

# OV8856 8MP product brief



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



available in  
a lead-free  
package

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](http://www.ovt.com).



## Applications

- Cellular Phones
- Tablets
- PC Multimedia

## Product Features

- 1.12  $\mu\text{m}$  x 1.12  $\mu\text{m}$  pixel
- optical size of 1/4"
- 32.9° CRA for <math>\leq 5\text{ mm}</math> Z-height
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- supports images sizes:
  - 8MP (4.3, 3264x2448)
  - 8MP (16:9, 3264x1836)
  - EIS 1080p (2112x1188)
  - 1080p (1920x1080)
  - EIS 720p (1408x792), 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

# OV8856



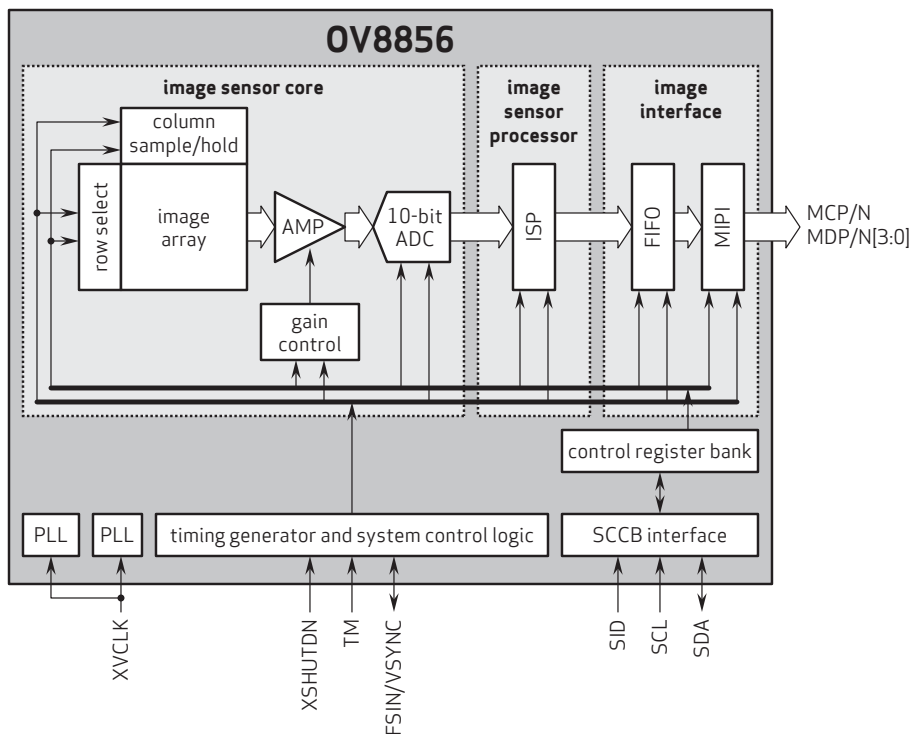
## Ordering Information

- OV08856-GA4A**  
(color, chip probing, 200  $\mu\text{m}$  backgrinding, reconstructed wafer with good die)

## Product Specifications

- active array size:** 3264 x 2448
- power supply:**
  - core: 1.14 - 1.26V (1.2V nominal)
  - analog: 2.6 - 3.0V (2.8V nominal)
  - I/O: 1.7 - 1.9V (1.8V)
- power requirements:**
  - active: 150 mW
  - standby: 0.8  $\mu\text{W}$
  - XSHUTDN: 1  $\mu\text{W}$
- temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable image: 0°C to +60°C junction temperature
- output interfaces:** up to 4-lane MIPI serial output
- output formats:** 10-bit RGB RAW
- lens chief ray angle:** 32.9° non-linear
- lens size:** 1/4"
- input clock frequency:** 6 - 27 MHz
- max S/N ratio:** 36.5 dB
- dynamic range:** 70 dB @ 8x gain
- 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
- sensitivity:** 480 mV/lux-sec
- scan mode:** progressive
- pixel size:** 1.12  $\mu\text{m}$  x 1.12  $\mu\text{m}$
- dark current:** 12 e<sup>-</sup>/sec @ 60°C junction temperature
- image area:** 3678.336  $\mu\text{m}$  x 2767.68  $\mu\text{m}$
- die dimensions:**
  - COB: 4806  $\mu\text{m}$  x 3969  $\mu\text{m}$
  - RW: 4856  $\mu\text{m}$  x 4019  $\mu\text{m}$

## Functional Block Diagram



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