



OmniVision's Global Shutter Technology



Enabling simultaneous image detection in all pixels to accurately reproduce rapid motion without any deformation, capturing moving objects, even at high speeds, without creating spatial distortion

Technology Features



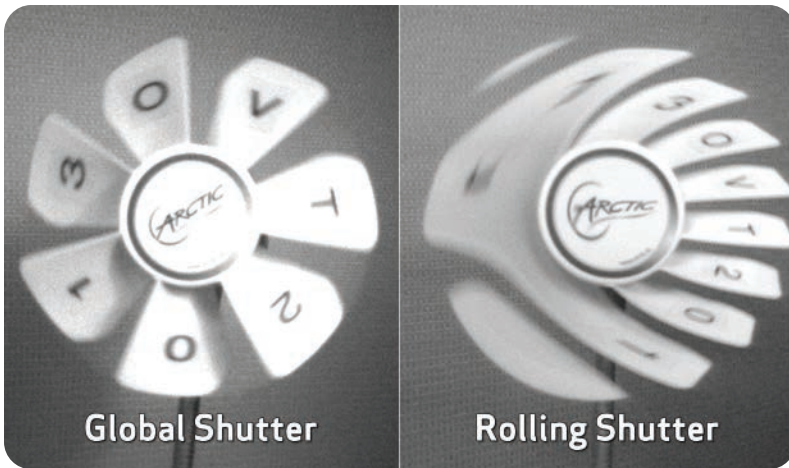
Simultaneously exposes all pixels and reads them out line-by-line for steady, high-speed imaging



Enables high sensitivity to near-infrared light for effective zero-light imaging



Optimized image quality, feature sets and compact size



Global Shutter

Rolling Shutter

Technology Benefits

- Best-in-class performance enables high-speed image capturing and transmitting for accurate reproductions, regardless of the speed of motion
- Captures the invisible—offers best-in-class NIR sensitivity to enable effective applications like eye tracking for computer vision

Applications and Use Cases



AR/VR:
SLAM & Eye Tracking



Drone (Agriculture,
Consumer)



Warehouse
Management



Facial
Authentication



Barcode
Scanner



DMS-
Automotive



Robotic Vacuum/
Robotic Lawn Mower



Fulfillment
Center



ITS (Intelligent
Transportation System)

Nyxel® Near-Infrared Imaging Technology

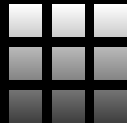
OmniVision

In 2017, OmniVision revealed the ground-breaking Nyxel® NIR imaging technology, enabling image sensors to see better and farther, and use less power.

Technology Features



Thicker silicon increases the chance of photon absorption, offering higher QE and increased signal strength

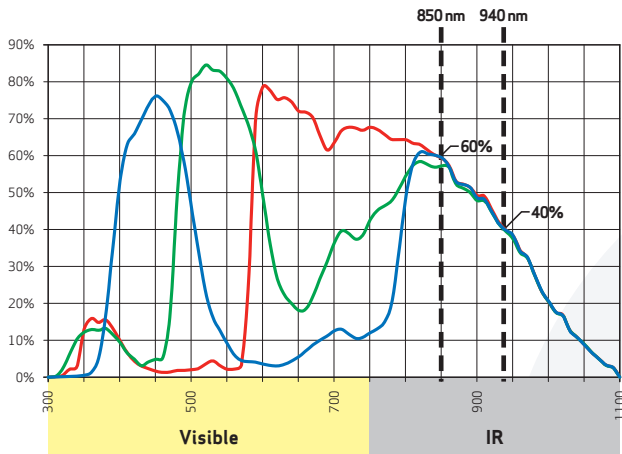


Deep trench isolation creates a barrier between the pixels to eliminate crosstalk and improve MTF



Using a carefully managed optical scattering layer prevents defects in the image's dark area and lengthens the photon path

Quantum Efficiency



Nyxel® Benefits

- Nyxel® NIR technology enables image sensors to see better and farther in low light while consuming less power
- Captures sharper, brighter images with up to 3x – 5x QE improvements, delivering optimum image data
- Offers better photon absorption compared with other NIR technologies for improved night vision
- Sensors with Nyxel® technology require minimal additional lighting—reducing system power needs and extending the life of battery-operated security cameras

Applications and Use Cases



Night Vision Security Camera



Battery Doorbell Camera



AR/VR: SLAM & Eye Tracking



Biometrics—Face Recognition



Automotive—IMS, DMS, ADAS Surround View System



CameraCubeChip™ Technology



OmniVision's CameraCubeChip™ integrates image sensors, processors and lenses into a miniature wafer-level camera module that require minimal assembly and handling

Technology Features



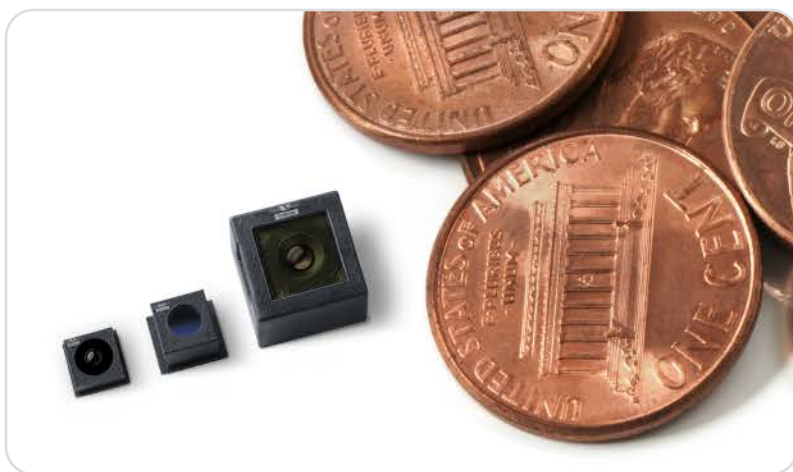
Leverages both OmniVision's FSI and BSI CMOS image-sensor technology



Applies semiconductor stacking methodology to fabricate wafer-level optical elements as wafer structure layers



Wafer-level chip-scale packaging expertise provides a simplified supply chain with standard surface mount handling



Technology Benefits

- Delivers fully integrated high-quality camera functionality in very small footprints and low profiles, allowing for multiple cameras in one device
- Simplified, one-stop shop for reflowable wafer-level camera modules that require minimal assembly and handling, can be directly soldered to the printed circuit board with no socket or insertion required, making integration simple

Applications and Use Cases



Robotic Vacuum



Robotic Lawn Mower



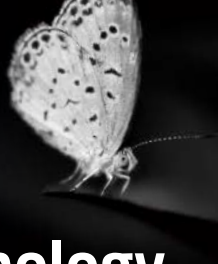
Agriculture



ITS (Intelligent Transportation System)



Global Shutter + Nyxel® Technology



With combined Global Shutter technology and Nyxel® technology, the sensor is able to achieve the benefits of both optimal performance and precision along with industry-leading QE and excellent MTF

Global Shutter + Nyxel® Product Offerings

A list of OmniVision's global shutter sensors covering the following range of features and characteristics.

Part Number	Optical Format	Pixel Size	CRA	Resolution	Frame Rate	Interface / Speed	Package	Special Features
OV6211	1/10.5"	3 μm	30°	400 x 400	120 fps	MIPI	CSP / COB	
OVM6211	1/10.5"	3 μm	30°	400 x 400	120 fps	MIPI	CameraCubeChip™	
OG0VA1B	1/10"	2.2 μm	23.4°	640 x 480	240 fps	MIPI	CSP / COB	Nyxel®
OC0VA1B	1/10"	2.2 μm		640 x 480	240 fps	MIPI	CameraCubeChip™	Nyxel®
OV7251 / OV7750	1/7.5"	3 μm	29°	640 x 480	120 fps	MIPI	CSP / COB	
OVM7251	1/7.5"	3 μm	29°	640 x 480	120 fps	MIPI	CameraCubeChip™	
OV9281 / OV9282 / OV9784	1/4"	3 μm	9° / 26.78°	1280 x 800	120 fps	MIPI	CSP / COB	
OVM9284	1/4"	3 μm	29°	1280 x 800	120 fps	MIPI	CameraCubeChip™	
OG01A1B	1/5"	2.2 μm	31.3°	1280 x 1024	120 fps	MIPI	COB	Nyxel®
OV9285 / OV9286	1/3.5"	3 μm	9° / 29.7°	1328 x 1120	90 fps	MIPI	COB	
OG02B1B	1/2.9"	3.0 μm	15°	1600 x 1300	60 fps	DVP / MIPI	CSP / COB	

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