



OS04C10 4MP product brief



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



available in a lead-free package

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.



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Applications

- Security Camera
- High Resolution Consumer Camera
- Action Camera

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

OS04C10



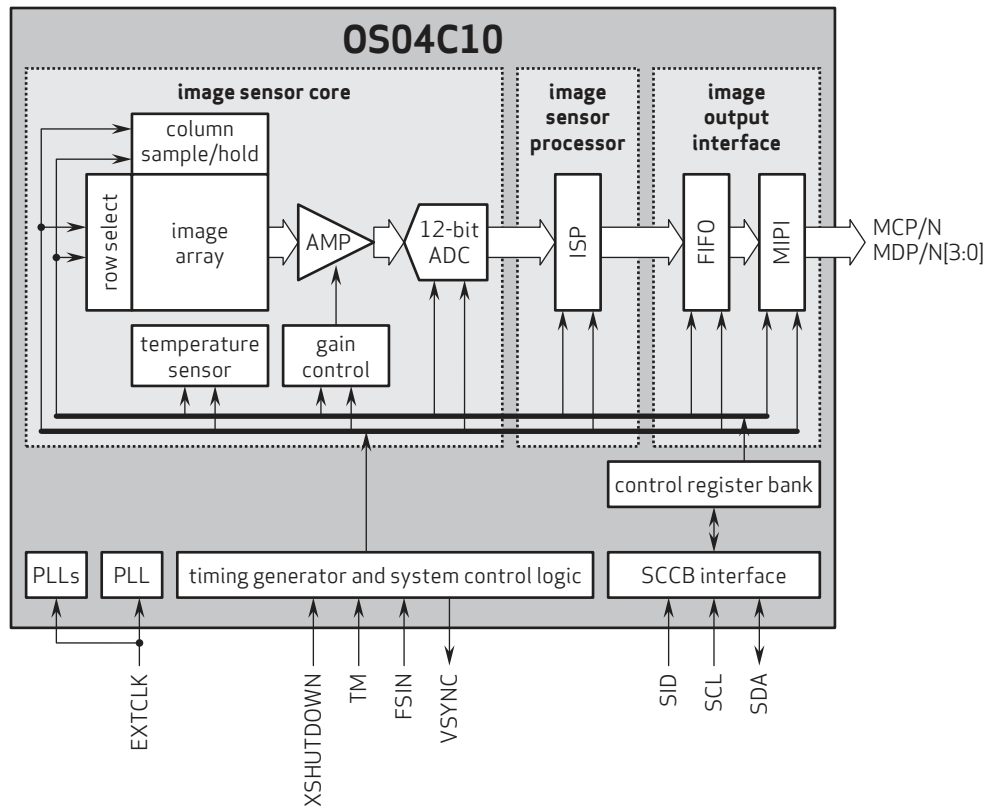
Ordering Information

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

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 μ A
- temperature range:
 - operating: -30°C to +85°C junction temperature
 - stable image: -10°C to +60°C junction temperature
- lens size: 1/3"
- lens chief ray angle: 12° non-linear
- output formats: 10/12-bit RGB RAW
- pixel size: 1.998 μ m x 1.998 μ m
- image area: 5402.592 μ m x 3068.928 μ m

Functional Block Diagram



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