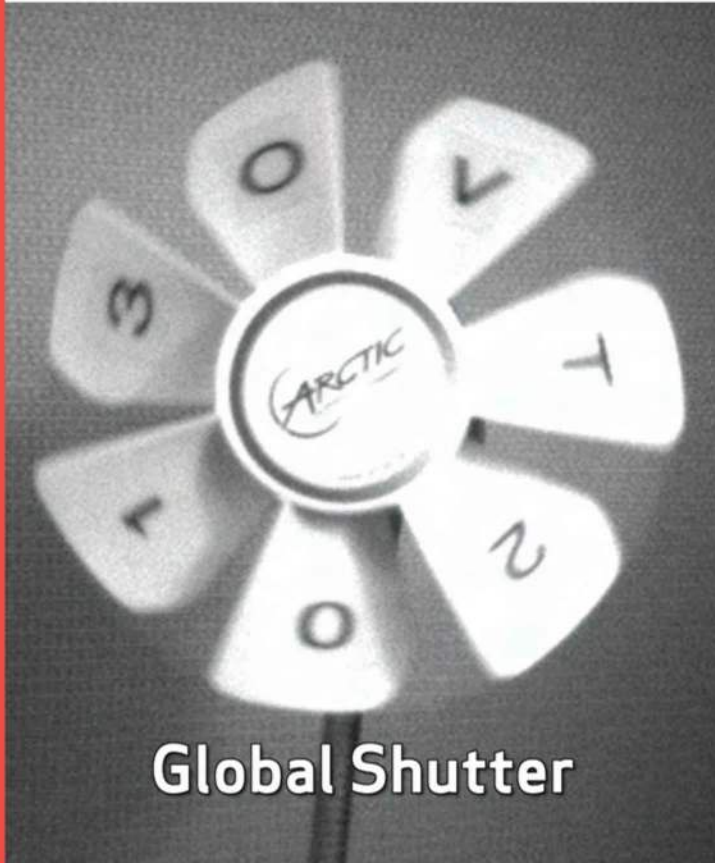
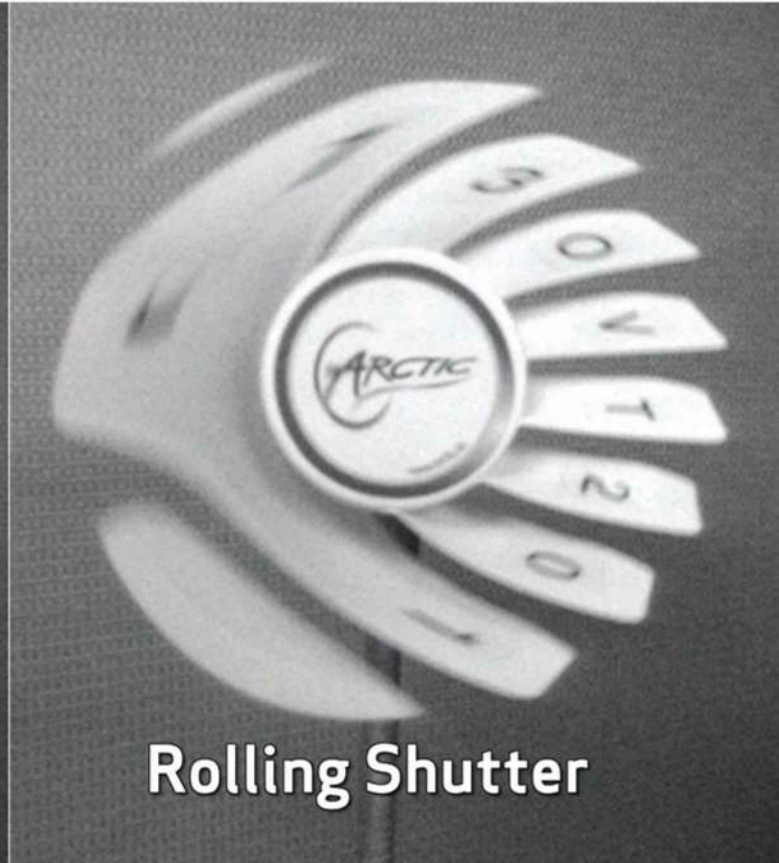


# OVM6211 400 x 400 product brief



**Global Shutter**



**Rolling Shutter**

## Compact Global Shutter CameraCubeChip™ Brings Computer Vision to Mobile Devices, Notebooks and Wearables



available in  
a lead-free  
package

OmniVision's high performance OVM6211 offers a number of advanced features, including gesture recognition, eye tracking and motion detection in the industry's smallest global shutter package. Its advanced functionality, easy adoption and compact form-factor make it an ideal camera solution for advanced space-constrained devices, such as smartphones, tablets, notebooks and wearables.

Featuring a 3-micron OmniPixel3-GS™ global shutter pixel, the OVM6211 is capable of capturing full resolution (400 x 400 pixels) video at 120 fps and features two low-power modes: light sensing mode and ultra-low power mode.

The OVM6211 CameraCubeChip™ will be available in two packages. The OVM6211-RADA is intended for human interface systems including eye tracking and will have a narrow field of view (FOV) at approximately 50 degrees. The OVM6211-RAHA is a complementary product intended for applications including gesture recognition and wearable devices and uses a lens with FOV wider than 90 degrees.

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



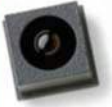
## Applications

- Eye Tracking
- Security and Surveillance
- Wearable Devices
- Toys and Games

## Product Features

- 3  $\mu\text{m}$  global shutter pixel
- programmable SCCB device ID
- automatic black level calibration (ABLC)
- one-lane MIPI serial output interface
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- embedded 128 bits of one-time programmable (OTP) memory for part identification, etc.
- two on-chip phase lock loop (PLL)
- supports output formats: 8/10-bit RAW
- programmable I/O drive capability
- supports images sizes:
  - 400 x 400
  - 200 x 200
  - 100 x 100
- built-in 1.5V regulator for core
- PWM
- fast mode switching
- built-in strobe control
- supports horizontal and vertical 2:1 and 4:1 monochrome subsampling
- ultra low power mode for ambient light sensor
- supports 2x2 monochrome binning
- standard serial SCCB interface

# OVM6211



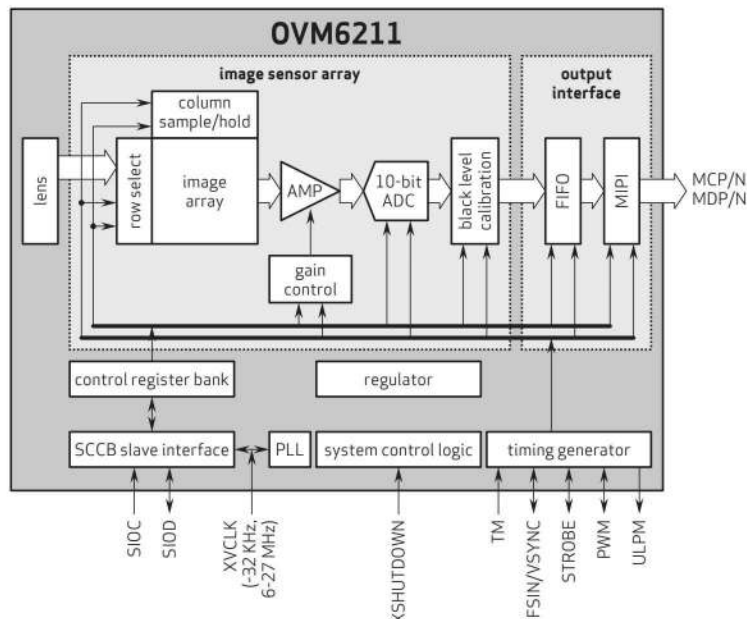
## Ordering Information

- **OVM6211-RADA** (B&W, lead-free) CameraCubeChip™ with black coating, 50° FOV
- **OVM6211-RAHA** (B&W, lead-free) CameraCubeChip™ with black coating, 90° FOV

## Product Specifications

- **active array size:** 400 x 400
- **max S/N ratio:** 37.5 dB
- **power supply:**
  - core: 1.5 VDC  $\pm$ 5%
  - analog: 2.6 - 3.0V
  - I/O: 1.7 - 3.0V
- **dynamic range:** 66.5 dB @ 8x gain
- **power requirements:**
  - active: 85 mW @ 120 fps
  - standby: 15  $\mu\text{A}$  for AVDD, 40/700  $\mu\text{A}$  for DOVDD with/without input clock
  - XSHUTDOWN: 5  $\mu\text{A}$  for AVDD, 5  $\mu\text{A}$  for DOVDD
- **maximum image transfer rate:**
  - 400 x 400: 120 fps
  - 200 x 200: 220 fps
  - 100 x 100: 380 fps
- **temperature range:**
  - operating: -30°C to +70°C junction temperature
  - stable image: 0°C to +50°C junction temperature
- **sensitivity:** 7190 mV/( $\mu\text{W}\cdot\text{cm}^2\cdot\text{sec}$ ) @ 850 nm  
2800 mV/Lux-sec @ 530 nm
- **scan mode:** progressive
- **output formats:** 8/10-bit RAW
- **maximum exposure interval:** 434 x  $t_{\text{row}}$
- **optical format:** 1/10.5"
- **pixel size:** 3  $\mu\text{m}$  x 3  $\mu\text{m}$
- **input clock frequency:** 6 - 27 MHz
- **dark current:** 2000 e<sup>-</sup>/s @ 50°C junction temperature
- **f no.:**
  - RADA: 3.1
  - RAHA: 2.4
- **image area:** 1248  $\mu\text{m}$  x 1248  $\mu\text{m}$
- **focal length:**
  - RADA: 1.681 mm
  - RAHA: 0.776 mm
- **net weight:**
  - RADA: 38.1 mg
  - RAHA: 59.9 mg
- **package dimensions (including ball height):**
  - RADA: 3230 x 3230 x 2450  $\mu\text{m}$
  - RAHA: 3230 x 3230 x 3920  $\mu\text{m}$

## Functional Block Diagram



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