

OV6948 200 x 200 product brief



The World's Smallest Commercially Available Image Sensor with Industry-Leading Resolution and Image Quality for Medical Applications



available in
a lead-free
package

OmniVision's OV6948 is the winner of the Guinness World Record for "The Smallest Commercially Available Image Sensor*," with its size of 0.575 mm x 0.575 mm. Initially developed for small-outer-diameter medical endoscopes and catheters, the OV6948 can be designed into a wide range of applications, including dental, veterinary, internet-of-things (IoT), industrial, wearable and forensic devices. The OV6948 leverages OmniVision's proven OmniBSI™+ pixel technology to deliver best-in-class image quality and low-light performance.

The OV6948 has an 1/36-inch optical format and an image array capable of capturing 200 x 200 resolution video at up to 30 frames per second (fps).

It offers exceptional low-light sensitivity of 1000 mV/lux-sec, and using OmniVision's proprietary sensor technology, delivers excellent image quality in terms of color fidelity, sharpness and low noise.

Due to the sensor's low power consumption, less heat is generated at the distal tip of the endoscope, improving patient comfort and thus permitting longer-duration procedures. The sensor enables easy integration, with a 4-pin interface and analog data output, capable of data transmission of up to 4 meters with minimal signal noise.

Find out more at www.ovt.com.



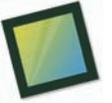
Applications

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

Product Features

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

OV6948



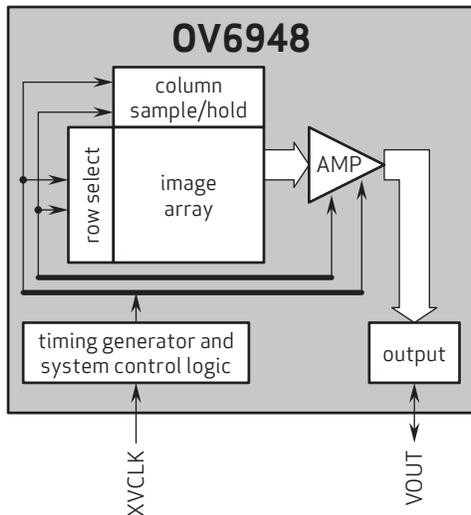
Ordering Information

- **OV06948-H04A-Z** (color, lead-free)
4-pin CSP

Product Specifications

- **active array size:** 208 x 208
- **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 format:** analog signal output
- **optical size:** 1/36"
- **exposure time:** 792 x Tline
- **lens chief ray angle:**
supports lens up to 25° CRA
- **scan mode:** progressive
- **frame rate:**
- 200 x 200: 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
- **package dimensions:** 575 μm x 575 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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