



HIGH-SPEED COUNTING

PROPHESÉE
META-VISION FOR MACHINES

PROPHESÉE

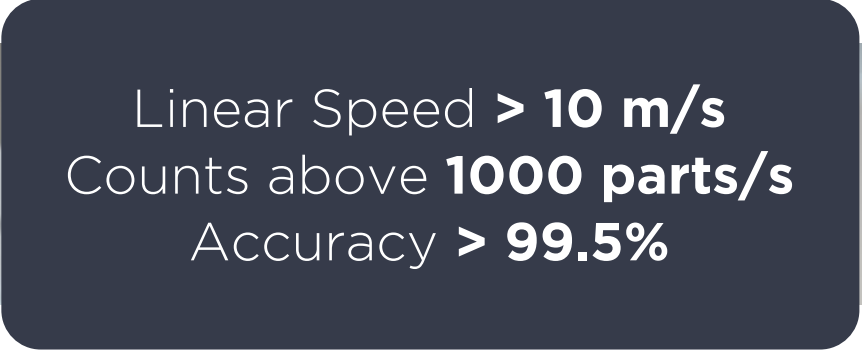
METAVISION FOR MACHINES

HIGH-SPEED COUNTING

Prophesee is the inventor of the **world's most advanced** neuromorphic vision systems.

Its Metavision® technologies, composed of a proprietary Event-Based sensor and algorithms, dynamically captures only **the most relevant information**, in real-time.

Gives you the tools you need to unlock a new approach to **high-speed counting**



Linear Speed **> 10 m/s**
Counts above **1000 parts/s**
Accuracy **> 99.5%**

WHAT

Drastically improve productivity by counting and measuring objects moving across a field of view a **thousand products per second**, in **real time** and with a **compact, cost-efficient system**.

HOW

With Prophesee's patented event-based vision technology, objects are counted as they pass through the field of view, triggering each pixel independently as the object goes by. By only recording the pixels independently triggered by changes, Metavision® Technology captures the essential information the system requires and no more. This new approach allows for unprecedented counting speed that can reach a

Prophesee technology strongly reduces the need for more expensive ultra high-speed, matrix or line scan cameras, reducing the cost and complexity of your set up.




thousand counts per second and more.

A traditional frame-based approach, will capture the whole scene at a fixed, pre-defined frame-rate, without taking the scene dynamics into account. The overall system load is unnecessarily high and limits maximal speed potential.

Prophesee's approach allows for the object's motion to define the camera rate dynamically, in real-time.



Figure 1: High-speed seed counting

>10 m/sec	More than 99.5% accuracy	Runs real-time on Snapdragon 805	SCAN TO LEARN MORE  bit.ly/highspeedcounting	
		Above 1,000 objects/sec		10,000 fps equivalent temporal precision

Prophesee's patented sensor counts moving objects at **time resolutions of 10's of microseconds** and **are not subject to motion blur**.

Because each pixel is independently triggered by motion, objects can never move more than one pixel between two acquisitions. This means event-based algorithms can **track objects**

smoothly and extract geometry even at very high speeds. In addition, vision **processes like counting and tracking can be realized** on modest computing systems.

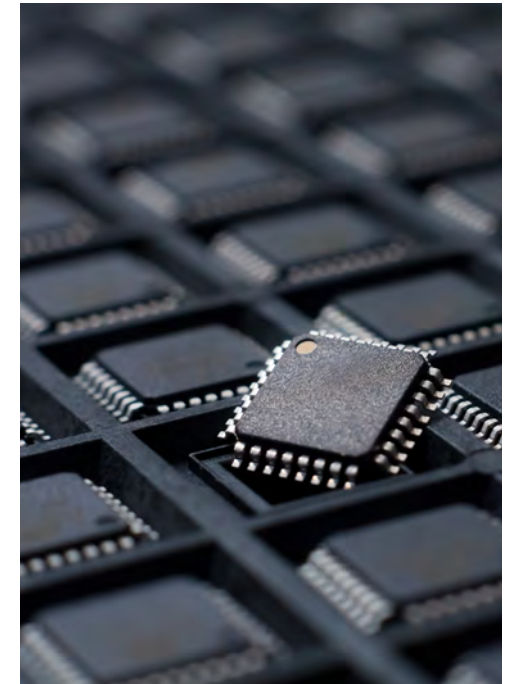
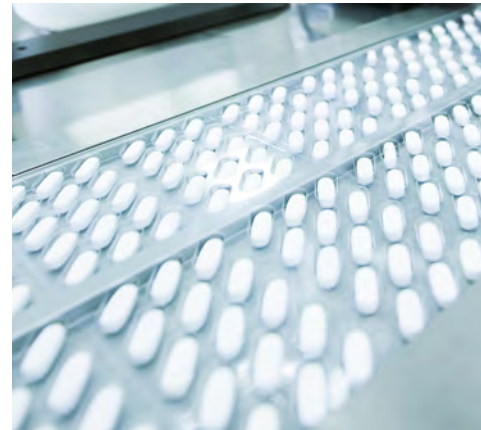
The sensor is available in an industry-standard package. For the first time, Event-Based Vision's light and efficient integration into existing system is made possible.

WHERE

Prophesee event-based vision systems can be deployed to count a wide variety of manufactured products.

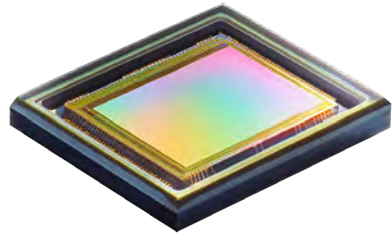
Giving many industries a new competitive edge:

- Pharmaceutical
- Food & Beverage
- Electronics
- Mechanics
- Agriculture



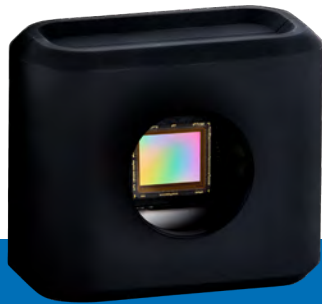
Linear transfer speeds	≥ 10 m/s
Sensor latency	100 µs
Accuracy	> 99.5%
Number of objects per second	Above 1000

HARDWARE



METAVISION® SENSOR PACKAGED

- 640x480 VGA Event-Based sensor
- Package: 13x15mm mini PBGA
- Dynamic Range: >120dB
- Typical Background Activity: <1mHz
- Max. Bandwidth: 66Meps



EVALUATION KIT

- VGA Event-Based Sensor
- USB Powered
- IMU



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METAVISION® SENSING

Prophesee third generation **Metavision® sensor**, is now available in an **industry-standard package**.

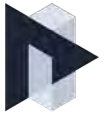
For the first time, Event-Based Vision's light and efficient integration into existing system is made possible.

bit.ly/propheseeproducts

SOFTWARE

PLAYER

Metavision® Player is the perfect tool to start with, whether you own an EVK or not. It features a **Graphical User Interface** allowing anyone to visualize and record data streamed by **PROPHESSEE-compatible Event-Based Vision systems**



DESIGNER

Metavision® Designer is a tool that allows engineers to **interconnect python components very easily for fast prototyping** of Event-Based Vision applications



SDK

Metavision® SDK is the largest set of **C++ Event-Based Vision algorithms** accessible to date. Algorithms are available via APIs, **ready to go to production**



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METAVISION® INTELLIGENCE

Introducing **Metavision® Intelligence suite**, the most comprehensive Event-Based Vision software toolkit to date.

Experience first hand the new performance standards set by Event-Based Vision by interacting with more than **35 algorithms, 30 filters, 16 code samples and 5 ready-to-use applications**, the industry's widest selection available to date.

bit.ly/Metavisionintelligence

WHY

High-speed cameras capable of >10k frames per second are sometimes purchased or rented at great expense for counting purposes. Prophesee Metavision® packaged sensor enables more cost efficiency for **ultra high-speed counting and analysis that is both real-time and continuous.**

The technology can be deployed in quantity, dramatically decreasing the cost-per-count ratio. As the technology can run real-time on a mobile grade computing platform (tested on Snapdragon 805), the final architecture is more compact and the maintenance is easier.



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