

SMALLEST PACKAGE FOR MINIMALLY INVASIVE APPLICATIONS

- Best-in-class low-light performance
- 1.8 mm x 1.8 mm footprint

▶▶ [Learn More](#)



Medical Imaging

Enhancing Vision, Advancing Medicine

Overview

OmniVision Enables Medical Technology

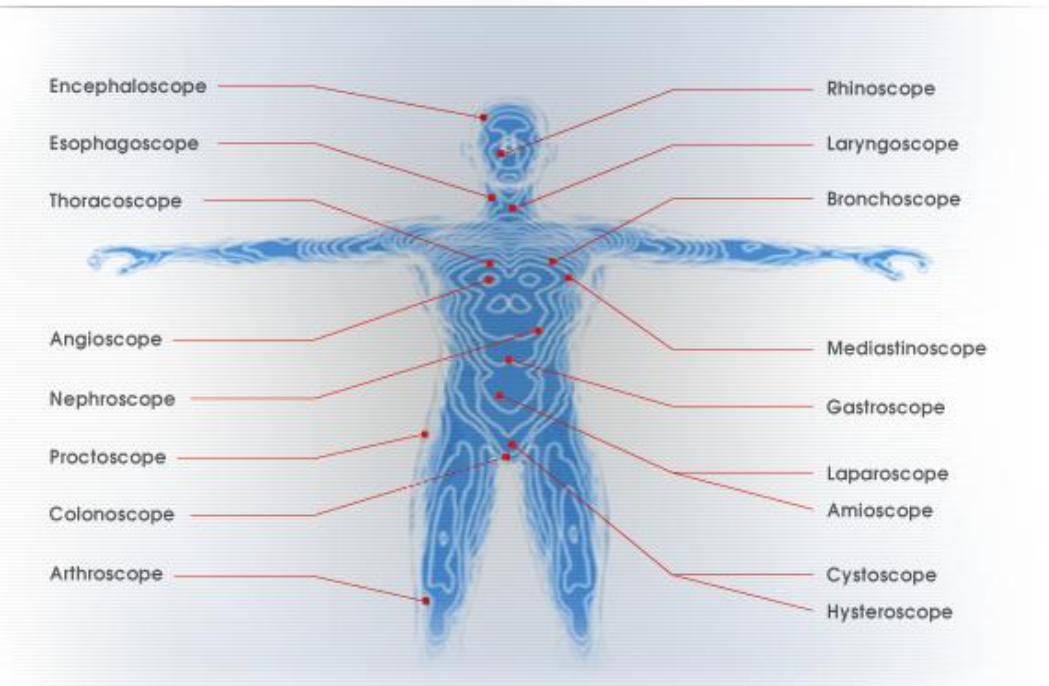
Continued innovation in CMOS image sensor technology is enabling a host of new medical imaging applications that improve quality of life, and sometimes save lives. OmniVision is at the forefront of developing the latest technologies for medical imaging applications, which range from small, disposable diagnostic cameras, to smaller endoscopic tools, and even to prosthetic eyes. OmniVision's ongoing developments and achievements in digital imaging technology are enabling entirely new products for minimally invasive medical procedures, such as ultra-small, flexible scopes for gastro-intestinal applications.

Through continued pixel miniaturization and unsurpassed low-light performance, OmniVision enables real world implementation of vision in medical devices. Its OmniPixel3-HS™ and OmniBSI™ pixel architectures enable significant improvements in quantum efficiency and reductions in crosstalk in CMOS imagers, and its CameraCube™ technology enables cost-effective complete, high-quality miniature cameras. These advances mean that medical equipment manufacturers can develop very small, disposable diagnostic cameras that increase patient comfort and care provider's ease of use and diagnostic accuracy.

OmniVision's portfolio of medical sensors deliver high quality still and video images, and are fully customizable so that customers can develop solutions that address their specific imaging requirements.

CMOS Image Sensor Market Leader

OmniVision is the world's largest supplier of CMOS image sensors with over 25 percent of unit shipments in 2008. The company is rapidly expanding into emerging markets, with non-mobile products expected to account for more than 35 percent of sales by 2010. Committed to developing the most cutting-edge digital imaging technologies for the rapidly evolving medical device market, OmniVision is well positioned for leadership as CMOS image sensors are expected to surpass CCD shipments by 2011.



CMOS technology has proven to be preferred over CCD and fiber optic, enabling its wider use in medical imaging applications

CMOS image sensors are seeing increasing market share for medical applications due to their many benefits over fiber optic and CCD technologies.

Introduced over 30 years ago, CCDs were long the premier image capture technology until the mid to late nineties when CMOS image sensors selectively gained acceptance. The main obstacle towards wider market acceptance was the fact that CCD cameras offered better image quality than CMOS. Since then, OmniVision has perfected its CMOS pixel architecture and process technology to surpass the performance and capabilities of CCD components and by 2004, CMOS surpassed CCD as the premier image capture technology.

CMOS sensors also consume significantly less power than CCDs, a major advantage as electronics continue to shrink in profile. In terms of image processing, CCD's do not readout as fast, so they are not suitable for full-HD video, unlike CMOS sensors.

Fiber optic bundles offer another approach to capture images in minimally invasive imaging applications but relative to CMOS sensors, they offer lower resolution due to the limit of the number of fibers that can be used in the available space. Additionally, fiber optic bundles are costly compared to CMOS image sensors and they are relatively rigid, hindering their ability to transmit information over a long distance (as in the case of a flexible endoscope).

The rapid adoption of CMOS imaging technology in recent years is largely contributed to its inherent benefits - including higher integration and a lower overall system bill-of-materials as compared to CCD-based cameras or fiber optic bundles. The CMOS production process enables the integration of all camera functions on a single chip, significantly reducing chip count, cost and board space. The relative simplicity of OmniVision's CMOS image sensors allows for quick and easy application designs, enabling faster time-to-market for systems manufacturers.

OmniVision's Medical Imaging Technologies

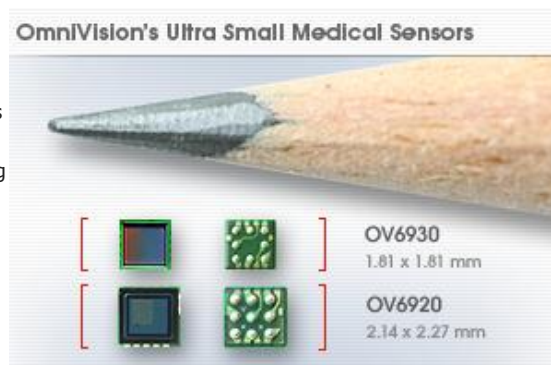
Each OmniVision image sensor offers an application-specific package tailored to address the very stringent and specific requirements of the medical device industry. OmniVision has developed some of the world's smallest imaging solutions through its advanced approach to packaging design and device miniaturization.

OmniVision's proprietary OmniPixel3-HS technology has enabled the design and development of ultra small medical sensors (1.8 mm) with best-in-class low light performance of 3300 mV/lux-second. Currently, no other CMOS image sensor on the market can claim such high performance and sensitivity in such a small form factor, making OmniPixel3-HS a very compelling solution for the medical devices such as endoscopes and other applications where

there is no natural light source to assist with the image capture.

On the backend, OmniVision's CameraCube technology offers an extremely attractive complete camera solution including image sensor, embedded ISP and wafer-level optics, enabling customers to develop very small, disposable cameras that improve patient comfort and care providers' ease of use as well as diagnostic accuracy.

OmniVision delivers the medical industry's most complete product offering



OmniVision offers the broadest portfolio of CMOS image sensors on the market, from sub-VGA to 9-megapixel solutions, available in the industry's broadest selection of package options. Package customization is available to meet specific market needs and all products are delivered with evaluation kits, software and development platforms.

Leading OmniVision Image sensors for medical applications include:

OV6922 NTSC Camera on Chip

- 2.1mm x 2.2 mm
- 9-pin CSP2 package
- 2-wire NTSC output
- NTSC output
- SCCB interface control
- 1/18" optical format

OV6930 1.8mm 400x400 analog

- 1.8mm x 1.8 mm, 8-pin CSP3 package
- 400x400 pixel array
- 3300 mV/lux-sec sensitivity
- Patent pending 2-wire analog output up to 14ft
- SCCB interface control
- 1/10" optical format

SMALLEST PACKAGE FOR MINIMALLY INVASIVE APPLICATIONS

- Best-in-class low-light performance
- 1.8 mm x 1.8 mm footprint


[▶▶ Learn More](#)

Medical Imaging


Enhancing Vision, Advancing Medicine

Products


OV5653

Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Package Size	Product Brief
66-pin CSP3	5 MP	1/3.2"	1.75 μm	60 @ 720p 30 @ 1080p 15 @ Full	RAW RGB	6505 x 6005 μm	



OV6922

Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Package Size	Product Brief
9-pin CSP2	320 x 240	1/18"	2.5 μm	60 fields/sec	NTSC	2135 x 2265 μm	


OV6930

Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Package Size	Product Brief
8-pin CSP3	400 x 400	1/10"	3.0 μm	60 @ 400 x 200 30 @ Full	Analog	1815 x 1815 μm	


OV7740

Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Package Size	Product Brief
32-pin CSP3	VGA	1/5"	4.2 μm	120 @ QVGA 60 @ Full	RAW RGB, YUV	4185 x 4345 μm	
Wafer	VGA	1/5"	4.2 μm	120 @ QVGA 60 @ Full	RAW RGB, YUV	4200 x 4360 μm	


OV7960

Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Package Size	Product Brief
62-pin aCSP	NTSC	1/3.6"	6.0 μm	60 fields/sec	NTSC	6670 x 7120 μm	



OV7962

Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Package Size	Product Brief
62-pin CSP4	VGA	1/3.2"	6.0 μm	60 @ QVGA 30 @ WVGA 30 @ Full	RAW RGB, RGB, YUV, PAL	6680 x 7130 μm	

OV8810


Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Package Size	Product Brief
67-pin CSP3	8 MP	1/3.2"	1.4 μm	60 @ 720p 60 @ VGA 30 @ 1080p 10 @ Full	RAW RGB	6235 x 6535 μm	

OV9715

Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Package Size	Product Brief
48-pin QFP2	720p 1 MP	1/4"	3.0 μm	60 @ 640 x 400 30 @ 720p	RAW RGB	12.00 x 12.00 mm	
28-pin CSP2	720p 1 MP	1/4"	3.0 μm	60 @ 640 x 400 30 @ 720p	RAW RGB	5415 x 4415 μm	

OVM7690

Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Package Size	Product Brief
----------------	-------------------	-----------------------	-------------------	-------------------	----------------------	---------------------	----------------------

20-pin Module	VGA	1/13"	1.75 μ m	60 @ QVGA 30 @ Full	RAW RGB, RGB, YUV	2517 x 2967 x 2465 μ m	
---------------	-----	-------	--------------	------------------------	-------------------	-------------------------------	--

OVM7692

Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Package Size	Product Brief
25-pin Module	VGA	1/13"	1.75 μ m	60 @ QVGA 30 @ CIF 30 @ Full	RAW RGB, RGB, YUV	2835 x 3199 x 2472 μ m	