

your best camera partner

YDS-CMFL60101-IMX335 V1.0 5.14MP Sony IMX335 Fixed Focus Camera Module





Front View

Back View

Overview

The YDS-CMFL60101-IMX335 V1.0 camera module uses the Sony IMX335 high-quality CMOS image sensor, which has a diagonal of 6.52mm (1/2.8 type) CMOS image sensor, a pixel of 2.0um, a color square pixel display, and an effective pixel of 5.14 megapixels.

When used with the master board, it can support shooting 5MP pixel high-definition photos and up to 2.7K@30FPS video. The board frame size is 32x32mm, and the size from the top of the module lens to the PCB board is 32x32x23.5mm.



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YDS-CMFL60101-IMX335 V1.0 **5.14MP Sony IMX335 Fixed Focus Camera Module**

Specifications

Model No.	YDS-CMFL60101-IMX335 V1.0	
Image Sensor	IMX335	
Image Sensor Type	CMOS	
Effective Pixels	5.14 Megapixels	
Sensor Size	1/2.8"	
Pixel Size	2.0 um x 2.0 um	
Video Frame Rate	4K@30FPS/60FPS (Differential) 2.7K@30FPS 1080P@30FPS/60FPS 720P@60FPS/120FPS	
Photo Resolution (with Master Board)	20MP (5200x3900) (Differential) 13MP (4160x3120) (Differential) 12MP (4000x3000) (Differential) 10MP (3648x2736) (Differential) 8MP (3264x2448) (Differential) 5MP (2592x1944) Default 3MP (2048x1536) 2MP (1920x1080)	
Operating Temperature	-10°C to +60°C	
Storage Temperature	-20°C to +80°C	
Humidity	20% to 80%	
PCB Dimensions	32 x 32 mm	
Module Size	32 x 32 x 23.5 mm	
PCB Screw Hole Spacing	28 x 28 mm	
PCB Screw Hole Diameter	2 mm	



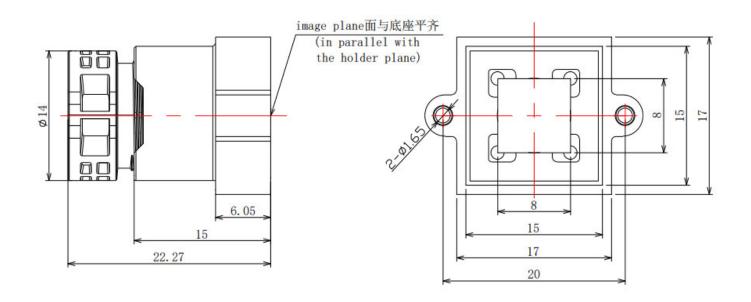
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Lens Specifications

Lens Model No.	HX60101
EFL (Focal Length)	7 mm
TTL (Total Length)	22.27 mm
F. No.	1.65
Lens Barrel Thread	M12 x P0.5
Lens Construction	6E
Diagonal View Angle (DFOV)	52.2° (DFOV)
Horizonal View Angle (HFOV)	45.8° (HFOV)
Vertical View Angle (VFOV)	26.2° (VFOV)
Chief-Ray Angle	10.7°
Distortion	-3.60%
Relative Illumination	>57.1%
Lens Operating Temperature	-20°C to +60°C
Lens Storage Temperature	-30°C to +80°C

Lens Drawing





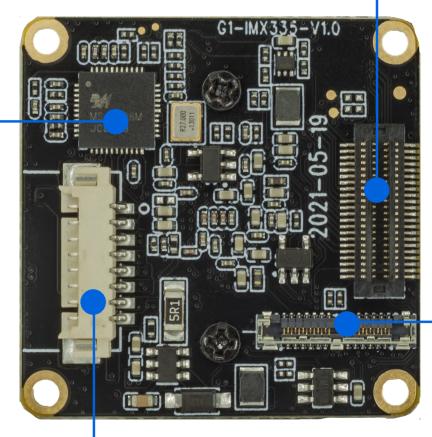
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YDS-CMFL60101-IMX335 V1.0 5.14MP Sony IMX335 Fixed Focus Camera Module

通过板对板连接器支持自动AF变焦镜头 Sensor、IR-CUT、LED等

Connect AF Zoom Lens, Sensor, IR-CUT, Led

Zoom lens driver chip变焦镜头驱动芯片



Mipi Sensor interface

週同轴线连接MIP

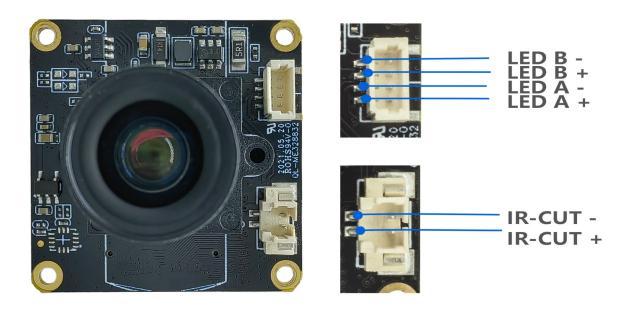
变焦马达接口

Zoom motor interface

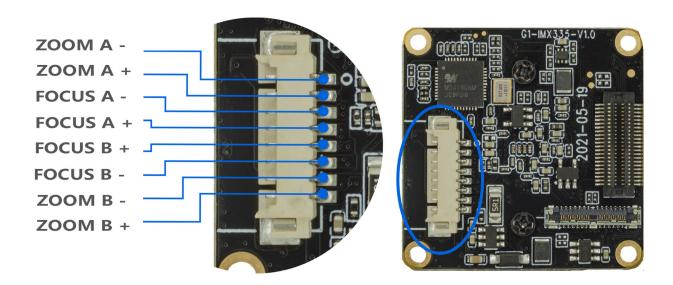


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The two groups of fill light interfaces support the expansion of infrared lights and white light boards to provide fill light for the device. Note: The IR-Cut filter switch interface is used by lenses with filters, but this camera module does not support this function.



The auto focus interface leads to the connection automatically focusing motor to achieve the zoom function, but this camera module does not support zoom function.



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YDS-CMFL60101-IMX335 V1.0 5.14MP Sony IMX335 Fixed Focus Camera Module





G1 IMX335 HX60101

两组LED补光灯接口

LEDS * 2 INTERFACE

Note: You can choose between TBT board-to-board socket or connecting to the master board via coaxial cable. Users can use them flexibly according to the construction scenarios.



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YDS-CMFL60101-IMX335 V1.0 **5.14MP Sony IMX335 Fixed Focus Camera Module**







SONY

[Product Information]

Ver.1.0

IMX335LLN

Diagonal 6.52 mm (Type 1 / 2.8) CMOS Solid-state Image Sensor with Square Pixel for Monochrome Cameras

Description

The IMX335LLN is a diagonal 6.52 mm (Type 1 / 2.8) CMOS active pixel type solid-state image sensor with a square pixel array and 5.14 M effective pixels. This chip operates with analog 2.9 V, digital 1.2 V, and interface 1.8 V triple power supply, and has low power consumption. High sensitivity, low dark current and no smear are achieved. This chip features an electronic shutter with variable charge-integration time.

(Applications: Surveillance cameras, FA cameras, Industrial cameras)

Features

- ◆ CMOS active pixel type dots
- ◆ Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ◆ Input frequency: 6 to 27 MHz / 37.125 MHz / 74.25 MHz
- ♦ Number of recommended recording pixels: 2592 (H) x 1944 (V) approx. 5.04 M pixels
- ◆ Readout mode

All-pixel scan mode

Window cropping mode

Vertical / Horizontal direction-normal / inverted readout mode

◆ Readout rate

Maximum frame rate in All-pixel scan mode 2592(H) x 1944(V) A/D 10-bit : 60 frame/s

◆ High dynamic range (HDR) function

Multiple exposure HDR

Digital overlap HDR

- ◆ Variable-speed shutter function (resolution 1H units)
- ◆ 10-bit / 12-bit A/D converter
- ♦ CDS / PGA function

0 dB to 30 dB: Analog Gain 30 dB (step pitch 0.3 dB)

30.3 dB to 72 dB: Analog Gain 30 dB + Digital Gain 0.3 to 42 dB (step pitch 0.3 dB)

◆ Supports I/O

CSI-2 serial data output (2 Lane / 4 Lane, RAW10 / RAW12 output)

◆ Recommended exit pupil distance: -100 mm to -∞

STARVIS

* STARVIS is a trademark of Sony Corporation. The STARVIS is back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. It features a sensitivity of 2000 mV or more per 1 µm² (color product, when imaging with a 706 cd/m² light source, F5.6 in 1 s accumulation equivalent), and realizes high picture quality in the visible-light and near infrared light regions.

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 Type 1/2.8

◆ Total number of pixels
 ◆ Number of effective pixels
 2704 (H) × 2104 (V) approx. 5.69 M pixels
 2616 (H) × 1964 (V) approx. 5.14 M pixels

♦ Number of active pixels 2616 (H) x 1960 (V) approx. 5.13 M pixels

♦ Number of recommended recording pixels 2592 (H) x 1944 (V) approx. 5.04 M pixels

♦ Unit cell size 2.0 μm (H) x 2.0 μm (V)

◆ Optical black Horizontal (H) direction: Front 0 pixel, rear 0 pixel

Vertical (V) direction: Front 13 pixels, rear 0 pixel

◆ Dummy Horizontal (H) direction: Front 0 pixel, rear 0 pixel

Vertical (V) direction: Front 0 pixel, rear 0 pixel

◆ Package 88 pin BGA

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F8)	Тур.	1961 Digit	1/30 s accumulation 12 bit converted value
Saturation signal	Min.	3895 Digit	12 bit converted value

Basic Drive Mode

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
All pixel	2592 (H) × 1944 (V) approx. 5.04 M pixels	60	CSI-2	10

SONY

[Product Information]

Ver.1.1

IMX335LQN

Diagonal 6.52 mm (Type 1/2.8) CMOS Solid-state Image Sensor with Square Pixel for Color Cameras

Description

The IMX335LQN is a diagonal 6.52 mm (Type 1/2.8) CMOS active pixel type solid-state image sensor with a square pixel array and 5.14 M effective pixels. This chip operates with analog 2.9 V, digital 1.2 V, and interface 1.8 V triple power supply, and has low power consumption. High sensitivity, low dark current and no smear are achieved through the adoption of R, G and B primary color mosaic filters. This chip features an electronic shutter with variable charge-integration time.

(Applications: Surveillance cameras, FA cameras, Industrial cameras)

Features

- ◆ CMOS active pixel type dots
- ◆ Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ♦ Input frequency: 6 to 27 MHz / 37.125 MHz / 74.25 MHz
- ◆ Number of recommended recording pixels: 2592 (H) x 1944 (V) approx. 5.04 M pixels
- ◆ Readout mode

All-pixel scan mode

Horizontal/Vertical 2/2-line binning mode

Window cropping mode

Vertical / Horizontal direction-normal / inverted readout mode

◆ Readout rate

Maximum frame rate in All-pixel scan mode 2592 (H) × 1944 (V) A/D 10-bit : 60 frame/s

◆ High dynamic range (HDR) function

Multiple exposure HDR

Digital overlap HDR

- ◆ Variable-speed shutter function (resolution 1H units)
- ◆ 10-bit / 12-bit A/D converter
- ◆ CDS / PGA function

0 dB to 30 dB : Analog Gain 30 dB (step pitch 0.3 dB)

30.3 dB to 72 dB: Analog Gain 30 dB + Digital Gain 0.3 to 42 dB (step pitch 0.3 dB)

◆ Supports I/O

CSI-2 serial data output (2 Lane / 4 Lane, RAW10 / RAW12 output)

◆ Recommended exit pupil distance: -30 mm to -∞

STARVIS

* STARVIS is a trademark of Sony Corporation. The STARVIS is back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. It features a sensitivity of 2000 mV or more per 1 μm² (color product, when imaging with a 706 cd/m² light source, F5.6 in 1 s accumulation equivalent), and realizes high picture quality in the visible-light and near infrared light regions.

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

◆ Total number of pixels

◆ Number of effective pixels

◆ Number of active pixels

◆ Number of recommended recording pixels

◆ Unit cell size

◆ Optical black

♦ Dummy

◆ Package

Type 1/2.8

2704 (H) x 2104 (V) approx. 5.69 M pixels

2616 (H) x 1964 (V) approx. 5.14 M pixels

2616 (H) x 1960 (V) approx. 5.11 M pixels

2592 (H) x 1944 (V) approx. 5.04 M pixels

 $2.0 \mu m (H) \times 2.0 \mu m (V)$

Horizontal (H) direction: Front 0 pixel, rear 0 pixel

Vertical (V) direction: Front 13 pixels, rear 0 pixel

Horizontal (H) direction: Front 0 pixel, rear 0 pixel

Vertical (V) direction: Front 0 pixel, rear 0 pixel

88 pin CSP BGA

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Тур.	2200 Digit	1/30 s accumulation 12 bit converted value
Saturation signal	Min.	3895 Digit	12 bit converted value

Basic Drive Mode

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
All pixel	2592 (H) × 1944 (V) approx. 5.04 M pixels	60	CSI-2	10
Horizontal/ Vertical 2/2-line binning	1296 (H) × 972 (V) approx. 1.26 M pixels	60	CSI-2	10



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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 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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Camera Reliability Test

Reliability Inspection Item		Tanking Makhad	Acceptones Critoria		
Category		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	
Physical	Vibration Test	50Hz X-Axis 2mm 30min	Vibration Table	Electrically Functional	
		50Hz Y-Axis 2mm 30min	Vibration Table	Electrically Functional	
1 TrySteat		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	
	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 Item		ı Item	lana antina Mathard	Oten dead of languages
Cateo	gory	Item	Inspection Method	Standard of Inspection
	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)
		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
	Image	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		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











