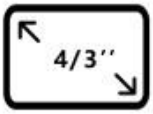
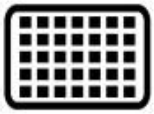
Product Description

ASI294MC

Sensor
IMX294



4/3''
19.1*13.0mm



Resolution
4144*2822

ADC
14bit

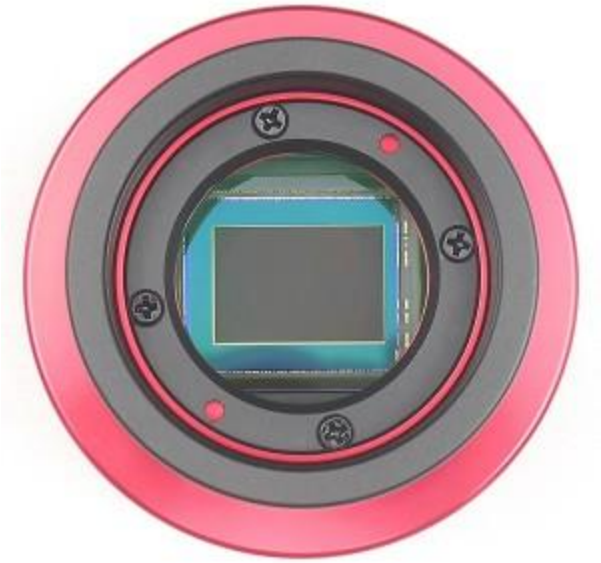
Read Noise
1.2e

FPS
19

Full well
63700e

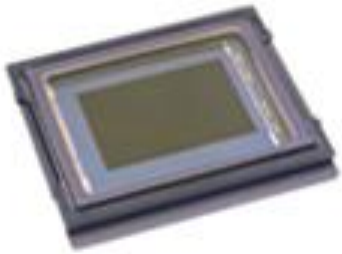
USB
3.0

ASI294 is the first camera in the world that equiped with SONY latest sensor IMX294CJK.



IMX294CJK

Diagonal 21.63 mm (Type 4/3) Approx. 10.71M-Effective Pixel Color CMOS Image Sensor, This is the official description on Sony website. In our effort, we remolded it to make it Diagonal 23.2 mm (Type 4/3) Approx. 11.71M-Effective Pixel.



High-Sensitivity Type 4/3 CMOS Image Sensor that Supports 4K for Astronomic Cameras and Industrial Applications

The “IMX294CJK” is the first in-house image sensor for astronomic cameras to adopt the Type 4/3 format, and realizes output of the number of pixels needed for 4K at 120 frame/s (in ADC 10-bit output mode, ASI294MC can run up to 25fps at 4k format base on USB3.0 bandwidth). In addition, use of a large-size pixel achieves SNR1s of 0.14 lx* which is very close to the value of ASI224(0.13 lx*).

Exceptional low-illumination performance

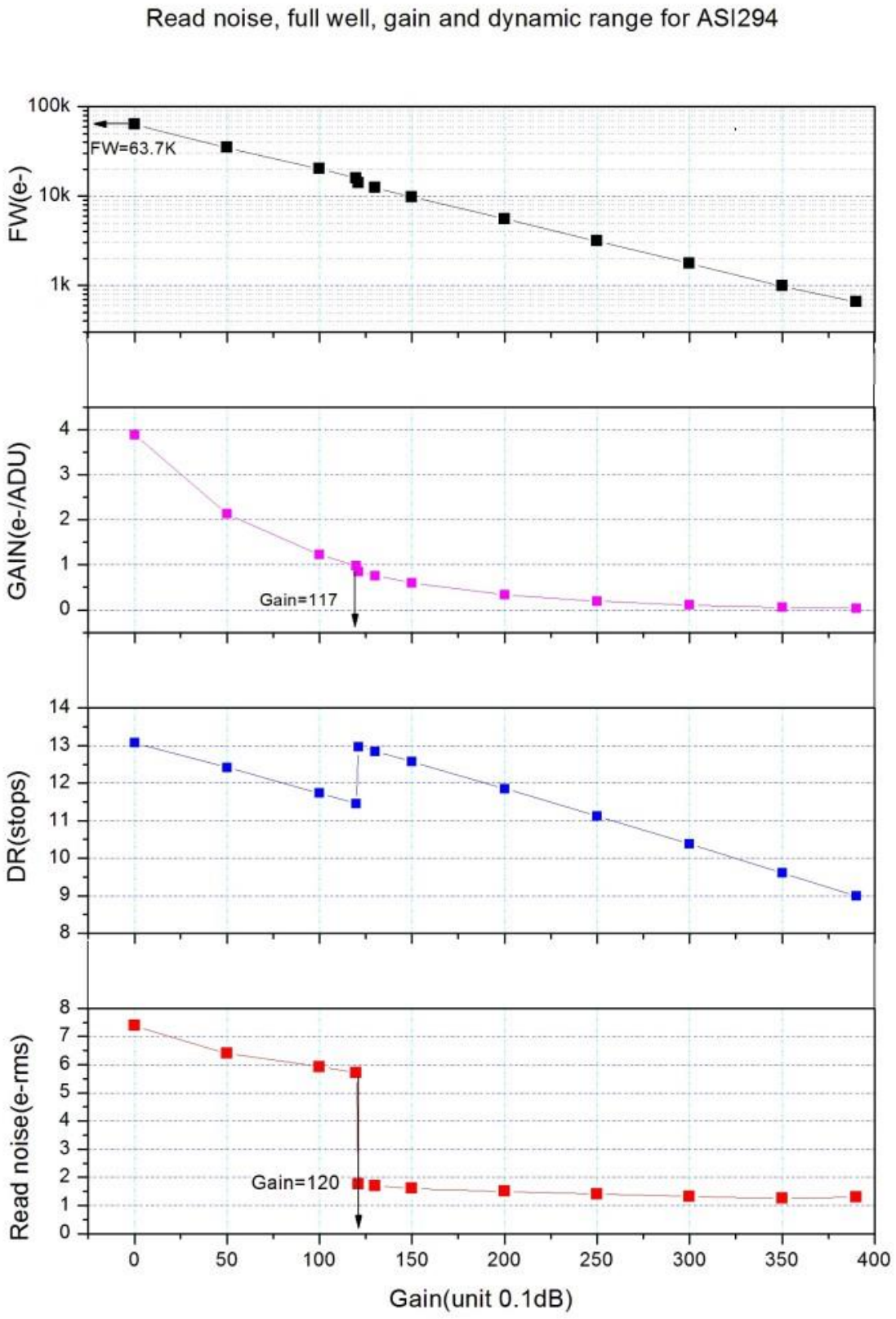
Exceptional low-illumination performance of SNR1s: 0.14 lx is realized by use of a large-size optical system and by expanding the area per pixel to 4.63 µm. This makes the IMX294CJK ideal sensor for astronomic camera market applications which requires low-illumination performance.

14bit ADC & 13 stops DR

ASI294 have 14bit ADC and it can achieve 13 stops dynamic range which is even better than ASI1600.

HCG Mode

HCG mode will be on when **gain** is higher than **120**(12db), read noise will drop below **2e** but same dynamic range(13 stops).



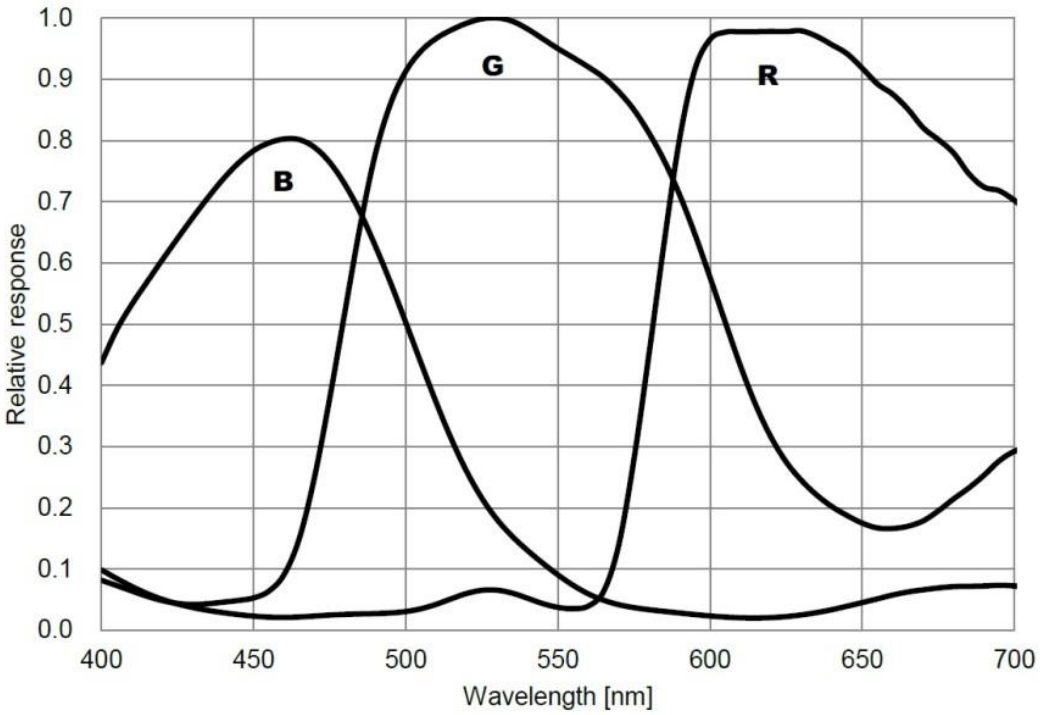
Full well Capacity

63700e full well, which is 3 times than ASI1600's capacity. Even bright stars won't saturate under long exposure.

This camera can achieve higher SNR(signal to noise ratio) with just one single exposure.

High QE

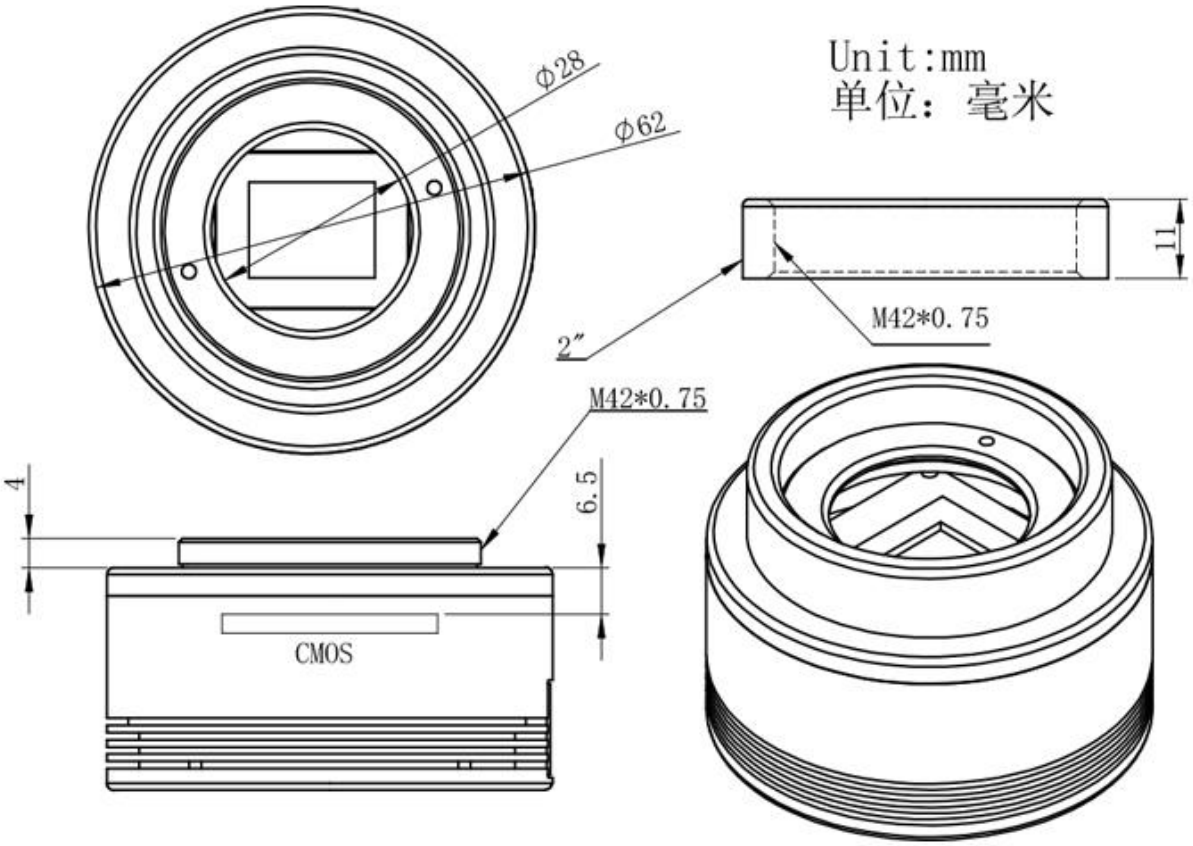
IMX294 sensor is a BSI(back-illuminated type) sensor and has very high QE(we suppose the QE peak is more than 75%).



USB 3.0 Port & ST4 Port

USB 3.0 Port: Provide 5Gb bandwidth to make it possible for ASI294MC to run at 16 fps (14bit, normal mode) or 19 fps (10bit, high speed mode) at full resolution(11.7Mega).
ST4 Port: Can be used connect with auto guide port of mount, for guiding.

Mechanical Drawing



What is in the box?

ASI294MC box includes all necessary cables, adapters, and manuals.

ST4 cable

camera body

T2-1.25″ adapter

quick guide

1.25″ cover

2m USB3.0 cable

2″ cover

1.25″ nose piece

Drivers and Software's:

Our website has newest camera drivers and many DSO and Planetary capture software's. Please make sure the newest driver and software has been installed before you start shooting:
https://astronomy-imaging-camera.com/software/

Sensor: 4/3″ SONY IMX294 CMOS
Diagonal: 23.2mm
Resolution: 11.7Mega Pixels 4144X2822
Pixel Size: 4.63μm
Bayer Pattern: RGGB
Exposure Range: 32μs-2000s
ROI: Supported
ST4 Guider Port: Yes
Focus Distance to Sensor: 12.5mm
Shutter Type: Rolling Shutter
Protect window: AR coated window
Operating System Compatibility: Mac, Windows, Linux
Interface: USB3.0/USB2.0
Bit rate: 12bit output(12bit ADC)
Adaptor: 2″ / 1.25″ / M42X0.75
Dimension: φ62mm X 36mm
Weight: 120g or 4.2 ounces (without lens)
Working Temperature: -5°C—45°C
Storage Temperature: -20°C—60°C
Working Relative Humidity: 20%—80%
Storage Relative Humidity: 20%—95%
Max FPS at full resolution:
10Bit ADC
4144×2822 19fps
14bit ADC
4144×2822 16fps
More resolutions can be user defined