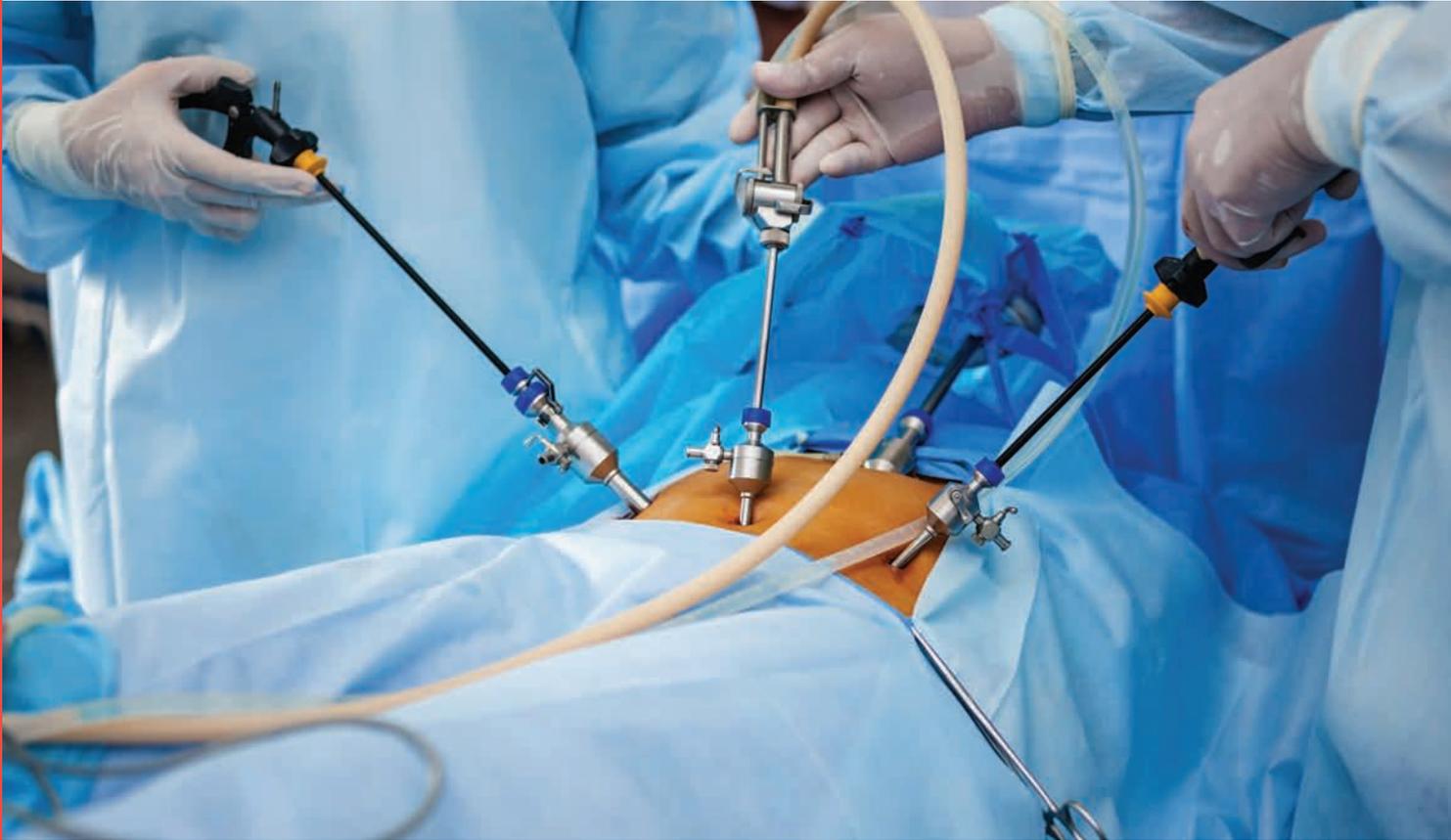# OVM6948 200 x 200 product brief

lead free

available in
a lead-free
package

Miniature Camera Module Provides High-Quality Imaging for Disposable Medical Guidewires, Catheters and Endoscopes

OmniVision's OVM6948 CameraCubeChip™ is a fully packaged, wafer-level camera module measuring 0.65 mm x 0.65 mm, with a z-height of just 1.158 mm, ideal for disposable devices operating from the smallest part of the anatomy. The camera module is derived from an ultra small image sensor, the OV6948, winner of the Guinness World Record for "The Smallest Commercially Available Image Sensor*," with its size of 0.575 mm x 0.575 mm. This complete module can be integrated into a disposable guidewire, catheter or endoscope with a diameter as small as 1.0 mm. With this camera's small size and high 200 x 200, or 40 KPixel backside-illuminated resolution, high quality images can be captured from within the body's narrowest blood vessels for neuro, ophthalmic, ENT, cardiac, spinal, urology, gynecology and arthroscopy procedures.

The OVM6948 is the only ultra small "chip on tip" camera with backside illumination, which provides excellent image quality and better low-light performance to help reduce LED heat, along with improved sensitivity. It offers a compact, high quality solution for disposable guidewires, catheters and endoscopes, which are experiencing growing demand because of their ability to reduce cross-contamination risks, downtime inefficiencies and costs associated with the repairs, preprocedural testing and sterilization of reusable endoscopes. Benefiting from the sensor's low power consumption of a mere 25 mW, less heat is generated for better patient comfort and flexible procedure durations.

Other key features of this camera module include a wide 120-degree field of view and an extended focus range of 3 mm to 30 mm. Its image array is capable of capturing 200 x 200 resolution images and video at up to 30 frames per second, and its analog output that can transmit over 4 meters with minimal noise.

Find out more at www.ovt.com.

Omni Vision.®

Applications

- Disposable Medical Endoscopes and Catheters
- Dental Equipment
- Security and Surveillance
- Toys and Games
- Wearable Devices
- IoT

OVM6948

Ordering Information

- **OVM6948-RALA** (color, lead-free) CameraCubeChip™ with black coating

Product Features

- optical size of 1/36"
- non-autoclavable
- analog output
- low power consumption
- single 3.3V power supply
- OmniBSI™+ pixel structure using 0.11 µm process

Product Specifications

- **active array size:** 200 x 200
- **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
- **optical size:** 1/36"
- **diagonal field of view (FOV):** 120°
- **f no.:** 2.8
- **focal length:** 0.175 mm

- **maximum exposure:** 792 x T_{line}
- **scan mode:** progressive
- **frame rate:**
  - **40 Kpixel (200x200):** 30 fps
- **max S/N ratio:** 34.4 dB
- **dynamic range:** 60.2 dB @ 1x gain
- **sensitivity:** 1000 mV/lux-sec
- **color mosaic:** RGB Bayer pattern
- **pixel size:** 1.75 µm x 1.75 µm
- **image area:** 364 µm x 364 µm
- **net weight:** 0.87 mg
- **package dimensions (including ball height):** 650 x 650 x 1158 µm

Functional Block Diagram
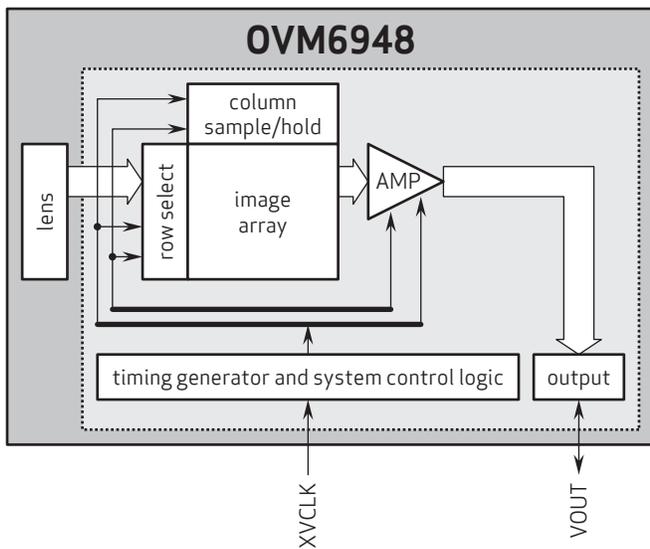
* Current Guinness World record title issued to OmniVision Technologies, Inc.: Smallest Commercially Available Image Sensor. The smallest commercially available image sensor is the OV6948, measuring 0.575 mm x 0.575 mm x 0.232 mm, made by OmniVision Technologies, Inc. (USA). The record is based on product testing and market research carried out by Transparency Market Research in Pune, India, on 10 April 2019.

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