

# COLOR HDR MEGAPIXEL SOC

- 360° surround, wide FOV and multi-camera systems
- Simultaneous vision and sensing functionality
- 100+ dB color HDR; 3.5 V/lux-sec sensitivity

▶▶ [Learn More](#)

## Automotive Imaging

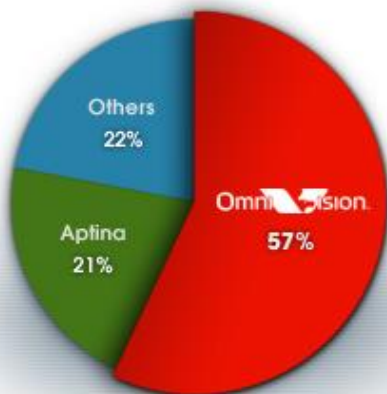
Dynamic Vision for the Road Ahead

### Overview

Through improvements in the quality and reliability of electronic components, safety-related imaging applications are becoming mainstream in today's vehicles, including lane departure detection and warning systems, blind spot detection/displays, rear view, 360°/panoramic view cameras, and night vision.

### Automotive Market Leadership

CY 2009 CMOS unit shipments



Source: TSR, CCD/CMOS Report June 2010

According to leading third-party market research firm Techno Systems Research (TSR), the percentage of integrated vehicle cameras using CMOS sensors is projected to increase from around 20 percent in 2008 to more than 70 percent in 2013.

OmniVision Technologies (OVT) is the leading provider of CMOS imaging solutions to the automotive industry with over 50 percent market share\* and a proven track record in delivering innovative solutions specifically designed to serve the unique requirements of the automotive industry.

At the forefront of innovation and industry expertise, OmniVision's rich portfolio of AutoVision solutions provides today's automotive designers with the industry's broadest selection of sensors, evaluation kits, and development platforms, enabling faster time-to-market and substantially reduced system costs for both display based and machine vision applications.

### Advantage of CMOS

AutoVision solutions deliver the inherent advantages of CMOS, including higher integration and a lower overall bill-of-material cost, while exceeding the performance of competing CCD solutions. With advanced image signal

processing capabilities, AutoVision solutions deliver vivid image capture in the most challenging lighting conditions. According to industry analysts, CMOS sensors are projected to represent more than four times the unit sales of CCD units by 2012.

### Commitment to Quality

OmniVision conducts over 50 different tests on each and every one of its sensors to ensure they meet the highest imaging quality standards. To ensure the highest standards of performance and reliability are met, all OmniVision automotive solutions are AEC-Q100 qualified.



The OVT automotive design team has placed a strong emphasis on package and test engineering. OVT automotive components are designed specifically to ensure reliable operation in harsh environments; resisting extreme temperatures, vibration and humidity.

### World's Smallest Automotive Package

OVT now offers its latest automotive sensors in the AutoVision chip-scale package (aCSP™), placing OVT at the forefront of packaging technology, including the industry's smallest automotive package (6.67 mm x 7.12 mm x 0.71 mm) - up to 50 percent smaller than competing CMOS devices.

### Machine Vision and Display Based Applications

- Lane Departure
- Pedestrian Detection
- Road Sign Detection
- Headlight Dimming
- Rain Detection
- Smart Airbag
- Blind Spot Detection
- Driver Monitor
- Collision Detection

**Machine Vision**      Display Based

**Machine vision** is the ability of a an embedded unit (ECU) to automatically acquire and analyze images through the use of image sensors for the purpose of obtaining data and controlling specific functions.

### Unique Approach to Distortion Correction

Realizing that electronic distortion correction has major disadvantages such as latency, loss of image resolution, and additional processing/heat source, OmniVision has worked closely with lens partners to develop a unique distortion corrected lens solution, resulting in optimized system performance, superior overall image quality, lowest possible system cost and faster time-to-market.

## Electronic Distortion Correction



Taken with DSL216, 187 HFOV Lens



De-warped with electronic distortion correction

## Optical Distortion Correction



130° lens without any distortion correction



**OmniVision Approach**  
Optical distortion with lens only distortion correction



**Competitor Approach**  
After on-chip electronic distortion correction

\*Source: TSR, 2009 CCD/CMOS Area Image Sensor Market Analysis

# COLOR HDR MEGAPIXEL SOC

- 360° surround, wide FOV and multi-camera systems
- Simultaneous vision and sensing functionality
- 100+ dB color HDR; 3.5 V/lux-sec sensitivity


▶▶ [Learn More](#)

## Automotive Imaging


Dynamic Vision for the Road Ahead

### Products

#### OV10121

Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Temperature	Product Brief
48-pin QFP	VGA	1/3.3"	6.0 µm	60 @ QVGA 30 @ Full	RAW RGB, YUV, HDR	TBD	

#### OV10131

Package	Resolution	Optical Format	Pixel Size	Frame Rate	Output Format	Temperature	Product Brief
76-pin aCSP	720p 1 MP	1/2.7"	4.2 µm	30 @ Full	RAW, YUV, B/W	Stable: 0° - 50°C Operating: -40° - 105°C	

#### OV10620


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

48-pin CLCC	VGA	1/3.3"	6.0 μm	60 @ QVGA 30 @ Full	RAW RGB, YUV, HDR	TBD	
48-pin QFP	VGA	1/3.3"	6.0 μm	60 @ QVGA 30 @ Full	RAW RGB, YUV, HDR	TBD	


### **OV10630**

<b>Package</b>	<b>Resolution</b>	<b>Optical Format</b>	<b>Pixel Size</b>	<b>Frame Rate</b>	<b>Output Format</b>	<b>Temperature</b>	<b>Product Brief</b>
76-pin aCSP	720p 1 MP	1/2.7"	4.2 μm	30 @ Full	RAW RGB, RGB, YUV	Stable: 0° - 50°C Operating: -40° - 105°C	





### **OV7211**

<b>Package</b>	<b>Resolution</b>	<b>Optical Format</b>	<b>Pixel Size</b>	<b>Frame Rate</b>	<b>Output Format</b>	<b>Temperature</b>	<b>Product Brief</b>
48-pin QFP2	VGA	1/4"	6.0 μm	60 @ QVGA 30 @ Full	RGB, YUV	TBD	



### **OV7451**

<b>Package</b>	<b>Resolution</b>	<b>Optical Format</b>	<b>Pixel Size</b>	<b>Frame Rate</b>	<b>Output Format</b>	<b>Temperature</b>	<b>Product Brief</b>
48-pin QFP2	656 x 406	1/4"	6.0 μm	60 fields/sec	NTSC	TBD	



### **OV7461**

<b>Package</b>	<b>Resolution</b>	<b>Optical Format</b>	<b>Pixel Size</b>	<b>Frame Rate</b>	<b>Output Format</b>	<b>Temperature</b>	<b>Product Brief</b>
48-pin CLCC	NTSC	1/3.6"	6.0 μm	60 fields/sec	NTSC	Operating: -20° - 70°C	
48-pin CLCC	PAL	1/3"	6.0 μm	50 fields/sec	PAL	Stable: 0° - 50°C Operating: -20° - 70°C	
62-pin aCSP	NTSC	1/3.6"	6.0 μm	60 fields/sec	NTSC	TBD	
62-pin aCSP	PAL	1/3"	6.0 μm	50 fields/sec	PAL	Operating: -40° - 105°C	




### **OV7710**

<b>Package</b>	<b>Resolution</b>	<b>Optical Format</b>	<b>Pixel Size</b>	<b>Frame Rate</b>	<b>Output Format</b>	<b>Temperature</b>	<b>Product Brief</b>
48-pin CLCC	VGA	1/4"	6.0 μm	60 @ QVGA 30 @ Full	RAW RGB, RGB, YUV	TBD	
48-pin QFP2	VGA	1/4"	6.0 μm	60 @ QVGA 30 @ Full	RAW RGB, RGB, YUV	TBD	

### **OV7949**

<b>Package</b>	<b>Resolution</b>	<b>Optical Format</b>	<b>Pixel Size</b>	<b>Frame Rate</b>	<b>Output Format</b>	<b>Temperature</b>	<b>Product Brief</b>
48-pin CLCC	510 x 496	1/3"	9.2 x 7.2 $\mu$ m	60 fields/sec	NTSC	TBD	
48-pin CLCC	628 x 586	1/3"	9.2 x 7.2 $\mu$ m	50 fields/sec	PAL	TBD	




### **OV7950**

<b>Package</b>	<b>Resolution</b>	<b>Optical Format</b>	<b>Pixel Size</b>	<b>Frame Rate</b>	<b>Output Format</b>	<b>Temperature</b>	<b>Product Brief</b>
48-pin CLCC	656 x 406	1/4"	6.0 $\mu$ m	60 fields/sec	NTSC	TBD	
48-pin QFP2	656 x 406	1/4"	6.0 $\mu$ m	60 fields/sec	NTSC	TBD	
48-pin MiniPak	656 x 406	1/4"	6.0 $\mu$ m	60 fields/sec	NTSC	TBD	


### **OV7952**

<b>Package</b>	<b>Resolution</b>	<b>Optical Format</b>	<b>Pixel Size</b>	<b>Frame Rate</b>	<b>Output Format</b>	<b>Temperature</b>	<b>Product Brief</b>
48-pin QFP2	NTSC	1/3.6"	6.0 $\mu$ m	50 fields/sec	NTSC	Operating: -40° - 85°C	n/a

### **OV7960**

<b>Package</b>	<b>Resolution</b>	<b>Optical Format</b>	<b>Pixel Size</b>	<b>Frame Rate</b>	<b>Output Format</b>	<b>Temperature</b>	<b>Product Brief</b>
48-pin CLCC	NTSC	1/3.6"	6.0 $\mu$ m	60 fields/sec	NTSC	TBD	
48-pin CLCC	PAL	1/3"	6.0 $\mu$ m	50 fields/sec	PAL	TBD	
62-pin aCSP	NTSC	1/3.6"	6.0 $\mu$ m	60 fields/sec	NTSC	Operating: -40° - 105°C	

### **OV7962**

<b>Package</b>	<b>Resolution</b>	<b>Optical Format</b>	<b>Pixel Size</b>	<b>Frame Rate</b>	<b>Output Format</b>	<b>Temperature</b>	<b>Product Brief</b>
62-pin aCSP	VGA	1/3.2"	6.0 $\mu$ m	60 @ QVGA 30 @ Full	RAW RGB, RGB, YUV, NTSC	TBD	

### **OV9715**

<b>Package</b>	<b>Resolution</b>	<b>Optical Format</b>	<b>Pixel Size</b>	<b>Frame Rate</b>	<b>Output Format</b>	<b>Temperature</b>	<b>Product Brief</b>
48-pin QFP2	720p 1 MP	1/4"	3.0 $\mu$ m	60 @ 640 x 400 30 @ 720p	RAW RGB	Stable: 0° - 50°C	