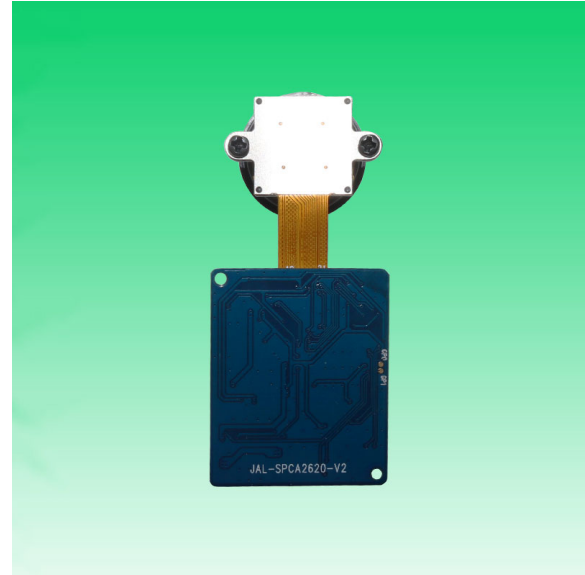
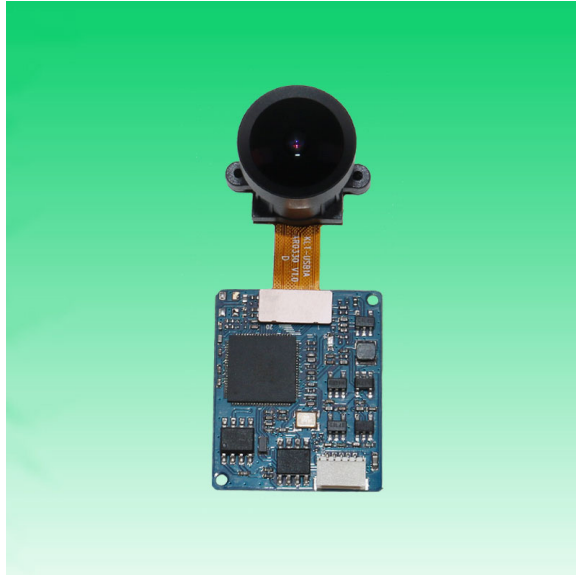


**KLT-USB1A-AR0330 V1.0****3MP OnSemi AR0330 M12 Fixed Focus USB 2.0 Camera Module**

KLT-USB1A-AR0330 V1.0 is a 3MP Fixed Focus USB camera module based on 1/3" AR0330 image sensor. It delivers high-speed, 2K resolution ultra sharp image.

The S-mount (M12) lens holder enables customers to choose different lens as per varies applications. This camera module is ideal solution for face recognition, identity detection, access control.

### Key Features

- 2K resolution (2304 x 1536) OnSemi AR0330 sensor
- High speed USB 2.0 Plug and Play
- MJPG and YUV2 output format
- Low power consumption
- Compact size
- UVC compliant to Windows, Linux, OS with UVC driver
- USB OTG (On-The-Go) support



## KLT-USB1A-AR0330 V1.0

### 3MP OnSemi AR0330 M12 Fixed Focus USB 2.0 Camera Module

Camera Module No.	KLT-USB1A-AR0330 V1.0
Resolution	3MP
Image Sensor	AR0330
Sensor Type	1/3"
Pixel Size	2.2 um x 2.2 um
EFL	2.30 mm
F.NO	2.50
Pixel	2304 x 1536
View Angle	170.0°(DFOV)
Lens Dimensions	13.70 x 13.70 x 20.92 mm
Module Type	Fixed Focus
Lens Model	KLT-LENS-MJ7005A
Interface	USB 2.0
Output Format	MJPEG / YUV2
Auto Control	Saturation, Contrast, Acutance White Balance, Exposure
Audio	None
Input Voltage	DC 5V
Working Current	Max 500mA
PCB Size	30.50 x 25.00 mm
System Compatibility	Windows XP (SP2, SP3), Vista, 7, 8, 10, 11 Android, Mac OS, Linux or OS with UVC Driver Raspberry Pi by USB Port
Software for USB Camera	AMCAP, Webcam Viewer, V4L2 Controls Contacam, VLC Player, MotionEye OS iSpy, ZoneMider, Yawcam
Lens Type	650nm IR Cut
Operating Temperature	-30°C to +70°C
USB Cable	KLT-Cable-U001

Wide Compatibility with Windows, Android, Mac OS, Linux, or Raspberry Pi



Windows

android

Mac OS

Linux

Raspberry Pi

**KLT-USB1A-AR0330 V1.0****3MP OnSemi AR0330 M12 Fixed Focus USB 2.0 Camera Module**

Top View



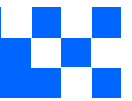
Side View



Bottom View



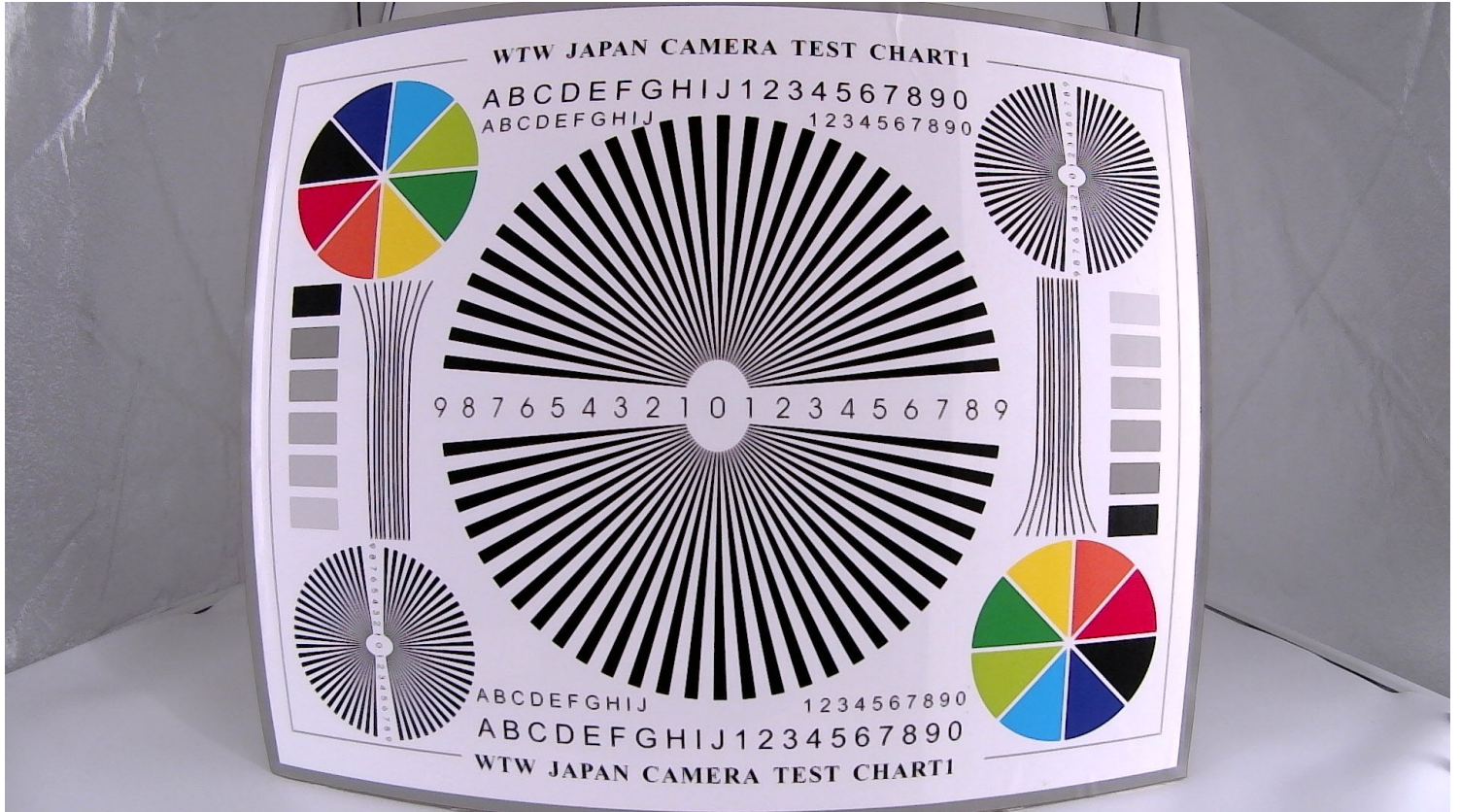
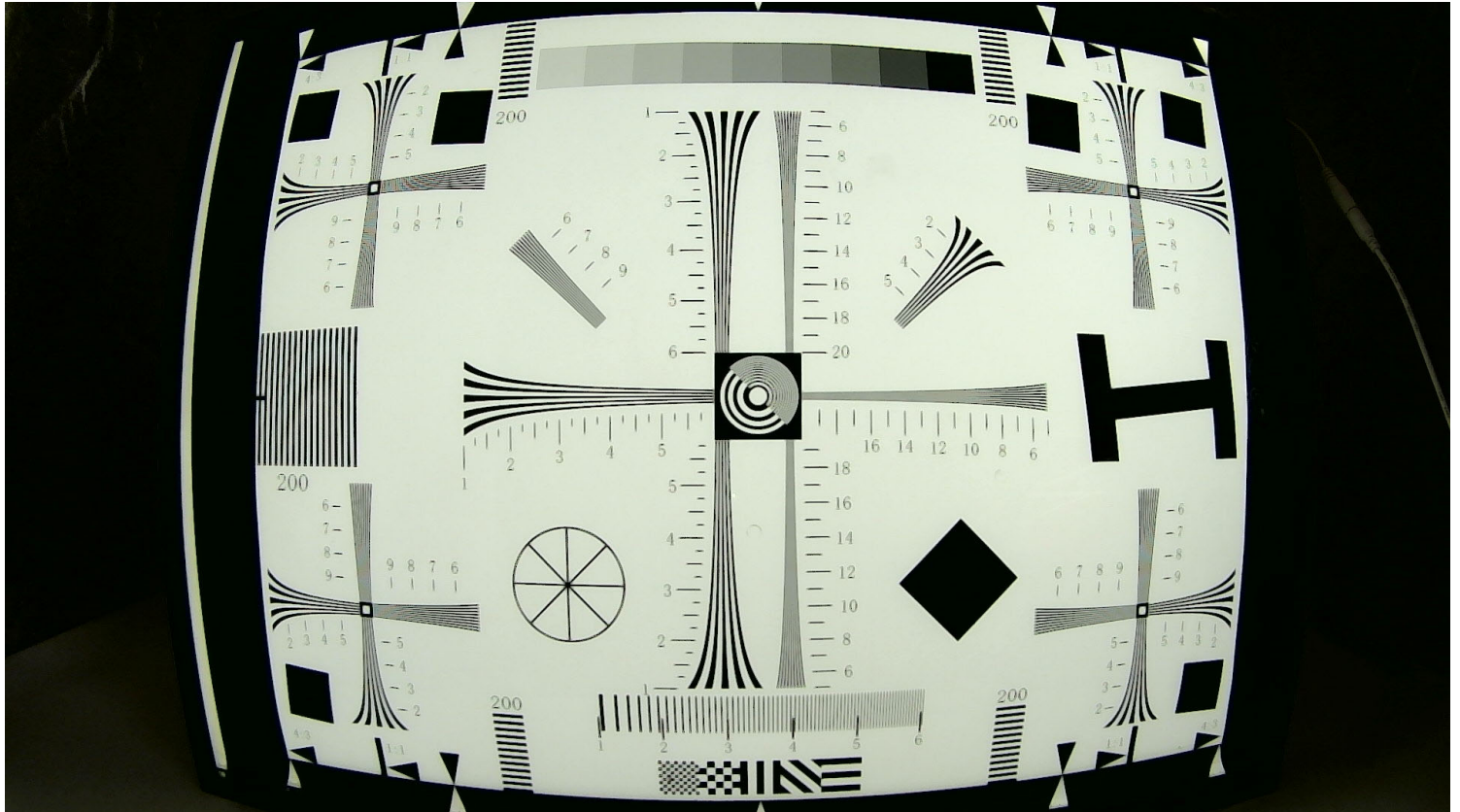
Mating Connector

**KLT-USB1A-AR0330 V1.0****3MP OnSemi AR0330 M12 Fixed Focus USB 2.0 Camera Module**

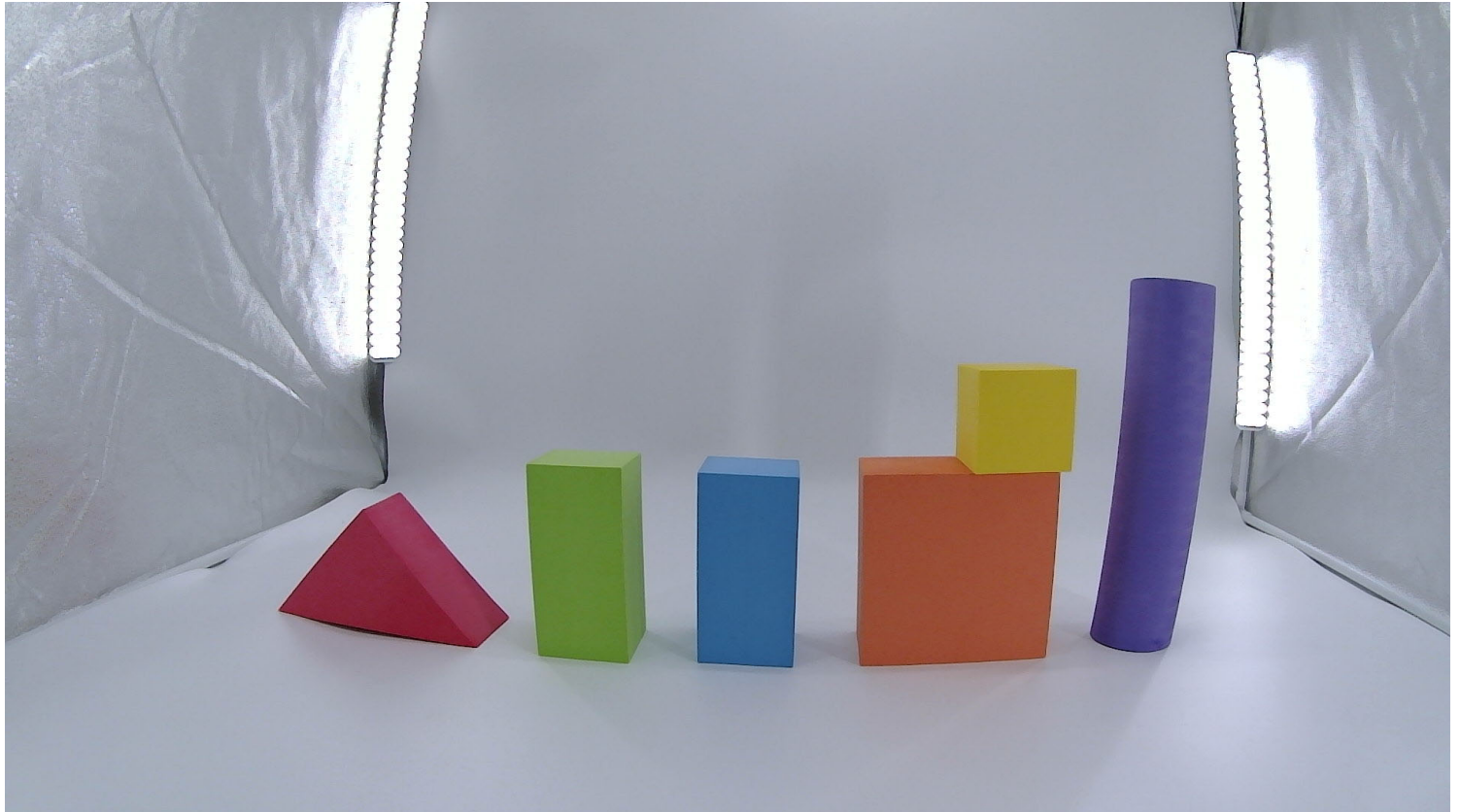
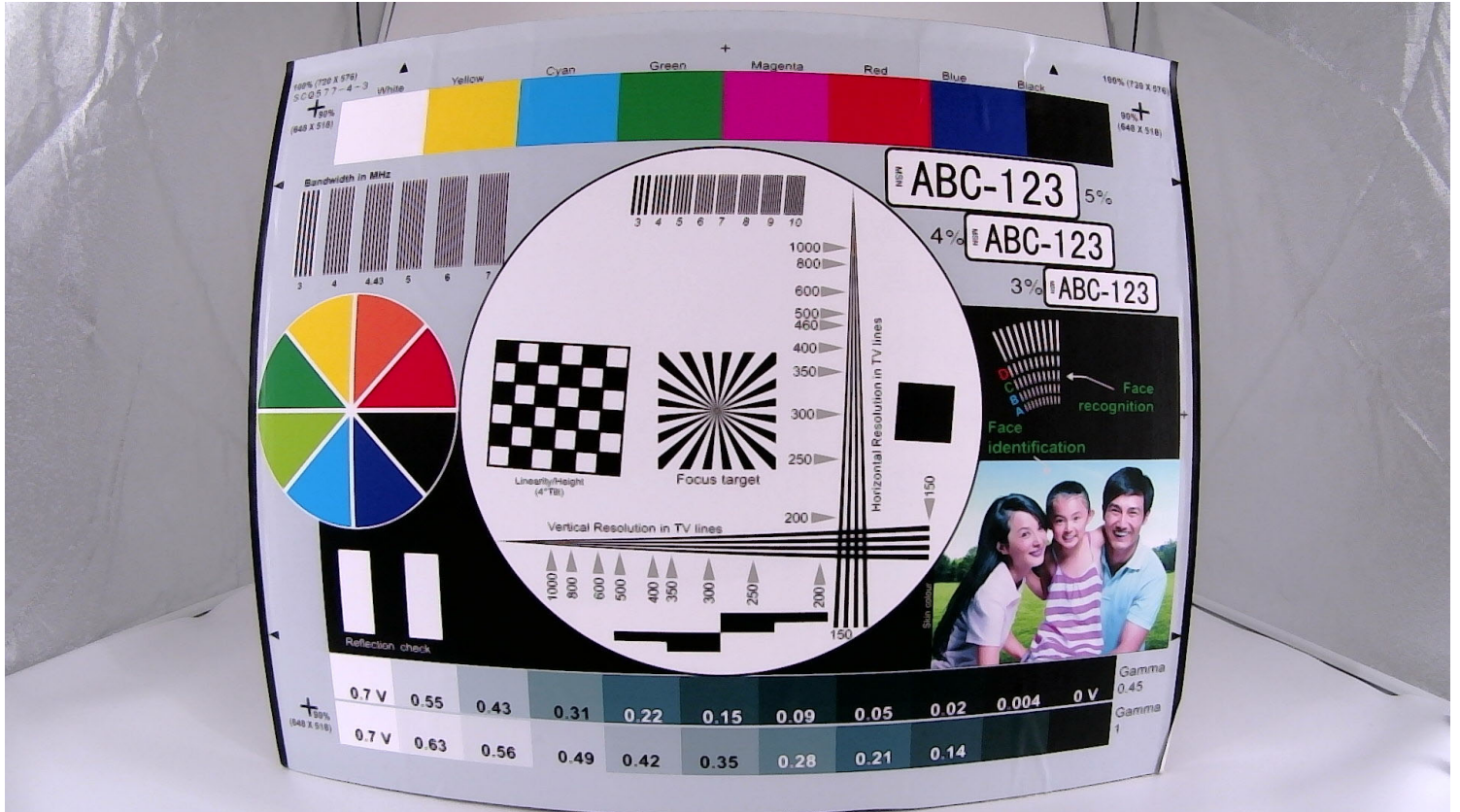
FORMAT	RESOLUTION	FRAME RATE
		USB 2.0
MJPEG	640 x 480 (VGA)	30 FPS
	1280 x 720 (720P)	30 FPS
	1920 x 1080 (1080P)	30 FPS
	2048 x 1536	20 FPS
YUY2	640 x 480 (VGA)	30 FPS
	1280 x 720 (720P)	10 FPS
	1920 x 1080 (1080P)	5 FPS
	2048 x 1536	5 FPS





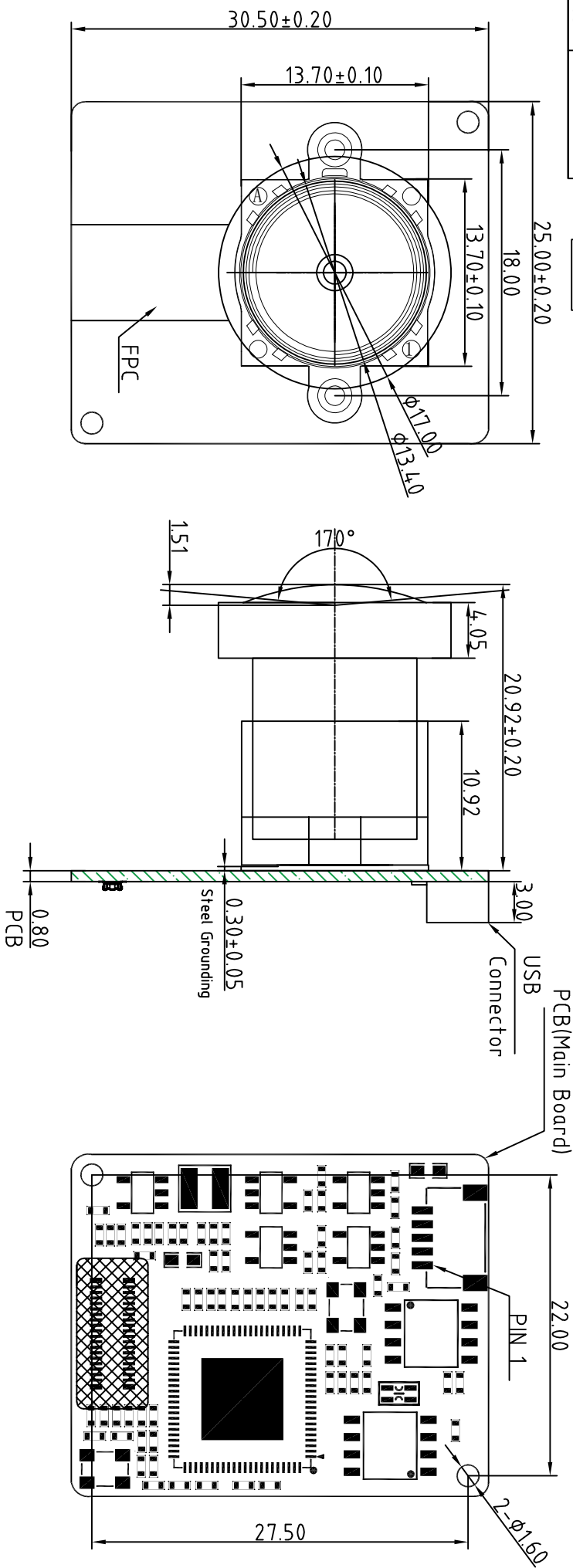
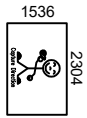






# ROHS

PIN NO	SIGNAL
01	USB 5V
02	D-
03	D+
04	DGND
05	DGND



## Parameters:

### 1、Sensor specification:

Image Sensor: AR0330  
 Pixel: 2.2umx2.2um  
 Lens Type: 1/3  
 Important Voltage Description: DVDD1.8V  
 (external power supply);

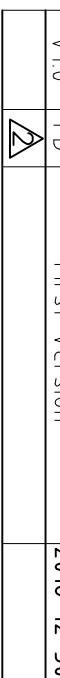
### 2、Lens specification:

FOV: 170°  
 F/NO.: 2.5  
 TV distortion: <35%  
 Focal length: 2.3mm  
 Composition: 5G +IRFILTER  
 IR Cut Coating: 650nm±10nm@50%

# Kai Lap Technologies Group Ltd

Designed By	Kevin	Model Name:	KLT-USB1A-AR0330 V1.0		
Checked By	Aouly Yan	Projection Type:	 Third Angle	Unit:	mm
		Scale:	1:1	Sheet:	1 of 1
		Version:	1/0		

Version Mark	Information	Date
V1.0	First Version	2018-12-30







## 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  $\mu\text{m}$  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

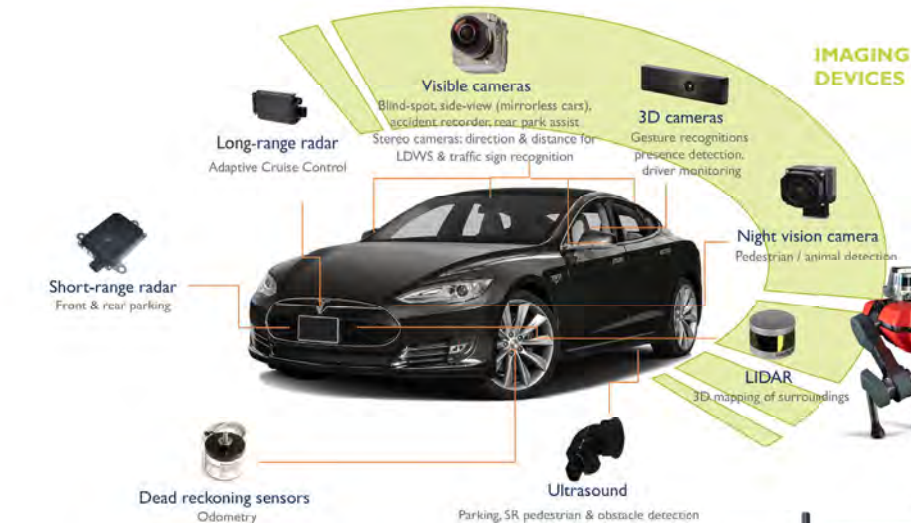
For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com).

Created on: 9/30/2017



*your BEST camera module partner*

## Cameras Applications



## IMAGING DEVICES







## Camera Reliability Test

Reliability Inspection Item		Testing Method	Acceptance Criteria	
Category	Item			
Environmental	Storage Temperature	High 60°C 96 Hours	Temperature Chamber	No Abnormal Situation
		Low -20°C 96 Hours	Temperature Chamber	No Abnormal Situation
	Operation Temperature	High 60°C 24 Hours	Temperature Chamber	No Abnormal Situation
		Low -20°C 24 Hours	Temperature Chamber	No Abnormal Situation
	Humidity	60°C 80% 24 Hours	Temperature Chamber	No Abnormal Situation
	Thermal Shock	High 60°C 0.5 Hours Low -20°C 0.5 Hours Cycling in 24 Hours	Temperature Chamber	No Abnormal Situation
Physical	Drop Test (Free Falling)	Without Package 60cm	10 Times on Wood Floor	Electrically Functional
		With Package 60cm	10 Times on Wood Floor	Electrically Functional
	Vibration Test	50Hz X-Axis 2mm 30min	Vibration Table	Electrically Functional
		50Hz Y-Axis 2mm 30min	Vibration Table	Electrically Functional
		50Hz Z-Axis 2mm 30min	Vibration Table	Electrically Functional
	Cable Tensile Strength Test	Loading Weight 4 kg 60 Seconds Cycling in 24 Hours	Tensile Testing Machine	Electrically Functional
Electrical	ESD Test	Contact Discharge 2 KV	ESD Testing Machine	Electrically Functional
		Air Discharge 4 KV	ESD Testing Machine	Electrically Functional
	Aging Test	On/Off 30 Seconds Cycling in 24 Hours	Power Switch	Electrically Functional
	USB Connector	On/Off 250 Times	Plug and Unplug	Electrically Functional



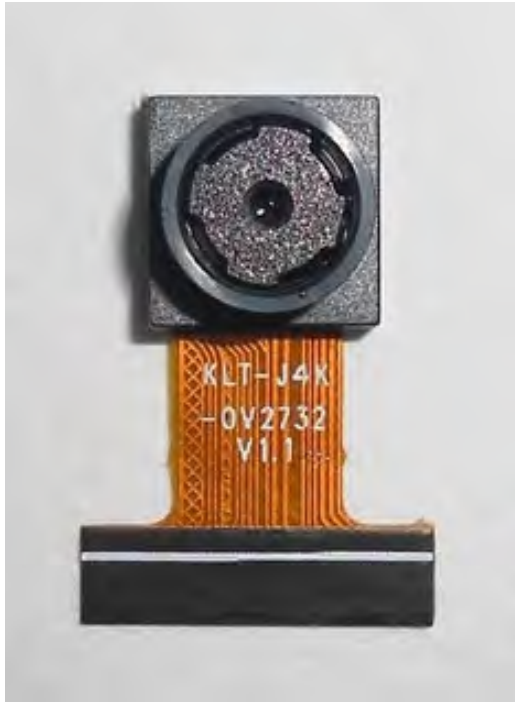


Inspection Item		Inspection Method	Standard of Inspection		
Category	Item				
Appearance	FPC/ PCB	Color	The Naked Eye	Major Difference is Not Allowed.	
		Be Torn/Chopped	The Naked Eye	Copper Crack Exposure is Not Allowed.	
		Marking	The Naked Eye	Clear, Recognizable (Within 30cm Distance)	
	Holder	Scratches	The Naked Eye	The Inside Crack Exposure is Not Allowed	
		Gap	The Naked Eye	Meet the Height Standard	
		Screw	The Naked Eye	Make Sure Screws Are Presented (If Any)	
		Damage	The Naked Eye	The Inside Crack Exposure is Not Allowed	
	Lens	Scratch	The Naked Eye	No Effect On Resolution Standard	
		Contamination	The Naked Eye	No Effect On Resolution Standard	
		Oil Film	The Naked Eye	No Effect On Resolution Standard	
		Cover Tape	The Naked Eye	No Issue On Appearance.	
	Function	Image	No Communication	Test Board	Not Allowed
			Bright Pixel	Black Board	Not Allowed In the Image Center
Dark Pixel			White board	Not Allowed In the Image Center	
Blurry			The Naked Eye	Not Allowed	
No Image			The Naked Eye	Not Allowed	
Vertical Line			The Naked Eye	Not Allowed	
Horizontal Line			The Naked Eye	Not Allowed	
Light Leakage			The Naked Eye	Not Allowed	
Blinking Image			The Naked Eye	Not Allowed	
Bruise			Inspection Jig	Not Allowed	
Resolution			Chart	Follows Outgoing Inspection Chart Standard	
Color			The Naked Eye	No Issue	
Noise			The Naked Eye	Not Allowed	
Corner Dark			The Naked Eye	Less Than 100px By 100px	
Color Resolution			The Naked Eye	No Issue	
Dimension	Height	The Naked Eye	Follows Approval Data Sheet		
	Width	The Naked Eye	Follows Approval Data Sheet		
	Length	The Naked Eye	Follows Approval Data Sheet		
	Overall	The Naked Eye	Follows Approval Data Sheet		



## KLT Package Solutions

KLT Camera Module



Complete with Lens Protection Film



Tray with Grid and Space



Place Cameras on the Tray

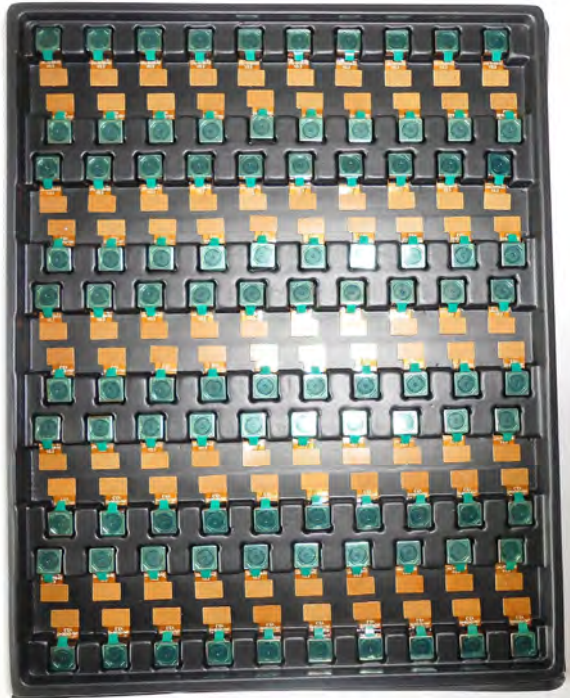






## Camera Modules Package Solution

Full Tray of Cameras



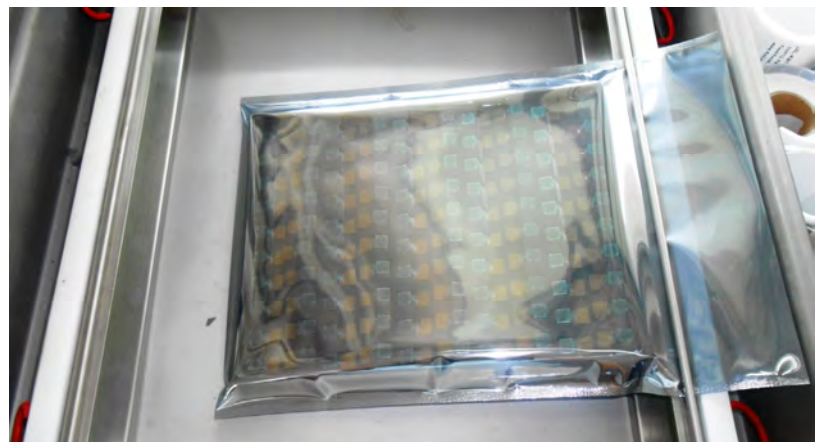
Cover Tray with Lid



Put Tray into Anti-Static Bag



Vacuum the Anti-Static Bag





## Camera Modules Package Solution

Sealed Vacuum Bag with Labels

1. Model and Description 2. Quantity 3. Shipping Date 4. Caution







## Large Order Package Solution

Place Foam Sheets Between Trays



Foam Sheets are Slightly Larger than Trays



Place Foam Sheets and Trays into Box



Foam Sheets are Tightly Fitting Box







## Small Order Package Solution

Place Foam Sheets and Trays into Small Box



Foam Sheets are Nicely Fitting the Small Box



Package in Small Box for Shipment



Place Small Boxes into Larger Box





## Carbon Box Package Solution

Seal the Carbon Box

Final Package Labelled Box



### Carbon Box Ready for Shipment

1. Delivery Address and Phone No. 2. Box No. and Ship Date 3. Fragile Caution







## Sample Order Package Solution

Place Sample into Small Anti-Static Bag



Place Connectors into Small Ant-Static Bag



### Sample Labels on the Small Bag

1. Camera Module or Connector Model 2. Shipping Date and Quantity 3. Caution







## Connectors Large Order Package Solution

Connectors in a Wheel



Label Connectors in the Wheel



The Wheel is Perfectly Fitting the Box



Connectors Box Ready for Shipment



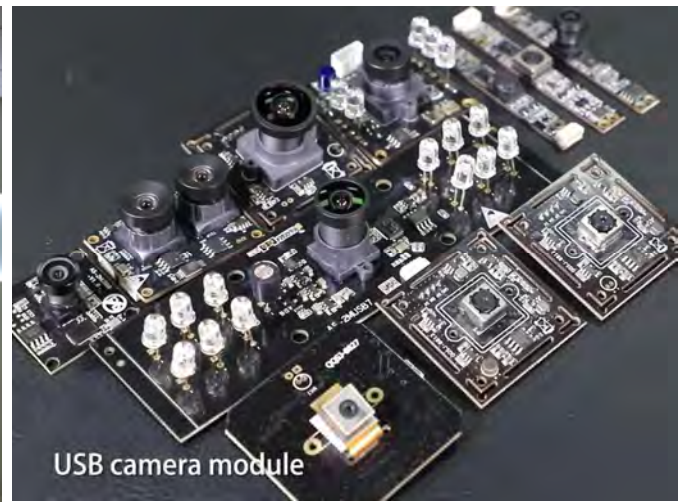


## Company Kai Lap Technologies (KLT)

Kai Lap Technologies Group Limited. (KLT) was established in 2009, a next-generation technology driven manufacturer specialized in research, design, and produce of audio and video products. KLT is occupying 20,000 square feet automated plants with 100 employees of annual throughput 30,000,000 units cameras.

KLT provides OEM, ODM design, contract manufacturing, and builds the camera products. You may provide the requirements to us, even with a hand draft, our sales and engineering work together to meet your needs. We consider ourselves your last-term partner in developing practical and innovative solutions.

Our team covers everything from initial concept development to mass produced product. KLT specializes in customized camera design, raw material, electronic engineering, firmware/software development, product testing, and packing design. Our experienced strategic supply systems offer a robust and dependable manufacturing capacity for orders of various sizes.



## Limited Warranty

KLT provides the following limited warranty if you purchased the Product(s) directly from KLT company or from KLT's website, [www.KaiLapTech.com](http://www.KaiLapTech.com). Product(s) purchased from other sellers or sources are not covered by this Limited Warranty. KLT guarantees that the Product(s) will be free from defects in materials and workmanship under normal use for a period of one (1) year from the date you receive the product ("Warranty Period").

For all Product(s) that contain or develop material defects in materials or workmanship during the Warranty Period, KLT will, at its sole option, either: (i) repair the Product(s); (ii) replace the Product(s) with a new or refurbished Product(s) (replacement Product(s) being of identical model or functional equivalent); or (iii) provide you a refund of the price you paid for the Product(s).

This Limited Warranty of KLT is solely limited to repair and/or replacement on the terms set forth above. KLT is not reliable or responsible for any subsequent events.







# CMOS CAMERA MODULES



*your BEST camera module partner*

## KLT Strength

### Powerful Factory



### Professional Service



### Promised Delivery



[www.KaiLapTech.com](http://www.KaiLapTech.com) [sales@KaiLapTech.com](mailto:sales@KaiLapTech.com) Tel: (852) 6908 1256 Fax: (852) 3017 6778

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