



OS04D10-1B

4-Megapixel Product Brief



High-Performance, Low-Power 2K 4-Megapixel Image Sensor for Consumer Security and Surveillance Cameras

The OS04D10-1B is a 4-megapixel (MP) image sensor that brings high-definition 2K resolution digital images and video at 30 frames per second (fps) to IP and HD analog security cameras, including smart home, doorbell and baby monitoring devices. The OS04D10-1B CMOS image sensor utilizes a high-performance 2.0-micron (μm) backside-illuminated (BSI) pixel combining OMNIVISION's PureCel®Plus and Nyxel® technologies, providing 40% power consumption savings, premium near-infrared (NIR) and ultra low light, SNR1 performance. Low power consumption is desirable for battery operated devices, especially doorbell security cameras.

The OS04D10-1B image sensor's 2.0-micron (μm) BSI pixel is based on OMNIVISION's PureCel®Plus technology and enables higher sensitivity, ultra-low noise and better overall image quality. Select conversion gain (SCG) allows the sensor to flexibly select low and high conversion gain depending on the lighting conditions. On-chip auto exposure control (AEC) and auto gain control (AGC) further accelerate system-on-chip (SoC) booting time.

The OS04D10-1B comes in a cost-effective 1/3.067-inch optical format and is pin-to-pin compatible with other OMNIVISION 44-pin image sensors, as well as future new products.

OMNIVISION's industry-leading NIR Nyxel® technology, combined with its PureCel®Plus technology and multiple HDR options, enables the OS04D10-1B to work equally well in all lighting conditions. This image sensor can detect incident light in both the visible and NIR wavelengths, while producing precise color and monochrome images for security applications. Infusing Nyxel® technology, which provides exceptional quantum efficiency (QE), enables 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 OS04D10-1B'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.

The OS04D10-1B supports MIPI interfaces.

Applications

- Security surveillance systems
- IP cameras
- HD analog cameras

Features

- **Active array size:** 2560 x 1440
- **Maximum image transfer rate:**
 - 2568 x 1448: 30 fps
- **Power supply:**
 - Analog: 2.8V
 - I/O: 1.8V
 - Core: 1.2V
- **Output interface:** 10-bit 2-lane MIPI
- **Output format:** 10-bit RAW RGB
- **Lens size:** 1/3.067"
- **Pixel size:** 1.998 μm x 1.998 μm

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