

# **DAVIS 346**

The DAVIS 346 is a 346 x 260 pixels DVS event camera with included active pixel frame sensor.



# **Specifications**

Frame Resolution  346 x 260 pixels, Grayscale, simultaneous output with DVS  DVS Dynamic range APS Dynamic range 56.7 dB Min. latency Lens mount Connectors / Power Bandwidth 12 MEvents / second Software DV-Platform Power consumption Dimensions H 40 x W 60 x D 25 [mm] Weight 100g (without lens) Hardware multi-camera sync IMU Case Anodized aluminum, 4 mounting points Tripod mount APS Frame Shutter Configurable, Global or Rolling Shutter CMOS Technology Chip size Pixel size Array size Fill factor Pixel complexity  APS dark signal APS dark signal APS readout noise  346 x 260 pixels, Grayscale, simultaneous output with DVS DIMB APS readout noise  56.7 dB APS dark signal APS count and DVS APS APS count and DVS APS (AB x 260 pixels, Grayscale, simultaneous output with DVS DVS APS (AB x 260 pixels, Grayscale, simultaneous output with DVS APS (AB x 260 pixels, Grayscale, simultaneous output with DVS APS (AB x 260 pixels, Grayscale, simultaneous output with DVS APS (AB x 260 pixels, Grayscale, simultaneous APS (AB x 260 pixels, Global or APS (AB x 260 pixels, AP	DVS Resolution	346 x 260 pixels
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APS readout noise 55 e <sup>-</sup>	APS dark signal	18000 e <sup>-</sup> /s
	APS readout noise	55 e⁻

Specifications not guaranteed. All specifications subject to change without notice



# Physical dimensions

The DAVIS 346 camera is housed in an anodized aluminum case. The case dimensions are depicted below.

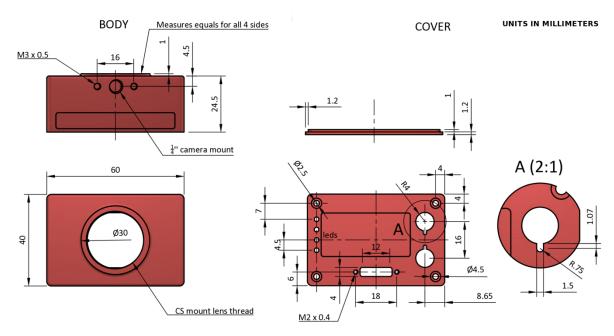


Figure 1 Dimensions of the DAVIS 346 camera case

#### Connectors

DAVIS 346 has three connectors on the back. One USB 3.0 connector for data and power, and two sync ports for syncing the camera with other cameras or external trigger devices



Figure 2 Connectors on the back of DAVIS 346

#### USB 3.0 connector

The USB 3.0 connector is used for data and power. Any USB 3.0 or USB 2.0 cable with micro B connector can be used. However, USB 3.0 speeds are only supported when using a USB 3.0 cable. Usage of cables with appropriate locking screws are recommended for a more secure and robust connection.



#### Sync connectors

The synchronization connectors are HiRose HR10A-7R-4P (male, SYNC OUTPUT) and HR10A-7R-4S (female, SYNC INPUT) connectors. Cables should use the matching connectors HR10A-7P-4S (female) and HR10A-7P-4P (male).

Please note that to keep full electrical isolation between different cameras, the cable should not be shielded, or if it is, the shield should not connect one end of the cable to the other.

Input signals can be 3.3V or 5V, depending on the VDD\_IN supplied externally, output signals are 5V, as is VDD\_OUT. If you chain cameras together for synchronization, the clock and VDD will be 5V, for example.



Figure 3 Sync connector pinouts on DAVIS 346

Synchronization connectors pinout is shown in the image above. Please note that all the pins in the SYNC IN ports are isolated from the SYNC OUT ports.

### **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 346 x 260 and measures:

- Width: 346 pixels x 18.5 um/pixel = 6.4 mm
- Height: 260 pixels x 18.5 um/pixel = 4.81 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]		2.1	3.5	4.5	6	12
Angular field of view horizontal [deg]		113	84.9	70.8	56.2	29.9
Angular field of view vertical [deg]		97.7	69	56.2	43.7	22.7
Angular field of view diagonal [deg]		125	97.7	83.3	67.4	36.9
Linear field of view horizontal [cm]	dist. 10 cm	30.5	18.3	14.2	10.7	5.33
	dist. 30 cm	91.4	54.9	42.7	32	16
	dist. 100 cm	305	183	142	107	53.3

#### Software

DAVIS 346 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

DAVIS 346 ships with the following items

- DAVIS 346 camera
- USB 3.0 cable, 1m with locking screws
- Varifocal C mount lens
- CS to C mount lens adapter