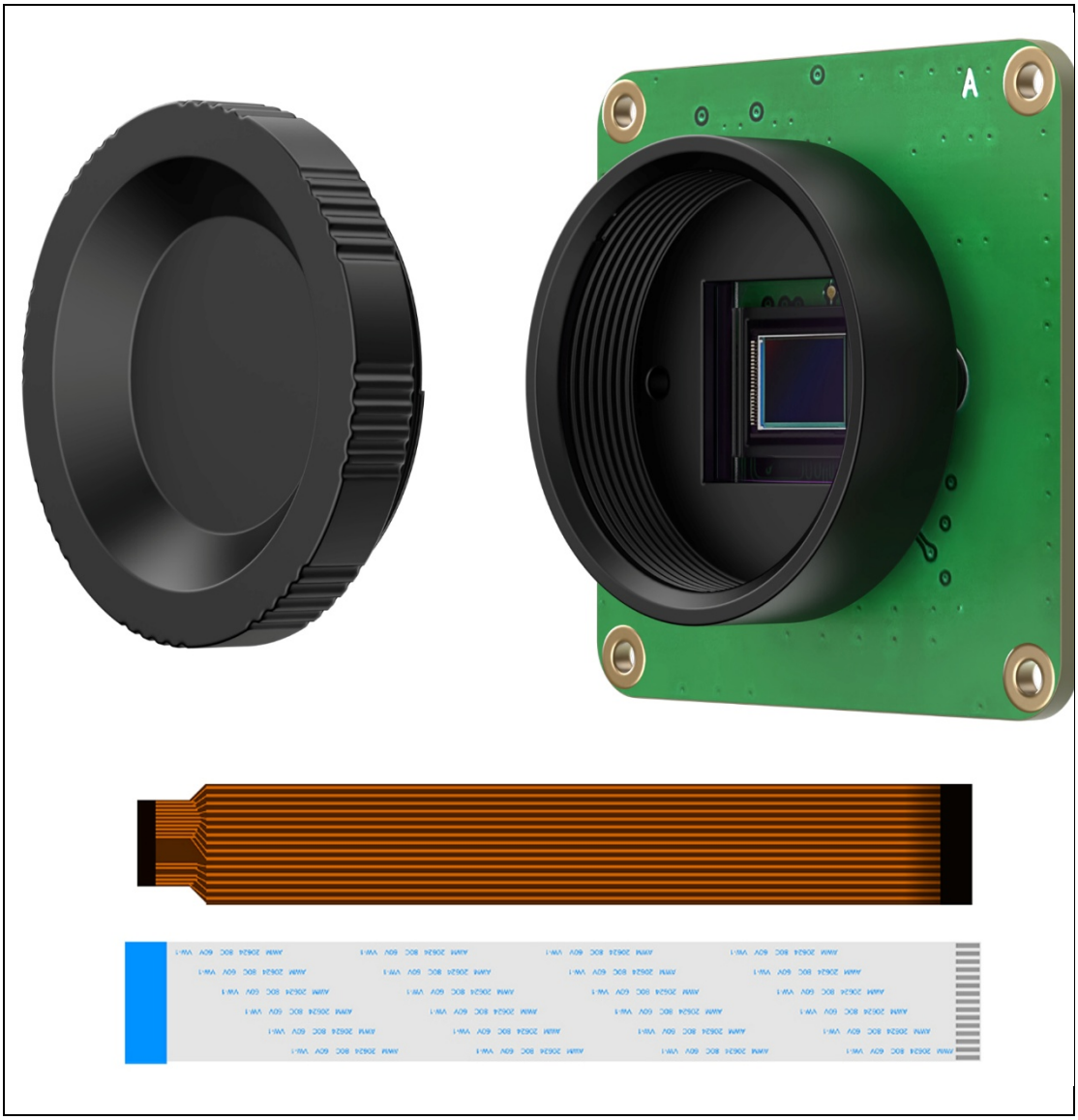
CAM-IMX477-HQ User Manual



Support: support@inno-maker.com	**Website:** www.inno-maker.com
Bulk Price: sales@inno-maker.com	**Github:** https://github.com/INNO-MAKER

Date	Revision	Change Details
2025/09/09	V1.0	First Released

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1 Overview

Innomaker low cost hq camera module cam-imx477-hq for raspberry pi,jetson nanao with 12.3M imx477 sensor support cs and c camera lens compatibal with raspberry pi hq camera.

cam-imx477-hq is a high quality camera module which adopts the IMX477R sensor, and requires a C- or CS-mount lens to work. Offers higher resolution (12.3MP) and higher sensitivity (nearly 50% greater area per pixel for improving low-light performance) than IMX219 cameras. The IMX477 12.3MP Camera is suitable for industrial and

consumer applications like security camera, and other specialist optical devices which require higher level of visual fidelity, Support Raspberry PI5/ Pi4/ PI3B+/ PI3/ PI2/ PI B+/ PI A/ PI ZERO/ CM4/ CM3+/ CM3/ Jetson Nano.

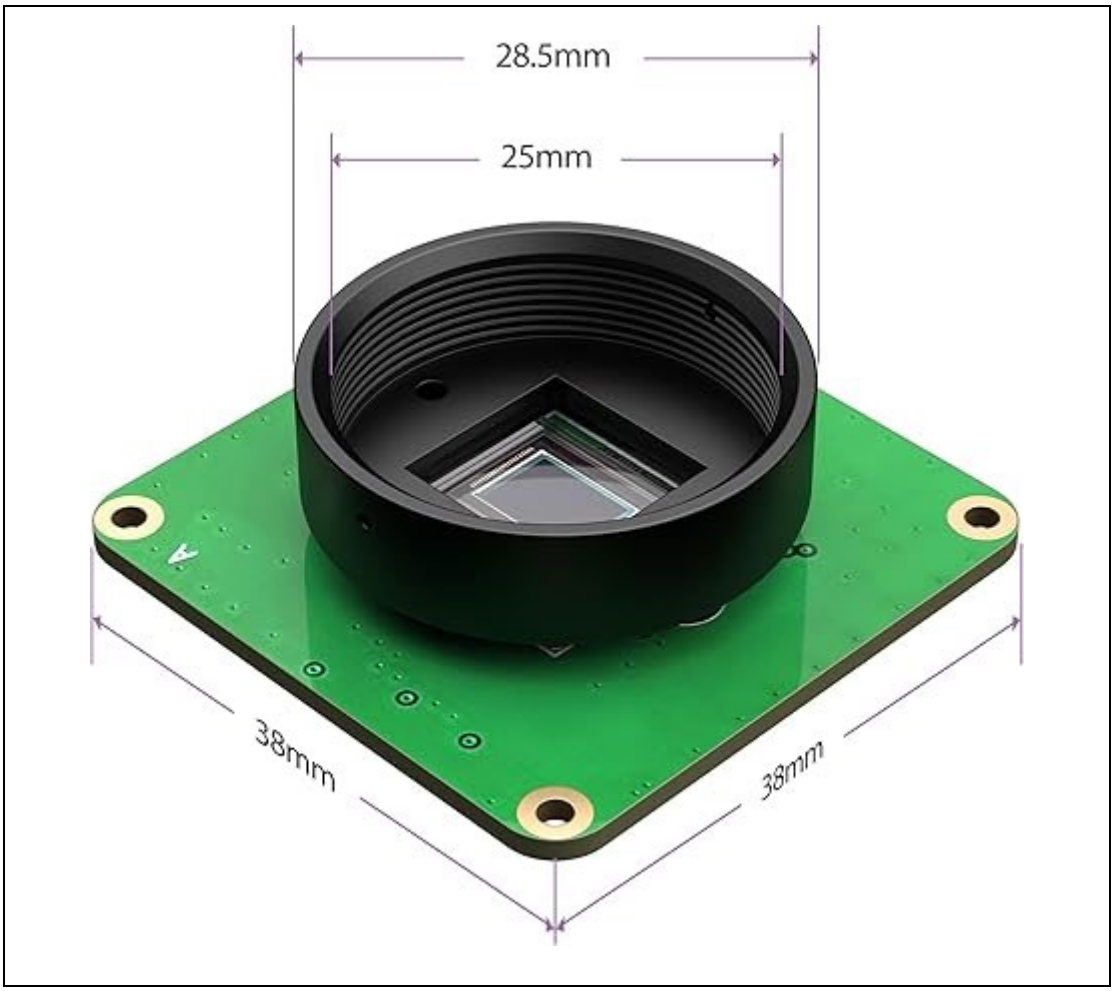
- Sensor Type: 12.3 Megappixel IMX477R Sensor, Static Images: 12.3MP, 4056 (H)×3040 (V), 7.9mm CMOS diagonal size, Support 1080p@30fps, 720p@60fps and 640x480p@90fps video record.
- support c/cs mount Lens, 20mm distance Lens seat with filter;
- Compatible with Raspberry PI5/Pi4/PI3B+/PI3/PI2/PI B+/PI A/PI ZERO/CM4/CM3+/CM3/Jetson Nano.
- Output: RAW12/10/8, COMP8, Board Size 38mm x 38mm.
- Packing List: cam-imx477, FPC Cable x2,

2 Specification

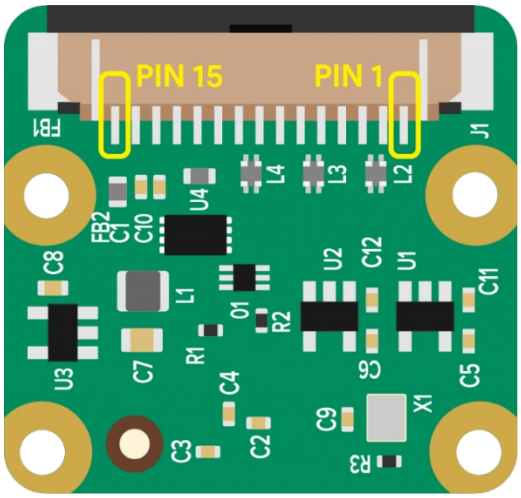
Items	HQ Camera
Size	38 x 38
Weight	30.4g
Still resolution	12.3 Megapixels
Video modes	2028 × 1080p50
	2028 × 1520p40
	1332 × 990p120
Sensor	Sony IMX477
Sensor resolution	4056 x 3040 pixels
Sensor image area	6.287mm x 4.712 mm (7.9mm diagonal)
Pixel size	1.55 µm x 1.55 µm
Optical size	1/2.3"
Focus	Adjustable
Depth of field	N/A
Focal length	Depends on lens
Horizontal Field of View (FoV)	Depends on lens
Vertical Field of View (FoV)	Depends on lens
Focal ratio (F-Stop)	Depends on lens
Maximum exposure times (seconds)	670.74
Lens Mount	C/CS- or M12-mount
NoIR version available?	No
Filter	Yes

3 Hardware

Camera Size



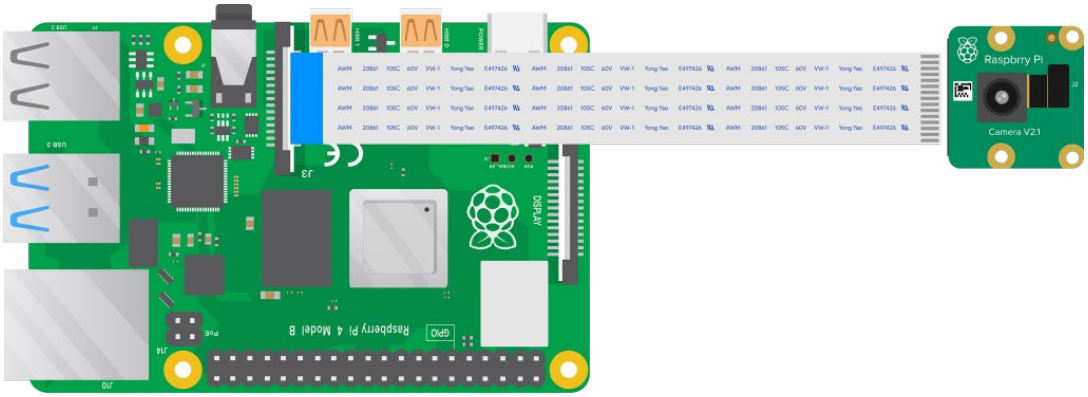
Camera Module Pins Out



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

Connection



4 Software User Guide

Quick Start For Raspberry PI Series

Step1, Modify config.txt

- sudo nano /boot/config.txt
    - For the latest version raspberry Pi OS, it should be
- sudo nano /boot/firmware/config.txt

Step2, Add below content to the last line

- dtoverlay=imx477

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Step3, Change camera_auto_detect=1 to

- camera_auto_detect=0

Step4, reboot and preview

- libcamera-hello-t 0

More information

- https://www.raspberrypi.com/documentation/computers/camera_softwarehtml

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 IMX477 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 Packing List

1 x 12.3MP Camera Board with C-CS Adapter

1 x 150mm 15pin to 22pin camera cable for Pi 5

1 x 150mm 15pin to 15pin camera cable for Pi 4B/3b+

6 Documentation

- Quick Start Guide on Raspberry Pi