

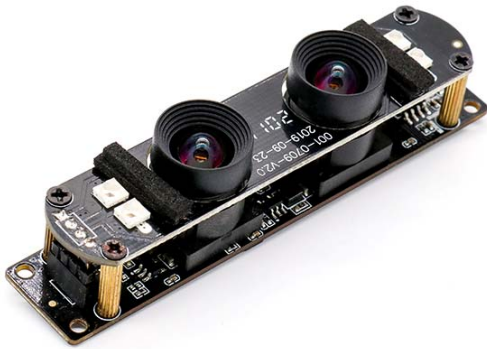


**HAMPO-003-0712**

## **2MP AR0230 RX2719 Fixed Focus M8 USB 2.0 Camera Module**

### **Product Description**

HAMPO-003-0712 is a synchronized dual lens USB camera module, with 1/2.7" CMOS AR0230 & RXS2719 image sensor, the max resolution is 1920\*1080P @30fps for each camera, delivery 96dB of wide dynamic range. The PCB board size is about 80\*16\*11.6(mm). This 3D stereo camera module is widely used for Robot vision, Virtual reality, Augmented Reality, biometric Retina analyze, 3D measurement, People Counting & Tracking etc





**HAMPO-003-0712**

## **2MP AR0230 RX2719 Fixed Focus M8 USB 2.0 Camera Module**

### **Key Features**

1. Synchronized dual lens camera module
2. Full HD 1080P Resolution
3. Excellent WDR Technology
4. Best Universal Compatibility
5. Wide Application



### **Product Specifications**

<b>HAMPO 003-0712</b>	<b>RGB Camera</b>	<b>IR Camera</b>
Sensor	AR0230	RX2719
Maximum Resolution	1920 x 1080	1920 x 1080
Maximum Pixels	2 MP	2 MP
Sensor Size	1/2.7	1/2.7"
Pixel Size	3.0um*3.0µm	3.0um*3.0µm
Frame Rate	30fps	30fps
Wide Dynamic Range	96DB	76DB
Output Format	MJPEG/YUV2	MJPEG/YUV2
Lens Specs (Default)	FOV =74.38°(Diagonal) 66.91°(Horizontal) 40.91°(Veitical)	
	TTL = 7.81mm	
	Lens Construction = 4P+1R	
	EFL=4.35mm	
	S-Mount = M8 * P0.35mm	
Auto Control	Saturation, Contrast, Acutance, White Balance, Exposure	
Input Voltage	DC 5V	
Working Current	200mA	
USB Interface	USB 2.0	
Storage Temperature	-20°C to +70°C	
PCB Size	80mm x 16mmx 11.6mm	
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, Motion Eye OS, iSpy, ZoneMider, Yawcam	



HAMPO-003-0712

## 2MP AR0230 RX2719 Fixed Focus M8 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

## Image





HAMPO-003-0712

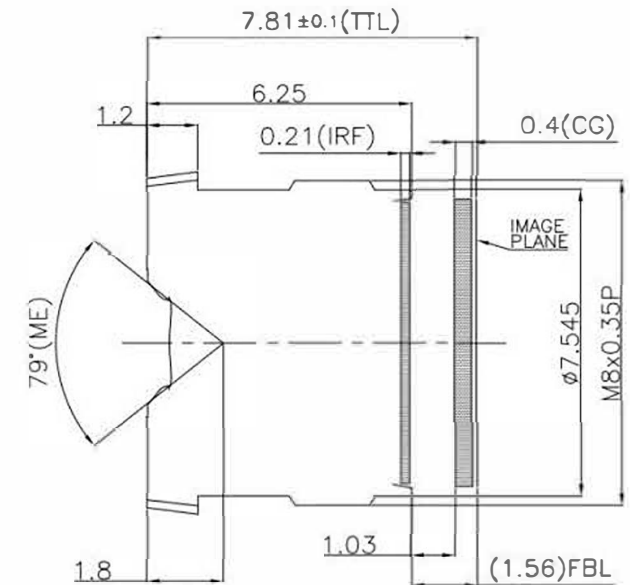
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YUY2	640 x 480 (VGA)	30 FPS
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	1920 x 1080 (1080P)	5 FPS

### Image



11. Number of Elements and Type :  $4P+IR$

5.1

## Product Overview

### AR0230AT: 2 MP 1/3" CMOS Image Sensor

For complete documentation, see the data sheet.

The AR0230AT is a 1/2.7-inch CMOS digital image sensor with an active-pixel array of 1928Hx1088V. It captures images in either linear or high dynamic range modes, with rolling-shutter readout. It includes sophisticated camera functions such as in-pixel binning, windowing and both video and single frame modes. It is designed for both low light and high dynamic range scene performance. It is programmable through a simple two wire serial interface. The AR0230AT produces extraordinarily clear, sharp digital pictures, and its ability to capture both continuous video and single frames makes it the perfect choice for a wide range of applications.

### Features

- High Dynamic Range

### Applications

- Automotive

### Part Electrical Specifications

Product	Compliance	Status	Type	Megapixels	Frame Rate (fps)	Optical Format	Shutter Type	Pixel Size (μm)	Output Interface	Color	Package Type
AR0230ATSC00XUEA0-DRBR	AEC Qualified PPAP Capable Pb-free Halide free	Active									IBGA-80
AR0230ATSC00XUEA0-DRBR-E	Pb-free Halide free	Active	CMOS	2.1	30	1/2.7 inch	Electronic Rolling and Global Reset Release	3.0 x 3.0	Parallel HiSPi™	RGB	IBGA-80
AR0230ATSM00XUEA0-DRBR-E	Pb-free Halide free	Active	CMOS	2.1	30	1/2.7 inch	Electronic Rolling and Global Reset Release	3.0 x 3.0	Parallel HiSPi™	Mono	IBGA-80

For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com).

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High quality RXS2719 is a 1/2.7 inch 1080p format CMOS image sensor. It provides high quality digital images and high-definition (HD) video. RXS2719 focuses on products including Security Surveillance systems, IP cameras and HD analog cameras.

By introducing advanced 3um pixel architecture, RXS2719 achieves excellent low-light sensitivity, signal-to-noise ratio, full-well capacity, quantum efficiency and low-power consumption. The default mode and programmable mode of it allow a more convenient way for controlling the parameters of frame size, exposure time, gain value, and so on. It also offers the following image control functions: mirror and flip, windowing, auto black level calibration, defective pixel correction, black sun cancellation, and so forth.

RXS2719 supports high frame rate up to 30fps@1080p format through the DVP interface or MIPI interface. These prominent features integrated in RXS2719 make it become the best-in-class image sensor, and will bring users vivid pictures and excellent experience.

**Trademark Information**

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Color CMOS 1080p (1920 x 1080) HD image sensor with OmniPixel3-HS™ technology  
datasheet (CSP)

PRELIMINARY SPECIFICATION

Version 1.15

December 2017

To learn more about OmniVision Technologies, visit [www.ovt.com](http://www.ovt.com).

## applications

- Security Surveillance systems
- IP cameras
- HD analog cameras

## Ordering Information

**RXS2719 (color, lead-free)**  
**66-pin CSP**

## features

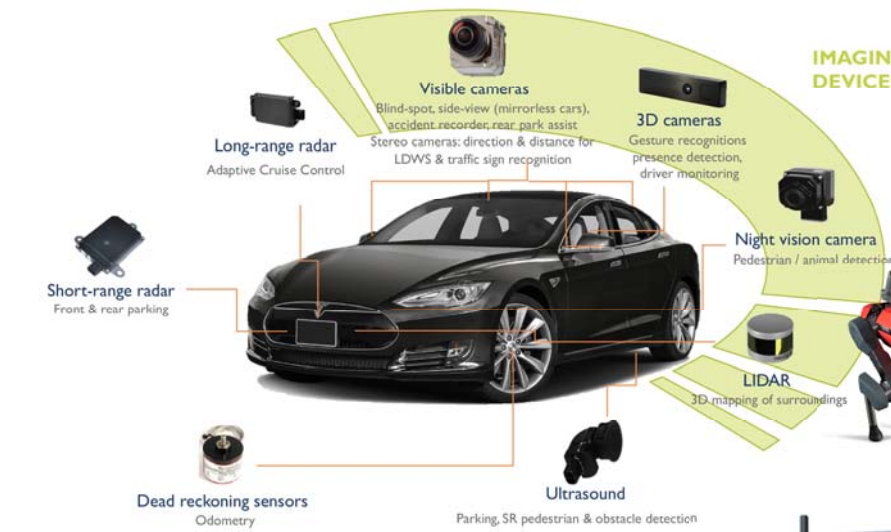
- Support 1080p (2Mega, 1920x1080) resolution
- Support windowing
- Support mirror and flip function
- Support auto black level calibration
- Support defective pixel correction
- Support black sun cancellation
- SCCB control interface for register programming
- Support binning function
- Support 10-bit / 8-bit RAW image data output
- Support MIPI 2-lane serial output interface
- Support DVP 10-bit / 8-bit output interface
- Low power mode
- Support multi-camera synchronous function

## key specifications (typical)

- active array pixel: 1920 x 1080
- power supply:
  - core: 1.35V~1.65V (1.5V nominal)
  - analog: 2.6V~3.0V (2.8V nominal)
  - I/O: 1.7V~3.0V
- power requirements:
  - active: < 200mW
- temperature range:
  - operating: -40°C~85°C junction temperature
  - stable: -20°C~60°C junction temperature
- output interfaces:MIPI 2-lane / DVP
- output formats:RAW10 / RAW8
- lens size: 1/2.7"
- lens chief ray angle: 12°linear
- input clock frequency: 6~27 MHz
- maximum image transfer rate:
  - 1080p: 30fps
- shutter: rolling
- sensitivity: 2080mV/Lux-sec
- max S/N ratio: 39dB
- dynamic range: 76dB
- dark current: 10mV/sec@60°C
- pixel size: 3μm x 3μm
- image area:5808 μm x 3288 μm
- Package dimension: CSP: 6961 μm x 4770 μm



## Cameras Applications



### IMAGING DEVICES





## 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	Major Difference is Not Allowed.
		Be Torn/Chopped	Copper Crack Exposure is Not Allowed.
		Marking	Clear, Recognizable (Within 30cm Distance)
	Holder	Scratches	The Inside Crack Exposure is Not Allowed
		Gap	Meet the Height Standard
		Screw	Make Sure Screws Are Presented (If Any)
		Damage	The Inside Crack Exposure is Not Allowed
	Lens	Scratch	No Effect On Resolution Standard
		Contamination	No Effect On Resolution Standard
		Oil Film	No Effect On Resolution Standard
		Cover Tape	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



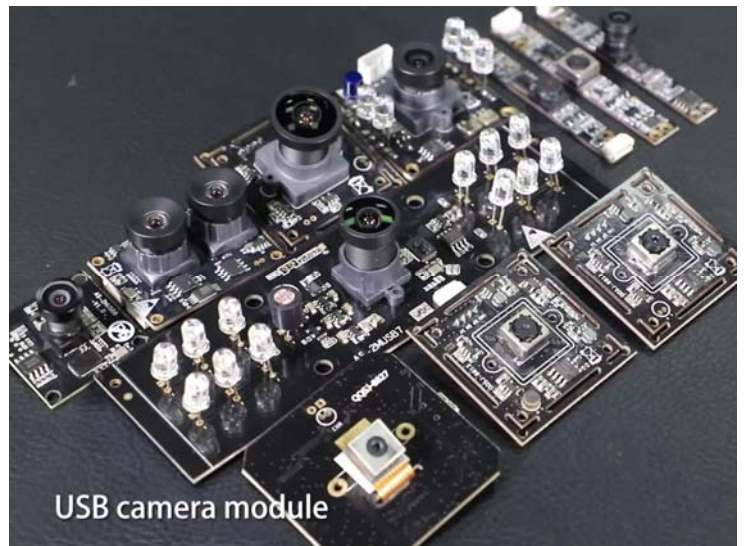


## Company HAMPO

Dongguan Hampo Electronic Technology Co., Ltd. was established in 2015, a next-generation technology driven manufacturer specialized in research, design, and produce of audio and video products. Hampo is occupying 150,000 square feet automated plants with 500 employees of annual throughput 180,000,000 units cameras.

Hampo 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. Hampo 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

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





## Hampo Strength

### Powerful Factory



### Professional Service



### Promised Delivery

