



# OS02K10-1B

## 2-Megapixel Product Brief



## 1/2.804" Color 1080p (1920 x 1080) HDR CMOS Image Sensor with PureCel®Plus-S Technology for Security Applications

The OS02K10-1B is a color 1/2.804-inch 2MP 1080p high dynamic range (HDR) CMOS image sensor specialized for the high-end security and consumer markets.

The OS02K10-1B features OMNIVISION's PureCel®Plus-S technology providing 120 dB ultra-wide dynamic range for low-noise imaging with challenging backlight conditions. The OS02K10-1B delivers a well-balanced solution of HD image quality, superior low light vision and for high-tier 1080p visual devices, covering professional security, DVR and diverse AIoT verticals as the optimal imaging core. Interleaved triple exposure pushes dynamic range to 120 dB, perfectly handling intense backlight from windows, direct vehicle headlights and outdoor light-shadow boundaries. Highlights remain non-saturated while shadow areas retain visible details of human bodies and facial features.

The OS02K10-1B has the option to output 12-bit, video with 87 dB dynamic range from a single dual conversion gain (DCG™) exposure. The sensor also supports DCG + VS staggered HDR and 3-exposure staggered HDR for >120 dB dynamic range. But in this case, the HDR combination must be done externally.

The OS02K10-1B performs sophisticated camera functions on-chip controlled via the serial camera control bus (SCCB) interface. These functions include black level correction (BLC), DCG combination, defect pixel correction (DPC) and piece wise linear (PWL) image compression. The standard 1/2.8-inch optical format supports all mainstream 9° CRA lenses on the market, popular module selection.

The OS02K10-1B enables advanced HDR imaging in a simple, cost effective system.

### Applications

- Security cameras
- Action cameras
- High resolution consumer cameras

### Features

- **Active array size:** 1920 x 1080
- **Maximum image transfer rate:**
  - 40x3 fps @ 1080p in 10-bit
  - 30x3 fps @ 1080p in 12-bit
- **Power supply:**
  - Analog: 2.8V
  - Digital: 1.1V
  - I/O: 1.8V
- **Output interfaces:** Up to 4-lane MIPI CSI-2 or LVDS
- **Output formats:** Single exposure HDR - 16-bit combined RAW, 12-bit (PWL) compressed combined RAW; dual exposure HDR - 16-bit combined RAW + 12-bit VS RAW, 12-bit (PWL) compressed combined RAW + 12-bit VS RAW; 3-exposure HDR - 12-bit long exposure + 12-bit medium exposure + 12-bit short exposure
- **Lens size:** 1/2.804"
- **Pixel size:** 2.9 μm x 2.9 μm

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