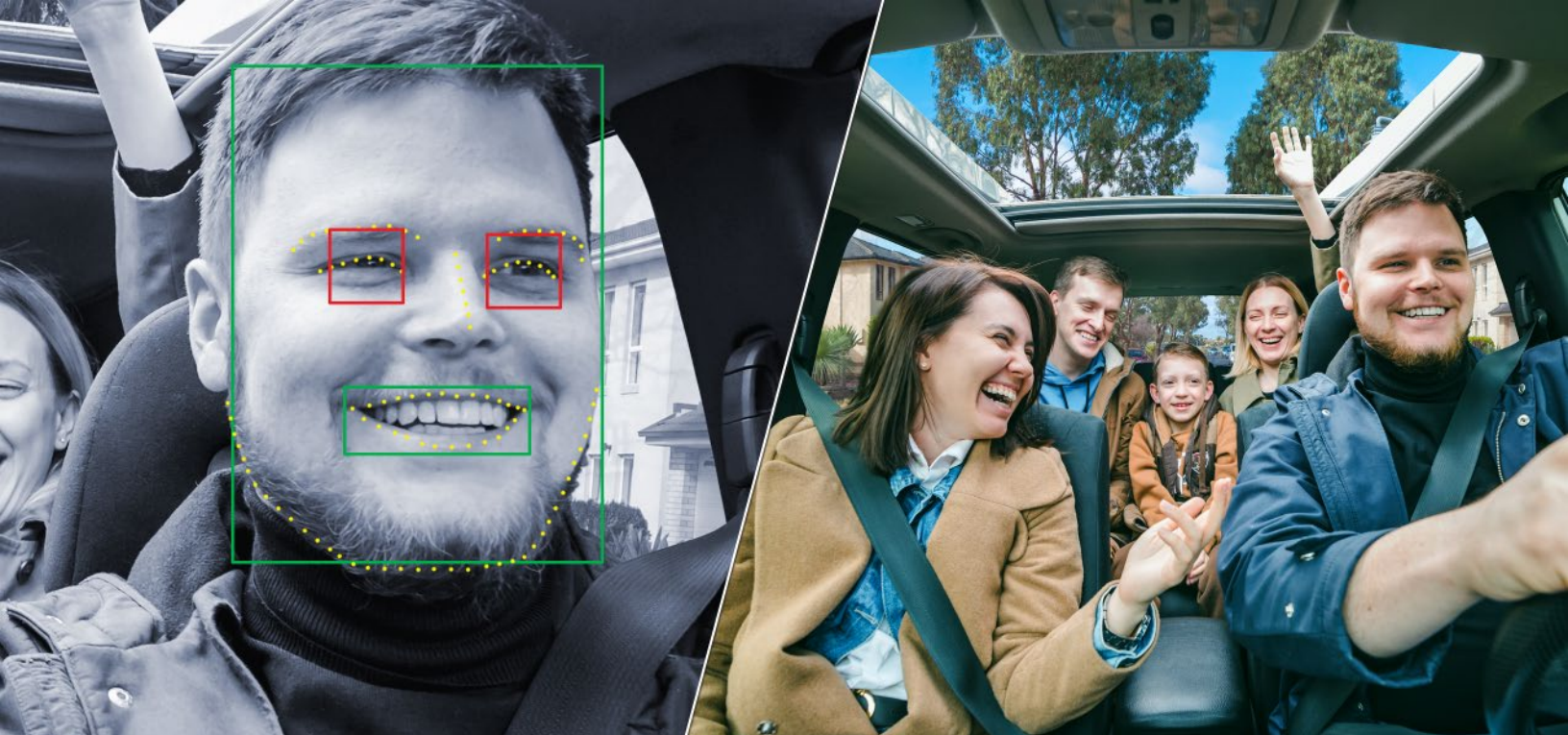




OX05B1S

5-Megapixel Product Brief



Automotive Industry's First 5MP RGB-IR Global Shutter Sensor for In-Cabin Driver Monitoring Systems

OMNIVISION's new OX05B1S is the automotive industry's first 5-megapixel (MP) RGB-IR BSI global shutter sensor for in-cabin applications. With a pixel size of just 2.2 μm , it offers 940 nm NIR sensitivity for the best performance in extremely low light conditions; it has a wide field of view and enough pixels to view both the driver and occupants. Additionally, it is the first RGB-IR sensor for in-cabin monitoring to feature integrated cybersecurity.

Based on OMNIVISION's revolutionary Nyxel® near-infrared (NIR) technology, the new OX05B1S brings dramatically improved resolution as well as overall enhanced efficiency and design flexibility to automotive OEMs. Nyxel® technology uses novel silicon semiconductor architectures and processes to achieve the world's best quantum efficiency

(QE) at the 940 nm NIR wavelength. The OX05B1S has the industry's highest NIR QE at 36% (a 3x boost from 12% in the previous generation). This enables the OX05B1S to detect and recognize objects that other image sensors would miss under extremely low lighting conditions, enabling higher-performance in-cabin camera capabilities for improved occupant and driver monitoring, security, selfies, videoconferencing and more.

The sensor comes in an OMNIVISION stacked a-CSP™ package that is 50% smaller than competitive products and allows for higher-performance image sensors in tighter camera spaces. It is also available in a reconstructed wafer option for designers who want the flexibility to customize their own package.

Applications

- In-cabin DMS monitoring systems

Features

- **Active array size:** 2592 x 1944
- **Maximum image transfer rate:**
 - 1944p: 60 fps
- **Power supply:**
 - Analog: 2.8V
 - Digital: 1.2V
 - I/O pads: 1.8V
- **Output interfaces:** Up to 4-lane MIPI serial output and DVP parallel output
- **Output formats:** 10-bit RAW
- **Lens size:** 1/2.525"
- **Pixel size:** 2.2 μm x 2.2 μm

Version 1.2, September 2025