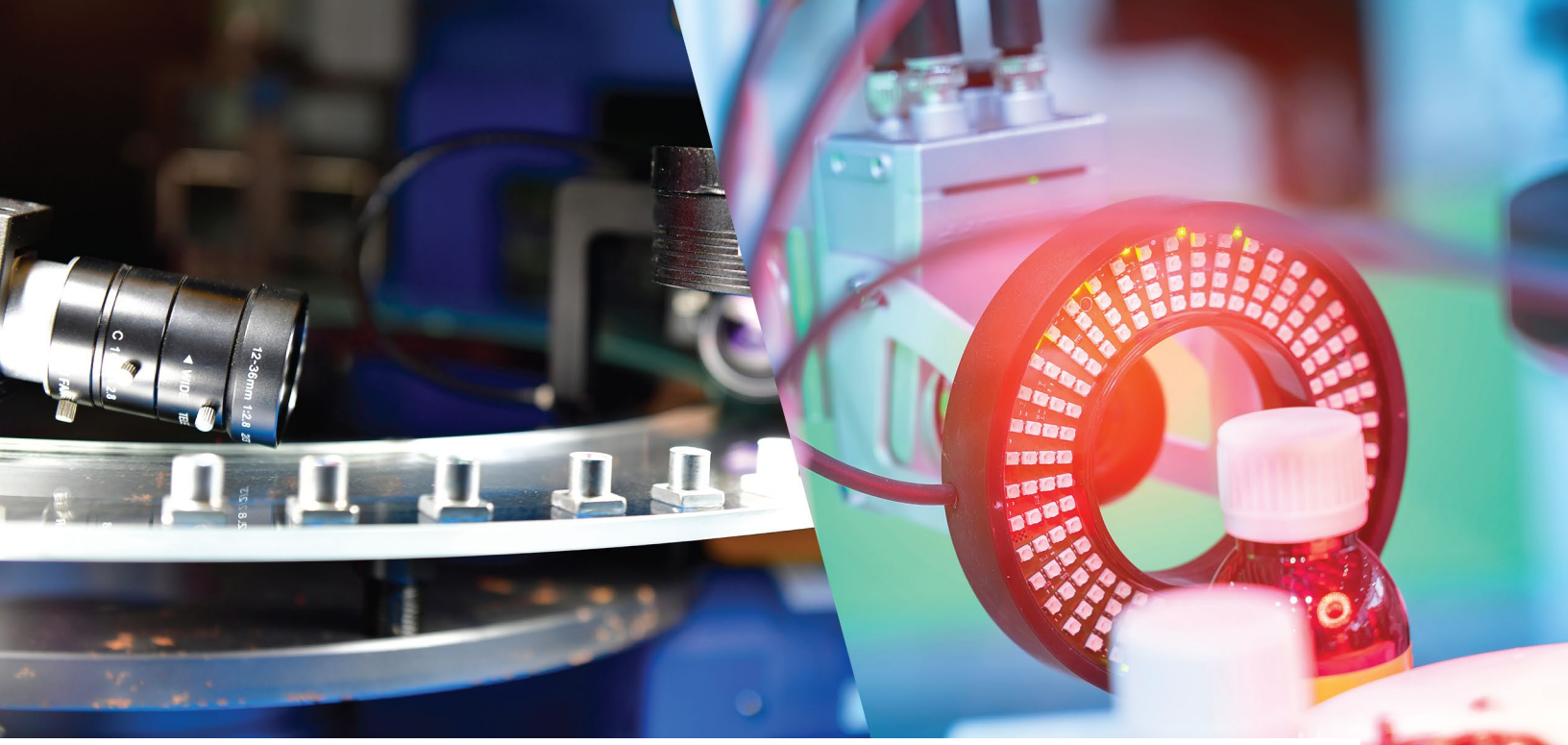


OG02C

2-megapixel product brief

New 3.45-micron BSI Global Shutter Image Sensor for Machine Vision Applications

The new OG02C10/1B Global Shutter (GS) image sensor features a 3.45-micron (µm) back-side illuminated (BSI) pixel for high sensitivity, industry-leading shutter efficiency and excellent low-light performance for applications including industrial automation, robotics, logistics, and barcode scanners. The advanced performance in a smaller pixel enables it to replace larger 4.8 µm pixel front-side illuminated (FSI) sensors traditionally used in machine vision products.

The OG02C10/1B is a 2-megapixel BSI GS sensor that features OMNIVISION's industry-leading technology including Nyxel® near-infrared (NIR) and PureCel®Plus-S. It comes in a 1/2.53-inch optical format (OF) and supports 300 frames per second (fps) with 106 dB shutter efficiency. 20Ke- full-well capacity (FWC) enables higher high dynamic range (HDR) with low noise level, resulting in clearer pictures. On-chip dual conversion gain (DCG™) HDR extends dynamic range, reproducing motion artifact–free and low-noise images in challenging lighting conditions.

The GS sensor fits the standard C-mount and S-mount lens and supports both LVDS and MIPI interfaces.

Find out more at www.ovt.com.

OMNIVISION®

OG02C

Ordering Information

- **OG02C10-A88A-001A-Z** (color, lead-free)
  88-pin CSP
- **OG02C1B-A88A-001A-Z** (b&w, lead-free)
  88-pin CSP

Applications

- factory automation (FA)
- machine vision camera
- industrial bar code scanning
- robotics

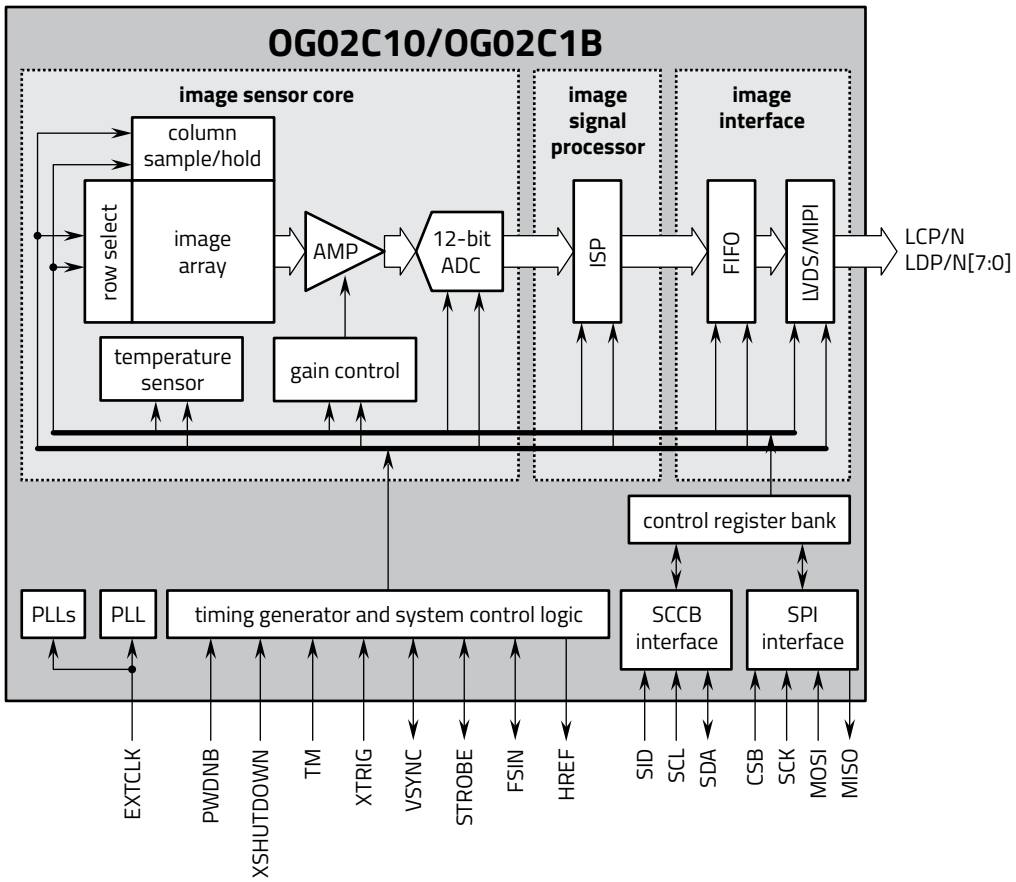
Technical Specifications

- **active array size:** 1632 x 1264
- **maximum image transfer rate:**
  - full size:
    - 300 fps @ 8-bit
    - 240 fps @ 10-bit
    - 180 fps @ 12-bit
  - DCG™ HDR mode:
    - 120 fps @ 12-bit
- **power supply:**
  - analog: 2.8V
  - digital: 1.2V
  - I/O pads: 1.8V
- **output formats:** 10-bit/12-bit RAW
- **temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable image: 0°C to +70°C junction temperature
- **output interfaces:** 1/2/4/8-lane LVDS, 4-lane MIPI
- **lens size:** 1/2.53"
- **lens chief ray angle:** 8° linear
- **pixel size:** 3.45 µm x 3.45 µm
- **image area:** 5685.6 µm x 4416 µm

Product Features

- 3.45 µm, high sensitivity, PureCel®Plus-S, Global Shutter pixel with dual conversion gain (DCG™) and enhanced NIR QE (Nyxel®)
- on-sensor DCG™ high dynamic range (HDR)
- dual exposure readout, with external trigger mode
- horizontal/vertical 2x2 sub-sampling
- supports ROI read out modes up to 8x8 windows
- embedded frame counter feature
- dynamic defective pixel cancellation (DPC) and OTP DPC
- automatic black level correction
- up to 8-channel sub-LVDS high speed serial interface
- SCCB for register programming
- SPI for register (0x0000~0x7FFF) programming
- external frame synchronization capability
- embedded temperature sensor
- one-time programmable (OTP) memory
- 12-bit A/D converter

Functional Block Diagram



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