

# OV20880-4C 20MP product brief



## 20-Megapixel Second-Generation 1.0-Micron PureCel®Plus-S Sensor for Front-Facing Cameras



available in  
a lead-free  
package

OmniVision's OV20880-4C is an ultra-compact image sensor engineered to bring 20-megapixel resolution to produce "super selfies" for high-end mobile applications using OmniVision's second-generation, 1.0-micron PureCel®Plus-S pixel technology. The OV20880-4C's on-chip pixel binning feature allows four times more light photons than a regular 1.0-micron pixel, enabling high-sensitivity and clear images in all lighting environments. The OV20880-4C pairs with OmniVision's complete software solution for resolution recovery and high-resolution, 20-megapixel selfies combined with a 4-cell mode.

The OV20880-4C offers a full 20-megapixel 4-cell RAW output mode and a 5-megapixel Bayer output mode that uses in-pixel binning to achieve 2.0-micron pixel performance. The OV20880-4C captures full-resolution 20-megapixel images and video at 30 frames per second (fps) and 1080p full high definition (HD) video at 120 fps. The OV20880-4C offers both MIPI D-PHY and C-PHY interfaces.

The OV20880-4C can fit in a package size of 8.5 x 8.5 mm with a z-height of 5.0 mm.

Find out more at [www.ovt.com](http://www.ovt.com).



## Applications

- Smartphones
- Video Conferencing
- PC Multimedia

## Product Features

- automatic black level calibration (ABLC)
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- support for dynamic DPC
- supports output formats:
  - 10-bit RAW RGB
  - DPCM 10-8 compression
- supports horizontal and vertical subsampling
- 20-megapixel resolution, 5184 x 3888, 4-cell color filter, 30 fps
- 5-megapixel resolution, 2592 x 1944, output Bayer pattern after quadra binned, 120 fps
- two on-chip phase lock loops (PLLs)
- standard serial SCCB interface with speed up to 1 MHz (when clock input is >10 MHz)
- up to 4-lane MIPI TX interface with speed up to 1.92 Gbps/lane
- programmable I/O drive capability
- embedded 20 kbits of one-time programmable (OTP) memory with 12 kbits reserved for customer use
- gyro interface with 4-wire SPI and EIS support
- long exposure time of up to 30 seconds
- built-in temperature sensor
- typical module size: 8.5 x 8.5 x 5.3 mm

# OV20880-4C



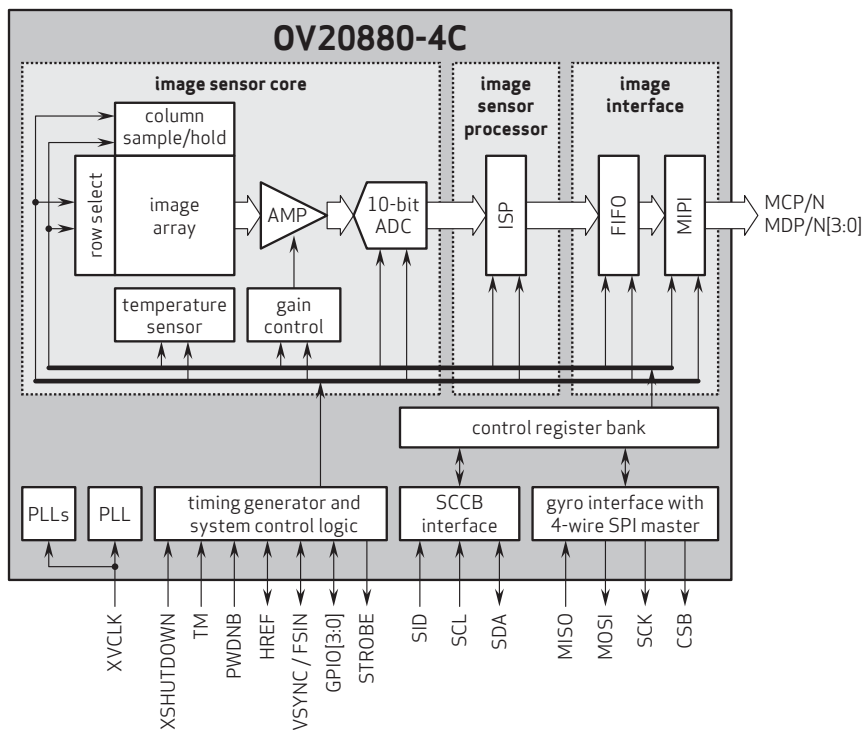
## Ordering Information

- OV20880-GA5A-4C**  
(color, chip probing, 150  $\mu\text{m}$  backgrinding, reconstructed wafer with good die)

## Product Specifications

- active array size:** 5184 x 3888
- maximum image transfer rate:**
  - 5184 x 3888: 30 fps
  - 2592 x 1944: 120 fps
  - 1920 x 1080: 180 fps
  - 1280 x 720: 180 fps
- power supply:**
  - core: 1.05V
  - analog: 2.8V
  - I/O: 1.8V
- power requirements:**
  - active: 349 mW
  - standby: 10 mW
  - XSHUTDOWN: 5  $\mu\text{A}$
- temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable image: 0°C to +60°C junction temperature
- output formats:** 10-bit RGB RAW, DPCM 10-8 compression
- lens chief ray angle:** 34.86° non-linear
- lens size:** 1/2.76"
- input clock frequency:** 6 - 64 MHz
- sensitivity:** 14,200  $e^-/\text{Lux}\cdot\text{sec}$  @ 530 nm in 4C bin mode
- max S/N ratio:** 37.8 dB
- dynamic range:** 64.8 dB @ 1x gain
- scan mode:** progressive
- pixel size:** 1.0  $\mu\text{m}$  x 1.0  $\mu\text{m}$
- dark current:** 4  $e^-/\text{sec}$  @ 60°C junction temperature
- image area:** 5257.73  $\mu\text{m}$  x 3951.36  $\mu\text{m}$
- die dimensions:**
  - COB: 6210  $\mu\text{m}$  x 4446  $\mu\text{m}$
  - RW: 6260  $\mu\text{m}$  x 4516  $\mu\text{m}$

## Functional Block Diagram



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