DVS 128

The DVS 128 is a 128 x 128 event camera with USB 2.0 interface.

Specifications

DVS Resolution	128 x 128 pixels
DVS Dynamic range	120 dB
Min. latency	~ 12 us @ 1 klux with optimized biases
Lens mount	CS-mount
Connectors / Power	USB 2.0 B
Bandwidth	1 MEvents / second
Software	DV-Platform
Power consumption	30-60mA @ 5V DC (activity dependent)
Dimensions	H 40 x W 60 x D 25 [mm]
Weight	65g (without lens)
Hardware multi-camera sync	Supported (Pinhead connector)
Case	Machined polycarbonate, 1 mounting point
Tripod mount	Whitworth ¼” female
CMOS Technology	0.35 um 2P4M
Chip size	6 x 6.6 [mm]
Pixel size	40 x 40 [um]
Array size	5.12 x 5.12 [mm]
Fill factor	8.1 %
Pixel complexity	26 transistors, 3 capacitors, 1 photodiode
Chip voltages	3.3 V
Chip power consumption	23mW (activity dependent)

Specifications not guaranteed. All specifications subject to change without notice

Latest change: 15 August 2019

Physical dimensions

The DVS 128 camera is housed in a machined polycarbonate case. The case dimensions are depicted below.

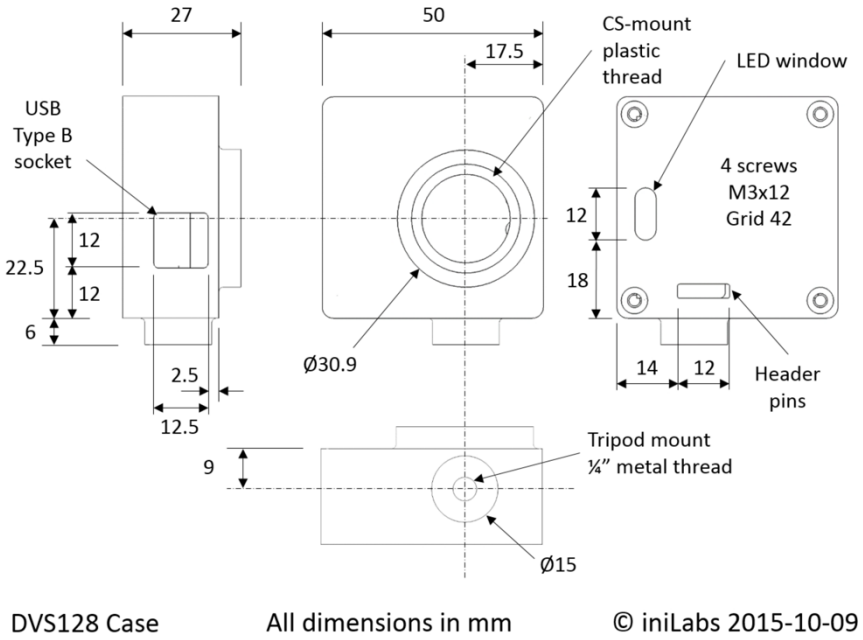

Figure 1 Dimensions of the DVS 240 camera case

Connectors

DVS 128 has two connectors. One USB 2.0 B connector for data and power, and a 3-pin sync port for syncing the camera with other DVS 128 cameras.

Figure 2 Connectors on the back of DVS 240

Note: The DVS 128 sync connector is incompatible with newer devices. DVS 128 can only be synchronized with other DVS 128 cameras.

Optics

The camera lens mount is designed to accommodate CS-mount lenses. Other lenses can be accommodated by using adapters. The standard lens shipped with the camera is a C-mount lens and ships with an adapter. The chip requires a lens designed for 1/3-inch imagers.

The field of view (FOV) depends on the focal length L of the lens and the size W of the pixel array. It is computed from geometrical optics, not accounting for any lens distortion. The angular field of view ($AFOV$) is given by:

$$AFOV = 2\tan^{-1}\left(\frac{W}{2L}\right)$$

The linear FOV ($LFOV$) at a distance D from the lens is given by

$$LFOV = D * W/L$$

The pixel array has a resolution of 128 x 128 and measures:

- Width: 128 pixels x 40 um/pixel = 5.12 mm
- Height: 128 pixels x 40 um/pixel = 5.12 mm

The following table shows the horizontal and vertical field of view in degrees and its size at various distances for different common focal lengths. Computations of Field of View

Lens focal length [mm]		2.6	3.6	4	4.5	6	8	12	25
Angular field of view horizontal [deg]		89.1	70.8	65.2	59.3	46.2	35.5	24.1	11.7
Angular field of view vertical [deg]		89.1	70.8	65.2	59.3	46.2	35.5	24.1	11.7
Angular field of view diagonal [deg]		108.6	90.3	84.3	77.6	62.2	48.7	33.6	16.5
Linear field of view horizontal [cm]	dist. 10 cm	19.7	14.2	12.8	11.4	8.5	6.4	4.3	2.0
	dist. 30 cm	59.1	42.7	38.4	34.1	25.6	19.2	12.8	6.1
	dist. 100 cm	196.9	142.2	128.0	113.7	85.3	64.0	42.7	20.5

Software

DVS 128 is compatible with DV software platform. Go to inivation.com to access the newest version of the software and SDK.

Serial number

The serial number of the device can be found on the case, usually a four-digit number printed on a black label located at the top of the camera case.

Package contents

DVS 128 ships with the following items

- DVS 128 camera
- USB 2.0 cable
- Varifocal C mount lens
- CS to C mount lens adapter