

# OVM6946 400 x 400 product brief



## Compact, Cost-Effective Wafer-Level Camera Module for Single-Use Endoscopes



available in  
a lead-free  
package

OmniVision's OVM6946 is a compact camera module for medical applications such as minimally-invasive endoscopes. The 1/18-inch OVM6946 utilizes OmniVision's market-proven CameraCubeChip™ wafer-level module technology to streamline manufacturing processes and shorten time-to-market, and is the industry's most cost-effective single-chip imaging solution for single-use endoscopes.

Built on OmniVision's OmniBSI+™ pixel architecture, the OVM6946 captures high quality 400 x 400 resolution video at 30 frames per second (fps). The OVM6946

comes in a compact 1.05 mm x 1.05 mm package with a z-height of 2.27 mm, enabling a wide 120-degree field of view with an extended focusing range of 5 mm to 50 mm. The OVM6946 is well-suited to a wide range of endoscope applications, including medical, veterinarian, and industrial.

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



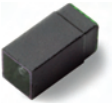
## Applications

- Medical, Dental, Veterinarian, Industrial Endoscopes

## Product Features

- optical size of 1/18"
- non-autoclavable
- analog output
- automatic/manual control of exposure and gain
- on-chip PLL
- low power consumption
- single 3.3V power supply
- serial peripheral interface (SPI)
- OmniBSI+™ pixel structure using 0.11 μm process

# OVM6946



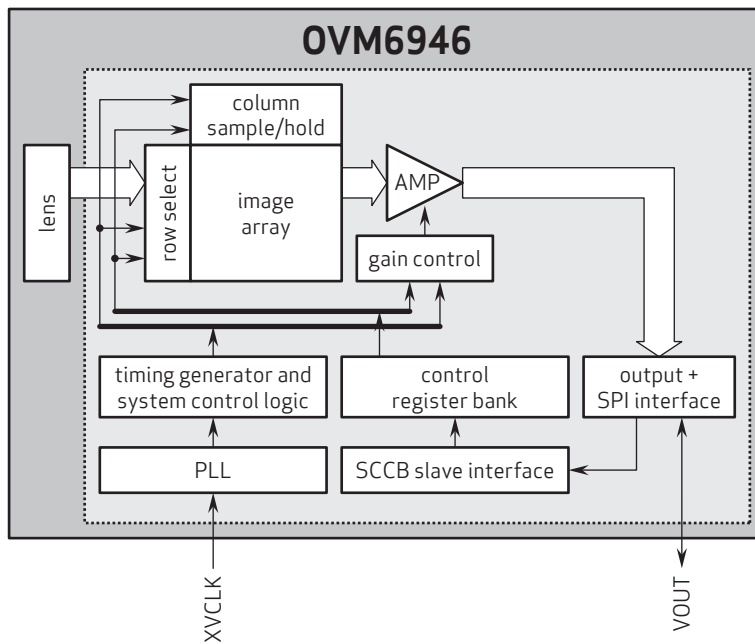
## Ordering Information

- OVM6946-RAJA  
(color, lead-free) CameraCubeChip™ with black coating

## Product Specifications

- active array size: 400 x 400
- power supply:  
- analog: 3.3V ± 5%
- power requirements:  
25 mW (with IO consumption)
- temperature range:  
- operating: -20°C to +70°C junction temperature  
- stable image: 0°C to +50°C junction temperature
- output formats: analog signal output
- lens size: 1/18"
- diagonal field of view (FOV): 120°
- f no.: 5.0
- focal length: 0.418 mm
- frame rate:  
- 160 Kpixel (400x400): 30 fps
- maximum exposure: 876 x T<sub>LINE</sub>
- minimum exposure time: 72.15 μs
- scan mode: progressive
- max S/N ratio: 36.8 dB
- dynamic range: 65.8 dB @ 4x gain
- sensitivity: 1000 mV/Lux-sec
- color mosaic: RGB Bayer pattern
- pixel size: 1.75 μm x 1.75 μm
- dark current: 42 e<sup>-</sup>/sec @ 60°C junction temperature
- image area: 714 μm x 707 μm
- net weight: 4.62 mg
- package dimensions (including ball height): 1050 x 1050 x 2266 μm

## Functional Block Diagram



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