

## Camera

Net price	25 \$
Size	around 25 x 20 x 9 mm
Weight	3 g
Still resolution	5 Megapixels
Video modes	1080p30, 720p60 and 640x480p60/90
Linux integration	V4L2 driver available
C programming API	OpenMAX IL and others available
Sensor	OmniVision OV5647
Sensor resolution	2592 x 1944 pixels
Sensor image area	3.76 x 2.74 mm
Pixel size	1.4 $\mu\text{m}$ x 1.4 $\mu\text{m}$
Optical size	1/4"
Full-frame SLR lens equivalent	35 mm
S/N ratio	36 dB
Dynamic range	67 dB @ 8x gain
Densitivity	680 mV/lux-sec
Dark current	16 mV/sec @ 60 C
Well capacity	4.3 Ke-
Fixed Focus	1 m to infinity
Focal length	3.60 mm +/- 0.01
Horizontal field of view	53.50 +/- 0.13 degrees
Vertical field of view	41.41 +/- 0.11 degress
Focal ratio (F-Stop)	2.9

## Hardware Features

Available	Implemented
Chief Ray Angle Correction	Yes
Global and rolling shutter	Rolling shutter
Automatic exposure control (AEC)	No - done by ISP instead
Automatic white balance (AWB)	No - done by ISP instead
Automatic black level calibration (ABLC)	No - done by ISP instead
Auto. 50/60 Hz luminance detection	No - done by ISP instead
Frame rate up to 120 fps	max 90fps. Limitations on frame size for the higher frame rates (VGA only for above 47fps)
AEC/AGC 16-zone size/pos/weight ctrl	No - done by ISP instead
Mirror and flip	Yes
Cropping	No - done by ISP instead (except 1080p mode)
Lens correction	No - done by ISP instead
Defective pixel canceling	No - done by ISP instead
10-bit RAW RGB data	Yes , format conversions available via GPU
Support for LED and flash strobe mode	LED flash
Support for internal and external frame synchronization for frame exposure mode	No
Support for 2x2 binning for better SNR in low light conditions	Anything output res below 1296x976 will use the 2x2 binned mode
Support for horizontal and vertical sub-sampling	Yes , via Binning and skipping

On-chip phase lock loop (PLL)	Yes
Standard serial SCCB interface	Yes
Digital video port (DVP) parallel output interface	No
MIPI interface (two lanes)	Yes
32 bytes of embedded one-time programmable (OTP) memory	No
Embedded 1.5V regulator for core power	Yes

## Software Features

Picture formats	JPEG (accelerated) , JPEG + RAW , GIF , BMP , PNG , YUV420 , RGB888
Video formats	raw h.264 (accelerated)
Effects	negative , solarise , posterize , whiteboard , blackboard , sketch , denoise , emboss , oilpaint , hatch , gpen , pastel , watercolour, film , blur , saturation
Exposure modes	auto , night , nightpreview , backlight , spotlight , sports , snow , beach, verylong , fixedfps , antishake , fireworks
Metering modes	average, spot, backlit, matrix
Automatic White Balance modes	off, auto , sun , cloud, shade, tungsten, fluorescent , incandescent , flash, horizon
Triggers	Keypress , UNIX signal , timeout
Extra modes	demo , burst/timelapse , circular buffer , video with motion vectors , segmented video , live preview on 3D models