



ASI485 Manual

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Please download the latest version from our Official website.



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1. Instruction

Congratulations and thank you for buying one of our ASI Cameras! This manual will give you a brief introduction to your ASI camera. Please take the time to read it thoroughly and if you have any other questions, please feel free to submit it on the ZWO support site:

<https://support.astronomy-imaging-camera.com/>

The ASI485MC is one of the latest color planetary cameras released by ZWO in 2021. Packed with Sony sensor IMX485, this camera has some very great highlights, including a large resolution of 3840*2160, USB 3.0 interface, large full-well depth of 13ke-, extremely high sensitivity and super low read out noise, etc. With many parameters in common, the ASI485MC can be regarded as the twin brother of ASI482MC.

Model	Mono/Color	Sensor
ASI485MC	Color	SONY IMX485

For software installation instructions and other technical information, please refer to our official website <https://astronomy-imaging-camera.com/>

2. What's in the box?

ASI485MC



Camera body



1.25" Cover



2" Cover



1.25" Nosepiece



Quick guide



USB3.0 Cable
(2m)



ST4 Cable

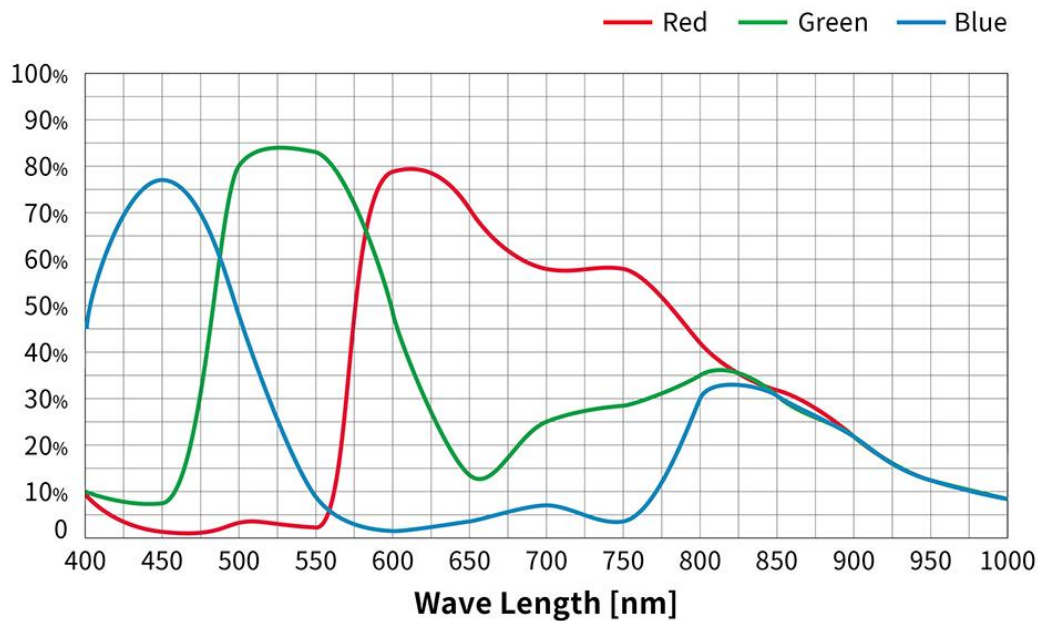
3. Camera technical specifications

Sensor	SONY IMX485 CMOS
Format	1/1.2"
Diagonal	12.86mm
Resolution	8.28 Mega Pixel, 3840*2160
Pixel size	2.9 μ m
Sensor size	11.13mm * 6.26mm
Max fps	39FPS
Shutter	Rolling shutter
Exposure range	32 μ s-2000s
Readout noise	0.7-6.4 e
QE peak	85% at 530nm
Full well	13ke
ADC	12bit
USB interface	USB 3.0
Adapters	2"/1.25"/M42X0.75
Protect window	AR
Dimension	62mm
Weight	0.133kg
Back focus length	6.5mm/17.5mm
Working temperature	-5°C~50°C
Working relative humidity	0~80%
Supported OS	Windows, Linux & Mac OSX

4. QE Graph & Read Noise

QE and Read noise are the most important parts to measure the performance of a camera. Higher QE and Lower read noise are needed to improve the SNR of an image.

The following figure shows the QE curve of ASI485. According to our estimation, the QE peak of ASI485 is 85% (530nm).

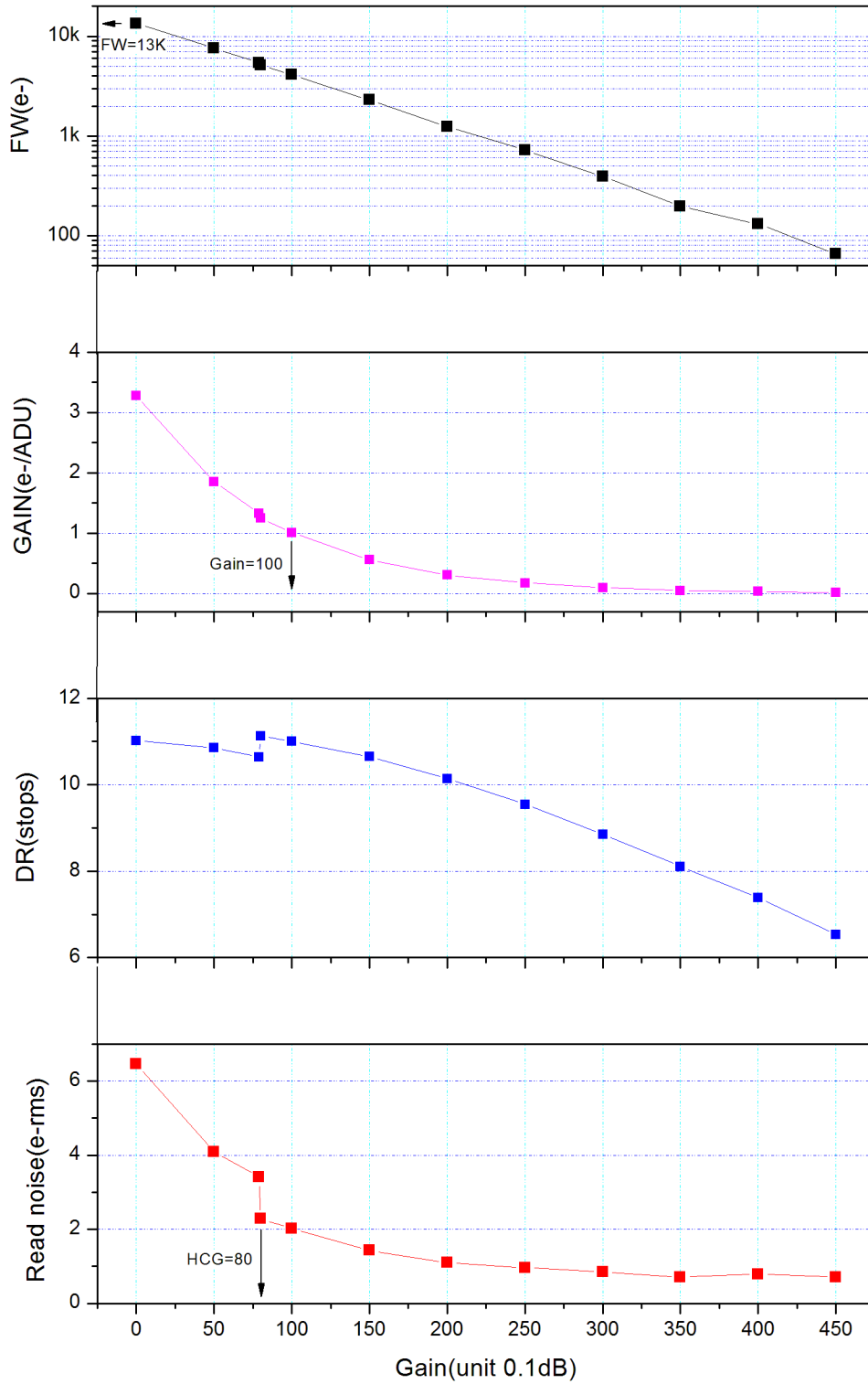


Read noise includes pixel diode noise, circuit noise and ADC quantization error noise. The lower the better.

As you can see, the Read Noise of the ASI485 camera is extremely low. The built-in HCG mode can even more reduce the read noise at high gain and keep the same wide dynamic range for this camera as at low gain. When the gain is 80, the HCG mode will be automatically turned on. Additionally, the read noise is as low as 1.5e while the dynamic range can still be close to 11bit.

Depending on your target, you can set the gain lower for higher dynamic range or set the gain higher for lower noise.

Read noise, full well, gain and dynamic range for ASI485



5. Getting to know your camera

5.1 External View



5.2 Power consumption

ASI485 camera is with low power consumption, max at 2.06W. USB3.0 cable is recommended for power supply.

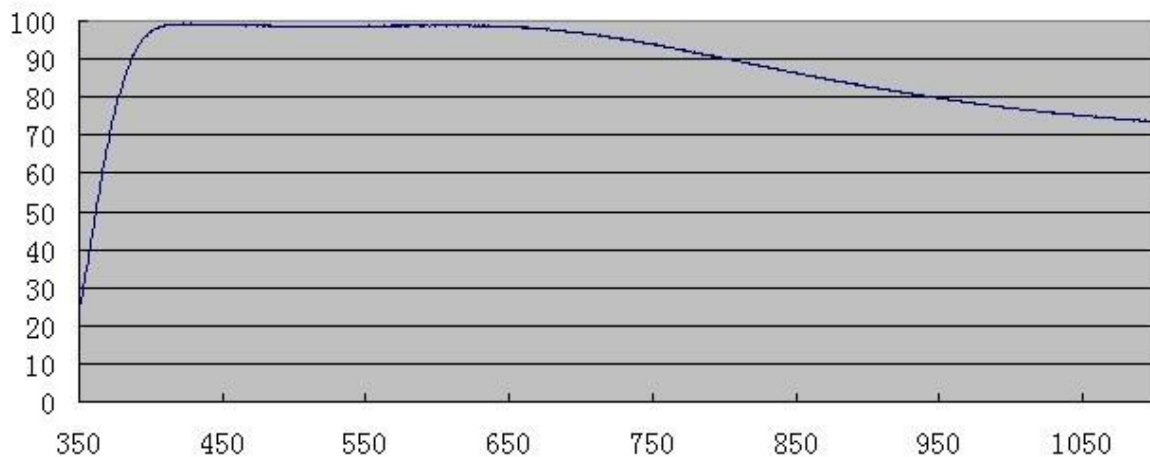
5.3 USB 3.0 port & ST4 port

USB 3.0 Port: Providing 5Gb bandwidth to let ASI485 run at 39fps (10bit, high speed mode) or 27.2fps (12bit, normal mode) at full resolution(8.28Mega).

ST4 Port: Can be used to connect with auto guide port of mount for guiding.

5.4 Protect window

There is a protective window AR filter in front of the ASI485 camera sensor, with 25mm diameter and 1mm thickness.



5.5 Analog to Digital Converter (ADC)

The ASI485 camera records in 12bit ADC and 10bit ADC. You can image at a faster fps rate if you choose to use 10bit ADC (high speed mode). This camera also supports ROI (region of interest) shooting, and this smaller ROI has faster fps.

Here is the maximum speed of ASI485 running at different ADC mode on USB3.0.

Resolution	USB 3.0			
	12bit		10bit	
	RAW16	RAW8	RAW16	RAW8
3840*2160	20	27.2	20.7	39.1
1920*1080	52.9	52.9	76.3	76.3
1280*720	77.4	77.4	111.7	111.7
640*480	112.1	112.1	161.6	161.6
320*240	203	203	292.6	292.6

5.6 Binning

ASI485 camera supports software bin2, bin3 and bin4 mode and hardware bin2, bin3 mode.

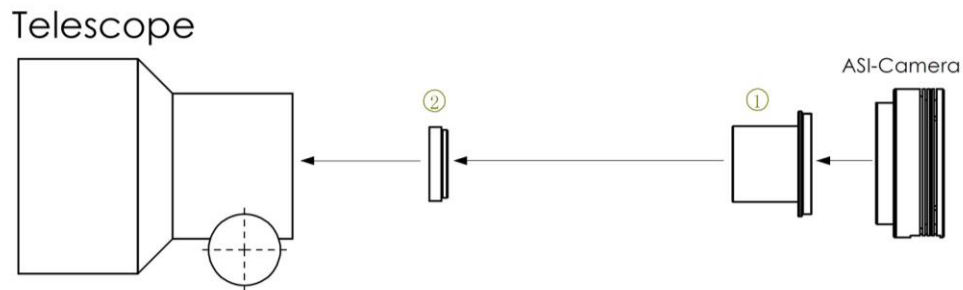
And the biggest benefit is a faster frame rate. If you don't care about speed, we suggest you use software binning.

6. How to use your camera

There are many adapters available for this camera for connecting to your scope or lens. Some are included with the camera and others you can order from our site:

<https://telescopes.taobao.com/>

Color camera connecting drawing:



1. 1.25" T-Mount

2. 1.25" filter(optional)

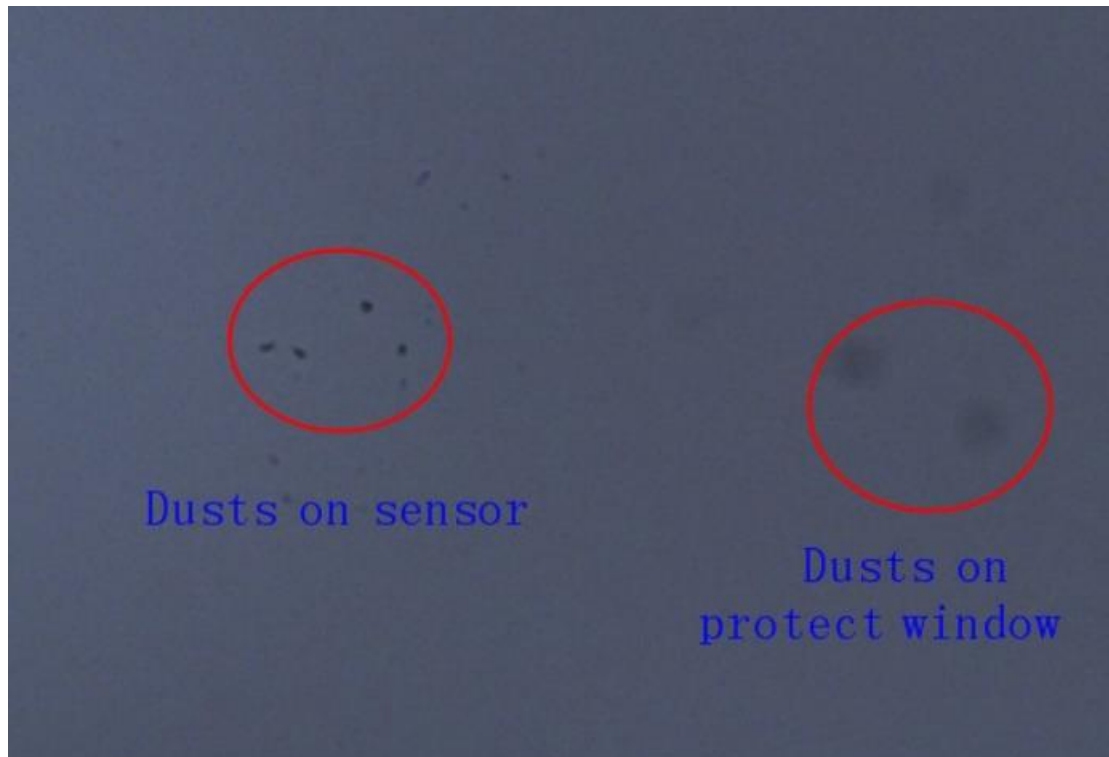
Planetary/Guide Cameras
External Device Connecting Drawing



7. Cleaning

The camera is sealed and comes with an AR protect window to protect the sensor from dusts and humidity.

To see the dusts, you just need to set up your telescope and point it to a bright place. A Barlow is required to see these dusts clearly. Then attach the camera and adjust the exposure to make sure not overly exposed. You can see an image like below if it's dirty.



The big dim spot on the image (right side) are the shadows of dust on the protect window.

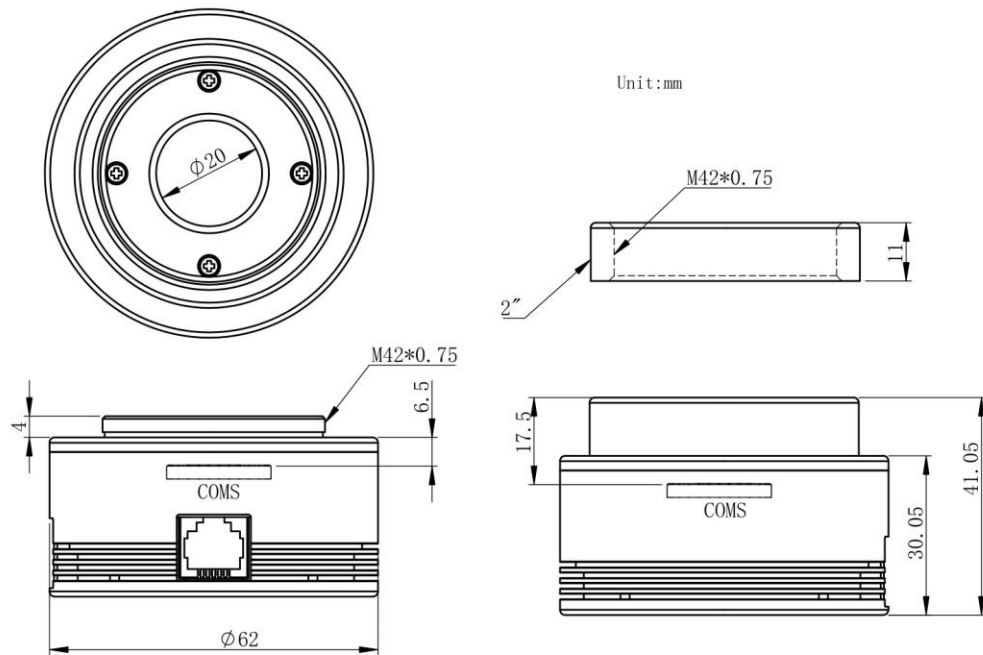
The very small but very dark spot on the image (at left) are the shadows of the dusts on the sensor. If above situation occurs, it is recommended that the dust on the sensor surface be blown off with air pump. If it cannot be blown off, it is recommended to use cotton swabs and 99% anhydrous ethanol to gently wipe the sensor.

We have very detailed instruction on our website:

https://astronomy-imaging-camera.com/manuals/How_to_clean_ASI_camera_and_redry_the_desiccant.pdf

8. Mechanical drawing

ASI485MC



9. Servicing

For software upgrades, please refer to “Support-manual and software” on our official website.

<https://astronomy-imaging-camera.com/>

For repairs and consultation, you can visit here: <https://support.astronomy-imaging-camera.com/>

For customers who bought the camera from your local dealer, dealer is responsible for the customer service.

10. Warranty

We provide 2-year warranty for our products. We offer repair service or replacement for free if the camera doesn't work within warranty period.

After the warranty period, we continue to provide repair support and service on a charged basis.

This warranty does not apply to damage that occurred as a result of abuse or misuse, or caused by a fall or any other transportation failures after purchase.

Customer must pay for shipping when shipping the camera back for repair or replacement.