

OV12895 12MP product brief



12-Megapixel PureCel®Plus-S Sensor for High-End Consumer Drones and Action Cameras



available in
a lead-free
package

OmniVision's OV12895 is a high-speed PureCel®Plus-S image sensor that brings 4K2K video and 12-megapixel images to consumer-grade drones, surveillance systems, and 360-degree action cameras. Leveraging a 1.55-micron pixel, the OV12895 captures stunning still images using 10-bit or optional 12-bit readout architecture that provides high-bit depth snapshots.

The OV12895 is built on OmniVision's PureCel Plus-S stacked-die architecture, featuring backside illumination for ultra-high resolution and crisp, vibrant images across all light levels. The stacked-die structure allows for additional sensor functionality while enabling smaller die sizes compared to non-stacked sensors.

The OV12895 captures ultra-high-resolution 4K2K video at 60 frames per second (fps) and full high-definition (FHD) 1080p videos at 240 fps with full field of view, enabling high-quality slow-motion video capture.

Available in the widely used 1/2.3-inch optical format, the OV12895's low chief ray angle of 5 degrees is suitable for mature lens ecosystems. The sensor currently is available in both RW and CLGA package formats.

Find out more at www.ovt.com.



Applications

- Consumer-grade Drones
- Surveillance Systems
- 360-degree Action Cameras

Product Features

- 1.55 μm x 1.55 μm pixel
- optical size of 1/2.3"
- 5° CRA
- enhanced dual camera support
- high-speed architecture for fast frames per second (fps)
- programmable controls for:
 - frame rate
 - mirror and flip
 - cropping
 - windowing
 - gain
 - exposure
- support for image sizes:
 - 12MP (4096x3072)
 - 4K2K (3840x2160)
 - 1080p (1920x1080), and more
- two-wire serial bus control (SCCB)
- strobe output to control flash
- embedded 13.5kbits of one-time programmable (OTP) memory
- two on-chip phase lock loops (PLLs)
- image quality controls for:
 - defect pixel correction
 - automatic black level calibration
 - lens shading correction
- built-in temperature sensor

OV12895



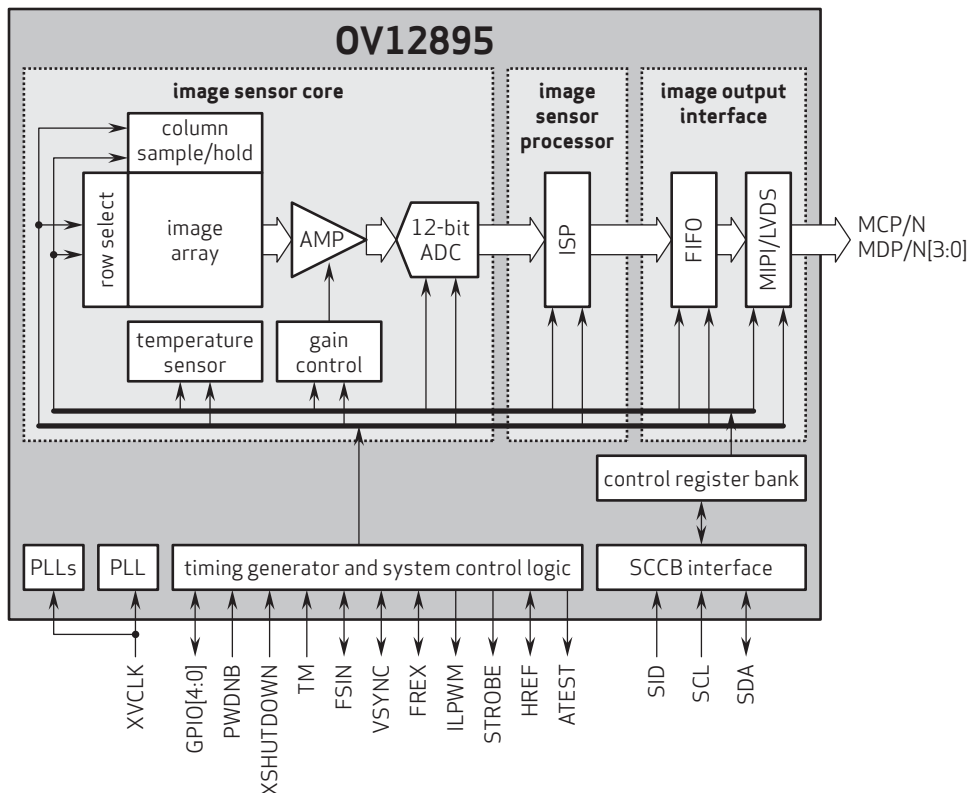
Ordering Information

- **OV12895-GA5A-Z**
(color, chip probing, 150 μm backgrinding, reconstructed wafer with good die)
- **OV12895-C61A-Z**
(color, lead-free, 161-pin CLGA)

Product Specifications

- **active array size:** 4096 x 3072
- **lens chief ray angle:** 5° linear
- **power supply:**
 - core: 1.2V
 - analog: 2.8V
 - I/O: 1.8V
- **input clock frequency:** 6 - 27 MHz
- **power requirements:**
 - active: 300 mW @ full-res, 30 fps, 12-bit
 - XSHUTDOWN: <10 μW
- **maximum image transfer rate:**
 - 12MP (12-bit) (4:3): 30 fps
 - 12MP (10-bit) (4:3): 45 fps
 - 4K2K (16:9): 60 fps
 - 1080p HD (crop+bin): 240 fps
- **temperature range:**
 - operating: -30°C to +85°C junction temperature
 - stable image: 0°C to +60°C junction temperature
- **scan mode:** progressive
- **pixel size:** 1.55 μm x 1.55 μm
- **image area:** 6398.4 μm x 4811.2 μm
- **output formats:** 10/12-bit RGB RAW, DPCM 10-8 compression
- **dimensions:**
 - COB: 7200 μm x 5750 μm
 - RW: 7250 μm x 5800 μm
 - CLGA: 12.8 mm x 11.8 mm
- **lens size:** 1/2.3"

Functional Block Diagram



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