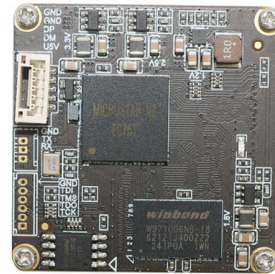![Micro Star logo]

MSR-USB-M2-48100-F114
48MP M12 Fixed Focus USB 2.0 Camera Module

Front View   Back View

MSR-USB-M2-48100-F114 is a 48MP Fixed Focus USB camera module based on 1/2.0" image sensor. It delivers 8000 x 6000 resolution at 0.80um pixels with 4K high quality images and 3D noise reduction function. The S-mount (M12) lens holder enables customers to choose different lens as per varies applications. This camera module is ideal solution for video conferencing, live broadcast, industrial equipment, media equipment, smart home, robotics, self-service equipment, advertising machines, all-in-one machines, display stands, computer cameras.
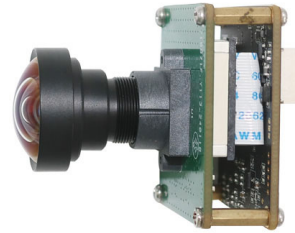
Key Features

    48 Megapixels 8000 x 6000 array at 5 FPS
    High speed USB 2.0 Plug and Play
    MJPG output format
    Low power consumption
    Compact size 38x38 mm
    UVC compliant to Windows, Linux, OS with UVC UAC driver
    USB OTG (On-The-Go) Support

MSR-USB-M2-48100-F114
48MP M12 Fixed Focus USB 2.0 Camera Module

Top View

Side View

Bottom View

USB Cable

MSR-USB-M2-48100-F114
48MP M12 Fixed Focus USB 2.0 Camera Module

Camera Module No.	MSR-USB-M2-48100-F114
Image Sensor	48MP 4K
Sensor Type	1/2.0"
Resolution	0.80 um x 0.80 um
Pixel Size	8000 x 6000 @ 5 FPS
TTL	29.56 mm
F. NO.	2.00
View Angle	114°(DFOV) 105°(HFOV) 68°(VFOV)
Lens Dimensions	15.30 x 15.30 mm
Module Type	Fixed Focus
Interface	USB 2.0
Output Format	MJPG
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	38.0 x 38.0 x 48.0 mm
System Compatibility	Windows XP (SP2, SP3), Vista, 7, 8, 10, 11 Android, Mac OS, Linux or OS with UVC UAC 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	-20°C to +70°C

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

MSR-USB-M2-48100-F114
48MP M12 Fixed Focus USB 2.0 Camera Module

Format	Resolution	Frame Rate
		USB 2.0
MJPG	**1280 x 720 (720P)**	**30 FPS**
	1920 x 1080 (1080P)	**30 FPS**
	3840 x 2160 (8MP)	**20 FPS**
	4000 x 3000 (12MP)	**10 FPS**
	4608 x 3456 (16MP)	**10 FPS**
	8000 x 6000 (48MP)	**5 FPS**
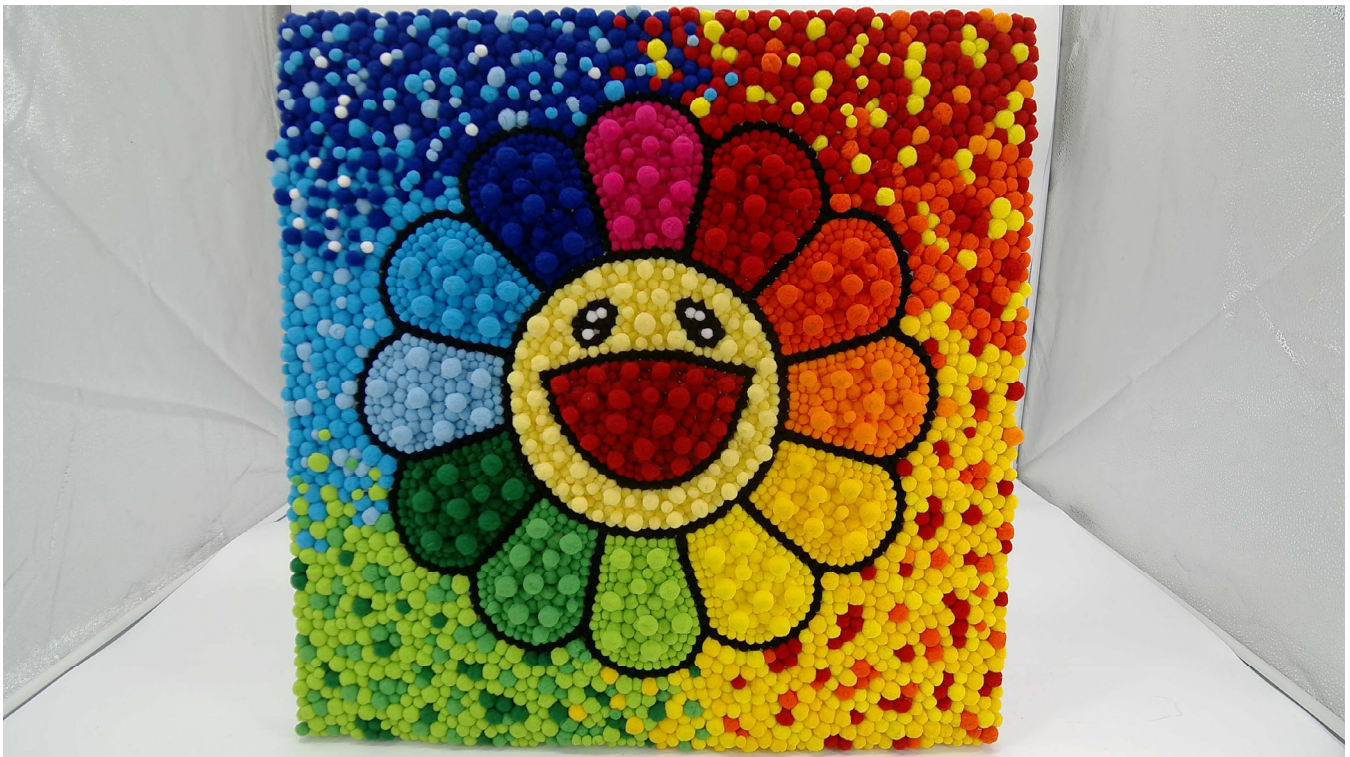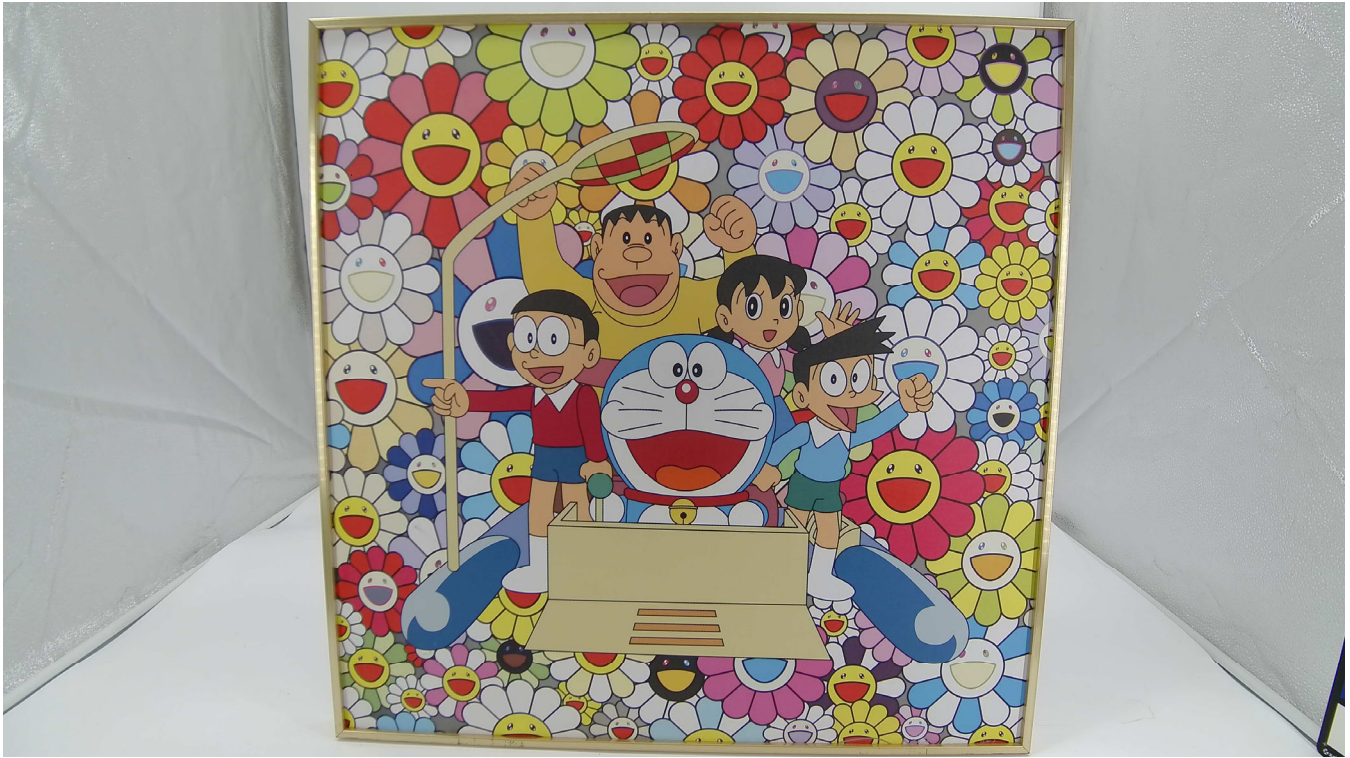
8000

6000

Capture Direction
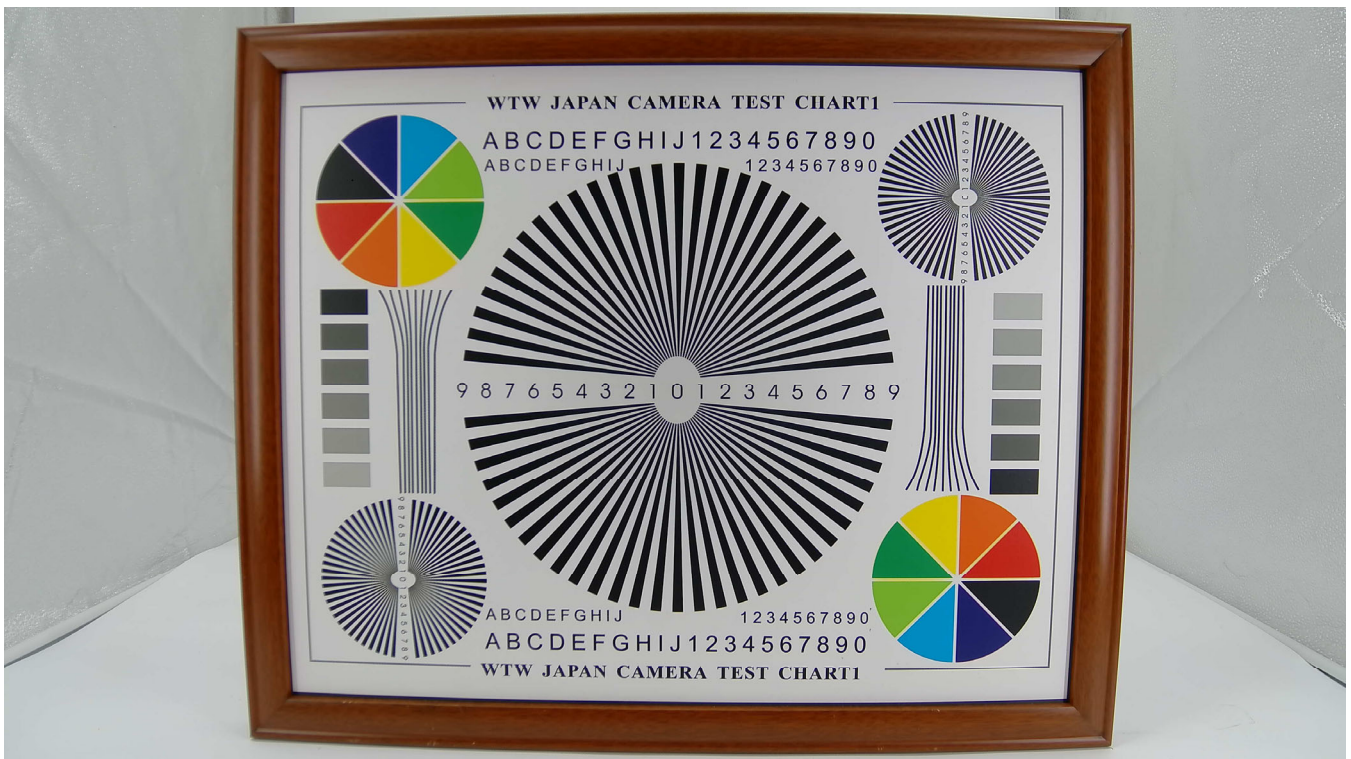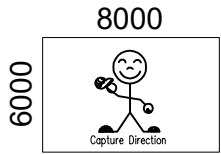
Version	Mark	Information	Date
V1.0	PD	First Version	2024-01-12

1.25mm-5P 立贴

38.0±0.2

34.0±0.2

Ø22

38.0±0.2

34.0±0.2

48.0±0.3

2-1.60（PCB）

10.0±0.1

4-M2-3螺丝

114°

4-M2-10铜柱

16,5

16,5

12

12

散热片
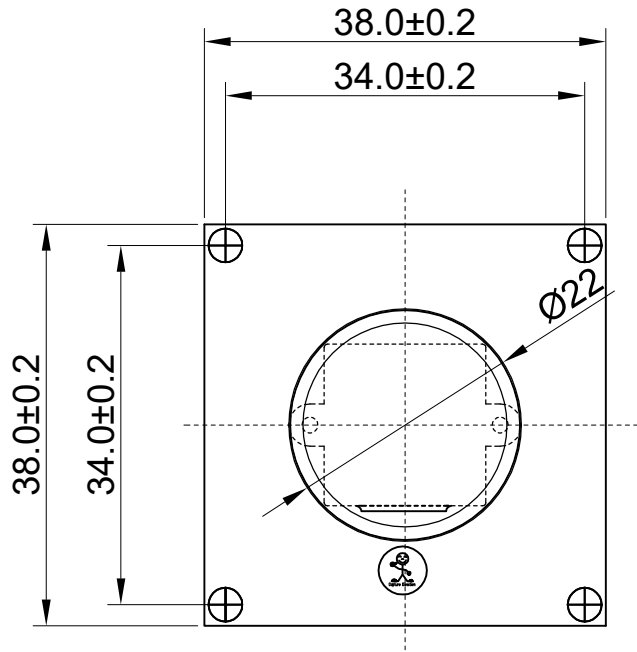
TOP VIEW
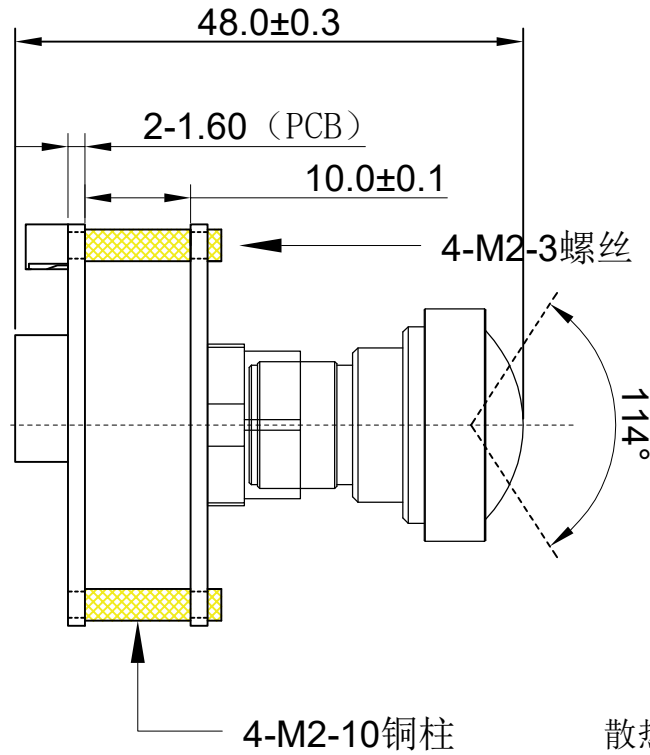
SIDE VIEW
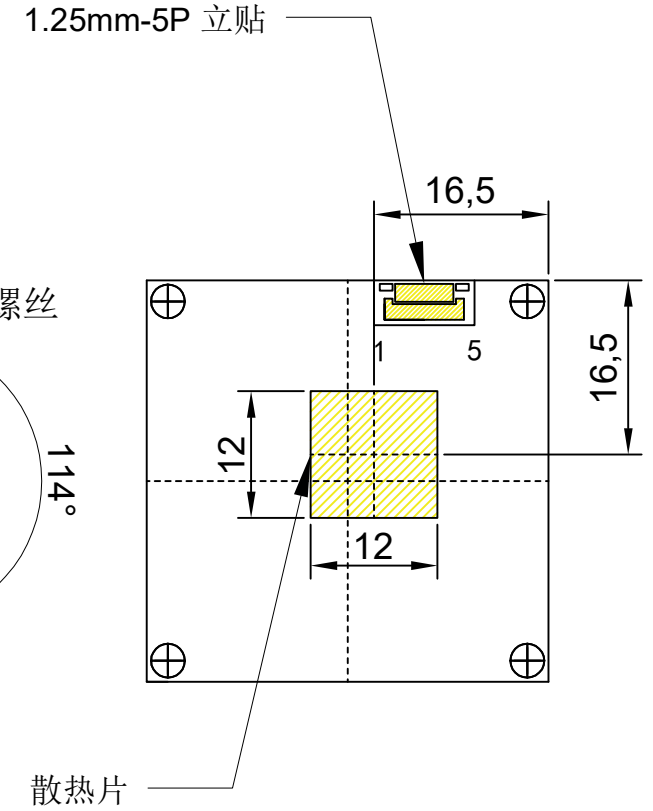
BOTTOM VIEW

Parameters:

1、Sensor specification:

Image Sensor 48M

Pixel Size： 0.8umX0.8um

Image Size： 1/2.0

2、Lens specification:

FOV： D:114°/H:105°/V:68°

F/NO.： 2.0

TV distortion： ≤-6.21%

EFL： 3.05mm

TTL： 29.56mm

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Designed By	Lu	Model Name:	M2-48100

Checked By	He cheng	Projection Type: Third Angle	Unit: mm	Material: -------------

| | | | Scale: 1:1 | Sheet: 1 of 1 | Version: 1/0 |

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
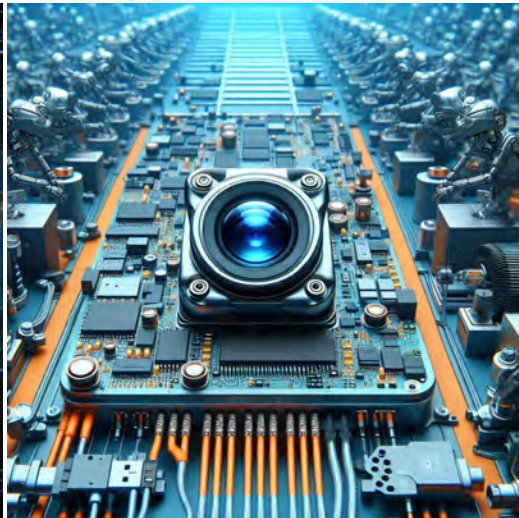
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Camera Module Pinout Definition Reference Chart

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
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	
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

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

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

YDS (MICROSTAR) Package Solutions
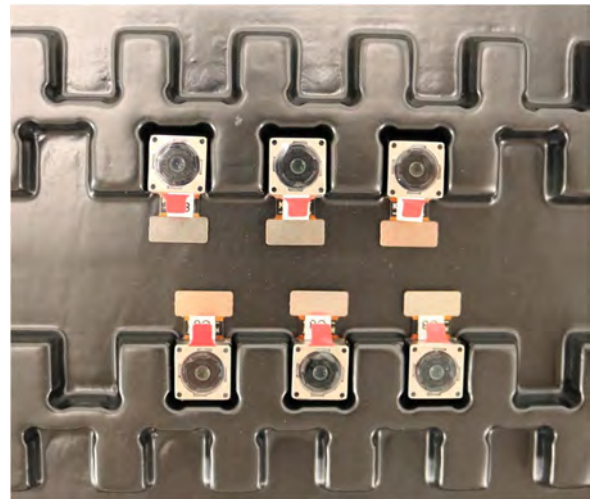
YDS (MicroStar) Camera Module

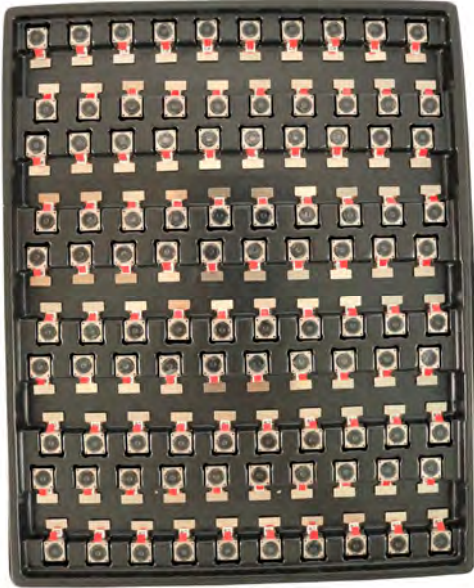Complete with Lens Protection Film
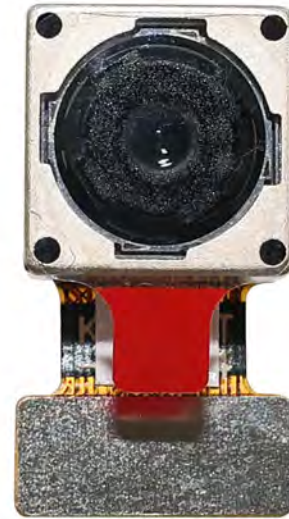
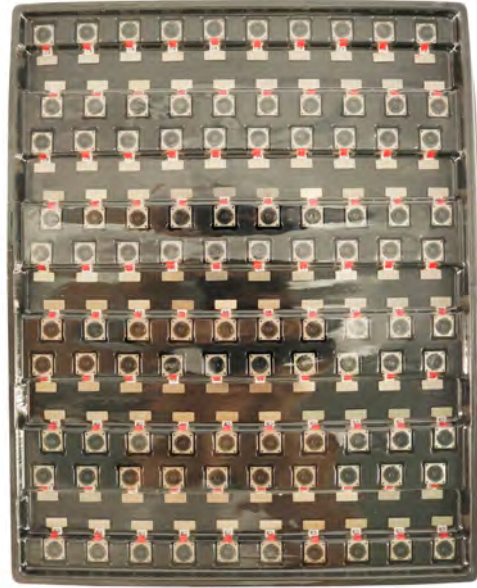Tray with Grid and Space

Place Cameras on the Tray

YDS (MICROSTAR) Package Solutions

Full Tray of Cameras

Cover Tray with Lid

Place Tray into Anti-Static Bag

Vacuum the Anti-Static Bag

Micro Star

YDS (MICROSTAR) Package Solutions

Sealed Vacuum Anti-Static Bag with Labels

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

YDS CAMERA

YDS Model No.

YDS-MAA12-IMX586 V1.0

IMX586, MIPI Interface

Auto Focus, 79.4 Degree

www.ydscam.com MADE IN CHINA

YDS CAMERA

Tray 1 of 1
100 PIECES

Production Date
20 August 2022

Date Code
2234 (Week 34, 2022)

www.ydscam.com MADE IN CHINA

CAUTION
STATIC SENSITIVE
DEVICES

NOT TO BE HANDLED
BY UNAUTHORISED
PERSONNEL

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YDS (MICROSTAR) Package Solutions

Place Foam Sheets Between Tray Bags

Foam Sheets are Larger Than Trays

Place Foam Sheets and Trays into Box

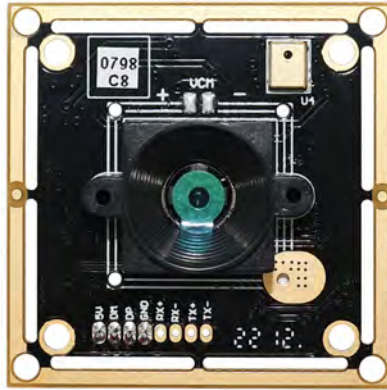Foam Sheets are Tightly Fitting in Box

Seal the Carbon Box

Label the Carbon Shipping Box

YDS (MICROSTAR) 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

YDS (MICROSTAR) Package Solutions

Place Camera Sample into Anti-Static Bag

Place Connectors into Anti-Static Bag

Label the Sample Bags

YDS
YDS CAMERA

YDS Model No.

YDS-MAA12-IMX586 V1.0

IMX586, MIPI Interface
Auto Focus, 79.4 Degree

www.ydscam.com MADE IN CHINA

CAUTION
STATIC SENSITIVE
DEVICES

NOT TO BE HANDLED
BY UNAUTHORISED
PERSONNEL

YDS
YDS CAMERA

OK-10F030-04

Mating Connector for
YDS-MAA12-IMX586 V1.0

10 PIECES

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CAUTION
STATIC SENSITIVE
DEVICES

NOT TO BE HANDLED
BY UNAUTHORISED
PERSONNEL

Place Connectors into Reel

Place Samples into the Carbon Box

Package:
1 of 1

fragile
HANDLE WITH CARE

Package:
1 of 1

fragile

Place Connectors into the Carbon Box

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About Our Company YingDeShun Co. Ltd. (Micro Star Brand)

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. The brand "Micro Star" is made by YDS. Our factories are occupying 50,000 square feet automated plants with 200 employees of annual throughput 85,000,000 units cameras.

Micro Star (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 long term partner in developing practical and innovative solutions.

Our team covers everything from initial concept development to mass produced product. Micro Star (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.

USB camera module
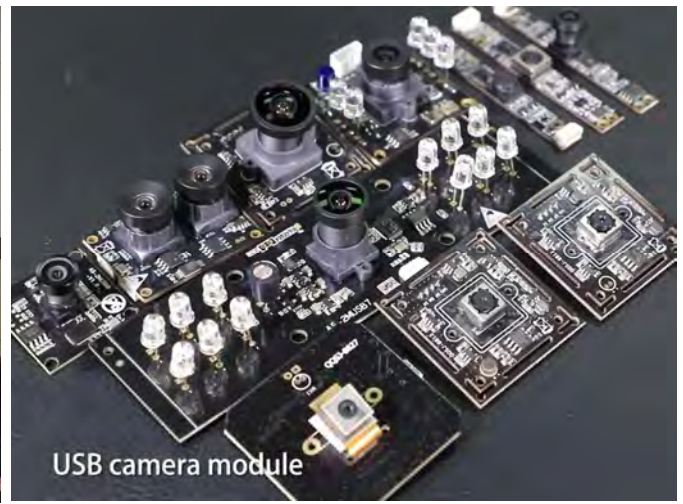
Limited Warranty

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

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Our Company Strength

Powerful Factory

Professional Service

Promised Delivery