OX05C1S

5-Megapixel Product Brief

Automotive Industry's First Global Shutter HDR Sensor for In-Cabin Driver and Occupant Monitoring Systems

The new OX05C1S is the automotive industry's first and only 5-megapixel (MP) back-side illuminated (BSI) global shutter (GS) high dynamic range (HDR) sensor for in-cabin driver and occupant monitoring systems (DMS and OMS).

The OX05C1S GS HDR sensor delivers extremely clear images of the entire cabin, enabling improved algorithm accuracy even in challenging high-brightness lighting conditions. It features a pixel size of just 2.2 µm and OMNIVISION's revolutionary Nyxel® NIR technology, which achieves the world's class-leading quantum efficiency (QE) at the 940 nm NIR wavelength to further improve DMS and OMS capabilities in low-light conditions. The OX05C1S has on-chip RGB-IR separation, relieving the burden of a dedicated image signal processor (ISP) and backend processing, thus freeing extra bandwidth for other tasks.

At just 6.61 mm x 5.34 mm, the OX05C1S package is 30% smaller than its predecessor, the OX05B1S (7.94 mm x 6.34 mm), providing automotive OEMs with greater design flexibility to place the camera in various locations within the cabin. Moreover, OEMs can use the same camera lens when upgrading from the OX05B1S to the newer OX05C1S, providing a design and cost advantage. The OX05C sensor is available in both color filter array RGB-IR (OX05C1S) and mono (OX05C1B) designs.

Applications

- In-cabin DMS monitoring systems
- Occupant monitoring systems (OMS)

Features

- **Active array size:** 2592 x 1944
- **Maximum image transfer rate:**
  - 60 fps (3-exposure HDR)
- **Power supply:**
  - Analog: 2.9V
  - Digital: 1.1V
  - I/O pins: 1.8V
- **Output interfaces:** Up to 4-lane MIPI serial
- **Output formats:** 10/12/14/16-bit HDR RAW
- **Lens size:** 1/2.525"
- **Pixel size:** 2.2 µm x 2.2 µm

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