

# Alvium

## FP3-210 STP



- AR0521 CMOS sensor
- 2.1 MP resolution
- ALVIUM image processing
- FPD-Link III interface
- Various hardware options

Model without hardware options

### Robust CSI-2 based Alvium cameras with FPD-Link III interface

#### Benefit from greater flexibility in cable lengths

Alvium FP3 STP cameras with FPD-Link III (Flat Panel Display Link) interface have been designed to overcome the limitations of standard CSI-2 cameras. The closed housing CSI-2 based cameras come with integrated serializer and a rugged HSD STP connector for cable lengths up to 10 meters. This connection can also be used to power cameras (Power over STP), enabling single cable solutions.

The standardized CSI-2 driver ensures quick integration with the flexibility to change camera models easily.

To operate Alvium FP3 cameras on your vision system, Allied Vision provides different access modes: - [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 systems on chip (SoCs).

In addition to lens mount and housing options, see [Customization and OEM Solutions webpage](#) for additional options.

## Specifications

Interface	FPD-Link III, based on MIPI CSI-2, up to 4 lanes
Resolution	1928 (H) × 1088 (V)
Spectral range	300 to 1100 nm
Sensor	ON Semi AR0521SR (HD mode)
Sensor type	CMOS
Shutter mode	RS (Rolling shutter)
Sensor size	Type 1/3.6
Pixel size	2.2 μm × 2.2 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	79 %
Temporal dark noise	5.9 e <sup>-</sup>
Saturation capacity	9890 e <sup>-</sup>
Dynamic range	63 dB
Absolute sensitivity threshold	7.1 e <sup>-</sup>

### Output

Bit depth	10-bit
YUV color pixel formats	YUV422 8-bit (UYVY) [MIPI CSI-2 (FOURCC)]
RGB color pixel formats	RBG888 (RGB3) [MIPI CSI-2 (FOURCC)]
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 +65 °C (housing)

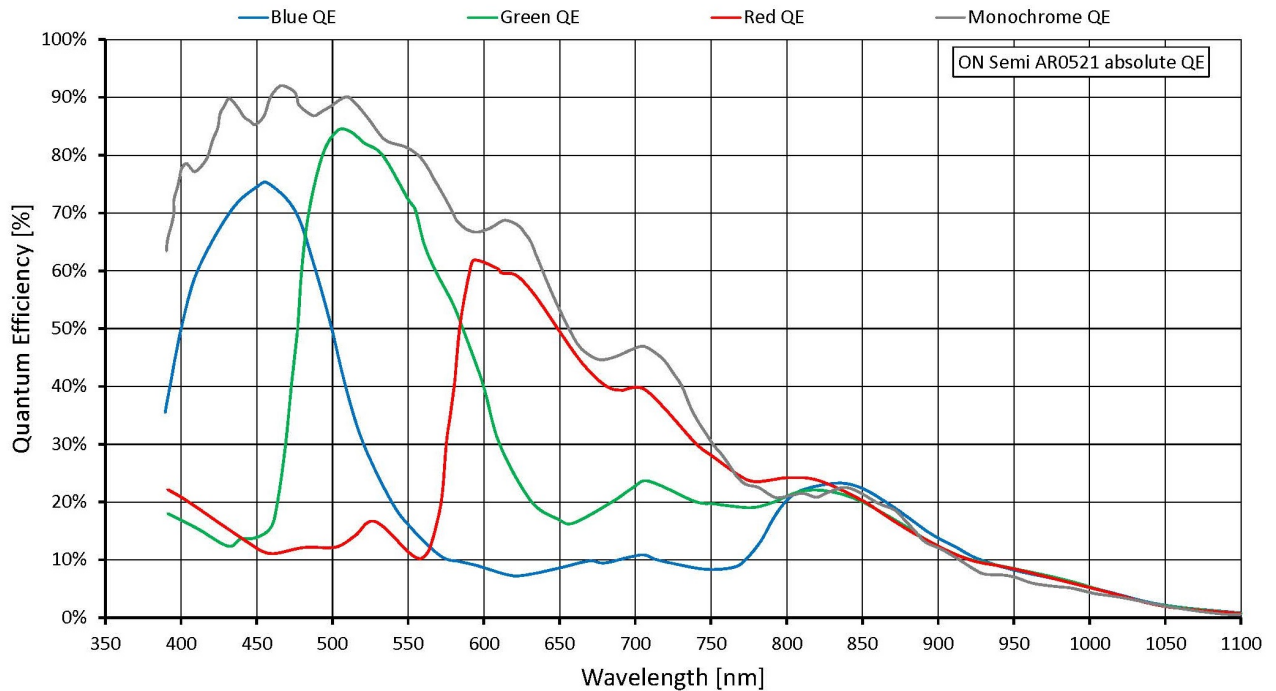
Power requirements (DC) 5 VDC over MIPI CSI-2

Power consumption Value for the integrated serializer adds to CSI-2 model value.

Mass 70 g

Body dimensions (L × W × H in mm) 41 × 29 × 29

### Quantum efficiency



## Features

### Image control: Auto

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

### Image control: Other

- Black level
- Color transformation (incl. hue, saturation; color models)
- De-Bayering up to 5×5 (color models)
- DPC (defect pixel correction)
- FPNC (fixed pattern noise correction)
- Gamma
- Reverse X/Y
- ROI (region of interest)

### Camera control

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

Technical drawing

