



Facial Recognition

Machine Vision

Drones

Industrial Automation

OG01A1B

1.3-Megapixel Product Brief



BSI Global Shutter Sensor with Nyxel® Technology Provides Superior Near-Infrared Performance for Advanced Consumer and Industrial Applications

OMNIVISION's OG01A is a backside-illuminated (BSI) global shutter (GS) image sensor with a pixel size of 2.2 microns. It combines OMNIVISION's PureCel®Plus-S pixel technology and Nyxel® near-infrared (NIR) technology to enable optimal performance and precision along with industry-leading NIR quantum efficiency (QE). These features make the OG01A ideal for a wide range of consumer and industrial applications that need a global shutter to avoid motion blur, along with top NIR performance for low- and no-light conditions.

The OG01A is well-suited to multiple machine-vision applications, including AR/VR headsets, drones, robots, and simultaneous localization and mapping (SLAM), as well as facial authentication in smart phones and other consumer electronics. This technology is also ideal for automotive in-cabin driver state monitoring and eye tracking.

The 1.3-megapixel OG01A image sensor provides 1280 x 1024 resolution at 120 frames per second (fps) and 640 x 480 resolution at 240 fps in a compact 1/5-inch optical format.

The sensor's high modulation transfer function (MTF) enables sharper images with more detail, which is especially important for enhancing decision-making processes in machine vision applications. The OG01A also has a high NIR QE at 940 nm and 850 nm, enabling the sensor to see farther and better in low- and no-light conditions, which allows designers to use less IR LED light and achieve lower system-level power consumption. For AR/VR headsets, this reduces heat generation. For industrial and robotics applications, designers can use fewer IR LEDs for lower system cost, or use the same number of IR LEDs to achieve a greater image detection range.

Applications

- Machine vision
- Industrial automation
- Augmented and virtual reality
- Gaming
- Biometric authentication
- Drones
- 3D imaging
- Industrial bar code scanning

Features

- **Active array size:** 1280 x 1024
- **Maximum image transfer rate:**
 - 1.3MP (1280 x 1024): 120 fps
 - VGA (640 x 480): 240 fps
- **Power supply:**
 - Analog: 2.8V (nominal)
 - Core: 1.2V (nominal)
 - I/O: 1.8V (nominal)
- **Output interfaces:** 1/2-lane MIPI serial output
- **Output formats:** 8/10-bit RAW
- **Lens size:** 1/5"
- **Pixel size:** 2.2 μm x 2.2 μm

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