



OV8856



8-megapixel product brief

High Performance PureCel® Sensor Brings 8-Megapixel Selfies to Mainstream Smartphones

OMNIVISION's OV8856 is a new 1/4-inch 8-megapixel PureCel® sensor designed for front- and rear-facing camera applications in mainstream mobile devices. Built on advanced 1.12-micron pixel architecture, the extremely compact OV8856 offers industry-leading image quality and improved performance when compared with previous-generation 8-megapixel image sensors.

The 1/4-inch OV8856 leverages OMNIVISION's PureCel® pixel architecture to capture full-resolution 8-megapixel images and video at 30 frames per second (fps), and 1080p high-definition (HD) video at 60 fps. The power-efficient

OV8856 sensor also supports interlaced high dynamic range (iHDR) for clear images and video in high- and low-light conditions. Using a high-speed four-lane MIPI interface, the OV8856 can output full-resolution, 8-megapixel 30 fps video over two MIPI lanes without requiring any data compression.

The OV8856 is one of the smallest 8-megapixel sensors on the market, and is approximately 15 percent smaller than OMNIVISION's previous-generation OV8858 image sensor. The OV8856 can fit into a 6.5 mm x 6.5 mm fixed-focus module with a z-height of approximately 4 mm.

Find out more at www.ovt.com.



- OV8856-GA4A (color, chip probing, 200 μm backgrinding, reconstructed wafer with good die)

Applications

- cellular phones
- tablets
- PC multimedia

Product Features

- 1.12 μm x 1.12 μm pixel
- optical size of 1/4"
- 32.9° CRA for <5 mm Z-height
- programmable controls for:
 - frame rate
 - mirror and flip
 - cropping
 - windowing
- supports images sizes:
 - 8MP (4:3, 3264 x 2448)
 - 8MP (16:9, 3264 x 1836)
 - EIS 1080p (2112 x 1188)
 - 1080p (1920 x 1080)
 - EIS 720p (1408 x 792), and more
- 8MP at 30 fps (720 Mbps/4-lane or 1.44 Gbps/2-lane)
- two on-chip phase lock loops (PLLs)
- two-wire serial bus control (SCCB)
- 8k bits of embedded one-time programmable (OTP) memory
- image quality control:
 - defect pixel correction
 - automatic black level calibration
 - lens shading correction
 - alternate row HDR
- suitable for module size of 8.5 x 8.5 x ~4 mm

Technical Specifications

- active array size:** 3264 x 2448
- maximum image transfer rate:**
 - 3264 x 2448: 30 fps
 - 3264 x 1836: 30 fps
 - 2112 x 1188: 60 fps
 - 1920 x 1080: 60 fps
 - 1408 x 792: 90 fps
- power supply:**
 - core: 1.14V ~ 1.26V (1.2V nominal)
 - analog: 2.6V ~ 3.0V (2.8V nominal)
 - I/O: 1.7V ~ 1.9V (1.8V)
- power requirements:**
 - active: 150 mW
 - standby: 0.8 μW
 - XSHUTDOWN: 1 μW
- output formats:** 10-bit RGB RAW
- temperature range:**
 - operating: -30°C to +85°C junction temperature
 - stable: 0°C to +60°C junction temperature
- output interfaces:** up to 4-lane MIPI serial output
- lens size:** 1/4"
- lens chief ray angle:** 32.9° non-linear
- scan mode:** progressive
- pixel size:** 1.12 μm x 1.12 μm
- image area:** 3678.336 μm x 2767.68 μm

Functional Block Diagram

