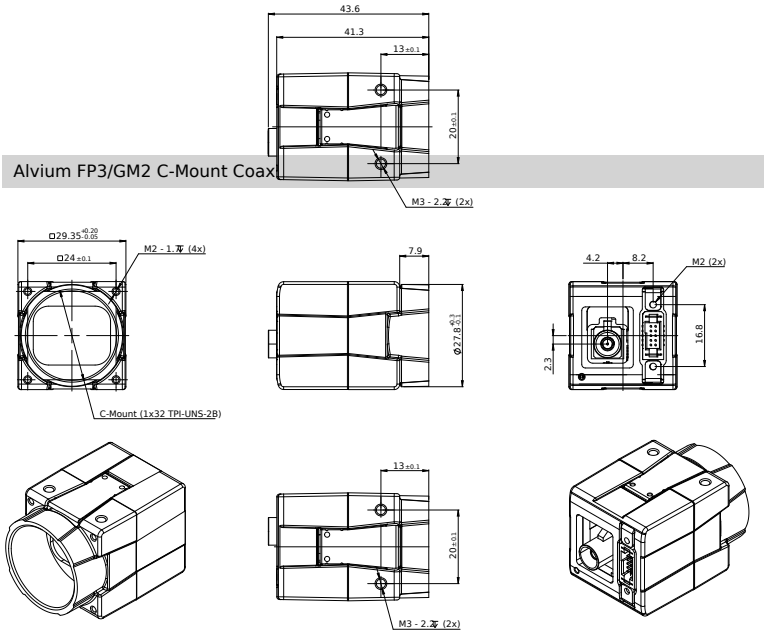
Camera control

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

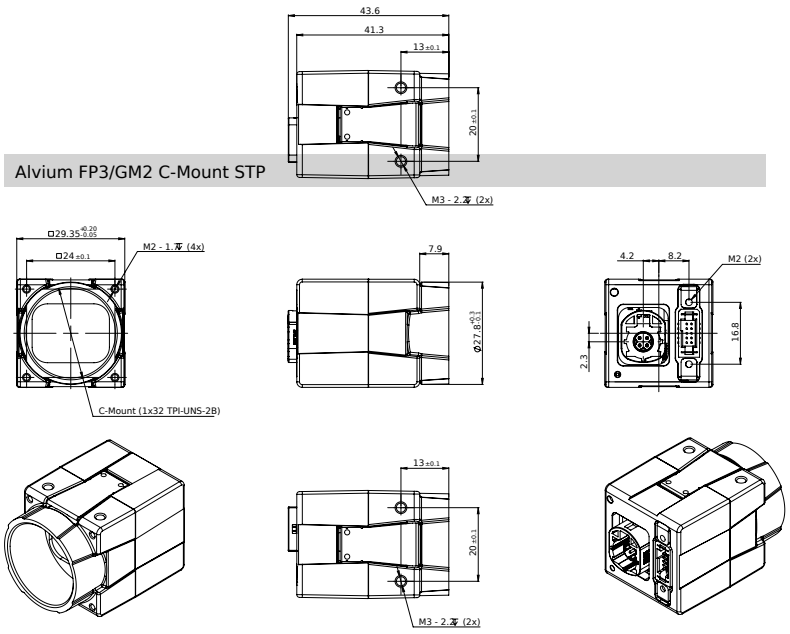
*GenICam for CSI-2 Access

Technical drawing

Alvium FP3/GM2 C-Mount Coax



Alvium FP3/GM2 C-Mount STP



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