Specifications – Current models

	DAVIS346 Simultaneous events and frames	**DVXplorer Lite** Discover event-based vision	**DVXplorer** High resolution	**DVXplorer Mini** Lightweight and compact	**DVXplorer S Duo** Smart camera
					
Event output					
Spatial resolution	346 x 260	320 x 240	640 x 480	640 x 480	640 x 480
Temporal resolution [1]	1 µs (output precision)	65 - 200 µs (effective accuracy, full event frame)			
Max. throughput	12 MEPS	100 MEPS	165 MEPS	450 MEPS	450 MEPS
Typical latency [2]	<1 ms	<1 ms	<1 ms	<1 ms	<1 ms
Dynamic range	Approx. 120 dB (0.1-100k lux with 50% pixel response to 80% contrast)	Approx. 90 dB (3-100k lux with 99.9% of pixels respond to 27.5% contrast) Approx. 110 dB (0.3-100k lux with 50% of pixels respond to 80% contrast)			
Contrast Sensitivity	14.3% (on), 22.5% (off) (with 50% pixel response)	13% (with 50% of pixels respond), 27.5% (with 99.9% of pixels respond)			
Pixel pitch	18.5 µm	18 µm	9 µm	9 µm	9 µm
Frame output					
Spatial resolution	346 x 260	The camera does not output frames of intensity images. However, similar intensity images can be reconstructed from the event output by our DV software. [3]			Up to full HD
Frame rate	Up to 40 fps				Up to 120 fps
Dynamic range	55 dB				71.4 dB
FPN	4.2 %				TBA
Dark signal	18000 e^-/s				TBA
Readout noise	55 e^-				TBA
Pixel pitch	18.5 µm				TBA
Other features					
IMU	6-axis (Gyro + Accelerometer), up to 8 kHz sampling rate				
Mult-cam sync	Supports multi-camera time synchronization via daisy chain connection and external event injection			-	Yes
On-board processing	-				Nvidia Jetson Nano

Other attributes	DAVIS346	DVXplorer Lite	DVXplorer	DVXplorer Mini	DVXplorer S Duo
Dimensions [mm]	H 40 x W 60 x D 25			H 29 x W 29 x D 32	H 32 x W 80 x D 92
Lens mount	CS-mount			S-mount (M12) with locking ring	
Mounting options	4-side Whitworth 1/4"-20 female and M3 mounting points			2- side Whitworth 1/4"-20 female and M3 mounting points	
Connectors	USB 3.0 micro B port with locking screws, fully isolated sync input and output connectors			USB 3.0 C port with locking screws	USB 3.0 C port with locking screws, Gigabit Ethernet with PoE, Mini-HDMI
Case material	Anodized aluminum	Engineering plastic (POM)	Anodized aluminum	Engineering plastic (POM) **or** anodized aluminum	Anodized aluminum
Weight (without lens)	100 g	75 g	100 g	43 g (aluminum) 21 g (POM)	220 g
Power consumption	<180 mA @ 5 VDC (USB)	<140 mA @ 5 VDC (USB)			TBA
Sensor technology	0.18 µm 1P6M MIM CIS	90 nm BSI CIS			
Sensor supply voltage	1.8 V and 3.3 V	1.2 V, 1.8 V and 2.8 V			
Certifications	CE certified				In progress

[1] The temporal resolution is characterized by the timestamp unit, which is the minimum time between timestamps. In practice, a timestamp unit of 1 µs offers a minimal real-world gain over timestamp units of 63-200 µs. For further explanation, please refer to our white paper.

[2] Nominal figure; can be improved with strong lighting/optimized biases.

[3] Please view our FAQ for further details.

DVS: https://ieeexplore.ieee.org/document/4444573 P. Lichtsteiner, C. Posch and T. Delbruck, "A 128×128 120dB 15us Latency Asynchronous Temporal Contrast Vision Sensor", IEEE Journal of Solid State Circuits, 43(2) 566-576, 2008

DAVIS: https://ieeexplore.ieee.org/document/6889103 C. Brandli, R. Berner, M. Yang, S.-C. Liu, and T. Delbruck, "A 240x180 130dB 3us Latency

Global Shutter Spatiotemporal Vision Sensor", IEEE Journal of Solid State Circuits, 49(10) 2333-2341, 2014.

DAVIS346 Limitations

- In APS GlobalShutter mode, bursts of DSV events can be caused by the capture of an APS frame.
- Due to bandwidth limitations, the DVS event output tends to follow a scanning pattern when under high load.
- The frame output has below average performance in terms of image quality compared to conventional image sensors.
- Color frames are not calibrated, and thus do not faithfully reproduce the real observed color.
- Event output can be destabilized if very strong light impacts a sensitive spot outside the photosensitive pixel array.