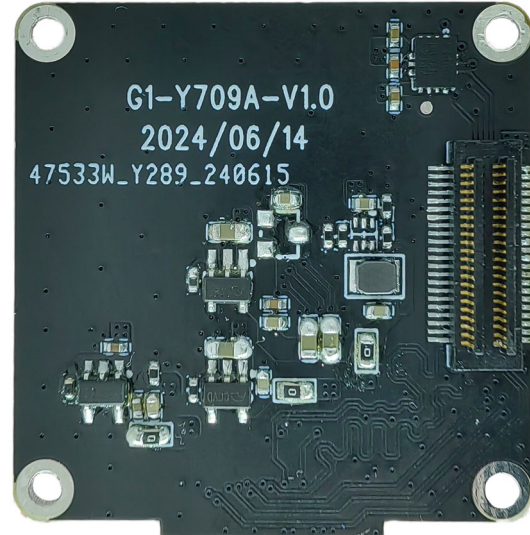


YDS-CMFLY709A-IMX577 V1.0 12.3MP Sony IMX577 Fixed Focus Camera Module



Front View



Back View

Overview

The YDS-CMFLY709A-IMX577 V1.0 camera module uses the Sony IMX577 high-quality CMOS image sensor, which has a diagonal of 7.857mm (1/2.3 type) CMOS image sensor, a pixel size of 1.55um, a color square pixel display, an effective pixel of 12 megapixels, and a high-definition image.

When used with the master board, it can support 12MP high-definition photos, and can support up to 4K@60FPS (differential), 4K@30FPS video shooting. Used with the master board, the coaxial cable is used to connect the main board or by directly plug in. The board frame size is 33x32mm, and the size from the top of the module lens to the PCB board surface is 14mm.

YDS-CMFLY709A-IMX577 V1.0 12.3MP Sony IMX577 Fixed Focus Camera Module



Top View



Side View

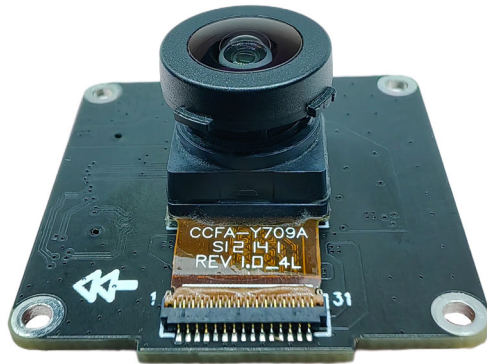


Bottom View



Isometric View

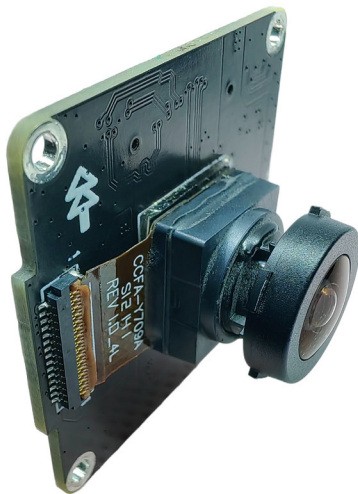
YDS-CMFLY709A-IMX577 V1.0 12.3MP Sony IMX577 Fixed Focus Camera Module



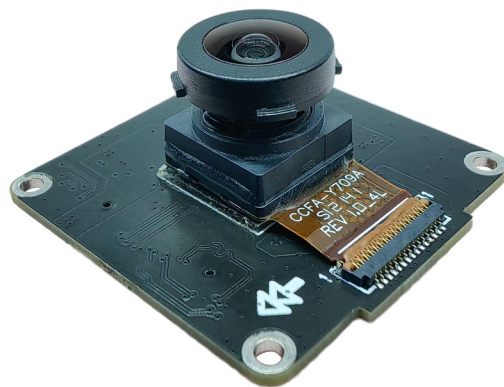
Top View



Side View



Bottom View



Isometric View



YDS-CMFLY709A-IMX577 V1.0 12.3MP Sony IMX577 Fixed Focus Camera Module

Specifications

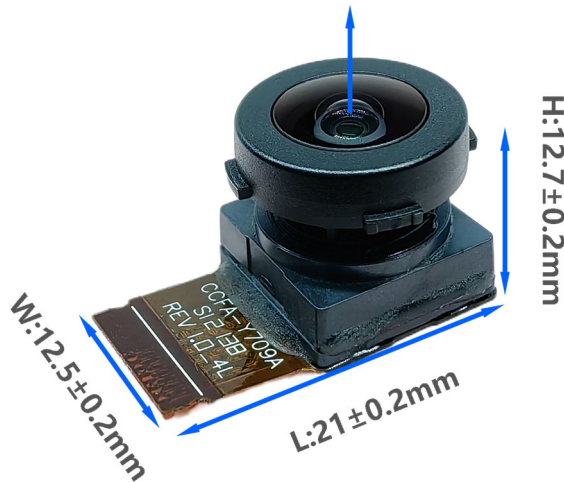
Model No.	YDS-CMFLY709A-IMX577 V1.0
Image Sensor	IMX577
Image Sensor Type	CMOS
Effective Pixels	12.3 Megapixels
Sensor Size	1/2.3"
Pixel Size	1.55 um x 1.55 um
Video Frame Rate	4K@24/25/30/FPS, 4K@48/50/60FPS (Differential) 2.7K@24/25/30/48/50/60FPS 1080P@24/25/30/48/50/60/120FPS 720P@24/25/30/48/50/60/120/240FPS
Video Slow Motion	OFF, 4K2X, 1080P4X, 720P8X
Photo Resolution (with Master Board)	20MP (5200x3900) (Differential) 13MP (4160x3120) (Differential) 12MP (4000x3000) 10MP (3648x2736) 8MP (3264x2448) 5MP (2592x1944) 3MP (2048x1536) 2MP (1920x1080)
Operating Temperature	-10°C to +60°C
Storage Temperature	-20°C to +80°C
Humidity	20% to 80%
PCB Dimensions	33 x 32 mm
Module Size	33 x 32 x 14 mm
PCB Screw Hole Spacing	28 x 28 mm
PCB Screw Hole Diameter	2 mm
Module Cable Holder	31PIN-0.3mm

YDS-CMFLY709A-IMX577 V1.0 12.3MP Sony IMX577 Fixed Focus Camera Module

Lens Specifications

Lens Model No.	Y709A
EFL (Focal Length)	3.51 mm
TTL (Total Length)	11.7 mm
F. No.	2.50
Diagonal View Angle (DFOV)	130.0° (DFOV)
Horizontal View Angle (HFOV)	99.53° (HFOV)
Vertical View Angle (VFOV)	73.74° (VFOV)
Distortion	<0.5%
Lens Operating Temperature	-30°C to +75°C
Lens Storage Temperature	-40°C to +85°C

IMX577 Y709A 镜头模组



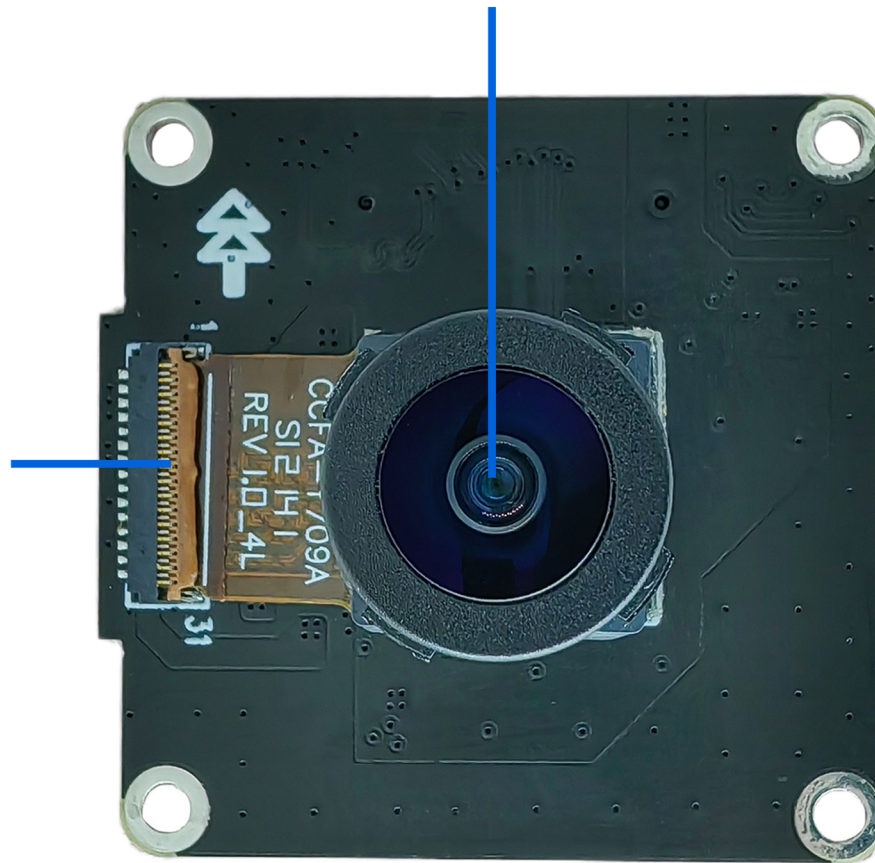
IMX577 Y709A 镜头模组



YDS-CMFLY709A-IMX577 V1.0 12.3MP Sony IMX577 Fixed Focus Camera Module

IMX577 Y709A 镜头模组

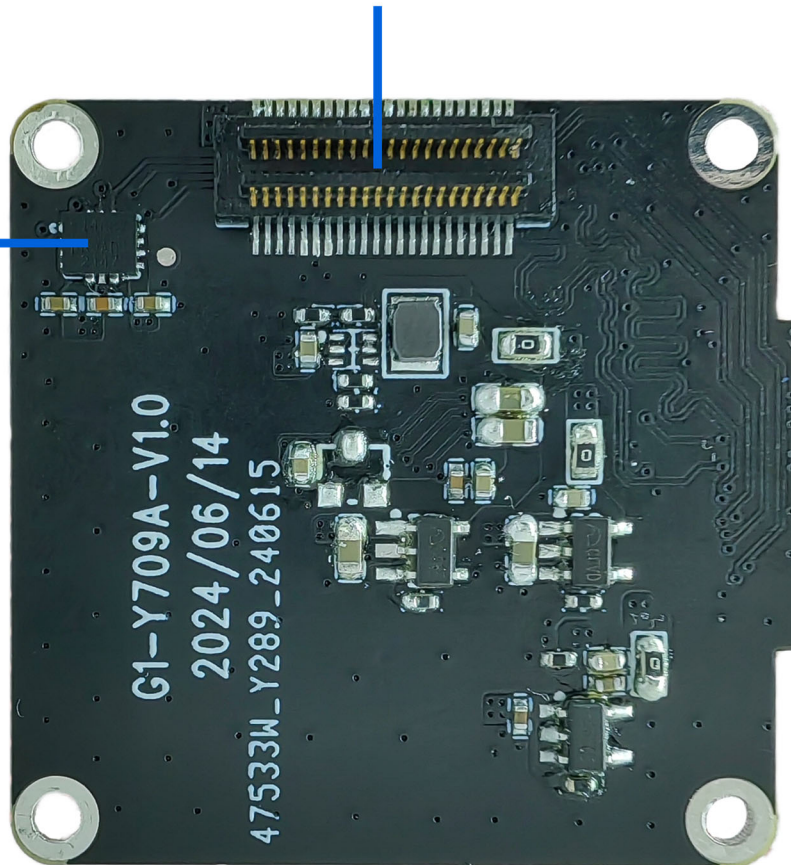
31PIN-0.3mm
模组排线座子



YDS-CMFLY709A-IMX577 V1.0
12.3MP Sony IMX577 Fixed Focus Camera Module

通过板对板连接器连接G1主板
支持Sensor、EIS等
Connect Sensor、EIS

陀螺仪，支持EIS防抖
EIS Stabilization



[Product Information]

IMX577-AACK

Ver.1.0

Diagonal 7.857 mm (Type 1/2.3) 12.3 Mega-Pixel CMOS Image Sensor with Square Pixel for Color Cameras

Description

The IMX577-AACK is a diagonal 7.857 mm (Type 1/2.3) 12.3 Mega-pixel CMOS active pixel type stacked image sensor with a square pixel array. It adopts Sony's Stacked CMOS Image Sensor technology to achieve high speed image capturing by column parallel A/D converter circuits and high sensitivity and low noise image (comparing with conventional CMOS image sensor) through the backside illuminated imaging pixel structure. R, G, and B pigment primary color mosaic filter is employed. It equips an electronic shutter with variable integration time. It operates with three power supply voltages: analog 2.8 V, digital 1.05 V and 1.8 V for input/output interface and achieves low power consumption.

In addition, this product is designed for use in consumer use camcorder. When using this for another application, Sony Semiconductor Solutions Corporation does not guarantee the quality and reliability of product. Therefore, don't use this for applications other than consumer use camcorder.

In addition, individual specification change cannot be supported because this is a standard product.

Consult your Sony Semiconductor Solutions Corporation sales representative if you have any questions.

Features

- ◆ Back-illuminated and stacked CMOS image sensor
- ◆ Digital Overlap High Dynamic Range (DOL-HDR) mode with raw data output.
- ◆ High signal to noise ratio (SNR).
- ◆ Full resolution @60 frame/s (Normal), 4K2K @60 frame/s (Normal), 1080p @240 frame/s
Full resolution @40 frame/s (12 bit Normal), Full resolution @30 frame/s (DOL-HDR, 2 frame)
- ◆ Output video format of RAW12/10/8, COMP8.
- ◆ Power Save Mode with MIPI ULPS operation
- ◆ Pixel binning readout and V sub-sampling function.
- ◆ Independent flipping and mirroring.
- ◆ Input clock frequency 6 to 27 MHz
- ◆ CSI-2 serial data output (MIPI 2lane/4lane, Max. 2.1 Gbps/lane, D-PHY spec. ver. 1.2 compliant)
- ◆ 2-wire serial communication.
- ◆ Two PLLs for independent clock generation for pixel control and data output interface.
- ◆ Defect Pixel Correction (DPC)
- ◆ Ambient Light Sensor (ALS)
- ◆ Fast mode transition. (on the fly)
- ◆ Dual sensor synchronization operation (Multi camera compatible)
- ◆ 7 k bit of OTP ROM for users.
- ◆ Built-in temperature sensor
- ◆ 10-bit/12-bit A/D conversion on chip
- ◆ Horizontal Low Power Analog Cropping
- ◆ Window Scanning mode
- ◆ 92-pin high-precision ceramic package

Sony reserves the right to change products and specifications without prior notice.

Sony logo is a registered trademark of Sony Corporation.

Device Structure

◆ CMOS image sensor	
◆ Image size	Diagonal 7.857 mm (Type 1/2.3)
◆ Total number of pixels	4072 (H) × 3176 (V) approx. 12.93 M pixels
◆ Number of effective pixels	4072 (H) × 3064 (V) approx. 12.47 M pixels
◆ Number of active pixels	4056 (H) × 3040 (V) approx. 12.33 M pixels
◆ Chip size	7.564 mm (H) × 5.476 mm (V)
◆ Unit cell size	1.55 μm (H) × 1.55 μm (V)
◆ Package	92 pin LGA

Image Sensor Characteristics

(T_j = 60 °C)

Item		Value	Remarks
Sensitivity (F2.8)	Min.	250 LSB	1/120 s integration
Saturation signal	Min.	1023 LSB	

Basic Drive Mode

Drive mode	Number of active pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
Full (4:3) (Normal)	4056 (H) × 3040 (V) approx. 12.33 M pixels	60	CSI-2	10
		43	CSI-2	12
Full (4:3) (DOL-HDR)	4056 (H) × 3040 (V) approx. 12.33 M pixels	DOL 2 frame : 30 DOL 3 frame : 15	CSI-2	10
Full (16:9) 4K2K (Normal)	4056 (H) × 2288 (V) approx. 9.28 M pixels	79	CSI-2	10
Full (16:9) 4K2K (DOL-HDR)	4056 (H) × 2288 (V) approx. 9.28 M pixels	DOL 2 frame : 39 DOL 3 frame : 19	CSI-2	10
Full (4:3) Binning (Normal)	2028 (H) × 1520 (V) approx. 3.08 M pixels	178	CSI-2	10
Full (16:9) Binning 1080P (Normal)	2028 (H) × 1112 (V) approx. 2.26 M pixels	241	CSI-2	10
Full (16:9) Binning 720P (Normal)	1352 (H) × 740 (V) approx. 1.00 M pixels	241	CSI-2	10
Full (16:9) Scaling 1080P (Normal)	2028 (H) × 1144 (V) approx. 2.32 M pixels	79	CSI-2	10
Full (16:9) Scaling 720P (Normal)	1352 (H) × 762 (V) approx. 1.03 M pixels	79	CSI-2	10

Cameras Applications



Automotive Driver Pilot



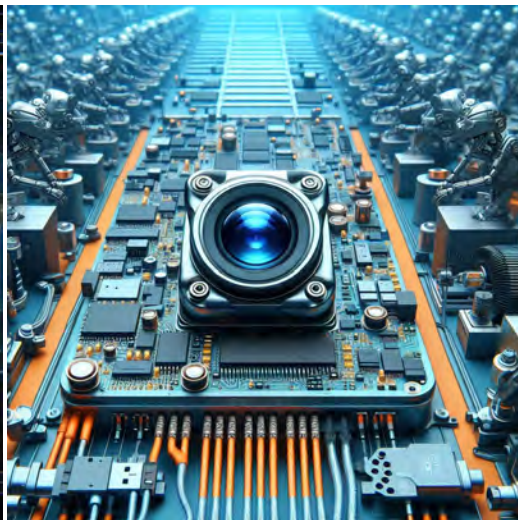
Live Streaming



Video Conference



Eye Tracker Biometric Detection



Machine Vision



Agricultural Monitor



Night Vision Security



Drone and Sports Eagle Eyes



Interactive Pet Camera



YDS CAMERA MODULE

your best camera partner

Camera Module Pinout Definition Reference Chart

OmniVision	Sony	Samsung	On-Semi	Aptina	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							
FREQ		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									
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 DO0 Y0		DVP data output port 0							
D1 DO1 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 DO6 Y6		DVP data output port 6							
D7 DO7 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 DO11 Y11		DVP data output port 11							

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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



Camera Inspection Standard

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		

YDSCAM Package Solutions

YDS Camera Module



Complete with Lens Protection Film



Tray with Grid and Space



Place Cameras on the Tray

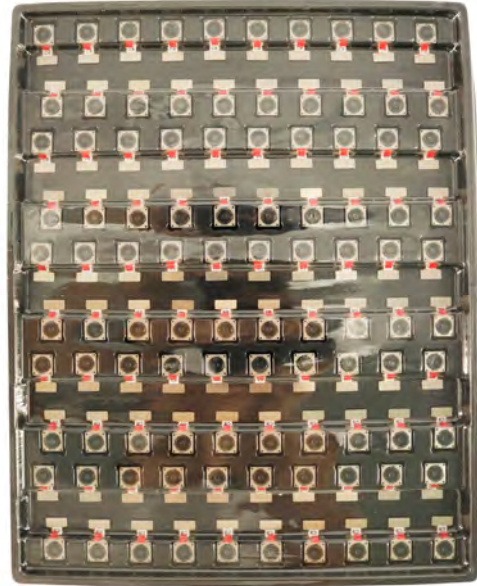


YDSCAM Package Solutions

Full Tray of Cameras



Cover Tray with Lid



Place Tray into Anti-Static Bag



Vacuum the Anti-Static Bag



YDSCAM Package Solutions

Sealed Vacuum Anti-Static Bag with Labels

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



YDSCAM Package Solutions

Place Foam Sheets Between Tray Bags



Foam Sheets are Larger Than Trays



Place Foam Sheets and Trays into Box



Foam Sheets are Tightly Fitting in Box



Seal the Carbon Box



Label the Carbon Shipping Box





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



YDSCAM Package Solutions

Place Camera Sample into Anti-Static Bag



Place Connectors into Anti-Static Bag



Label the Sample Bags



Place Connectors into Reel



Place Samples into the Carbon Box



Place Connectors into the Carbon Box





YDS CAMERA MODULE

your best camera partner

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 subsequent events.



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YDS CAMERA MODULE

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YDS Strength

Powerful Factory



Professional Service



Promised Delivery



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