



OG05C

5-megapixel product brief

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

The new OG05C10/1B 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, barcode scanners and intelligent transportation systems (ITS). 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 OG05C10/1B is a 5-megapixel BSI GS sensor that features OMNIVISION's industry-leading technology including Nyxel® near-infrared (NIR) and PureCel®Plus-S. It comes in a

1/1.45-inch optical format (OF) and supports 120 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 lens and supports both LVDS and MIPI interfaces.

Find out more at www.ovt.com.



- OG05C10-C88A-001A (color, lead-free)
188-pin CLGA
- OG05C1B-C88A-001A (b&w, lead-free)
188-pin CLGA

Applications

- intelligent transportation systems (ITS)
- factory automation (FA)
- machine vision camera
- industrial bar code scanning
- robotics

Technical Specifications

- active array size:** 2464 x 2064
- maximum image transfer rate:**
 - full size:
 - 120 fps @ 10-bit
 - 60 fps @ 12-bit
 - DCG™ HDR mode:
 - 60 fps @ 12-bit/14-bit
- power supply:**
 - analog: 2.8V
 - digital: 1.2V
 - I/O pins: 1.8V
- power requirements:**
 - active: 524 mW
 - XSHUTDOWN: <37 mW
- temperature range:**
 - operating: -30°C to +85°C junction temperature
- output interfaces:** 4/8-lane LVDS/4-lane MIPI
- output formats:** 10-bit/12-bit/14-bit RAW
- lens size:** 1/1.45"
- lens chief ray angle:** 8° linear
- pixel size:** 3.45 μm x 3.45 μm
- image area:** 8500.8 μm x 7120.8 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
- 4-lane MIPI interface
- LVDS 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

