

0VM6946 400 x 400 product brief





available in a lead-free package

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

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 compact 1.10 mm x 1.10 mm packages with z-heights of 2.37 or 2.27 mm, enabling a 90° or 120° diagonal field of view. The OVM6946 is well-suited to a wide range of endoscope applications, including medical, veterinarian, and industrial.

Find out more at www.ovt.com.





Applications

■ Medical, Dental, Veterinarian, Industrial Endoscopes

OVM6946



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
- extra black coating versions available

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

Technical Specifications

- active array size: 400 x 400
- frame rate:
- **160 Kpixel (400x400):** 30 fps
- 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):
- RAJA: 120° RANA: 90°

- f no.: RAJA: 5.0 - RANA: 4.0

- focal length: RAJA: 0.418 mm RANA: 0.505 mm
- scan mode: progressive
- color mosaic: RGB Bayer pattern
- pixel size: 1.75 µm x 1.75 µm
- image area: 714 μm x 707 μm
- net weight: 4.62 mg
- package dimensions (including ball height):
 RAJA: 1100 × 1100 × 2266 µm
 RANA: 1100 × 1100 × 2362 µm

Functional Block Diagram



