

OS04C10

4 megapixel product brief



4MP, 2 Micron Image Sensor for IoT and Home Security Cameras with PureCel®Plus and Nyxel® NIR Ultra Low Light Technologies

OMNIVISION's OS04C10 is a 2.0 micron pixel, 4 megapixel (MP) resolution image sensor for both IoT and home security cameras. When paired with the designer's selected platform, the OS04C10 can enable a system ultra low power mode for battery-powered cameras with AI functionality. Additionally, it provides high 2688 x 1520 resolution with a 16:9 aspect ratio, while adding the premium near-infrared (NIR) and ultra low light, SNR1 performance of its Nyxel® and PureCel®Plus technologies. This sensor also offers multiple high dynamic range (HDR) options for the highest quality 4MP still and video captures of fast-moving objects at 60 frames per second.

The OS04C10 is built on the PureCel®Plus pixel architecture to achieve a superior low-noise design, providing an SNR1 that is 150% better than OMNIVISION's prior-generation OV4689 4MP mainstream security sensor. This new sensor maintains the same high 4MP resolution as the popular OV4689, while adding improved NIR, ultra low light and HDR performance for these IoT and home security cameras, along with a new ultra low power mode that consumes 98.9% less power than the normal mode for longer battery life.

OMNIVISION's industry-leading NIR Nyxel® technology, combined with its PureCel®Plus technology and multiple HDR options, enables the OS04C10 to work equally well in all lighting conditions. It can detect incident light in both the visible and NIR wavelengths, while producing precise color and monochrome images for security applications.

The OS04C10 is infused with Nyxel® technology, which provides exceptional quantum efficiency (QE), enabling the sensor to see better and farther at both the 850 nm and 940 nm NIR wavelengths. Such excellent QE also enables the use of lower power IR illumination in total darkness, resulting in significantly reduced system-level power consumption. Additionally, 940 nm NIR lighting cannot be detected by the human eye in dark indoor settings, while 850 nm light is ideal for outdoor security cameras. The OS04C10's ability to capture crisp, clear images using undetectable 940 nm NIR light means that indoor security cameras will not disturb sleeping residents and can be easily concealed from unwanted prowlers.

Find out more at www.ovt.com.

OMNIVISION™

OS04C10

Ordering Information

- **OS04C10-A43A** (color, lead-free)
  43-pin CSP

Applications

- security cameras
- action cameras
- high resolution consumer cameras

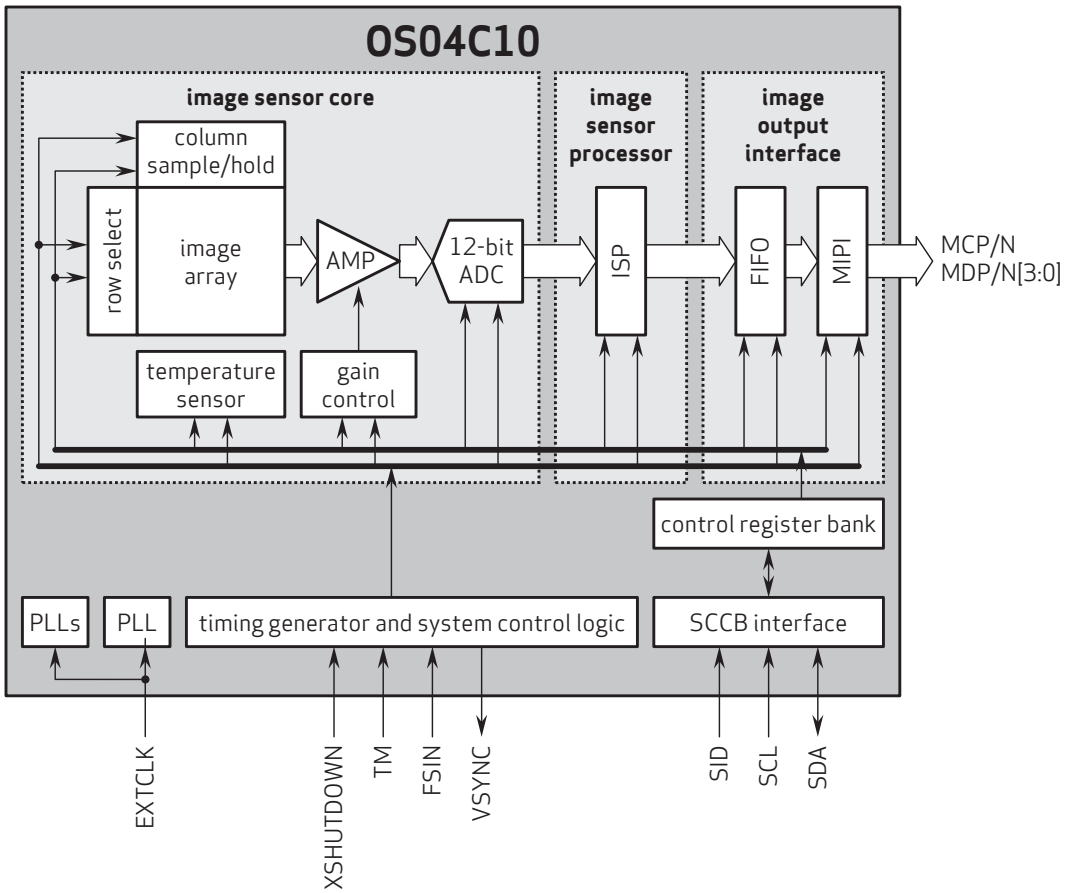
Technical Specifications

- **active array size:** 2688 x 1520
- **maximum image transfer rate:**
  - 2688 x 1520: 60 fps
  - 1920 x 1080: 80 fps
  - 1280 x 720: 240 fps
- **power supply:**
  - core: 1.2V
  - analog: 2.8V
  - I/O: 1.8V
- **power requirements:**
  - active: 155 mW
  - XSHUTDOWN: <10 µA
- **output formats:** 10/12-bit RGB RAW
- **temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable: -10°C to +60°C junction temperature
- **lens size:** 1/3"
- **lens chief ray angle:** 12° non-linear
- **scan mode:** progressive
- **pixel size:** 1.998 µm x 1.998 µm
- **image area:**
  5402.592 µm x 3068.928 µm

Product Features

- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- supports output formats:
  - 12-bit/10-bit RAW RGB
- supports images sizes:
  - full (2688x1520)
  - 1080p (1920x1080)
  - 720p (1280x720)
  - AO_720p (1280x720)
  - AO_360p (640x360)
- supports 2x2 binning
- standard serial SCCB interface
- up to 4-lane MIPI serial output interface (supports maximum speed up to 1500 Mbps/lane)
- add staggered HDR RAW data output
- programmable I/O drive capability
- built-in temperature sensor
- MIPI serial output interface (1-lane, 2-lane, or 4-lane)
- image quality controls:
  - defect pixel correction
  - automatic black level calibration

Functional Block Diagram



Version 1.1, October 2022

4275 Burton Drive
Santa Clara, CA 95054
USA

Tel: + 1 408 567 3000
Fax: + 1 408 567 3001
www.ovt.com

OMNIVISION reserves the right to make changes to their products or to discontinue any product or service without further notice. OMNIVISION and the OMNIVISION logo are trademarks or registered trademarks of OmniVision Technologies, Inc. PureCel and Nyxel are registered trademarks of OmniVision Technologies, Inc. All other trademarks are the property of their respective owners.

OMNIVISION™