KLT-USB-0394 V1

2.1MP 0394 OnSemi AR0230 M12 Fixed Focus USB 2.0 Camera Module

KLT-USB-0394 V1 is a 2.1MP Fixed Focus USB camera module based on 1/2.7” AR0230 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, automotive, access control.

Key Features

- 2K resolution (1920 x 1080) OnSemi AR0230 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

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KLT-USB-0394 V1

2.1MP 0394 OnSemi AR0230 M12 Fixed Focus USB 2.0 Camera Module

Camera Module No.	KLT-USB-0394 V1
Resolution	2.1MP
Image Sensor	AR0230
Sensor Type	1/2.7"
Pixel Size	3.0 um x 3.0 um
EFL	3.60 mm
F.NO	2.80
Pixel	1920 x 1080
View Angle	88°(DFOV) 80°(HFOV) 50°(VFOV)
Lens Dimensions	13.20 x 13.20 x 19.00 mm
Module Type	Fixed Focus
Lens Model	KLT-LENS-0394 V1
Interface	USB 2.0
Output Format	MJPG / YUV2
Auto Control	Saturation, Contrast, Acutance White Balance, Exposure
Audio	None
Input Voltage	DC 5V
Working Current	Max 500mA
PCB Size	32 x 32 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 +85°C
USB Cable	KLT-Cable-U015

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

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Top View

Side View

Bottom View

Mating Connector

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2.1MP 0394 OnSemi AR0230 M12 Fixed Focus USB 2.0 Camera Module

FORMAT	RESOLUTION	FRAME RATE
		USB 2.0
MJPG	640 x 480 (VGA)	25 FPS
	1280 x 720 (720P)	25 FPS
	1920 x 1080 (1080P)	25 FPS
YUV2	640 x 480 (VGA)	25 FPS
	1280 x 720 (720P)	10 FPS
	1920 x 1080 (1080P)	5 FPS

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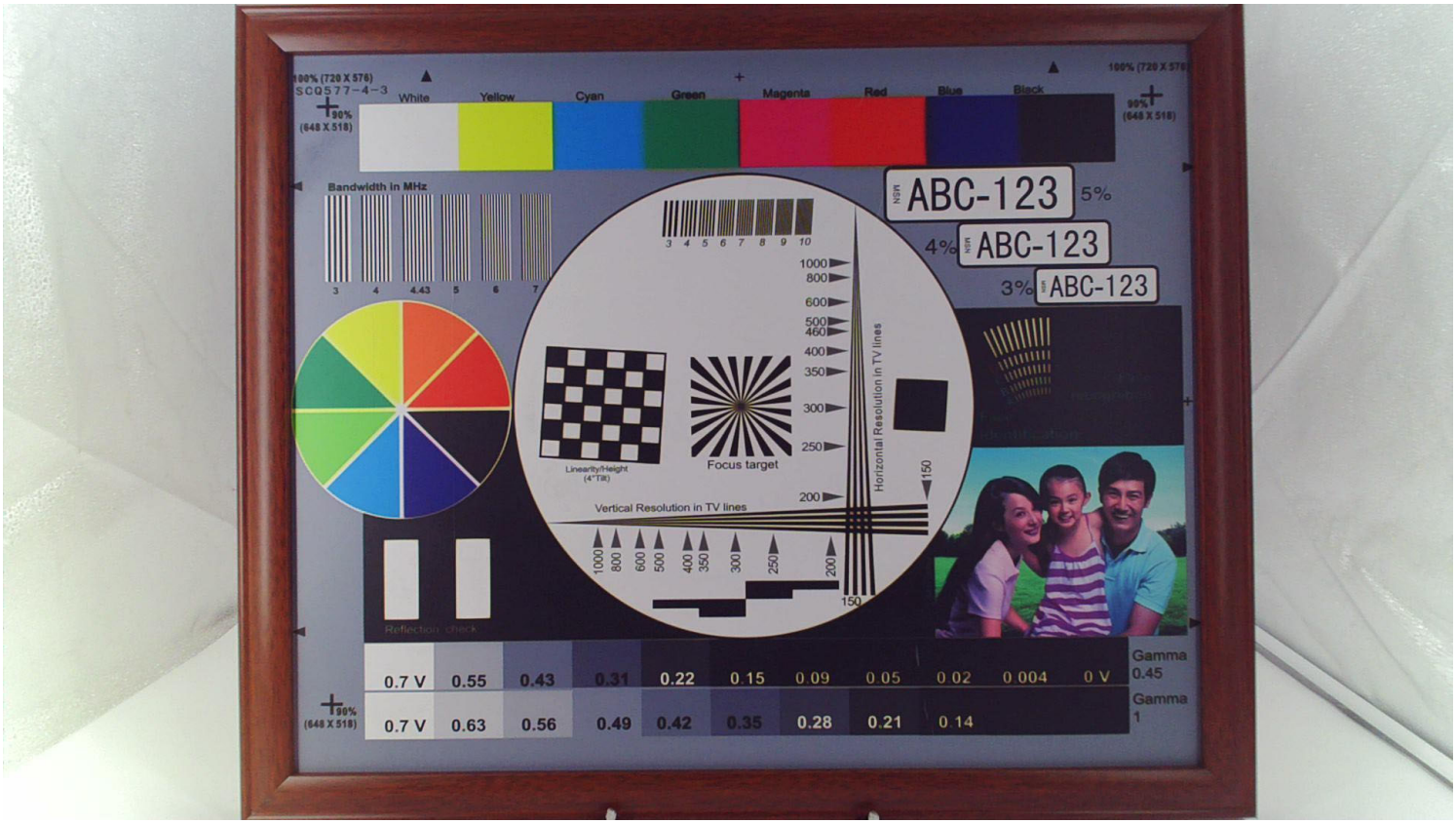

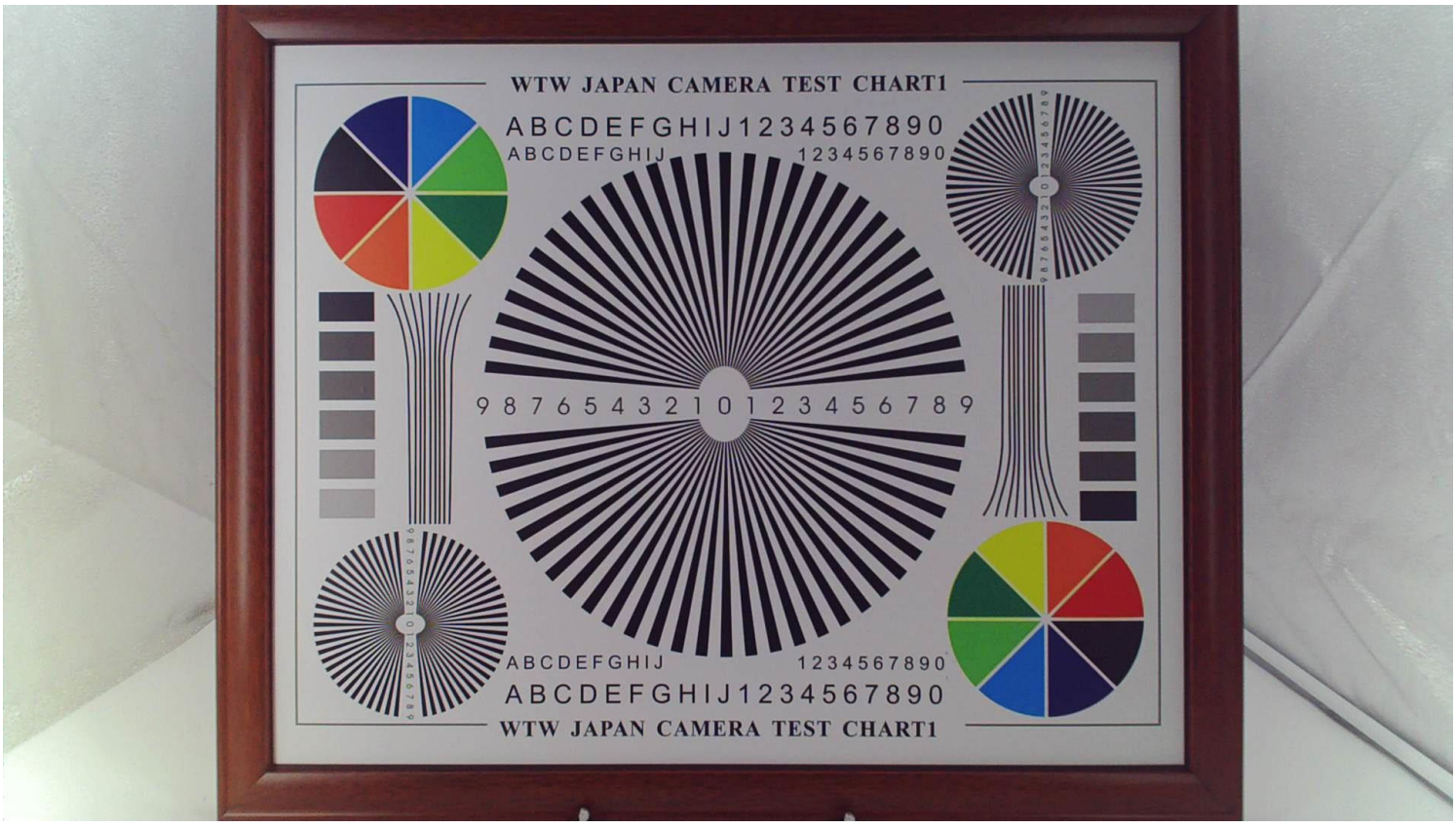

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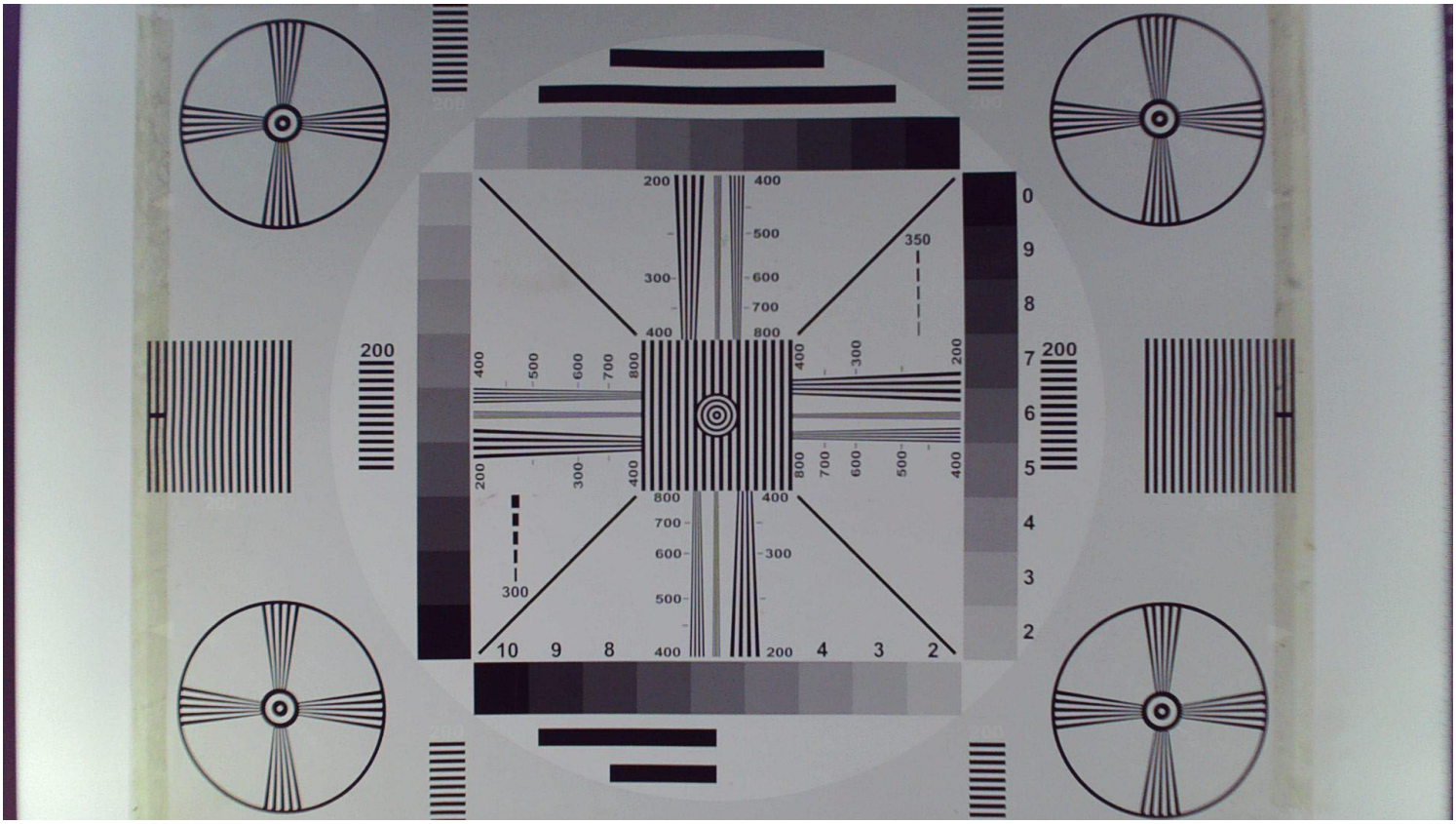

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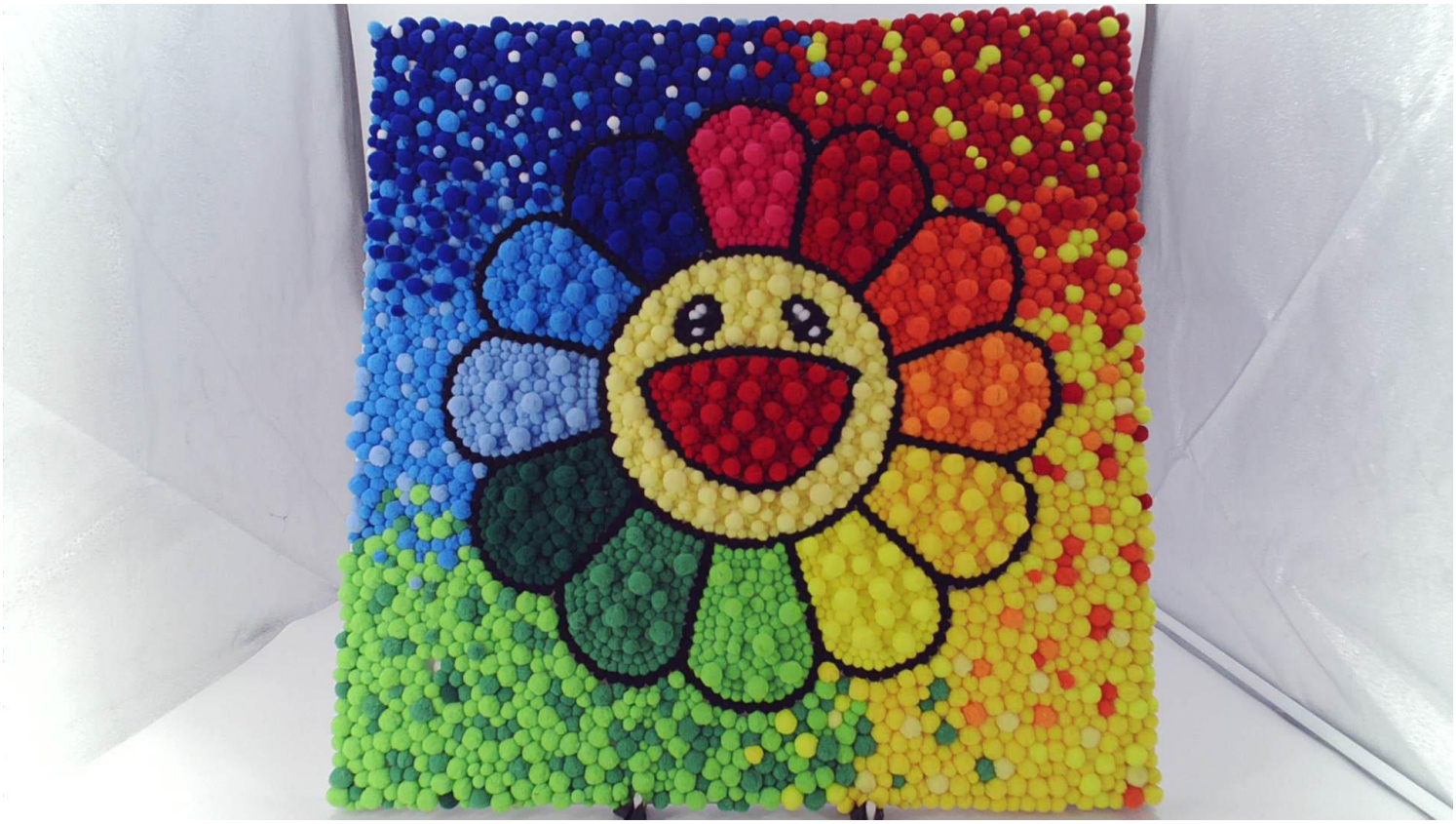

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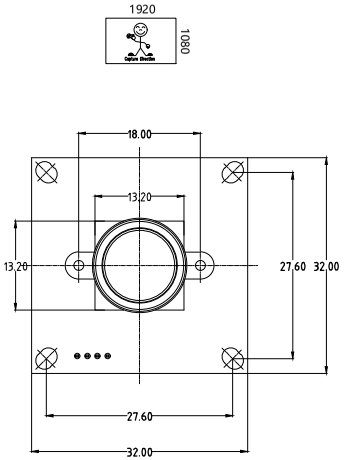
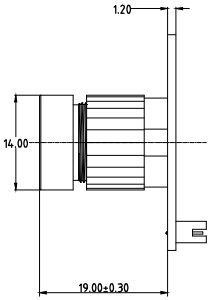
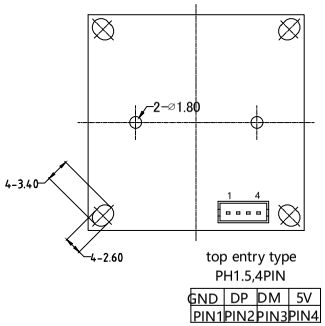
Version	Information	Date
V1.0	First Version	8-16-2022



TOP VIEW



RIGHT VIEW



BOTTOM VIEW

Parameters:

1、Sensor specification:

Image Sensor: AR0230
Pixel: 3.0um×3.0um
Lens Type: 1/2.7
Important Voltage Description: USB 5V (external power supply);

2、Lens specification:

FOV: 88°(D);80°(H);50°(V)
F/NO.: 2.8
TV distortion: <-0.32%
Focal length: 3.6mm
Composition: 2G2P+IR FILTER
IR Cut Coating: 650nm±10nm@50%

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Designed By	Kevin	Model Name:	KLT-USB-0394 V1
Checked By	Jacky	Projection Type: Third Angle	Unit: mm / Material: ---------- / Scale: 1:1 / Sheet: 1 of 1 / Version: 1/0

Product Overview

AR0230AT: 2 MP 1/3" CMOS Image Sensor

For complete documentation, see the data sheet.

The AR0230AT is a 1/2.7-inch CMOS digital image sensor with an active-pixel array of 1928Hx1088V. It captures images in either linear or high dynamic range modes, with rolling-shutter readout. It includes sophisticated camera functions such as in-pixel binning, windowing and both video and single frame modes. It is designed for both low light and high dynamic range scene performance. It is programmable through a simple two wire serial interface. The AR0230AT produces extraordinarily clear, sharp digital pictures, and its ability to capture both continuous video and single frames makes it the perfect choice for a wide range of applications.

Features

- High Dynamic Range

Applications

- Automotive

Part Electrical Specifications

Product	Compliance	Status	Type	Megapixels	Frame Rate (fps)	Optical Format	Shutter Type	Pixel Size (µm)	Output Interface	Color	Package Type
AR0230ATSC00XUEA0-DRBR	AEC Qualified PPAP Capable Pb-free Halide free	Active									IBGA-80
AR0230ATSC00XUEA0-DRBR-E	Pb-free Halide free	Active	CMOS	2.1	30	1/2.7 inch	Electronic Rolling and Global Reset Release	3.0 x 3.0	Parallel HiSPi™	RGB	IBGA-80
AR0230ATSM00XUEA0-DRBR-E	Pb-free Halide free	Active	CMOS	2.1	30	1/2.7 inch	Electronic Rolling and Global Reset Release	3.0 x 3.0	Parallel HiSPi™	Mono	IBGA-80

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Created on: 9/30/2017

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Cameras Applications

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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

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Camera Inspection Standard

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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

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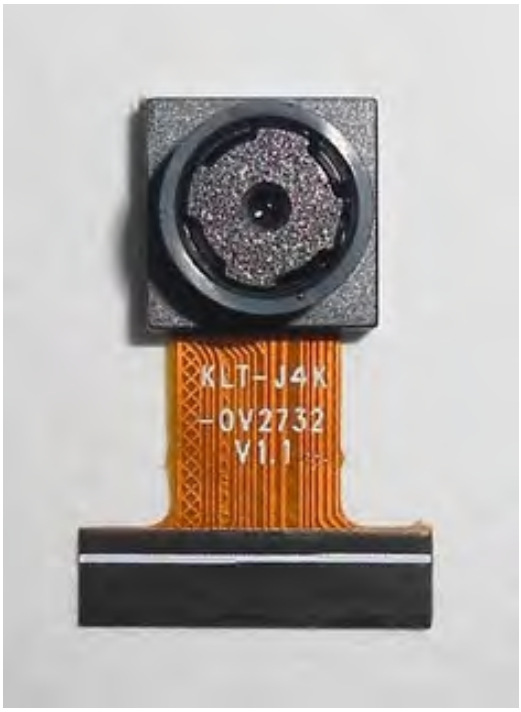
KLT Package Solutions

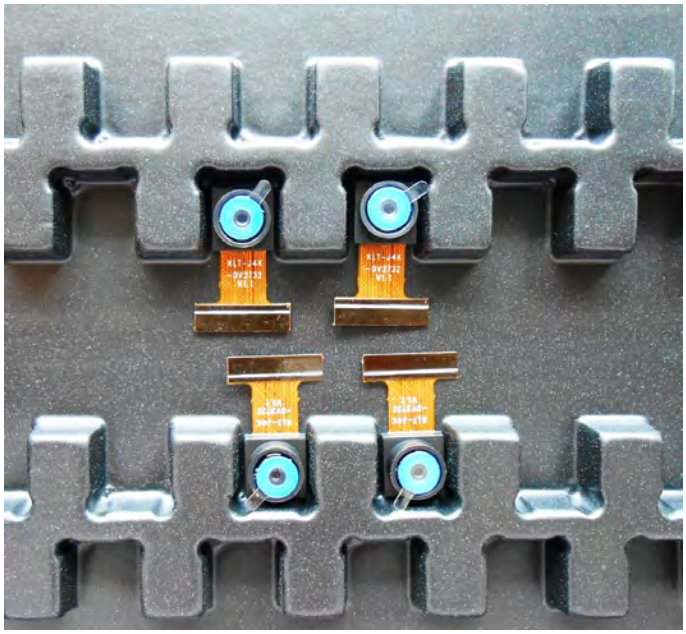
KLT Camera Module



Complete with Lens Protection Film

Tray with Grid and Space

Place Cameras on the Tray



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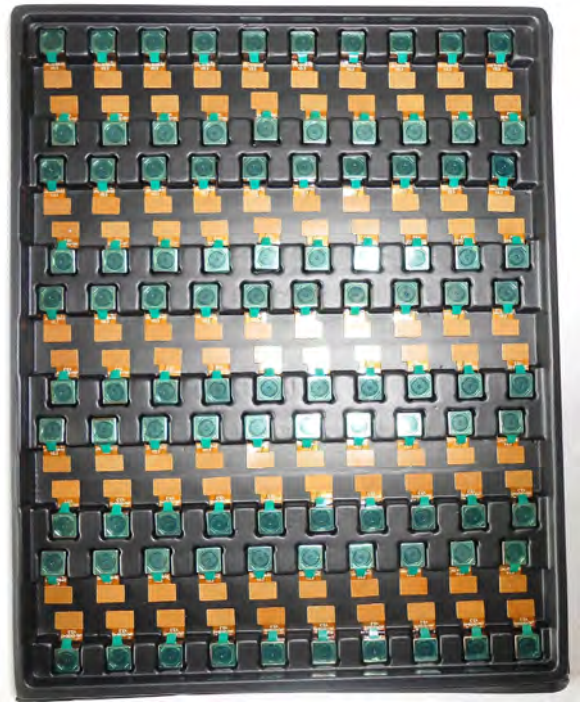
Camera Modules Package Solution

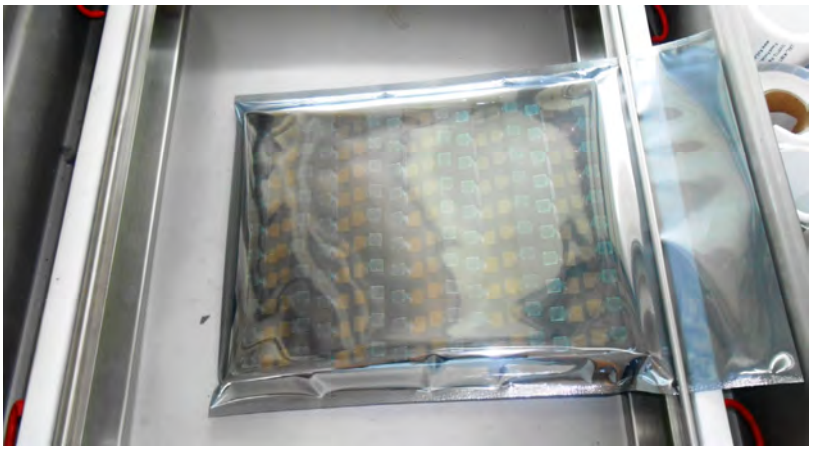
Full Tray of Cameras



Cover Tray with Lid

Put Tray into Anti-Static Bag

Vacuum the Anti-Static Bag



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Camera Modules Package Solution

Sealed Vacuum Bag with Labels
1. Model and Description 2. Quantity 3. Shipping Date 4. Caution

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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

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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

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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

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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

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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

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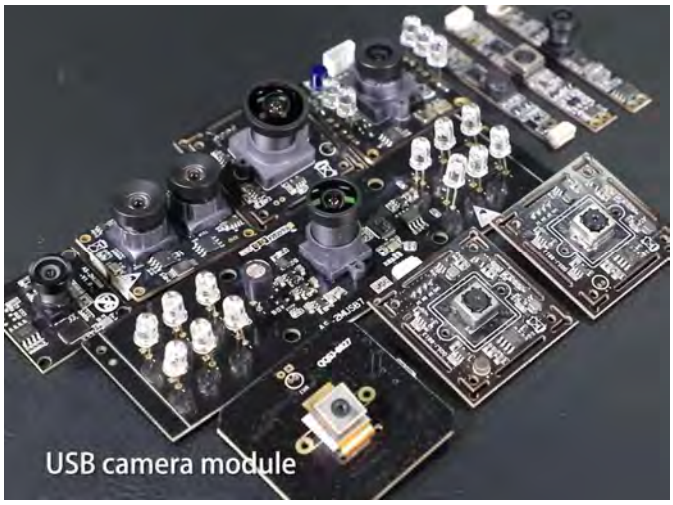
Company Kai Lap Technologies (KLT)

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. 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 subsequential events.

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KLT Strength

Powerful Factory

Professional Service

Promised Delivery

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