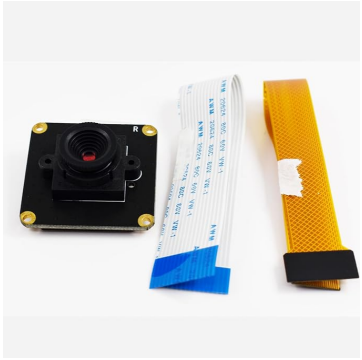
PI-CAMV2 User Manual

		
PI-CAMV2-FOV60 IMX219 Camera Module feature with FOV60 Camera Len	**PI-CAMV2-FOV90** IMX219 Camera Module feature with FOV90 Camera Len	**PI-CAMV2-FOV160** IMX219 Camera Module feature with FOV160 Camera Len

Date	Revision	Description
2025/09/09	V1.0	First Released

1 Description

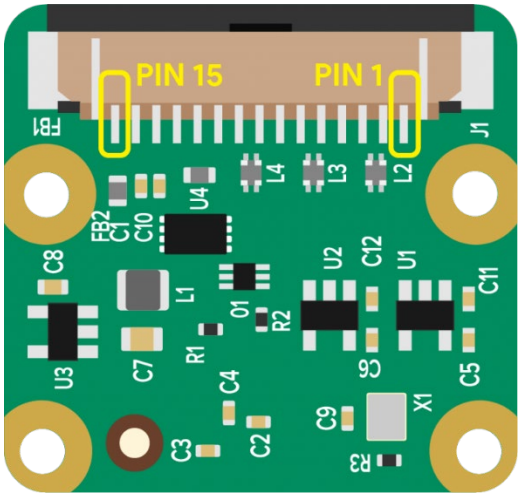
Pibiger PI-CAMV2 with 8MP Sony IMX219 Sensor for raspberry pi Compatible with Raspberry Pi camera v2, Options with FOV60,FOV90,FOV160 Camera Lens.
-Sensor Type: Low-cost 8 Megapixel IMX219 Sensor,
-Static Images:3280(H)x2464(V) pixel,
-Support 1080p@30fps, 720p@60fps and 640x480p@90fps video record.
-Lens: M12
-Board Size: 32mm x 32mm.

2, Specification

Image Sensor	IMX219
Still Resolution	8 Megapixels
Sensor Resolution	3280 × 2464 pixels
Video Modes	1080p 47fps, 1640 × 1232p41fps, 640 × 480p 206fps
Pixel Size	1.12 µm x 1.12 µm
Optical Size	1/4"
IR-Cut	Yes
Module Size	32mm*32mm
Lens	FOV60 FOV90 FOV160

3, Hardware

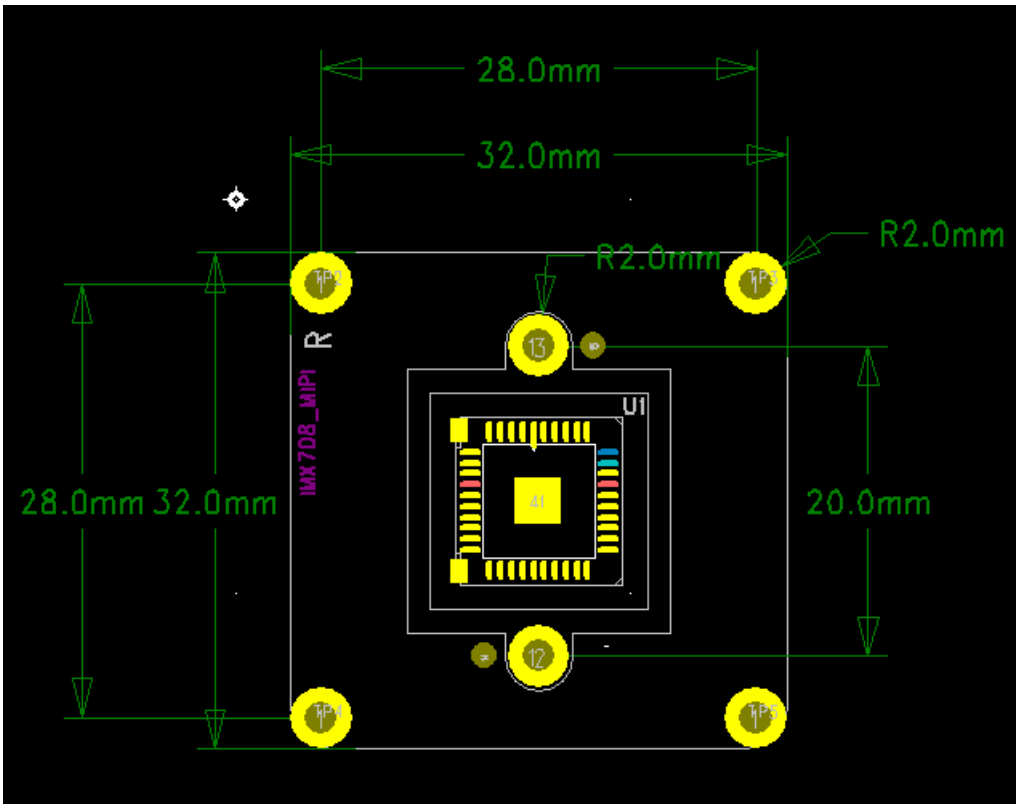
3.1 Camera Module Pins Out



Pin #	Name	Description
1	GND	Ground
2	CAM_D0_N	MIPI Data Lane 0 Negative
3	CAM_D0_P	MIPI Data Lane 0 Positive
4	GND	Ground
5	CAM_D1_N	MIPI Data Lane 1 Negative
6	CAM_D1_P	MIPI Data Lane 1 Positive
7	GND	Ground
8	CAM_CK_N	MIPI Clock Lane Negative
9	CAM_CK_P	MIPI Clock Lane Positive
10	GND	Ground

11	CAM_IO0	Power Enable
12	CAM_IO1	LED Indicator
13	CAM_SCL	I2C SCL
14	CAM_SDA	I2C SDA
15	CAM_3V3	3.3V Power Input

3.2 Camera Size



3.2 Camera Lens

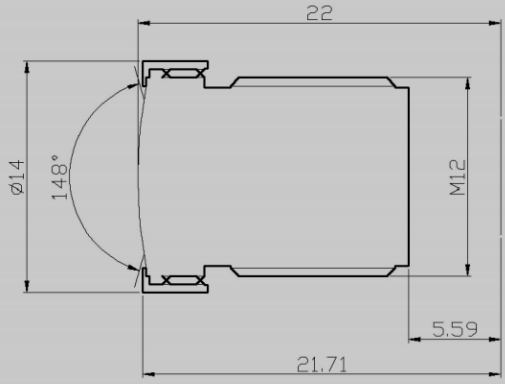
FOV60 Lens

Focal length: 4.3mm
Aperture: 2.8
Total optical length (TTL): 5.65mm
Thread size: M7*P0.35
Field of view: 1/4" (62° diagonal)
Distortion: <1%
Construction: 4E/IR

FOV90 Lens

SENSOR SIZE （芯片尺寸）	1/2.7"
WAVELENGTH（波长）	λ=400～1100nm
FOCAL LENGTH（焦距）	2.8
F/NO	2.2
FIELD OF VIEW（视场角）	D=148° H=118°
TV DISTORTION（畸变）	<-17%
Element（结构）	4G+IR
Material（材料）	铝合金
CRA（主光线角度）	10度
Relative Illumination（相对照度）	52%

注：镜头适配OV2710 OV4689 AR0330 IMX322
F02

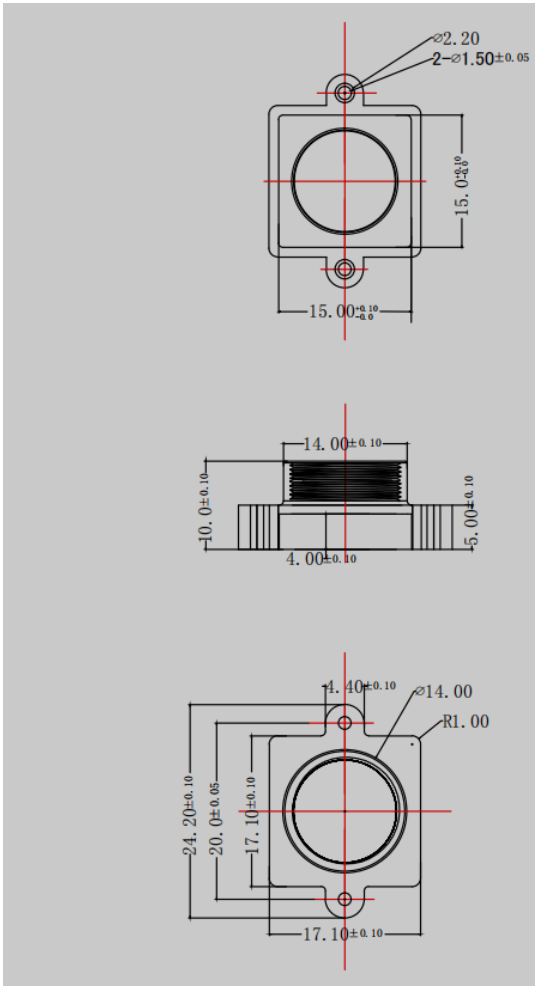


- FOCAL LENGTH: 2.8
- LENS DIAMETER: 12mm
- Lens Seat Spacing: 22mm
- F/NO ： 2.2
- FIELD OF VIEW: 90°
- TV DISTORTION: < -17%
- Element: 4G+IR
- CRA: 10°

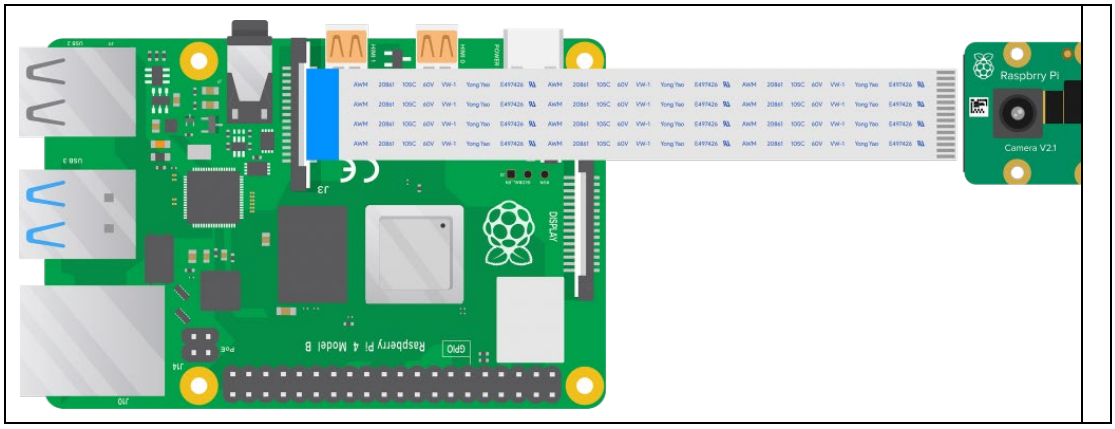
FOV160 Lens

型号（Model）：	CW-182017-5MP			
	分辨率（Resolution）	5MP		
	像面尺寸（Image format）	1/2.5"		
	焦距（Focal length）	1.8mm		
	通光孔径（Aperture）	F20		
	接口（Mount）	M12		
	视场角（Field Angle）D×H×V(°)	1/2.5	1/3	1/4
		D 185	172	158
		H 142	133	122
		V 102	93	82
	畸变(Optical Distortion)	-53.00%	-38.00%	-23.00%
	最近物距(M.O.D.)	0.2m		
	光学后焦距(BFL)	3.8mm		
	外形尺寸(Dimension)	Φ17×19.9mm		
	光学总长(TTL)	21.4mm		
	结构（Lens Construction）	5组6片		
	操作方法	光圈（Iris）	固定光圈（FIX）	
	工作温度（Operating temperature）	-40℃～+80℃		

Len Seat Size information



3.4 Connection



4, Software

Quick Start for Raspberry PI Series

Step1, Modify config.txt

- sudo nano /boot/firmware/config.txt

For the older version raspberry Pi OS, it should be

- sudo nano /boot/config.txt

Step2, Add below content to the last line

- dtoverlay=imx219

Step3, Reboot and use below command to preview

- libcamera-hello -t 0

Quick Start for Nvidia Series

Step 1: Open the terminal and execute the following

- sudo /opt/nvidia/jetson-io/jetson-io.py

Step 2: Select Configure Jetson Nano CSI Connector

Step 3: Select Configure for compatible hardware

Step 4: Select the camera that you want to use

- Camera IMX219 DUAL

Step 5: Select Save pin changes

Step 6: Select Save and reboot to reconfigure pins

Step 7: Press any key on the keyboard and the device will reboot with the applied camera configuration

For CAM0 port

- nvgstcapture-1.0 sensor-id=0

For CAM1 port

- nvgstcapture-1.0 sensor-id=1

5, Documentation

More information

- Camera Description on Raspberry Pi
- Camera Software On Raspberry Pi