



OH01A10

1-Megapixel Product Brief



High-Definition, Compact and Cost-Effective Medical Image Sensor for Single-Use and Reusable Endoscopes and Catheters

OMNIVISION's OH01A10 CMOS image sensor leverages PureCel®Plus-S stacked-die architecture to provide the high resolution, compact size and cost effectiveness required for the next generation of disposable and reusable endoscopes and catheters.

The OH01A10 is the world's first medical image sensor to capture 1280 x 800 resolution at 60 frames per second (fps) in a compact 2.5 mm x 1.5 mm package. These features make it ideal for many endoscopic devices, including those used in airway management (esophagoscopes, laryngoscopes, thoracoscopes, pleuroscopes, bronchoscopes, mediastinoscopes); gastrointestinal (gastrosopes, duodenoscopes, amnioscopes); and urology (ureterorenoscopes) applications.

Compared with previous-generation sensors, the OH01A10 consumes 25% lower power, which keeps the distal tip of the endoscope cooler for greater patient comfort. A high chief ray angle of 32 degrees enables a slimmer module and a wider field-of-view

for flexible endoscopes with tight bend radius and close-focus requirements. Two OH01A10 image sensors can be synchronized to produce stereo, 3D images for surgical procedures.

The OH01A10 has a 1/10.685-inch optical format and a 1.116-micron pixel size. The sensor supports multiple resolution formats and frame rates with a 10-bit RGB RAW output, including 720p HD at 60 fps in a 16:9 aspect ratio and 800 x 800 at 60 fps for a 1:1 square image for a crisp, jitter-free image. The sensor delivers the highest-quality images with improved sensitivity, high full-well capacity, no blooming and low color crosstalk.

Additionally, it supports both MIPI and sub-LVDS output interfaces to transmit image data. It also integrates one-time programmable (OTP) memory to store manufacturing and calibration information.

The OH01A10 can be autoclaved for reusable devices and sterilized for disposable ones.

Applications

- Medical, veterinarian, industrial, and video microscopes

Features

- **Active array size:** 1280 x 800
- **Maximum image transfer rate:**
 - 1280 x 800: 60 fps
 - 800 x 800: 60 fps
 - 400 x 400: 90 fps
- **Power supply:**
 - Analog: 2.7V ~ 3.0V (2.8V nominal)
 - Core: 1.14V ~ 1.26V (1.2V nominal)
 - I/O: 1.7V ~ 1.9V (1.8V nominal)
- **Output interfaces:**
 - 1-lane MIPI serial output/LVDS
- **Output formats:** 10-bit RGB RAW
- **Lens size:** 1/10.685"
- **Pixel size:** 1.116 μm x 1.116 μm

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