Specifications – Current models

	DVXplorer S Duo Smart camera	**DVXplorer Micro** Lightweight and compact	**DVXplorer** High resolution	**DVXplorer Lite** Discover event-based vision	**DAVIS346** Simultaneous events and frames	**DAVIS346 AER** Direct interface to FPGA and custom neuromorphic hardware
						
Event output						
Spatial resolution	640 x 480	640 x 480	640 x 480	320 x 240	346 x 260	346 x 260
Temporal resolution [1]	65 - 200 µs (effective accuracy, full event frame)				1 µs (output precision, single event)	
Max. throughput	30 MEPS	450 MEPS	165 MEPS	100 MEPS	12 MEPS	12 MEPS
Typical latency [2]	<1 ms	<1 ms	<1 ms	<1 ms	<1 ms	<1 ms
Dynamic range	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)				Approx. 120 dB (0.1-100k lux with 50% pixel response to 80% contrast)	
Contrast Sensitivity	13% (with 50% of pixels respond), 27.5% (with 99.9% of pixels respond)				14.3% (on), 22.5% (off) (with 50% pixel response)	
Pixel pitch	9 µm	9 µm	9 µm	18 µm	18.5 µm	18.5 µm

Specifications – Current models

	DVXplorer S Duo	DVXplorer Micro	DVXplorer	DVXplorer Lite	DAVIS346	DAVIS346 AER
Frame output						
Spatial resolution	Up to Full HD 1920 x 1080	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]			346 x 260	346 x 260
Frame rate	Up to 30 fps				Up to 40 fps	Up to 40 fps
Dynamic range	71.4 dB				55 dB	55 dB
FPN	-				4.2 %	4.2 %
Dark signal	-				18000 e^-/s	18000 e^-/s
Readout noise	-				55 e^-	55 e^-
Pixel pitch	3 µm				18.5 µm	18.5 µm
Other features						
IMU	6-axis (Gyro + Accelerometer), up to 8 kHz sampling rate					
Multi-cam sync	-		Supports multi-camera time synchronization via daisy chain connection and external event injection			-
On-board processing	Nvidia Jetson Nano	-				

Specifications – Current models

	DVXplorer S Duo	DVXplorer Micro	DVXplorer	DVXplorer Lite	DAVIS346	DAVIS346 AER
Other attributes						
Dimensions [mm]	H 32 x W 80 x D 92	H 24 x W 27.5 x D 29.7	H 40 x W 60 x D 25			H 40 x W 78.8 x D 25
Lens mount	S-mount (M12) with locking ring		CS-mount			
Mounting options	2- side Whitworth 1/4"-20 female and M3 mounting points	4x M2 mounting points	4-side Whitworth 1/4"-20 female and M3 mounting points			
Connectors	USB 3.0 C port with locking screws, Gigabit Ethernet with PoE, Mini-HDMI	USB 3.1 C port with locking screws	USB 3.0 micro B port with locking screws, fully isolated sync input and output connectors			USB 3.0 micro B port with locking screws
Case material	Anodized aluminum	Engineering plastic (POM)	Anodized aluminum	Engineering plastic (POM)	Anodized aluminum	Anodized aluminum
Weight (without lens)	220 g	16 g	100 g	75 g	100g	120 g
Power consumption	Maximum 12W, typical 7W	<140 mA @ 5 VDC (USB)			<180 mA @ 5 VDC (USB)	
Sensor technology	90 nm BSI CIS				0.18 µm 1P6M MIM CIS	
Sensor supply voltage	1.2 V, 1.8 V and 2.8 V				1.8 V and 3.3 V	
Certifications	In progress		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.

DAVIS346 AER Limitations

- The AER connector can only transmit events, not frames or IMU data.
- No Multi-camera timestamp synchronization is present, nor triggers.