

# ZWO ASI Cooled Cameras Quick Guide

V2.0



Thank you very much for purchasing the ZWO ASI camera. This instruction is a brief summary of the installation procedure to get you up and running with your new camera. Please be sure to read it before use.

Please head over to the [ZWO website](#) if you want more detailed information on the camera.

# How to connect to the computer ? (For Windows users)

1. Go to the ZWO official website (<https://astronomy-imaging-camera.com>), click [Support] – [Software].

The screenshot shows the ZWO website's 'Software and Drivers' page. At the top, there is a navigation menu with links for HOME, PRODUCTS, EXPLORE, GALLERY, DEALERS, SUPPORT, FORUM, and OUR STORY. The 'SUPPORT' link is highlighted. Below the navigation, the page title is 'Software and Drivers'. A sidebar on the left contains links for 'Support', 'Review', and 'Manuals and Guides'. The main content area features the ZWO logo and a paragraph of text: 'Everything what you will need for ASI camera control, imaging, guiding and processing at one place! Windows, MAC and Linux USB drivers, ASCOM drivers, latest firmware and camera control and processing software for all ZWO devices. If you have any questions please feel free to Contact Us. We will try to answer your query as soon as possible!'. Below this text is a horizontal menu with tabs for 'Windows', 'Mac', 'Linux', 'Mobile App', 'Developers', and 'FW Update'. The 'Windows' tab is currently selected.

2. Go to [Native Drivers] – [ASI Cameras] then download the driver (Only Windows system require this step). Then go [Software] and download [ASISStudio]. Be aware of the different versions for x64 and x32 systems.

The screenshot shows a closer view of the 'Native Drivers' and 'Software' sections on the ZWO website. The 'Native Drivers' section is highlighted with a red box and a circled '1'. It contains a table with the following data:

		v3.17	Released	
ASI Cameras	This driver <b>MUST</b> be installed for Windows users to use ASI cameras.	Download	9/6/2021	Download

The 'Software' section is highlighted with a red box and a circled '2'. It contains a table with the following data:

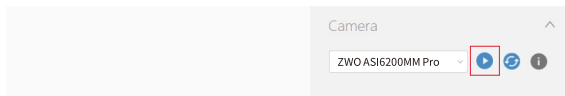
		v1.5.4	Released	x86 Download
ASISStudio	ZWO ASI Official astronomy software, specialized in planetary imaging, DSO imaging, live stack and other useful imaging processing gadget. Support: WIN7 / WIN8 / WIN10	Download	11/19/2021	x64 Download

3. Double click the files to install the ASI camera driver and ASIStudio.

4. Open ASIStudio, start with ASIIImg.



5. Plug the 12v power supply cable into the DC connector on the camera (Connector type 5.5\*2.1mm, center positive, 12V 3A required), then connect the camera to computer via the USB 3.0 cable that is included in the box. Click Play icon to start imaging. Please notice that the camera needs to be powered by 12v power supply, just connecting it to computer with a USB cable will lead to a recognition failure issue.



## 6. Adjust the settings for the camera.

The screenshot displays the ASIimg application interface. On the left, a window titled "CPU Temperature and Cooling Status" is visible. On the right, the "Camera (via USB3.0)" settings panel is shown. This panel includes sections for "Camera Settings" (Resolution, Exposure, Color, Anti-Dew), "Image" (Preview, Auto Run), "Saving Path" (Path), and "Histogram Adjustment" (Histogram). Red arrows point from text labels to these specific sections. Below the main interface, two red labels are present: "Process and Status of Auto-run" and "Camera Exposure Status".

7. A Help function is available from within the application by clicking the help button. This document will provide a more detailed guide should you require it. Hovering over an icon will also pop up a brief explanation of that function.

This figure shows the help functionality. The top part is a screenshot of the application's top toolbar, where a red box highlights the "Help document About..." button. A red arrow points from this button to the text "Help Document". The bottom part is a screenshot of the "ASIimg Manual" document, which is titled "v1.1 2021.03.31". The manual contains sections for "1. Introduction" and "2. User Interface". A red arrow points from the "Help document About..." button to the manual, with the label "Corresponding Software Usage Manual". The manual also includes a "Start autorun" button at the bottom.

8. For 3rd party software ASCOM drivers should be installed before use.

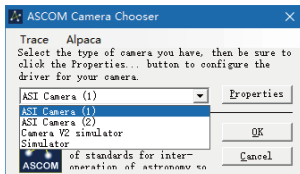
8.1 Download the main ASCOM platform and the ZWO camera ASCOM driver.

8.2 ZWO ASCOM drivers allows the use of your camera for imaging in 3rd party software such as MaximDL, N.I.N.A, Sequencer Generator Pro and for guiding using PHD2.

ASCOM Drivers (optional)			
<b>ASCOM Platform</b>	After installing the ASCOM Platform, please install below ASCOM drivers, then you can use many 3rd party astro software through ASCOM. <b>Note:</b> This software is not from ZWO, we just provide another download node. <a href="#">Official Site</a>	v6.5	Released 11/20/2020 <a href="#">Download</a>
<b>ASCOM</b>	ASCOM driver to support ASI Cameras, EAF, EPW and USBT4.	v6.5.1.12 <a href="#">Change Log</a>	Released 11/19/2021 <a href="#">Download</a>
Other Drivers (optional)			
<b>DirectShow</b>	This driver is optional, only needed for those software which control the camera through DirectShow.	v5.20.5 <a href="#">Change Log</a>	Released 11/19/2021 <a href="#">Download</a>
<b>TWAIN</b>	Implemented with our camera, regulates communication between software and digital imaging devices.	v1.0.0	Released 12/10/2018 <a href="#">Download</a>

### 8.3. ASCOM configuration

There are two camera options in the ASCOM configuration window “ASCOM Camera Chooser”, if you plan to use two cameras simultaneously for both imaging and guiding, then please choose “ASI Camera (1)” as the main camera and choose “ASI Camera (2)” as the guide camera.



If you only plan to use one camera, then just choose “ASI Camera (1)” .

Click [Properties] to configure the camera.

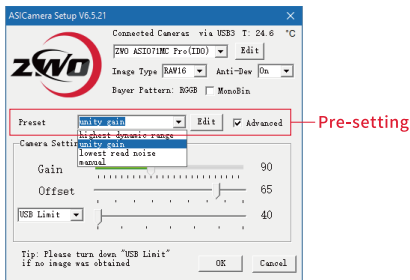
Three common settings for DSO imaging are available.

**[Low Gain]:** Suitable for targets with high dynamic range, such as M42. It provides maximum dynamic range.

**[Mid Gain]:** Can be used in most cases. If you are not sure which kind of gain to set, then it is recommended to choose this.

**[High Gain]:** Suitable for lucky imaging or other imaging methods with short exposure time. It provides lowest readout noise, also low dynamic range.

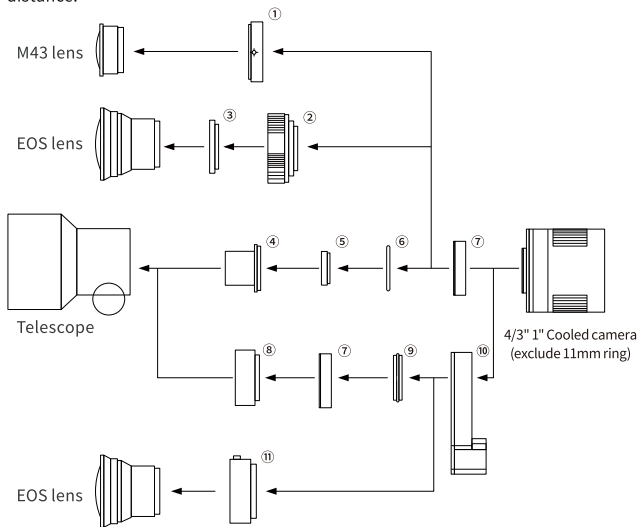
Or you can also choose [manual] mode to configure these settings to your own liking.



Choose the camera setup as you need, click [OK] to complete the configuration.

## How to connect your cooled camera to telescope?

Please refer to the telescope manual to understand what extension tubes or adapters may be required to connect your ZWO camera. The use of an accessory such as a field flattener or reducer may require a specific back focus distance.

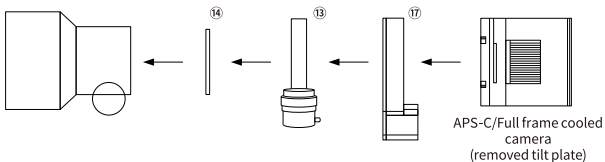
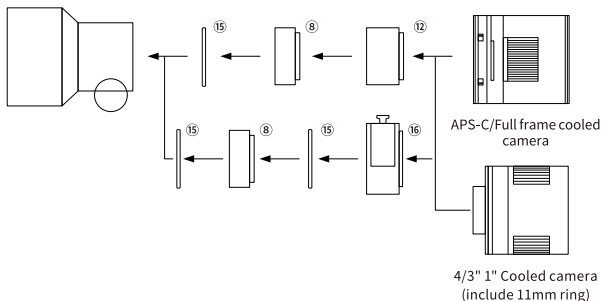


Many of these accessories use a common back focus distance of 55mm. You can visit the ZWO website and find instructions on how to configure your camera for this:

<https://astronomy-imaging-camera.com/tutorials/best-back-focus-length-solutions-55mm.html>

(Scan the QR Code for the tutorial.)

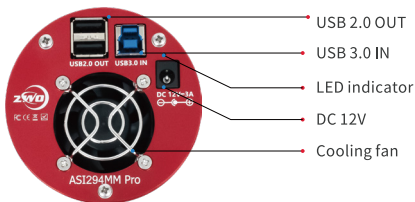




- |                              |                               |
|------------------------------|-------------------------------|
| ①. M43-T2 adapter (optional) | ⑩. 1.25"/2"/36mm/31mm EFW     |
| ②. EOS-T2 adapter (optional) | ⑪. EOS-EFW adapter            |
| ③. 2" filter (optional)      | ⑫. 21mm T2 extender           |
| ④. 1.25" T-mount             | ⑬. OAG-L                      |
| ⑤. 1.25" filter (optional)   | ⑭. Sensor tilt plate          |
| ⑥. M42-1.25" adapter         | ⑮. M48-M42 adapter (optional) |
| ⑦. 11mm T2 extender          | ⑯. M42 filter drawer          |
| ⑧. M42-M48 16.5mm extender   | ⑰. 2" EFW                     |
| ⑨. T2-T2 adapter             |                               |



## Camera ports



USB2.0 cable



USB 3.0/USB 2.0 cable



DC 12V power supply cable



Connects to guide camera, EFW and other accessories



Connects to USB 3.0/USB 2.0 ports on computer



12v power adapter (Not included in the box)

## FAQs

### 1. Is it normal to have uneven areas in my images?

Yes, there are many factors that may lead to uneven images, such as poorly configured reducers/flatteners, incorrectly mounted filters, focuser tilt, dust on the sensor surface etc. Defects in the form of hot/cold pixels, vignetting or background gradient or other phenomenon, can be removed by the use of calibration frames in processing.

## 2. Will the camera work without an external power supply?

The power consumption of cooled cameras is significant and cannot be met with USB power alone, so you will need to use a 12V power supply to power your cooled camera. Later model cameras produced after the year of 2022 will encounter recognition failure issue if no power applied.

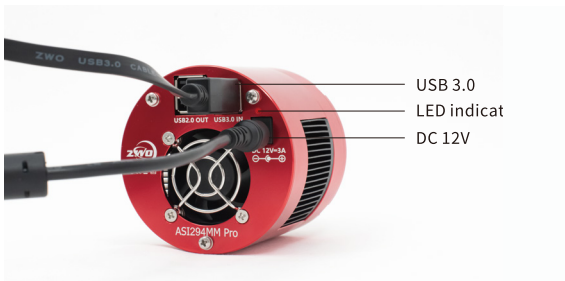
## 3. Why does the cooler not work?

### 3.1 Check if the power supply is working.

Make sure the camera is using DC 12v power, and the red LED power indicator is on. You can use the official ZWO AC-DC 12V power adapter, or 12V portable power source. The interface standard: 5.5\*2.1mm; center positive.

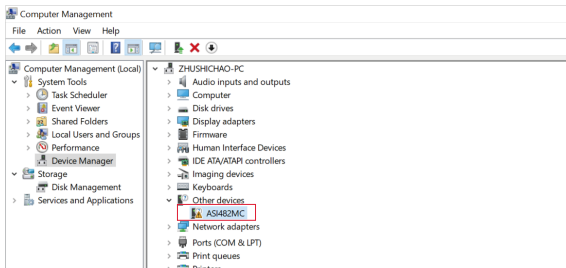
### 3.2 Check if the cooling function is turned on in your imaging software.

The cooling fan will only spin when the cooling function is turned on in the software.



#### 4. Why can't I find the camera in PHD2 even drivers have already been installed?

Please check the Device Manager -> Image Device to see whether it has the ZWO camera in the list. A question mark or exclamation mark normally indicates the driver is not installed properly. Please uninstall it and close your antivirus software or firewall. Re-install the driver, then restart your computer.





Scan to watch  
operating video



Facebook Page



ZWO WEB

苏州振旺光电有限公司 SuZhou ZWO Co., Ltd.

Tel: +86 0512 65923102

TW: <https://twitter.com/zwoasi>

INS: <https://www.instagram.com/zwoasi/>

FB: [https://www.facebook.com/ZwoDesign  
AstronomyCameras](https://www.facebook.com/ZwoDesignAstronomyCameras)

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