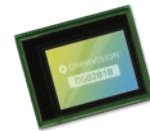




OG02B1B

2 megapixel product brief



High-Resolution, Cost-Effective Global Shutter Image Sensors for Machine Vision Applications

OMNIVISION's OG02B1B (monochrome) and OG02B10 (color) are global shutter image sensors designed to cost-effectively enable a wide range of consumer and industrial machine vision applications such as AR/VR headsets and accessories, industrial automation, robotics, agricultural drones and 3D modeling. These sensors provide designers with best-in-class resolution and the option for full-color imaging, and both have a 15 degree chief ray angle (CRA) to support wide field-of-view lens designs. This combination of color imaging and CRA is excellent for applications such as agricultural drones that must capture high-resolution color images for crop and field monitoring.

Available in a 1/2.9 inch optical format, the OG02B1B and OG02B10 capture 2 megapixel or 1600 x 1300 resolution images and video at 60 frames per second (fps) using advanced 3 x 3 micron OmniPixel®3-GS pixel technology. This global shutter technology eliminates motion artifacts and blurring, and dramatically improves low-light sensitivity. Additionally, both sensors' excellent near infrared (NIR) sensitivity at 850 nm and 940 nm helps reduce device power consumption to extend battery life.

Find out more at www.ovt.com.



- OG02B1B-GA4A
(b&w, chip probing, 200 µm backgrinding, reconstructed wafer with good die)

Applications

- augmented and virtual reality
- drone
- 3D imaging
- machine vision
- industrial bar code scanning
- industrial automation

Technical Specifications

- active array size:** 1600 x 1300
- maximum image transfer rate:**
 - 1600 x 1300: 60 fps
- power supply:**
 - analog: 2.8V (nominal)
 - core: 1.2V (nominal)
 - I/O: 1.8V (nominal)
- power requirements:**
 - active: 190 mW
 - XSHUTDOWN: <25 µA
- output interfaces:** 2-lane MIPI serial output and DVP parallel output
- temperature range:**
 - operating: -30°C to +85°C junction temperature
 - stable image: 0°C to +50°C junction temperature
- lens size:** 1/2.9"
- lens chief ray angle:** 15° linear
- output formats:** 10-bit RAW
- pixel size:** 3 µm x 3 µm
- image area:** 4857.696 µm x 3955.896 µm

Product Features

- 3 µm x 3 µm pixel with OmniPixel®3-GS technology
- automatic black level calibration (ABLC)
- programmable controls for:
 - frame rate
 - mirror and flip
 - cropping
 - windowing
- support output formats: 8/10-bit RAW
- fast mode switching
- supports 2x2 monochrome binning
- two-lane MIPI serial output interface
- DVP parallel output interface
- supports horizontal and vertical 2:1 monochrome subsampling
- support for image sizes:
 - 1600 x 1300
 - 1280 x 720
 - 640 x 480
- embedded 128 bytes of one-time programmable (OTP) memory
- two on-chip phase lock loops (PLLs)
- LED PWM
- temperature sensor
- built-in strobe control

Functional Block Diagram

