

your best camera partner

YDS-K5MF-OV12895 V1.2

12MP OmniVision OV12895 MIPI Interface M12 Fixed Focus Camera Module





Front View Back View

Specifications

Camera Module No.	YDS-K5MF-OV12895 V1.2
Resolution	12MP
Image Sensor	OV12895
Sensor Type	1/2.3"
Pixel Size	1.55 um x 1.55 um
EFL	3.00 mm
F.NO	2.40
Pixel	4096 x 3072
View Angle	160.0°(DFOV) 125.0°(HFOV) 92.0°(VFOV)
Lens Dimensions	14.80 x 14.80 x 21.82 mm
Module Size	40.04 x 23.00 mm
Module Type	Fixed Focus
Interface	MIPI
Auto Focus VCM Driver IC	None
Lens Model	YDS-LENS-ZJ3064B
Lens Type	650nm IR Cut
Operating Temperature	-30°C to +85°C
Mating Connector	AXE540124



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YDS-K5MF-OV12895 V1.2 12MP OmniVision OV12895 MIPI Interface M12 **Fixed Focus Camera Module**







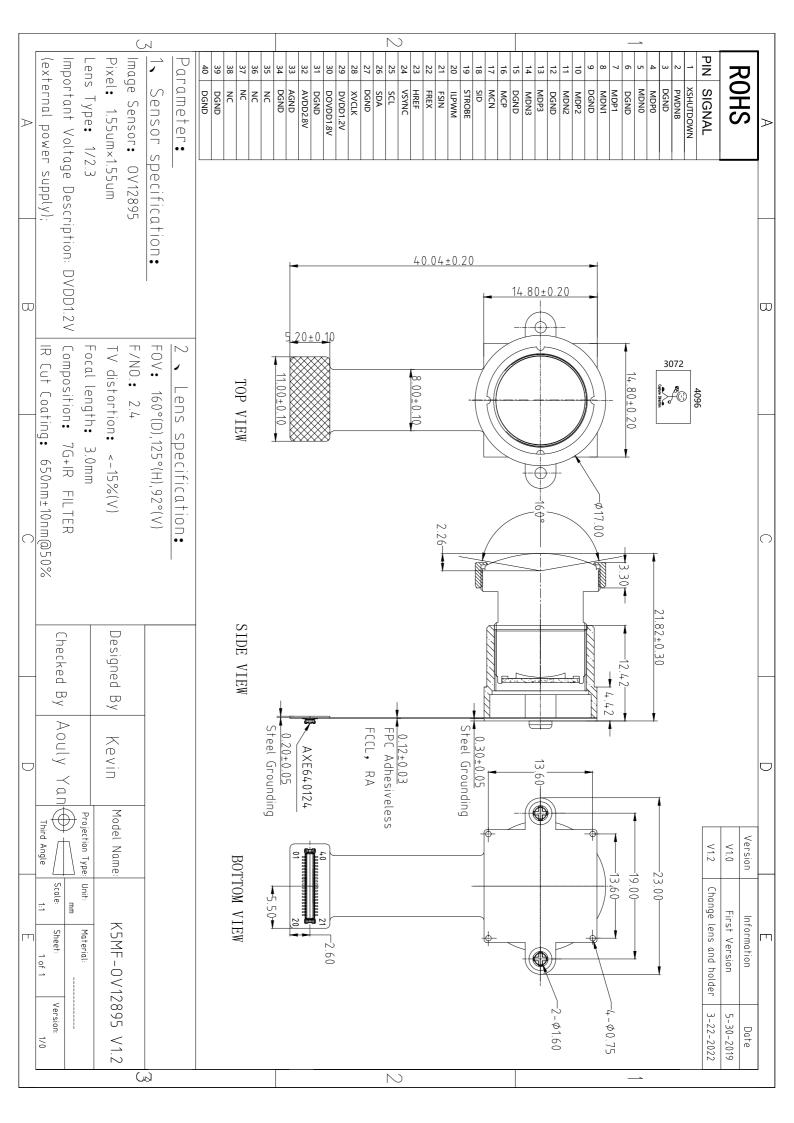
Side View

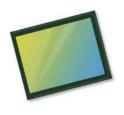


Bottom View



Mating Connector





$0V12895_{12MP}$ product brief





available in a lead-free package

12-Megapixel PureCel®Plus-S Sensor for High-End Consumer Drones and Action Cameras

OmniVision's OV12895 is a high-speed PureCel*Plus-S image sensor that brings 4K2K video and 12-megapixel images to consumer-grade drones, surveillance systems, and 360-degree action cameras. Leveraging a 1.55-micron pixel, the OV12895 captures stunning still images using 10-bit or optional 12-bit readout architecture that provides high-bit depth snapshots.

The OV12895 is built on OmniVision's PureCel®Plus-S stacked-die architecture, featuring backside illumination for ultra-high resolution and crisp, vibrant images across all light levels. The stacked-die structure allows for additional sensor functionality while enabling smaller die sizes compared to non-stacked sensors.

The OV12895 captures ultra-high-resolution 4K2K video at 60 frames per second (fps) and full high-definition (FHD) 1080p videos at 240 fps with full field of view, enabling high-quality slow-motion video capture.

Available in the widely used 1/2.3-inch optical format, the OV12895's low chief ray angle of 5 degrees is suitable for mature lens ecosystems. The sensor currently is available in both RW and CLGA package formats.

Find out more at www.ovt.com.





Applications

- Consumer-grade Drones
- 360-degree Action Cameras
- Surveillance Systems

Product Features

- 1.55 µm x 1.55 µm pixel
- optical size of 1/2.3"
- 5° CRA
- enhanced dual camera support
- high-speed architecture for fast frames per second (fps)
- programmable controls for:
- exposure
- frame rate
- image size horizontal mirror
- vertical flip
- cropping - panning
- windowing

- support for image sizes:
 12MP (4096x3072)

 - 4K2K (3840x2160)
 - -1080p (1920x1080), and more
- two-wire serial bus control (SCCB)
- strobe output to control flash
- total embedded one-time programmable (OTP) memory: 4096 bytes, 64 bytes for customer use, remaining bytes for internal use
- two on-chip phase lock loops (PLLs)
- image quality controls for: defect pixel correction

- automatic black level calibration lens shading correction alternate row HDR
- built-in temperature sensor

OV12895



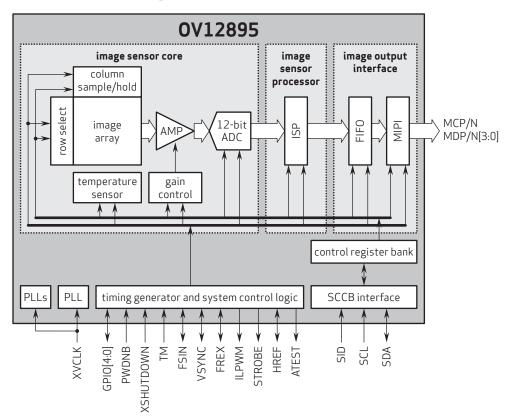
- OV12895-GA5A (color, chip probing, 150 µm backgrinding, reconstructed wafer with good die)
- OV12895-C61A (color, lead-free) 161-pin CLGA

Technical Specifications

- active array size: 4096 x 3072
- maximum image transfer rate:
 12MP (12-bit) (4:3): 30 fps
- 12MP (10-bit) (4:3): 45 fps
- 4K2K (16:9): 60 fps 1080p HD (crop+bin): 240 fps
- power supply: core: 1.2V
- analog: 2.8V I/O: 1.8V
- power requirements:
 active: 320 mW @ full-res, 30 fps, 12-bit
 XSHUTDOWN: <10 µW

- temperature range:operating: -30°C to +85°C junction
- temperature stable image: 0°C to +60°C junction temperature
- output formats: 10/12-bit RGB RAW, DPCM 10-8 compression
- lens size: 1/2.3"
- lens chief ray angle: 5° linear
- scan mode: progressive
- **pixel size:** 1.55 μm x 1.55 μm
- image area: 6398.4 µm x 4811.2 µm

Functional Block Diagram



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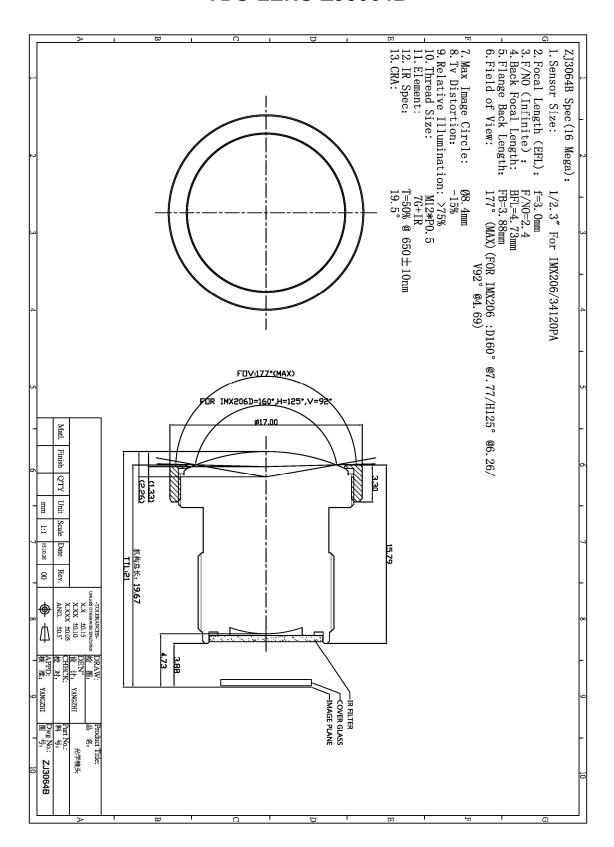
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YDS-LENS-ZJ3064B



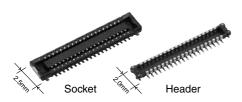
Panasonic ideas for life

Narrow pitch connectors (0.4mm pitch)

For board-to-FPC

A4S Series





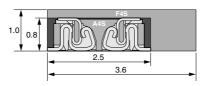
RoHS compliant

FEATURES

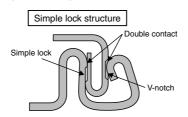
1. 2.5 mm wide slim two-piece style connectors

Compact and slim structure contributes overall miniaturization of product design.

- <Compared to F4S series (40 pin contacts, when mated)>
- Width: 30% down
- Footprint: 30% down



- 2. "TOUGH CONTRET FROURNEED" ensures high resistance to various environments in lieu of slim and low profile body
- 3. Simple lock structure provides tactile feedback to ensure excellent mating/unmating operation feel.



The connector gives the tactile feedback when inserted, allowing reliable mating.

- 4. Mated heights of 0.8 and 1.0 mm are available for the same foot pattern.
- 5. Connectors for inspection available

APPLICATIONS

Recommended for board-to-FPC connections of mobile equipment, such as cellular phones, smart phones, laptops, and portable music players

ORDERING INFORMATION

	AXE				2	4
5: Narrow Pitch Connector A4S (0.4 mm pitch) Socket 6: Narrow Pitch Connector A4S (0.4 mm pitch) Header						
Number of pins (2 digits)						
Mated height <socket> 1: For mated height 0.8/1.0 mm <header> 1: For mated height 0.8 mm 2: For mated height 1.0 mm</header></socket>						
Functions 2: Without positioning bosses						
Surface treatment (Contact portion / Terminal portion) <socket> 4: Ni plating on base, Au plating on surface (for Ni barrie <header> 4: Ni plating on base, Au plating on surface</header></socket>	er availat	ble)				

PRODUCT TYPES

Mated height	Number of pine	Part r	umber	Packing		
wated neight	Number of pins	Socket	Header	Inner carton (1-reel)	Outer carton	
	10	AXE510124	AXE610124			
	12	AXE512124	AXE612124			
	14	AXE514124	AXE614124			
_	16	AXE516124	AXE616124			
	18	AXE518124	AXE618124			
	20	AXE520124	AXE620124			
	22	AXE522124	AXE622124			
	24	AXE524124	AXE624124			
	26	AXE526124	AXE626124			
	28	AXE528124	AXE628124			
	30	AXE530124	AXE630124			
0.0	32	AXE532124	AXE632124			
0.8mm	34	AXE534124	AXE634124			
	36	AXE536124	AXE636124			
	38	AXE538124	AXE638124			
	40	AXE540124	AXE640124			
	44	AXE544124	AXE644124			
	50	AXE550124	AXE650124			
	54	AXE554124	AXE654124			
	56	AXE556124	AXE656124	5,000 pieces	10,000 pieces	
	60	AXE560124	AXE660124			
	64	AXE564124	AXE664124			
	70	AXE570124	AXE670124			
	80	AXE580124	AXE680124			
	10	AXE510124	AXE610224			
	12	AXE512124	AXE612224			
	14	AXE514124	AXE614224			
	20	AXE520124	AXE620224			
	24	AXE524124	AXE624224			
	26	AXE526124	AXE626224			
	30	AXE530124	AXE630224			
1.0mm	32	AXE532124	AXE632224			
	40	AXE540124	AXE640224			
	44	AXE544124	AXE644224			
	50	AXE550124	AXE650224			
	54	AXE554124	AXE654224			
	60	AXE560124	AXE660224			
	70	AXE570124	AXE670224			
	80	AXE580124	AXE680224			

Notes: 1. Order unit:

For volume production: 1-inner carton (1-reel) units

Samples for mounting check: 50-connector units. Please contact our sales office.
Samples: Small lot orders are possible. Please contact our sales office.

2. The above part numbers are for connectors without positioning bosses, which are standard. When ordering connectors with positioning bosses, please contact our sales office.

3. Please contact us for connectors having a number of pins other than those listed above.

SPECIFICATIONS

■ Characteristics

	Item	Specifications	Conditions
	Rated current	0.3A/pin contact (Max. 5 A at total pin contacts)	
	Rated voltage	60V AC/DC	
Electrical B characteristics	Breakdown voltage	150V AC for 1 min.	No short-circuiting or damage at a detection current of 1 mA when the specified voltage is applied for one minute.
Griaractoriotico	Insulation resistance	Min. 1,000M Ω (initial)	Using 250V DC megger (applied for 1 min.)
	Contact resistance	Max. 90mΩ	Based on the contact resistance measurement method specified by JIS C 5402.
	Composite insertion force	Max. 1.200N/pin contacts × pin contacts (initial)	
Mechanical	Composite removal force	Min. 0.165N/pin contacts × pin contacts	
characteristics	Contact holding force (Socket contact)	Min. 0.20N/pin contacts	Measuring the maximum force. As the contact is axially pull out.
	Ambient temperature	-55°C to +85°C	No freezing at low temperatures. No dew condensation.
	Soldering heat resistance	Peak temperature: 260°C or less (on the surface of the PC board around the connector terminals)	Infrared reflow soldering
		300°C within 5 sec. 350°C within 3 sec.	Soldering iron
	Storage temperature	-55°C to +85°C (product only) -40°C to +50°C (emboss packing)	No freezing at low temperatures. No dew condensation.
Environmental characteristics	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100M Ω , contact resistance max. $90m\Omega$	Sequence 1. –55-\(\frac{9}{3}\)°C, 30 minutes 2. \(\times\), Max. 5 minutes 3. 85-\(\frac{9}{3}\)°C, 30 minutes 4. \(\times\), Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100M Ω , contact resistance max. $90m\Omega$	Bath temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100M Ω , contact resistance max. 90m Ω	Bath temperature 35±2°C, saltwater concentration 5±1%
	H ₂ S resistance (header and socket mated)	48 hours, contact resistance max. 90mΩ	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.
Lifetime characteristics	Insertion and removal life	30 times	Repeated insertion and removal speed of max. 200 times/ hours
Unit weight		20 pin contact type: Socket: 0.02 g Header: 0.01 g	

■ Material and surface treatment

Part name	Material	Surface treatment
Molded portion	LCP resin (UL94V-0)	
Contact and Post	Copper alloy	Contact portion: Base: Ni plating Surface: Au plating Terminal portion: Base: Ni plating Surface: Au plating (except the terminal tips) The socket terminals close to the portion to be soldered have nickel barriers (exposed nickel portions). Soldering terminals: Sockets: Base: Ni plating Surface: Pd+Au flash plating (except the terminal tips) Headers: Base: Ni plating Surface: Au plating (except the terminal tips)

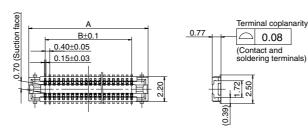
DIMENSIONS (Unit: mm)

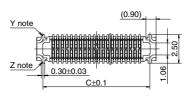
The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e

■ Socket (Mated height: 0.8 mm/1.0 mm)

CAD Data







General tolerance: ±0.2

Note: Since the soldering terminals has a single-piece construction, sections Y and Z are electrically connected.

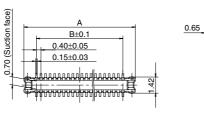
Dimension table (mm)

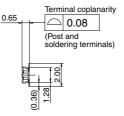
Number of pins/ dimension	А		С
10	4.5	1.6	3.4
12	4.9	2.0	3.8
14	5.3	2.4	4.2
16	5.7	2.8	4.6
18	6.1	3.2	5.0
20	6.5	3.6	5.4
22	6.9	4.0	5.8
24	7.3	4.4	6.2
26	7.7	4.8	6.6
28	8.1	5.2	7.0
30	8.5	5.6	7.4
32	8.9	6.0	7.8
34	9.3	6.4	8.2
36	9.7	6.8	8.6
38	10.1	7.2	9.0
40	10.5	7.6	9.4
44	11.3	8.4	10.2
50	12.5	9.6	11.4
54	13.3	10.4	12.2
56	13.7	10.8	12.6
60	14.5	11.6	13.4
64	15.3	12.4	14.2
70	16.5	13.6	15.4
80	18.5	15.6	17.4

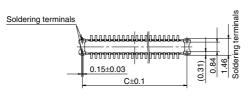
■ Header (Mated height: 0.8 mm)

CAD Data









General tolerance: ±0.2

Dimension table (mm)

Number of pins/ dimension	А	В	С
10	3.8	1.6	3.2
12	4.2	2.0	3.6
14	4.6	2.4	4.0
16	5.0	2.8	4.4
18	5.4	3.2	4.8
20	5.8	3.6	5.2
22	6.2	4.0	5.6
24	6.6	4.4	6.0
26	7.0	4.8	6.4
28	7.4	5.2	6.8
30	7.8	5.6	7.2
32	8.2	6.0	7.6
34	8.6	6.4	8.0
36	9.0	6.8	8.4
38	9.4	7.2	8.8
40	9.8	7.6	9.2
44	10.6	8.4	10.0
50	11.8	9.6	11.2
54	12.6	10.4	12.0
56	13.0	10.8	12.4
60	13.8	11.6	13.2
64	14.6	12.4	14.0
70	15.8	13.6	15.2
80	17.8	15.6	17.2



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Camera Module Pinout Definition Reference Chart

OmniVision Sony Samsung On-Semi Ap	otina Himax GalaxyCore PixArt SmartSens Sensors
Pin Signal	Description
DGND GND	ground for digital circuit
AGND	ground for analog circuit
PCLK DCK	DVP PCLK output
XCLR PWDN XSHUTDOWN STANDBY	power down active high with internal pull-down resistor
MCLK XVCLK XCLK INCK	system input clock
RESET RST	reset active low with internal pull-up resistor
NC NULL	no connect
SDA SIO_D SIOD	SCCB data
SCL SIO_C SIOC	SCCB input clock
VSYNC XVS FSYNC	DVP VSYNC output
HREF XHS	DVP HREF output
DOVDD	power for I/O circuit
AFVDD	power for VCM circuit
AVDD	power for analog circuit
DVDD	power for digital circuit
STROBE FSTROBE	strobe output
FSIN	synchronize the VSYNC signal from the other sensor
SID	SCCB last bit ID input
ILPWM	mechanical shutter output indicator
FREX	frame exposure / mechanical shutter
GPIO	general purpose inputs
SLASEL	I2C slave address select
AFEN	CEN chip enable active high on VCM driver IC
MIPI Interface	3
MDN0 DN0 MD0N DATA_N DMO1N	MIPI 1st data lane negative output
MDP0 DP0 MD0P DATA P DMO1P	MIPI 1st data lane positive output
MDN1 DN1 MD1N DATA2 N DMO2N	MIPI 2nd data lane negative output
MDP1 DP1 MD1P DATA2 P DMO2P	MIPI 2nd data lane positive output
MDN2 DN2 MD2N DATA3 N DMO3N	MIPI 3rd data lane negative output
MDP2 DP2 MD2P DATA3 P DMO3P	MIPI 3rd data lane positive output
MDN3 DN3 MD3N DATA4 N DMO4N	MIPI 4th data lane negative output
MDP3 DP3 MD3P DATA4_P DMO4P	MIPI 4th data lane positive output
MCN CLKN CLK_N DCKN	MIPI clock negative output
MCP CLKP MCP CLK_P DCKN	MIPI clock positive output
DVP Parallel Interface	
D0 D00 Y0	DVP data output port 0
D1 D01 Y1	DVP data output port 1
D2 DO2 Y2	DVP data output port 2
D3 DO3 Y3	DVP data output port 3
D4 DO4 Y4	DVP data output port 4
D5 DO5 Y5	DVP data output port 5
D6 D06 Y6	DVP data output port 6
D7 D07 Y7	DVP data output port 7
D8 DO8 Y8	DVP data output port 8
D9 DO9 Y9	DVP data output port 9
D10 DO10 Y10	DVP data output port 10
D11 D011 Y11	DVP data output port 11
ווו ווטס ווס	DVI data output port 11



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Cameras Applications





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Camera Reliability Test

Reliability Inspection Item		Tanking Makhad	A acceptance Cuitoria		
Cat	egory	Item	Testing Method	Acceptance Criteria	
Storage		High 60°C 96 Hours	Temperature Chamber	No Abnormal Situation	
	Temperature	Low -20°C 96 Hours	Temperature Chamber	No Abnormal Situation	
	Operation	High 60°C 24 Hours	Temperature Chamber	No Abnormal Situation	
Environmental	Temperature	Low -20°C 24 Hours	Temperature Chamber	No Abnormal Situation	
Environmental	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	
	Drop Test	Without Package 60cm	10 Times on Wood Floor	Electrically Functional	
	(Free Falling)	With Package 60cm	10 Times on Wood Floor	Electrically Functional	
	Vibration Test	50Hz X-Axis 2mm 30min	Vibration Table	Electrically Functional	
Physical		50Hz Y-Axis 2mm 30min	Vibration Table	Electrically Functional	
Titysical		50Hz Z-Axis 2mm 30min	Vibration Table	Electrically Functional	
Strength Test 60 Seconds		Loading Weight 4 kg 60 Seconds Cycling in 24 Hours	Tensile Testing Machine	Electrically Functional	
	ESD Test	Contact Discharge 2 KV	ESD Testing Machine	Electrically Functional	
	ESD Test	Air Discharge 4 KV	ESD Testing Machine	Electrically Functional	
Electrical	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	











Camera Inspection Standard

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Inspection		ı Item	Inapaction Mathed	Oraș le de Characteria	
Cateo	gory	Item	Inspection Method	Standard of Inspection	
		Color	The Naked Eye	Major Difference is Not Allowed.	
	FPC/ PCB	Be Torn/Chopped	The Naked Eye	Copper Crack Exposure is Not Allowed.	
		Marking	The Naked Eye	Clear, Recognizable (Within 30cm Distance)	
		Scratches	The Naked Eye	The Inside Crack Exposure is Not Allowed	
	Holder	Gap	The Naked Eye	Meet the Height Standard	
Appearance	Holdel	Screw	The Naked Eye	Make Sure Screws Are Presented (If Any)	
		Damage	The Naked Eye	The Inside Crack Exposure is Not Allowed	
		Scratch	The Naked Eye	No Effect On Resolution Standard	
	Lens	Contamination	The Naked Eye	No Effect On Resolution Standard	
	Lens	Oil Film	The Naked Eye	No Effect On Resolution Standard	
		Cover Tape	The Naked Eye	No Issue On Appearance.	
		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	
Function	Image	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	
		Height	The Naked Eye	Follows Approval Data Sheet	
Dimer	neion	Width	The Naked Eye	Follows Approval Data Sheet	
Dille	131011	Length	The Naked Eye	Follows Approval Data Sheet	
		Overall	The Naked Eye	Follows Approval Data Sheet	



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YDSCAM Package Solutions

YDS Camera Module



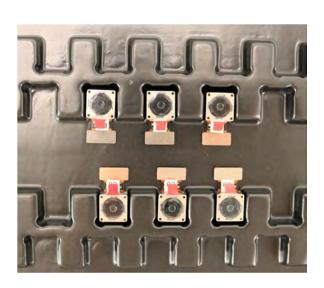
Tray with Grid and Space



Complete with Lens Protection Film



Place Cameras on the Tray





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YDSCAM Package Solutions

Full Tray of Cameras



Place Tray into Anti-Static Bag



Cover Tray with Lid



Vacuum the Anti-Static Bag





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YDSCAM Package Solutions

Sealed Vacuum Anti-Static Bag with Labels

1. Model and Description 2. Quantity 3. Manufacturing Date Code 4. Caution





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YDSCAM Package Solutions

Place Foam Sheets Between Tray Bags



Place Foam Sheets and Trays into Box



Seal the Carbon Box



Foam Sheets are Larger Than Trays



Foam Sheets are Tightly Fitting in Box



Label the Carbon Shipping Box





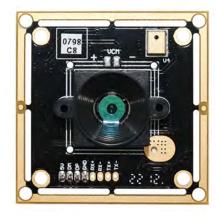
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YDSCAM Package Solutions

USB Camera Module

Complete with Lens Protection Film







Place Camera Sample into Anti-Static Bag

Place USB Cameras into Tray







Seal the Tray with Anti-Static Bag

Label the Carbon Shipping Box







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YDSCAM Package Solutions

Place Camera Sample into Anti-Static Bag





Label the Sample Bags



Place Samples into the Carbon Box



Place Connectors into Anti-Static Bag





Place Connectors into Reel



Place Connectors into the Carbon Box





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Company YDSCAM

YingDeShun Co. Ltd. (YDS) was established in 2017, a next-generation technology driven manufacturer specialized in research, design, and produce of audio and video products. YDS is occupying 20,000 square feet automated plants with 100 employees of annual throughput 30,000,000 units cameras.

YDS 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. YDS 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

YDS provides the following limited warranty if you purchased the Product(s) directly from YDS company or from YDS's website www.YDSCAM.com. Product(s) purchased from other sellers or sources are not covered by this Limited Warranty. YDS 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, YDS 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 YDS is solely limited to repair and/or replacement on the terms set forth above. YDS is not reliable or responsible for any subsequential events.















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YDS Strength

Powerful Factory





Professional Service







Promised Delivery











