



IMT-1B12E005-6

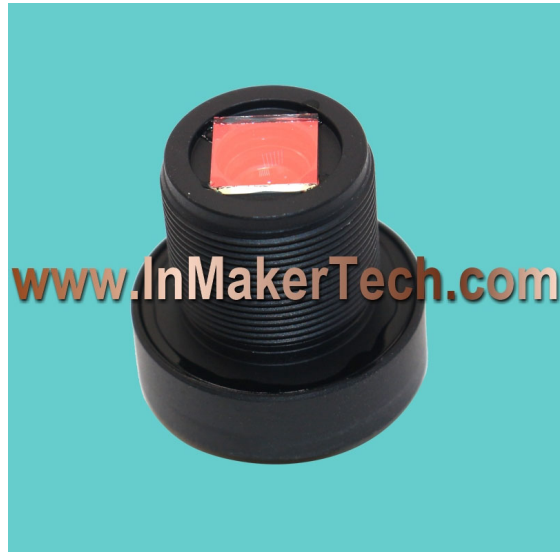
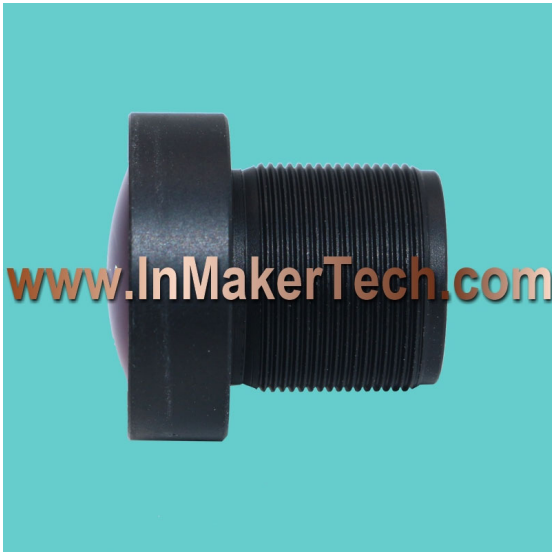
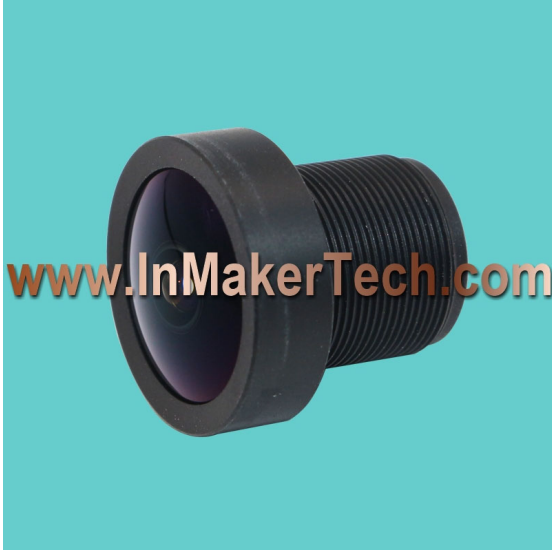
1/3" 5MP CSP F2.5 DFOV 170 Degree M12 Lens



Lens Model	IMT-1B12E005-6
Sensor Format	1/3"
Resolution	5 MP
Sensor Type	CSP
Structure	5G + IR Filter
Max Image Circle	Ø6.4
F/NO.	2.5 +/- 5%
EFL (mm)	2.30
TTL (mm)	20.10
FOV	Field of View
Diagonal DFOV	170°
Horizontal HFOV	130°
Vertical VFOV	84°
TV Distortion	<35%
CRA	<14°
Lens Filter	650nm +/- 10nm @50%
Barrel	M12*P0.5
KLT Camera Modules	KLT-USB1A-OV10635 V1.0
Use IMT Made Lenses	KLT-USB1A-AR0330 V1.0

IMT-1B12E005-6

1/3" 5MP CSP F2.5 DFOV 170 Degree M12 Lens



IMT Lens on
the real
Camera

KLT is our
Camera
Modules
Design and
Manufacture
Partner

www.KaiLapTech.com

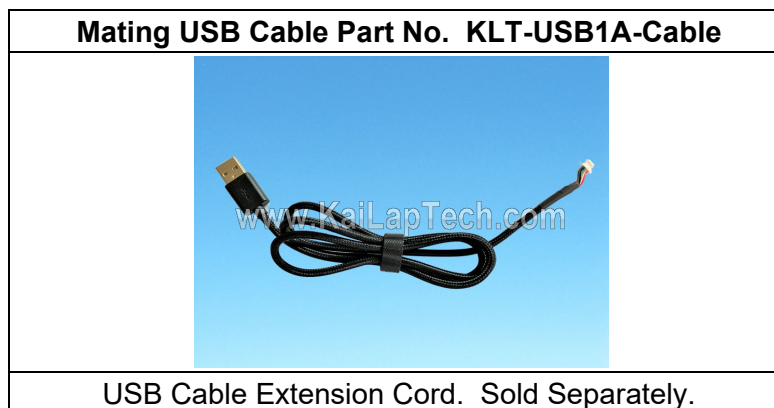


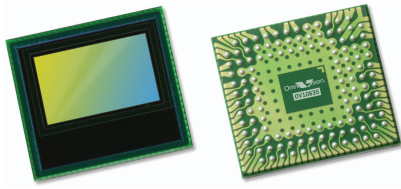
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KLT-USB1A-OV10635 V1.0**OmniVision OV10635 USB Interface Fixed Focus 1MP Camera Module**

Camera Module No.	KLT-USB1A-OV10635 V1.0	
Image Sensor	OV10635	Output Format: MJPG, YVY2
EFL	2.3 mm	30 FPS 640 x 480 (VGA)
F.NO	2.5	30 FPS 1280 x 720 (HD 720P)
Pixel	1280 x 800	30 FPS 1920 x 1080 (Full HD)
View Angle	170°	Supporting OS
Lens Type	1/2.7 inch	Windows 7, 8.1, 10, Vista
Lens Dimensions	13.00 x 13.00 x 20.92 mm	Windows XP SP2 under UVC
Module Size	30.50 x 28.50 mm	Linux Kernel V2.6.2.1 or later
Module Type	Fixed Focus	MAC OS 10.4 or later
IMT Lens Model	IMT-1B12E005-6	Operating Voltage: 5V +/- 5%
Interface	USB 2.0	Compliant with UVC Version 1.0





OV10635 HD HDR product brief



Megapixel, Color HDR Sensors for Advanced Automotive Display and Sensing Applications



available in a lead-free package

The OV10635 system-on-chip (SoC) sensor raises the standard in automotive imaging by combining megapixel resolution with color HDR. The AEC-Q100 qualified OV10635 comes with a full set of automatic controls and an image processing pipeline for display and sensing applications. Ideally suited for wide field of view and multi-camera applications, the OV10635 also incorporates special features and output formats for automotive machine vision applications. With its proprietary capability to simultaneously deliver high image quality and superior scene information, the OV10635 is designed for automotive applications that perform vision and sensing functions in tandem.

The sensor is built on a 4.2-micron OmniPixel3-HS™ pixel, enabling best-in-class low-light sensitivity of 3.65 V/lux-sec to capture detail-rich, high-definition color video in any environment. Using a proprietary new high dynamic range (HDR) concept and processing technology, this automotive sensor delivers excellent scene reproduction in the most demanding lighting conditions, achieving a dynamic range up to 115 dB in color and black-and-white. The OV10635 not only has the ability to accurately reproduce high-contrast scenes, but also employs auto dynamic range control to adjust to changing lighting and scene conditions to produce a clear, detailed and low-noise

color image in any automotive situation. A proprietary approach to generating HDR images also dramatically reduces or eliminates many typical HDR image sensor artifacts such as motion ghost artifacts and other unwanted effects.

The OV10635 offers all required automatic image control functions, including automatic exposure control, automatic white balance, automatic black level calibration, as well as defective pixel correction, gamma correction and lens shading correction. The sensor supports a digital video parallel port, and provides full-framed or windowed 10- or 8-bit YUV and 10- to 18-bit combined HDR RAW output format with complete user control over formatting and output data transfer.

Camera functions are programmable through the serial camera control bus (SCCB) interface. Additional features include a horizontal and vertical windowing capability, external frame sync capability, 50/60 Hz flicker cancellation and low power consumption.

The OV10635 comes in a 7.8 mm x 7.1 mm aCSP package.

Find out more at www.ovt.com.

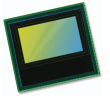
Applications

- Automotive
 - 360° surround view
 - automotive machine vision
 - lane departure warning
 - traffic sign recognition
 - automatic high beam control
 - object detection
- pedestrian detection
- rear view camera
- blind spot detection
- mirror replacement
- occupant sensor
- night vision

Product Features

- support for image sizes:
 - WXGA (1280x800)
 - HD 720p (1280x720)
 - WVGA (752x480)
 - VGA (640x480)
 - 600x400
 - CIF (352x288)
 - QVGA (320x240)
- support for output formats: YUV and separated and combined RAW
- parallel DVP interface
- high sensitivity
- automatic exposure/gain
- horizontal and vertical windowing capability
- auto white balance control
- aperture/gamma correction
- serial camera control bus (SCCB) for register programming
- low power consumption
- external frame sync capability
- 50/60 Hz flicker cancellation
- defective pixel correction

OV10635/OV10135



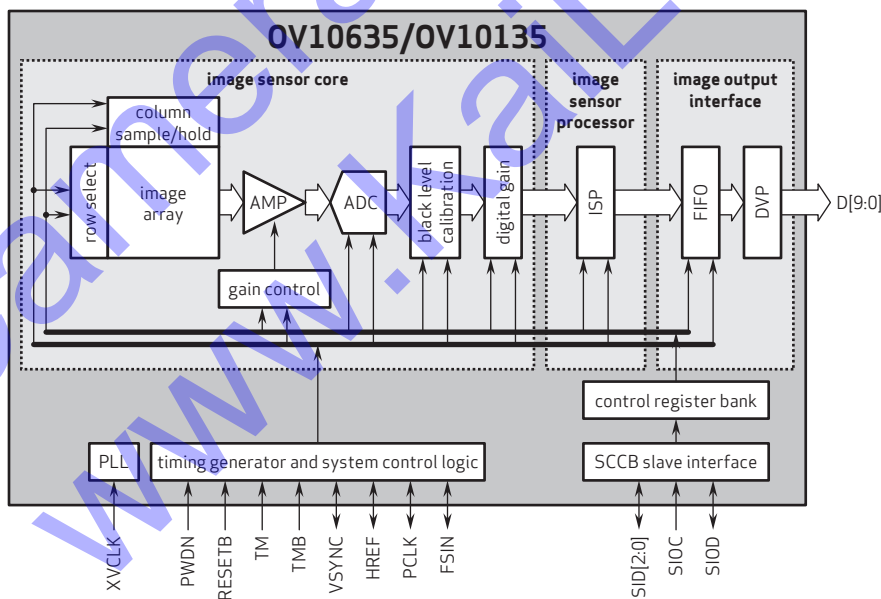
Ordering Information

- OV10635-N29Y-PB**
(color sensor with protective film in tray, lead-free, 129-pin aCSP™)
- OV10635-N29Y-RB**
(with protective film in tape and reel, lead-free, 129-pin aCSP™)
- OV10135-N29Y**
(b&w sensor with protective film in tray, lead-free, 129-pin aCSP™)

Product Specifications

- active array size:** 1280 x 800
- lens chief ray angle:** 9°
- power supply:**
 - core: 1.425 - 1.575V
 - analog: 3.14 - 3.47V
 - I/O: 1.7 - 3.47V
- input clock frequency:** 6 - 27 MHz
- max S/N ratio:** 39 dB
- dynamic range:** 115 dB
- power requirements:**
 - active: 485 mW typical @ 3.3V AVDD, 1.5V DVDD, and 1.8V DOVDD
 - standby: 267 μW typical @ 3.3V AVDD, 1.5V DVDD, and 1.8V DOVDD
- maximum image transfer rate:** 30 fps full resolution
- sensitivity:** 3650 mV/lux-sec
- scan mode:** progressive
- shutter:** rolling shutter
- maximum exposure interval:** 838 x t_{row}
- pixel size:** 4.2 μm x 4.2 μm
- dark current:** 2.5 mV/s @ 50°C junction temperature
- image area:** 5510.4 μm x 3418.8 μm
- package dimensions:**
 - aCSP™: 7795 μm x 7145 μm
- temperature range:**
 - operating: -40°C to +105°C sensor ambient temperature (operating sensor ambient temperatures above +60°C may result in degraded image quality)
- output interfaces:** 10-bit parallel DVP
- output formats:** up to 18-bit combined RAW, separated 10-bit RAW, 8-/10-bit YUV422
- lens size:** 1/2.7"

Functional Block Diagram



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CMOS CAMERA MODULES

your **BEST** camera module partner

KLT-USB1A-AR0330 V1.0

On Semiconductor Aptina AR0330 USB Interface Fixed Focus 3MP Camera Module



Camera Module No.	KLT-USB1A-AR0330 V1.0	
Image Sensor	AR0330	Output Format: MJPG, YVY2
EFL	2.3 mm	30 FPS 1280 x 720 (HD 720P)
F.NO	2.5	30 FPS 1920 x 1080 (Full HD)
Pixel	2304 x 1536	20 FPS 2304 x 1536 (3MP)
View Angle	170°	Supporting OS
Lens Type	1/3 inch	Windows 7, 8.1, 10,Vista
Lens Dimensions	13.70 x 13.70 x 20.92 mm	Windows XP SP2 under UVC
Module Size	30.50 x 25.00 mm	Linux Kernel V2.6.2.1 or later
Module Type	Fixed Focus	MAC OS 10.4 or later
IMT Lens Model	IMT-1B12E005-6	Operating Voltage: 5V +/- 5%
Interface	USB	Compliant with UVC Version 1.0

Mating USB Cable Part No. KLT-USB1A-Cable
USB Cable Extension Cord. Sold Separately.

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Product Overview

AR0330: 3 MP 1/3" CMOS Image Sensor

For complete documentation, see the data sheet.

ON Semiconductor's focus on pixel performance excellence provides the foundation for this sensor's exceptional image quality with superior color accuracy, low-light sensitivity, and low noise level. This cost-effective CMOS imaging solution enables high speed image capture capabilities, and includes variable functions, including gain, frame rate, and exposure while maintaining low power consumption.

Features

- 2.2 μm pixel with ON Semiconductor A-Pix™ technology
- Full HD support at 60 fps (2304H x 1296V) for maximum video performance
- Superior low-light performance
- 3.4Mp (3:2) and 3.15 Mp (4:3) still images
- Support for external mechanical shutter
- Support for external LED or Xenon flash
- Data interfaces: four-lane serial high-speed pixel interface (HiSPi™) differential signaling (SLVS), four-lane serial MIPI interface, or parallel.
- On-chip phase-locked loop (PLL) oscillator
- Simple two-wire serial interface
- Auto black level calibration

For more features, see the data sheet

Applications

- Camera
- Security

End Products

- Video Camcorders
- Web Cameras
- Video Conference Cameras
- Security Cameras

Part Electrical Specifications

Product	Compliance	Status	Type	Megapixels	Frame Rate (fps)	Optical Format	Shutter Type	Pixel Size (µm)	Output Interface	Color	Package Type
AR0330CM1C00SHAA0-DP	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	HiSPi™	RGB	CLCC-48
AR0330CM1C00SHAA0-DR	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	HiSPi™	RGB	CLCC-48
AR0330CM1C00SHAA0-TP	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	HiSPi™	RGB	CLCC-48
AR0330CM1C00SHKA0-CP	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	HiSPi™	RGB	ODCSP-64
AR0330CM1C00SHKA0-CR	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	HiSPi™	RGB	ODCSP-64
AR0330CM1C12SHAA0-DP	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	HiSPi™	RGB	CLCC-48
AR0330CM1C12SHAA0-DR	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	HiSPi™	RGB	CLCC-48
AR0330CM1C12SHKA0-CP	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	HiSPi™	RGB	ODCSP-64
AR0330CM1C12SHKA0-CR	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	HiSPi™	RGB	ODCSP-64
AR0330CM1C12SUW90	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	Multi	RGB	
AR0330CM1C21SHKA0-CP	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	HiSPi™	RGB	ODCSP-64
AR0330CM1C21SHKA0-CR	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	HiSPi™	RGB	ODCSP-64
AR0330CM1C25SUD20	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	Multi	RGB	
AR0330CS1C12SPKA0-CP	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	Parallel	RGB	ODCSP-61
AR0330CS1C12SPKA0-CR	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	Parallel	RGB	ODCSP-61
AR0330CSSC12SPBA0-DR	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	Parallel	RGB	PLCC-48
AR0330SR1C00SUKA0-CR	Pb-free Halide free	Active	CMOS	3.5	60	1/3 inch	Electronic Rolling	2.2 x 2.2	Multi	RGB	ODCSP-61

For more information please contact your local sales support at www.onsemi.com.

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