



# OH02A10

## 1080p product brief



### Best-In-Class Image Quality and High Frame Rate 1080p High Definition Video Capture for Endoscopic Applications

OMNIVISION's OH02A10 image sensor leverages 1.4-micron PureCel® pixel architecture to deliver best-in-class image quality and high frame rate in full 1080p high definition (HD) video to endoscopic applications, such as urology, laparoscopy, gynecology, cardiology and surgery.

By using PureCel® pixel architecture, the OH02A10 offers the highest-quality imaging capabilities with improved sensitivity and quantum efficiency, high full-well capacity, low color crosstalk, and minimal blooming and noise. The OH02A10's broadband double anti-reflective coating reduces flare in the visible and near-infrared spectrums, which is typically caused by strong ancillary illumination during surgical operations.

The compact OH02A10 is capable of recording full 1080p HD video at 60 frames per second (fps) or 720p HD video at 90 fps to ensure clear scene reproduction with minimal motion artifacts. The sensor supports interlaced high

dynamic range (HDR), which enables clear image capture with less saturation and excellent low light sensitivity in difficult high and low lighting situations. The OH02A10 is also stereo-ready with frame synchronization for 3D surgical applications.

OMNIVISION's OH02A10 consumes just 90 mW when recording 1080p HD video at 60 fps, which helps reduce heat generation at the distal tip of the endoscope to improve patient comfort and simplify design.

The OH02A10 is available in an 1/6-inch optical format and a compact 3.8 x 2.9 mm chip scale package (CSP). This sensor can be autoclaved and sterilized for reusable and single-use applications respectively.

Find out more at [www.ovt.com](http://www.ovt.com).



- OH02A10-A34A-SA (color, lead-free)
- 34-pin CSP with dual anti-reflective coating cover glass, packed in tape and reel with protective film

## Applications

- medical endoscopes
- dental equipment
- veterinarian endoscopes
- industrial endoscopes

## Technical Specifications

- active array size:** 1920 x 1080
- temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable image: 0°C to +60°C junction temperature
- maximum image transfer rate:**
  - 1080p: 60 fps
  - 720p: 90 fps
- power supply:**
  - core: 1.2V
  - analog: 2.8V
  - I/O: 1.8V
- power requirements:**
  - active: 90 mW
  - standby: 210 µA
  - XSHUTDN: 0.6 µA
- output format:** 10-bit RGB RAW
- lens size:** 1/6"
- lens chief ray angle:** 33° non-linear
- scan mode:** progressive
- pixel size:** 1.4 µm x 1.4 µm
- image area:** 2728.8 µm x 1549.8 µm
- package dimensions:**
  - CSP: 3855 µm x 2919 µm

## Product Features

- 1.4 µm x 1.4 µm pixel
- optical size of 1/6"
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- supports output formats: 10-bit RAW RGB
- supports images sizes:
  - 1080p (1920 x 1080)
  - 720p (1280 x 720)
  - VGA (640 x 480)
  - QVGA (320 x 240)
  - QQVGA (160 x 120)
- supports 2x2 binning
- standard serial SCCB interface
- up to 2-lane MIPI serial output interface (supports maximum speed up to 1000 Mbps/lane)
- embedded 2 kilobits of one-time programmable (OTP) memory for customer use
- add staggered HDR raw data output
- interleave row high dynamic range (iHDR) output
- programmable I/O drive capability
- support for LENC color shading correction

## Functional Block Diagram

