Event-based Vision Camera
SilkyEvCam® Specifications List

About the SilkyEvCam Event-based Vision Camera

The Event Camera is a neuromorphic camera modeled after the structure of the human retina.
In event-based vision, an “event” refers to a change in brightness, along with the pixel coordinates and timestamp. The camera rapidly captures only those changes in brightness that exceed a set threshold, and outputs the coordinate and timestamp information asynchronously on a per-pixel basis.

Whereas conventional cameras capture the entire screen on a frame-by-frame basis, event cameras capture changes in brightness (events) on a per-pixel basis, acquiring data with extremely high temporal resolution. As a result, even when the subject is moving at high speeds, the camera can capture its motion in minute detail.

This characteristic embodies the values associated with “silk”—originating from the East—such as lightness, smoothness, a lustrous sheen that reflects light, and a serene stillness akin to an eye that accurately captures change itself. With these values in mind, we named the event camera we develop and manufacture “SilkyEvCam.”
Hoping that the cutting-edge technology of event-based vision would bring a new perspective, the story of SilkyEvCam began in 2021 with the first model of the event camera, the VGA.

Event camera

Sample videos

CenturyArks Co., Ltd.

SilkyEvCam® Specifications List

		SilkyEvCam (VGA)	SilkyEvCam HD	SilkyEvCam HD Lite
Form Type		Camera	Camera	Camera
Event-Based Vision sensor	Model	PPS3MVCD （PROPHESEE）	IMX636(*1)（Sony）	IMX646(*1)（Sony）
	Image size	Type 3/4 “ （Diagonal 12mm）	Type 1/2.5 “ （Diagonal 7.14mm）	Type 1/2.5 “ （Diagonal 7.14mm）
	Module effective pixels	VGA （640 (H) x 480 (V)）	HD （1280 (H) x 720 (V)）	HD （1280 (H) x 720 (V)）
	Pixel size	15μm x 15μm	4.86μm x 4.86μm	4.86μm x 4.86μm
	Typical Latency	200μs	100μs or under @ 1k lux	800μs or under @ 1k lux
	Error pixel (Hot/Cold)	No information	80 pixels or less	180 pixels or less
Output	Interface （event data & control）	USB 3.0 （USB Type-C(TM) connector）	USB 3.0 （USB Type-C(TM) connector）	USB 3.0 （USB Type-C(TM) connector）
	Interface （Sync/Trigger）	IX Series Connector （IX80G-B-10P: HIROSE） （Plug: IX30G-B-10S-CV（7.0）｜IX31G-B-10S-CV（7.0））	IX Series Connector （IX80G-B-10P: HIROSE） （Plug: IX30G-B-10S-CV（7.0）｜IX31G-B-10S-CV（7.0））	IX Series Connector （IX80G-B-10P: HIROSE） （Plug: IX30G-B-10S-CV（7.0）｜IX31G-B-10S-CV（7.0））
Camera	Power supply	USB Power （VBUS）: 5.0V	USB Power （VBUS）: 5.0V	USB Power （VBUS）: 5.0V
	Lens Mount type	C/CS Mount	C/CS Mount	C/CS Mount
	Wide Dynamic Range	>120dB (*2)	>120dB (*2)	>120dB (*2)
	Operating temperature	T operation: 0 ～ + 50°C	T operation: 0 ～ + 50°C	T operation: 0 ～ + 50°C
	Storage temperature	T storage: - 30 ～ + 80°C	T storage: - 30 ～ + 80°C	T storage: - 30 ～ + 80°C
	Current consumption	500mA（max），200～300mA（Ave.）	300mA（max），100mA（Ave.）	300mA（max），100mA（Ave.）
	Dimensions / Weight （w/o Lens）	30 (W) x 30 (H) x 36 (D)mm / 40g	30 (W) x 30 (H) x 36 (D)mm / 42g	30 (W) x 30 (H) x 36 (D)mm / 42g
	Accessories	USB3.0 Type-C(TM) Cable 1.2m （w/ rock screw）	USB3.0 Type-C(TM) Cable 1.2m （w/ rock screw）	USB3.0 Type-C(TM) Cable 1.2m （w/ rock screw）
	Raw Formats	EVT3.0	EVT3.0/EVT2.1	EVT3.0/EVT2.1
Standard Lens	Model	M0814-MP2 （computar）	SFA0820-5M (SOYO)	-
	Focal length	8mm	8mm	-
	F value	F1.4 - F16C	F2.0 - C	-
	Angle of view	70deg	47.7deg(D)	-
	Focus range	100mm to infinity	100mm to infinity	-
	Size / Weight	Φ33.5mm x 28.2mm / 62.6g	Φ27mm x 33mm / 32.5g	-
Others	TurnKey Pack	w/ Standard Lens / Mini tripod / Hardcase	w/ Standard Lens / Mini tripod / Hardcase	Not avairable
	SDK support by PROPHESEE	METAVISION® SDK	METAVISION® SDK	METAVISION® SDK

		SilkyEvCam GenX320 4x5	SilkyEvCam HD Module		
Form Type		Camera module	Camera module		
Event-Based Vision sensor	Model	GenX320 （PROPHESEE）	IMX636(*1)（Sony）		
	Image size	Type 1/5 “ （Diagonal 2.85mm）	Type 1/2.5 “ （Diagonal 7.14mm）		
	Module effective pixels	320 (H) x 320 (V)	HD （1280 (H) x 720 (V)）		
	Pixel size	6.3μm x 6.3μm	4.86μm x 4.86μm		
	Typical Latency	No information	100μs or under @ 1k lux		
	Error pixel (Hot/Cold)	No information	80 pixels or less		
Output	Interface	Configurable 8-bit parallel output interface	MIPI（2Lane）		
		I²C and Four-wire serial peripheral interface	BtoB Connector （DF40GB-30DP-0.4V(51): HIROSE）		
Camera	Power supply	2.5V / 1.8V / 1.1V	3.3V IN		
	Wide Dynamic range	>120dB(*2)	>120dB(*2)		
	Operating temperature	T operation: 0 ～ + 60°C	T operation: 0 ～ + 50 °C		
	Storage temperature	T storage: - 20 ～ + 85°C	T storage: - 30 ～ + 80 °C		
	Current consumption	Approx. 3～5mA (Active.) ※provisional figure	250mA（max），80mA（Ave.）		
	Dimensions/Weight	4x5x3.5mm (head), 7x10x1.1mm (connector) / 0.13g	28.5 (W) x 31 (H) x 35 (D)mm / 12g		
	Raw formats	EVT2.1/EVT3.0	EVT3.0/EVT2.1		
Lens	Model	LP1532IR-3.1	M25360H06	CIL819-F2.0-M08ANIR	CIL829-F2.5-M8A650
	Focal length	1.498mm	3.6mm	1.9mm	2.8mm
	F value	F3.2	F2.0	F2.0	F2.55
	FOV (D)	65deg	156deg(D)	160deg(D)	100deg(D)
	Focus range	-	50mm to infinity	600mm to infinity	600mm to infinity
	Size/Weight	-	Φ14mm x 16.8mm / 6g	Φ13mm x 15.9mm / 7E	Φ10mm x 14.7mm / 1G6P

(*1) The event-based vision sensors IMX636 and IMX646 were realized through a collaboration between Sony Semiconductor Solutions Corporation (SSS) and PROPHESEE. They combine SSS's long-established CMOS image sensor technology with PROPHESEE's proprietary event-based vision sensing technology.
(*2) DR >120 dB can be reached based on low light cutoff measurement being: 0.08 lux (imaging characteristics not guaranteed).

SilkyEvCam Products

VGA

Entry Model

HD/HD Lite

Professional Model

GenX320 4x5

Built-in Model

HD Module

Built-in Model
High-resolution event data

BothView

Simultaneous acquisition of event and frame data

“BothView®” - A Hybrid Camera in the SilkyEvCama Series

This camera combines an event sensor and a frame sensor. By splitting the incident light with a beam splitter and passing it through both sensors, it can simultaneously acquire event data and frame data. Since it captures images with a single lens, no parallax occurs.
Additionally, data synchronization is possible by sending a timing signal from the frame sensor to the event sensor. Furthermore, by using a synchronization cable extension unit (sold separately) to connect multiple BothView units to each other or to a SilkyEvCam HD/VGA, you can synchronize and use multiple units together.

		SilkyEvCam BothView			
Form Type		Camera			
Event-Based Vision sensor	Model	IMX636(*1) （Sony）	Camera	Power supply	USB Power （VBUS）x2 (5.0 V)
	Image size	Type 1/2.5 “ （Diagonal 7.14mm）		Lens Mount type	C Mount
	Module effective pixels	1280 (H) x 720 (V)		Operating temperature	T operation: + 5 ～ + 35 °C
	Pixel size	4.86μm x 4.86μm		Storage temperature	T storage: - 20 ～ + 80 °C
	Wide Dynamic Range	>120dB(*2)		Current consumption	700mA（typical）
	Typical Latency	100μs or under @ 1k lux		Dimensions （w/o Lens）	approx. 80 (W) x 55 (H) x 37 (D)mm
Frame Based Vision sensor	Model	IMX392（Sony）		Weight （w/ Lens）	approx. 330g
	Image size	Type 1/2.3 “ （Diagonal 7.9mm）		Cables	USB3.0 Type A - Type C （w/ rock screw） Cable length 1.2m
	Module effective pixels	1936 (H) x 1216 (V)			
	Pixel size	3.45μm x 3.45μm			USB3.0 Type A - Type microB (3.0) （w/ rock screw） Cable length 1.2m
	Shutter type	Global shutter			
Beamsplitter	Type	Unpolarizing		Raw Formats （Event camera）	EVT3.0
	Ratio	EvB4AS-C T90:R10 (Frame camera: 90%、Event camera: 10%)		Resolution	max 1800 x 1012pixel (Effective resolution when two images acquired by both cameras are overlaid and combined.)
		EvB4BS-C T50:R50 (Frame camera: 50%、Event camera: 50%)			
Output	Interface （Event camera）	USB 3.0 （USB Type-C(TM) connector）	Lens	Model	VY1214（YAKUMO）
	Interface （Frame camera）	USB 3.0 （USB Type-microB connector）		Focal length	12mm
	Interface （Sync/Trigger）（Event Camera）(*3)	IX Series Connector （IX80G-B-10P : HIROSE ） （Plug: IX30G-B-10S-CV（7.0）	IX31G-B-10S-CV（7.0） ）	F value	F1.4 - F16
				Angle of view	33.1deg(D) for 1/2.5" type
Others	SDK support by Prophesee	METAVISION® SDK		Focus range	0.15m to infinity
	SDK support by Allied Vision	Vimba X SDK		Size / Weight	Φ31mm x 37mm / 70g

(*3) Since it is internally connected to the frame camera, there are some limitations on its use.

Metavision® SDK (PROPHESEE), Software Toolkit

It is provided for a fee by PROPHESEE (France), a pioneer in event-based technology.
It includes a basic library for handling event-based vision camera data, various algorithms, practical sample programs, source code for all modules, and a commercial-grade license depending on the version.
Additionally, a subset of the SDK—excluding advanced analysis logic and high-performance GUIs—is released as OpenEB under the Apache License 2.0 and is available on GitHub.

Details of Metavision SDK

Edge-AI Area Monitoring and Analysis

SilkyEvCam “EdgeBX®”

By integrating **event cameras** with **advanced AI** and processing data at the edge, we support real-time decision-making.

EdgeBX Structure

- ✓ Compact, all-weather indoor/outdoor box
- ✓ Equipped with an event camera, SilkyEvCam, and a single board computer with advanced AI algorithms

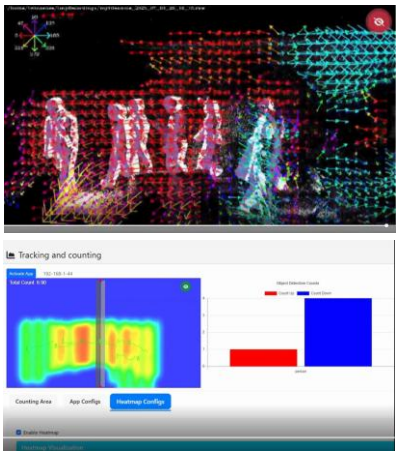
EdgeBX Features

- ✓ The specialty of the event camera
  - ✓ High-speed sensing of light intensity changes at the pixel level
  - ✓ Wide dynamic range, minimally affected by ambient lighting conditions
  - ✓ Small data size and low power consumption enable long-duration monitoring
- ✓ AI algorithms process and maintain the compact output data from the event camera
  - ✓ Real-time decision-making possible by processing data directly within EdgeBX

(Co-development with TwinSense Co., Ltd. (https://twinsense.ai/), a company specializing in event data processing)

By connecting EdgeBX to a cloud server, processed data can be recorded and combined with service providers and software developers to deliver comprehensive solutions. This will allow customers’ devices to display area changes and characteristics in real time.

For more information, please contact us.



Display images on customers’ devices

CenturyArks Co., Ltd.

We are a company dedicated to contributing to society through optical technology. Our team of engineers, skilled in optical technology, leverages our accumulated technical expertise and relentless curiosity to develop and manufacture products and services utilizing cutting-edge technologies such as compact, high-performance camera modules, event cameras, and bio-adaptive devices.

We also offer custom development services tailored to your specific needs. We would be happy to discuss your requirements.

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