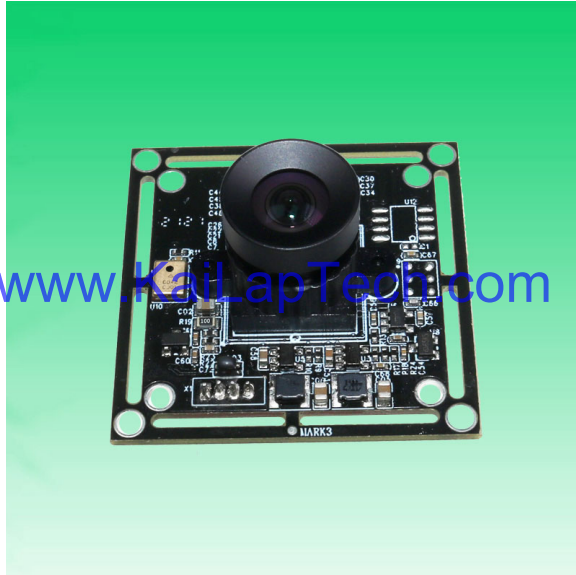


**KLT-USB-0362 V1****2.12MP 0362 Sony IMX323 M12 Fixed Focus USB 2.0 Camera Module**

KLT-USB-0362 V1 is a 2MP Fixed Focus USB camera module based on 1/2.9" IMX323 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 (1920 x 1080) OmniVision IMX323 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-USB-0362 V1

2.12MP 0362 Sony IMX323 M12 Fixed Focus USB 2.0 Camera Module

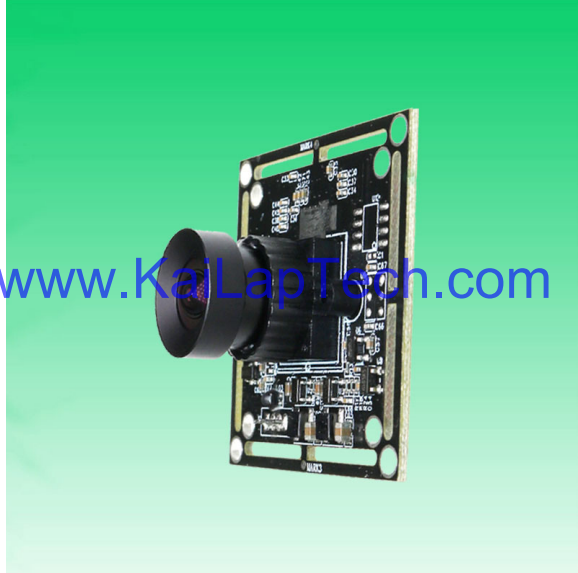
Camera Module No.	KLT-USB-0362 V1
Resolution	2.12MP
Image Sensor	IMX323
Sensor Type	1/2.9"
Pixel Size	2.8 um x 2.8 um
EFL	3.60 mm
F.NO	3.00
Pixel	1920 x 1080
View Angle	96°(DFOV) 80°(HFOV) 65°(VFOV)
Lens Dimensions	13.00 x 13.00 x 20.60 mm
Module Type	Fixed Focus
Lens Model	KLT-LENS-0362 V1
Interface	USB 2.0
Output Format	MJPEG / YUV2
Auto Control	Saturation, Contrast, Acutance White Balance, Exposure
Audio (Optional)	Digital Microphone, Single / Dual Channel
Input Voltage	DC 5V
Working Current	Max 500mA
PCB Size	38 x 38 mm / 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 +75°C
USB Cable	KLT-Cable-U015

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



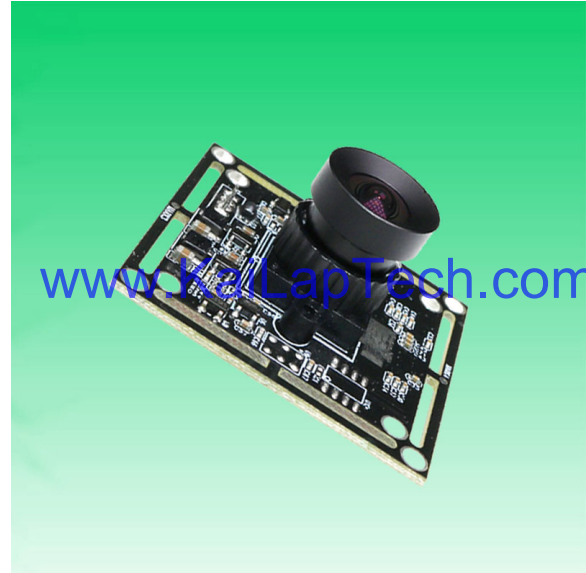
KLT-USB-0362 V1

2.12MP 0362 Sony IMX323 M12 Fixed Focus USB 2.0 Camera Module



Top View

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Side View

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Bottom View

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Mating Connector

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**KLT-USB-0362 V1****2.12MP 0362 Sony IMX323 M12 Fixed Focus USB 2.0 Camera Module**

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





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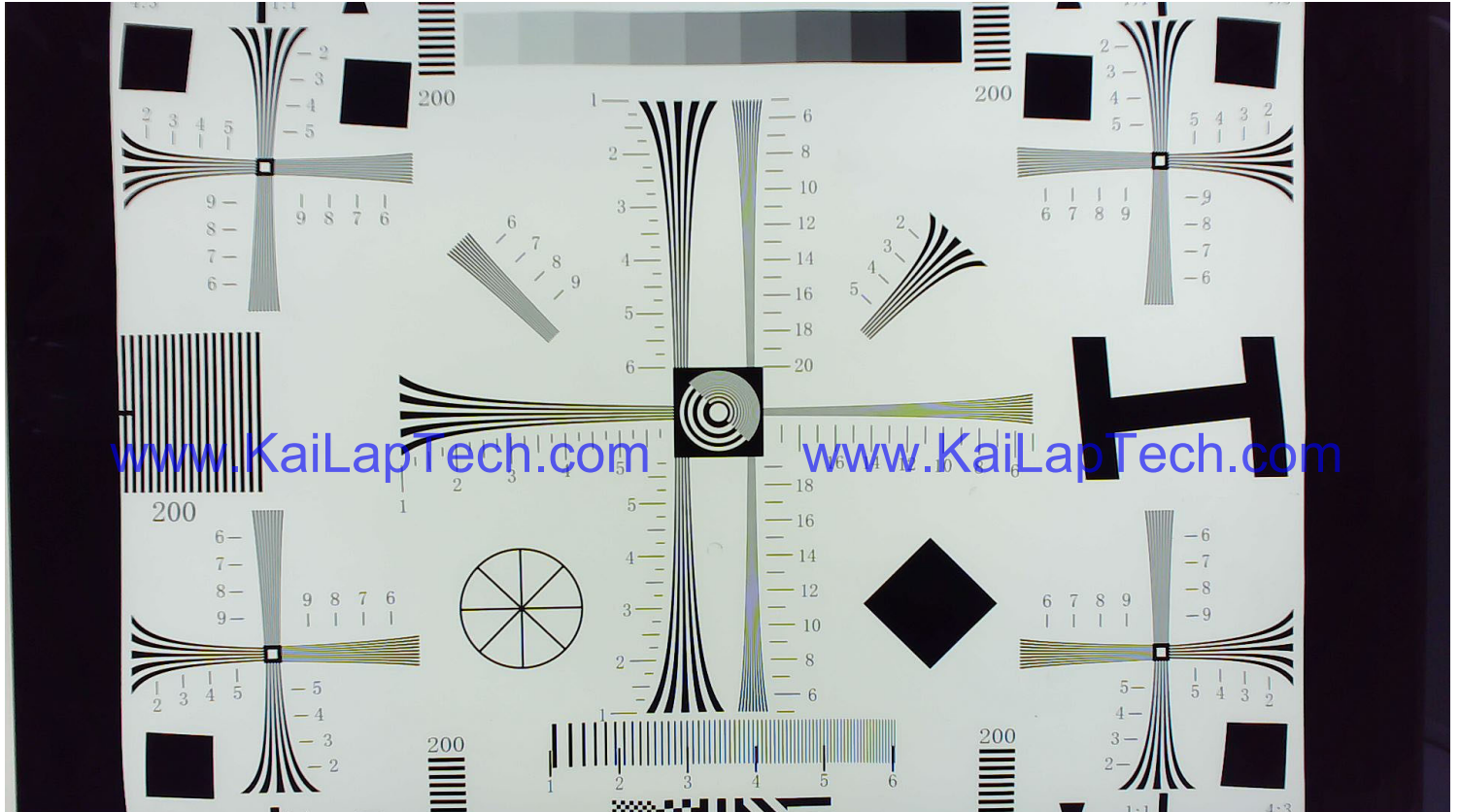
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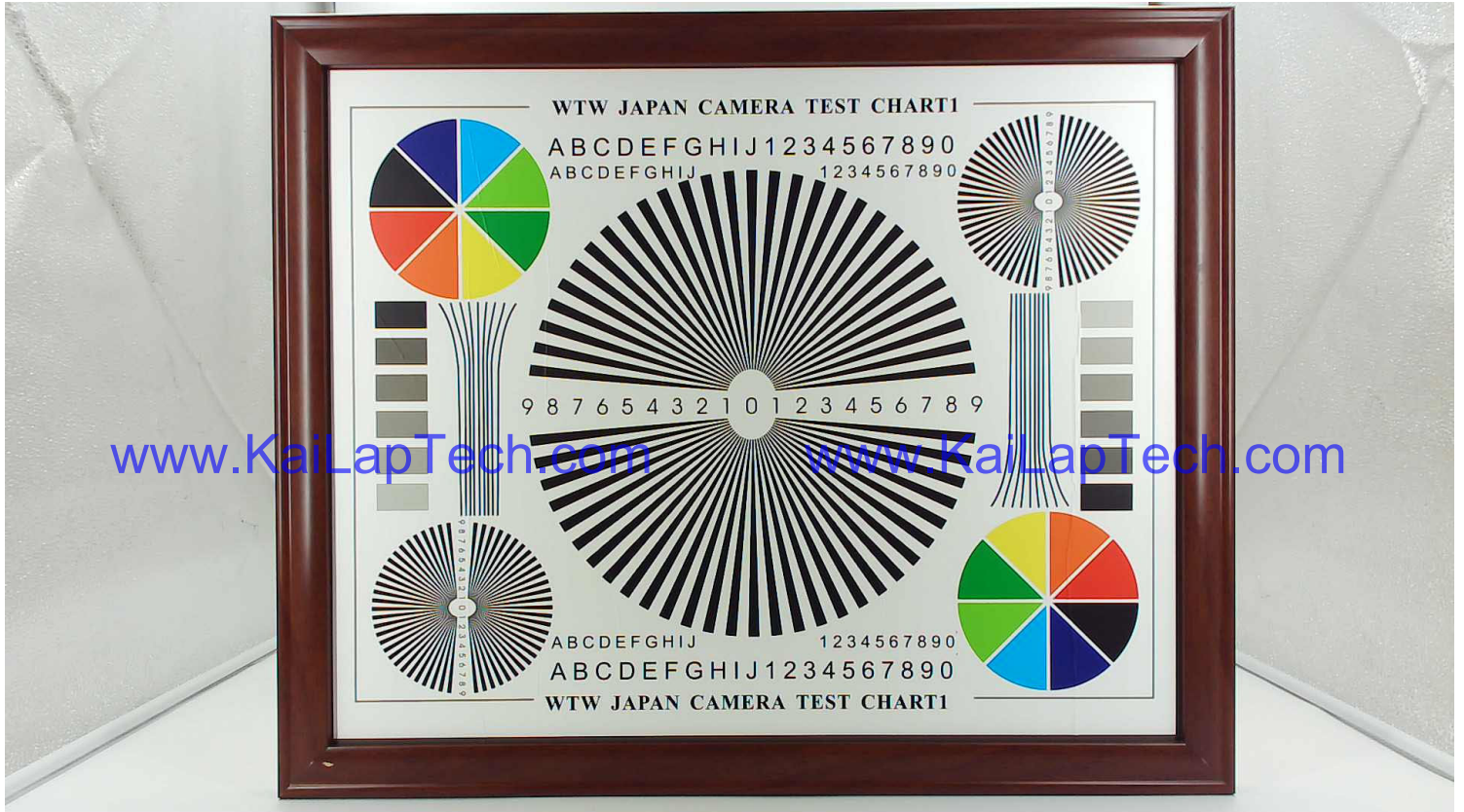
www.KaiLapTech.com





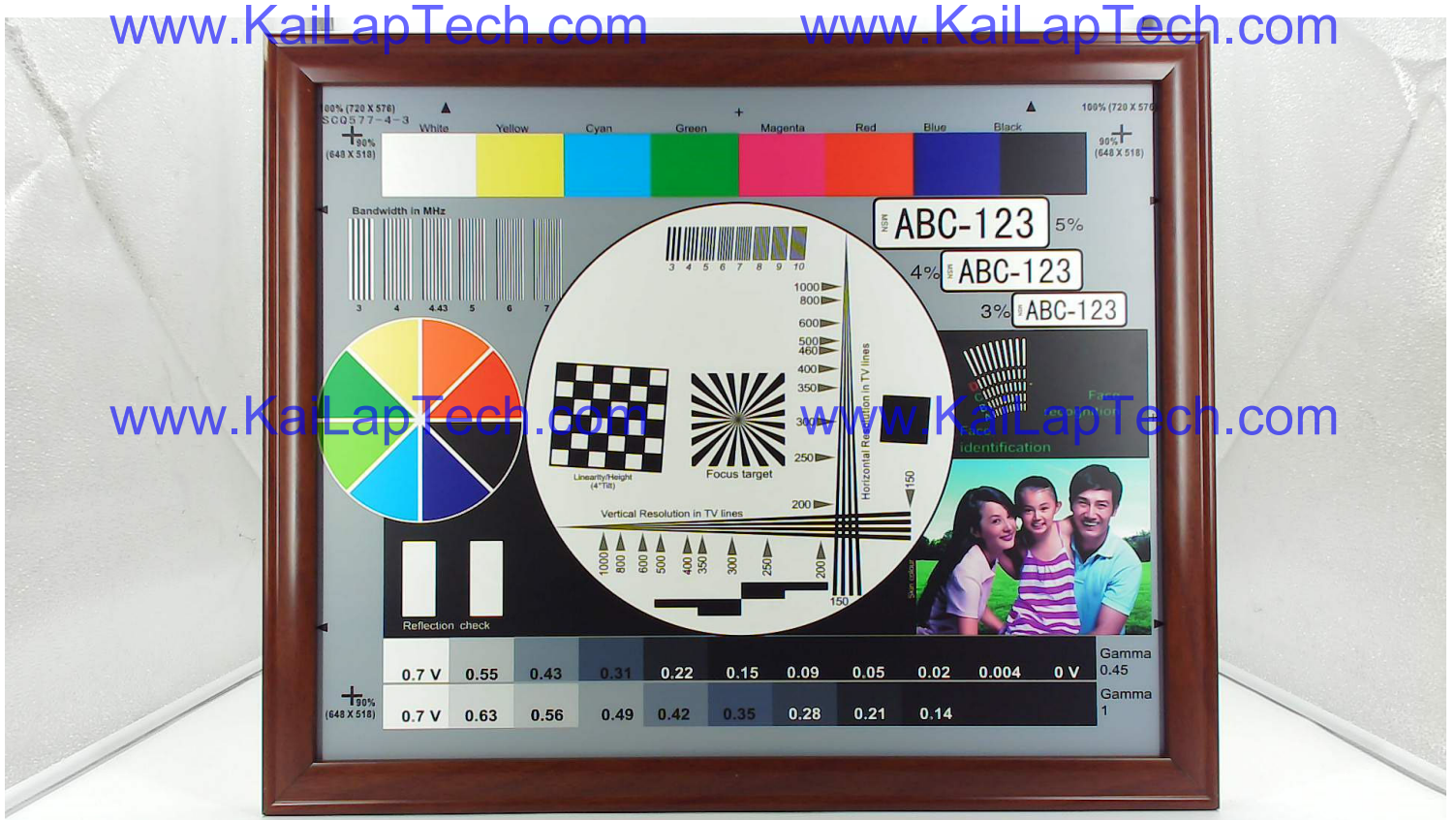
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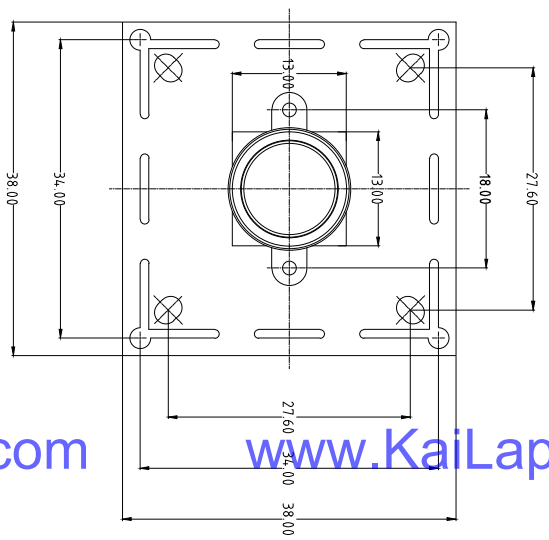
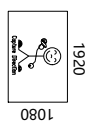
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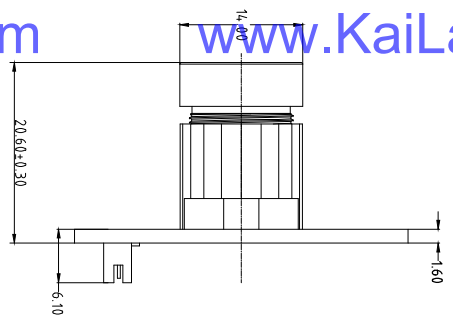
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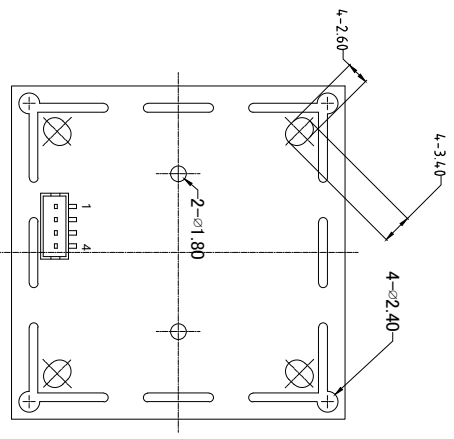
Version	Information	Date
V1.0	First Version	8-16-2022



TOP VIEW



SIDE VIEW



BOTTOM VIEW

PH1.5 top entry type, 4PIN
 GND DP DM 5V
 PIN1 PIN2 PIN3 PIN4

Parameters:

- 1、Sensor specification:
 Image Sensor: IMX323
 Pixel: 2.8um×2.8um
 Lens Type: 1/2.9
 Important Voltage Description: USB 5V (external power supply);

2 Lens specification:

- FOV: 96°(D),80°(H),65°(V)
 F/#: 3.0
 TVD: <0.35%
 Focal length: 3.6mm
 Composition: 2P2G+IR FILTER
 IR Cut Coating: 650nm±10nm@50%

Kai Lap Technologies Group Ltd

Designed By

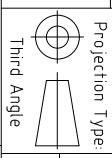
Keyan

Model Name:

KL T-USB-0362 V1

Checked By

Jacky



Unit: mm
 Scale: 1:1

Material: -----
 Sheet: 1 of 1
 Version: 1/0

A

B

C

D

E

3

2

1

3

2

1

SONY

Diagonal 6.23 mm (Type 1/2.9) CMOS Image Sensor with Square Pixel for Color Cameras

Preliminary

IMX323LQN-C

Description

The IMX323LQN-C is a diagonal 6.23 mm (Type 1/2.9) CMOS active pixel type image sensor with a square pixel array and approximately 2.12 M active pixels. This chip operates with analog 2.7 V, digital 1.2 V, and interface 1.8 V triple power supplies. High sensitivity, low dark current and no smear are achieved through the adoption of R, G and B primary color pigment mosaic filters. This chip features an electronic shutter with variable integration time.

(Applications: Consumer use drive recorder, Consumer use network camera)

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Features

- ◆ CMOS active pixel type dots
- ◆ Input clock frequency: 37.125 MHz
- ◆ Readout mode
 - HD1080 p mode
 - HD720 p mode
- ◆ Variable-speed shutter function (Minimum unit: One horizontal sync signal period (1XHS))
- ◆ H driver, V driver and serial communication circuit on chip
- ◆ DCK sync mode supported
- ◆ CDS/PGA on chip
 - 0 dB to 21 dB: Analog Gain 21 dB (step pitch 0.3 dB)
 - 21.3 dB to 45 dB: Analog Gain 21 dB + Digital Gain 0.3 to 24 dB (step pitch 0.3 dB)
- ◆ 10-bit / 12-bit A/D converter on-chip
- ◆ CMOS logic parallel SDR Data-Clock output
- ◆ R, G, B primary color pigment mosaic filters on chip
- ◆ Recommended lens F value: 2.8 or more (close side)
- ◆ Recommended exit pupil distance: -30 mm to $-\infty$

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Exmor

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Application circuits shown, if any, are typical examples illustrating the operation of the devices. Sony cannot assume responsibility for any problems arising out of the use of these circuits.

Device Structure

- ◆ CMOS image sensor
- ◆ Image size
Diagonal 6.23 mm (Type 1/2.9)
- ◆ Total number of pixels
2001 (H) × 1121 (V) approx. 2.24 M pixels
- ◆ Number of effective pixels
1985 (H) × 1105 (V) approx. 2.19 M pixels
- ◆ Number of active pixels
1936 (H) × 1097 (V) approx. 2.12 M pixels
- ◆ Number of recommended recording pixels
1920 (H) × 1080 (V) approx. 2.07 M pixels
- ◆ Unit cell size
2.8 μm (H) × 2.8 μm (V)
- ◆ Optical black

Horizontal (H) direction:	Front 16 pixels, rear 0 pixels
Vertical (V) direction:	Front 16 pixels, rear 0 pixels
- ◆ Dummy

Horizontal (H) direction:	Front 0 pixels, rear 0 pixels
Vertical (V) direction:	Front 7 pixels, rear 0 pixels
- ◆ Substrate material
Silicon

Absolute Maximum Ratings

Supply voltage (analog 2.7 V)	AV _{DD}	-0.3 to +3.3	V
Supply voltage (digital 1.2 V)	DV _{DD}	-0.3 to +2.0	V
Supply voltage (digital 1.8 V)	OV _{DD}	-0.3 to +3.3	V
Input voltage (digital)	V _I	-0.3 to OV _{DD} +0.3	V
Output voltage (digital)	V _O	-0.3 to OV _{DD} +0.3	V
Guaranteed Operating temperature	Topr	-30 to +75	°C
Guaranteed storage temperature	Tstg	-40 to +80	°C
Guaranteed performance temperature	Tspc	-10 to +60	°C

Recommended Operating Conditions

Supply voltage (analog 2.7 V)	AV _{DD}	2.7 ± 0.1	V
Supply voltage (digital 1.2 V)	DV _{DD}	1.2 ± 0.1	V
Supply voltage (digital 1.8 V)	OV _{DD}	1.8 ± 0.1	V
Input voltage (digital)	V _I	-0.1 to OV _{DD} +0.1	V
Output voltage (digital)	V _O	-0.1 to OV _{DD} +0.1	V



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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





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
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



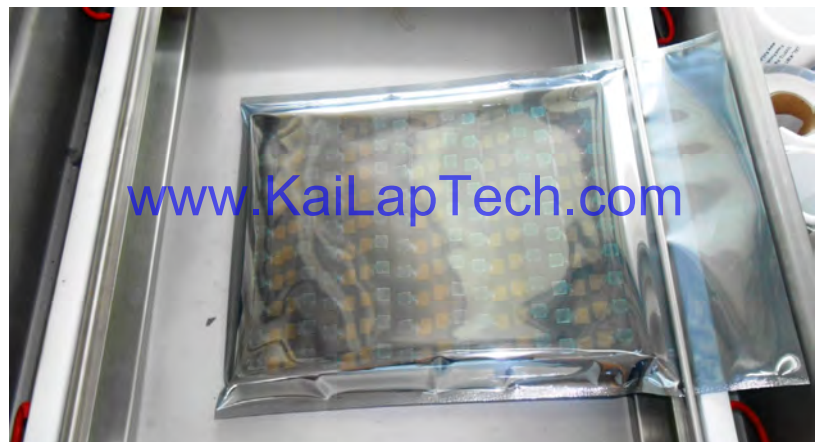
Cover Tray with Lid



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**





CMOS CAMERA MODULES



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Large Order Package Solution

Place Foam Sheets Between Trays

Foam Sheets are Slightly Larger than Trays



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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



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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





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.

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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 subsequent events.





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KLT Strength

Powerful Factory



Professional Service



Promised Delivery



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