



iOptron® iGuider™ Autoguiding System Operation Manual

Product #3360

Ver. 1.00 2021.3

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iOptron® iGuider™ autoguiding system include a mini guiding scope with a diameter of 30mm and focal length 120mm and an iGuider 1 camera. The resolution of the iGuide Scope/camera is 6.44 arc sec/pixel, especially suitable for guiding with a short to medium focal length telescope. With dielectric AR-coated achromatic lenses, iGuider Scope is sharp in imaging and ensures high quality guiding. iGuider Scope can mate with iOptron CEM26/GEM28/CEM40/GEM45 mounts seamlessly without any adapter¹. It comes with a standard finder scope dovetail, readily fits with telescopes that have finder scope slot.

The iGuider 1 autoguiding system only support ASCOM pulse guiding.

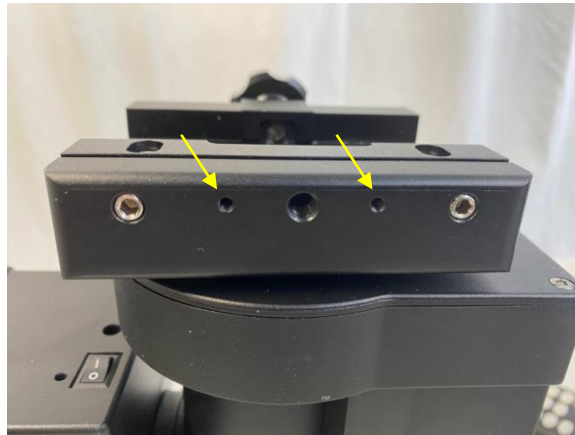
1. Installation

An iGuiding system includes the following parts

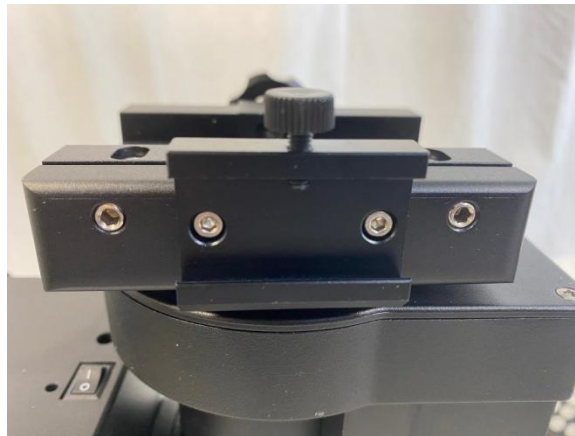


1. For late CEM40/GEM45 6 inch Vixen/Losmandy dual saddle with 2XM3 mounting holes.

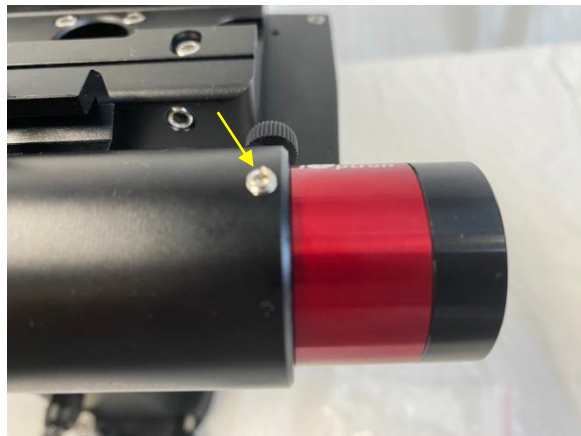
An iOptron mount that is ready to mate the iGuider system has two M3 mounting holes on the side of the dovetail saddle, as shown below:



Install the guiding scope dovetail saddle onto the mount saddle.

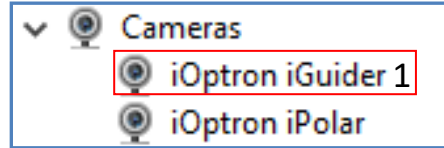


Slide the guiding scope into the adapter and tighten the locking screw. Insert iGuider 1 camera into the end of guiding scope. You may replace the nylon locking screw with included stainless steel set screw to secure it.



2. Connect to a PC

Connect the miniUSB cable to the back of the iGuider 1 camera and a PC USB port. You should see an iOptron iGudier 1 under the Cameras.

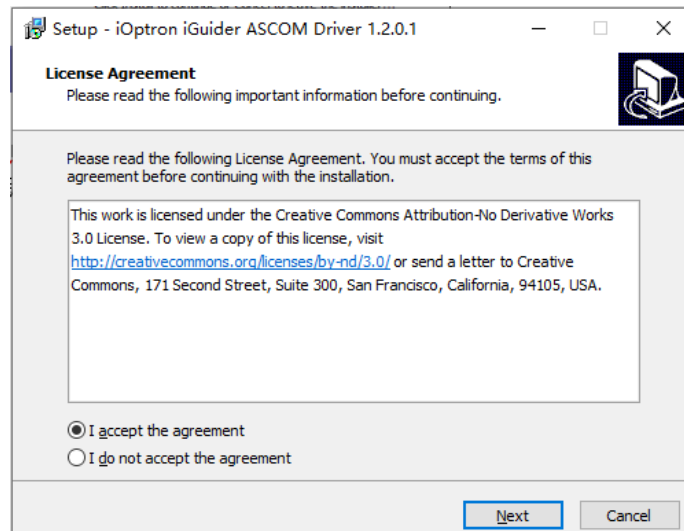


3. Download and Install Drivers and Software

iGuider 1 camera needs following software:

- (1) Windows 7, 8.1, 10, or server, 32 or 64bit system
- (2) ASCOM 6.5 and later version
- (3) iGuider ASCOM driver
- (4) Mount ASCOM driver
- (5) Guiding software supports ASCOM guiding, such as PHD2

Click on iGuider ASCOM driver:



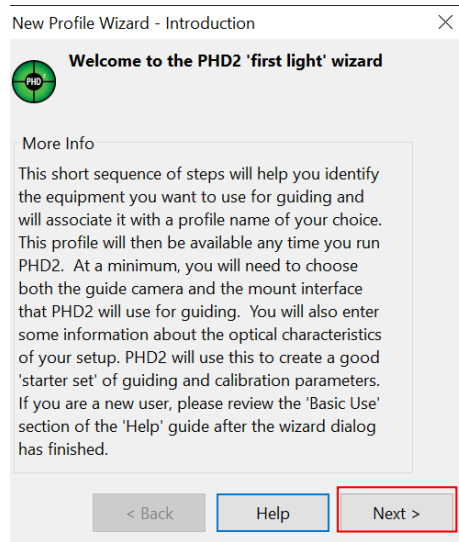
Please follow mount computer control reference to make sure that a proper ASCOM Drive is installed for the mount. The example shown here is only for connecting via an iOptron mount.

4. Setup PHD2 Guiding (example)

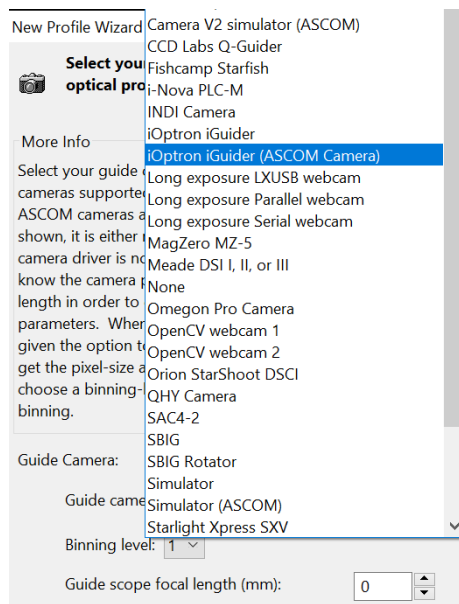
Download freeware PHD2 autoguiding software from <https://openphdguiding.org/downloads/>. Please select V2.6.7 or later version.



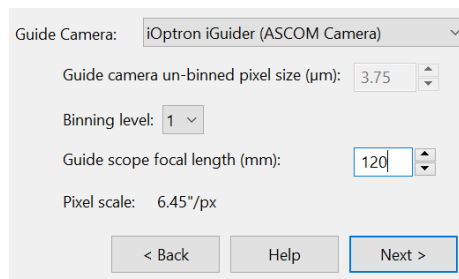
Click on PHD2 icon to start the PHD2 New Profile Wizard:



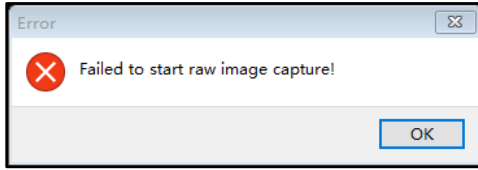
Click on Next. Select “iOptron iGuider (ASCOM Camera)” from the camera selection menu.



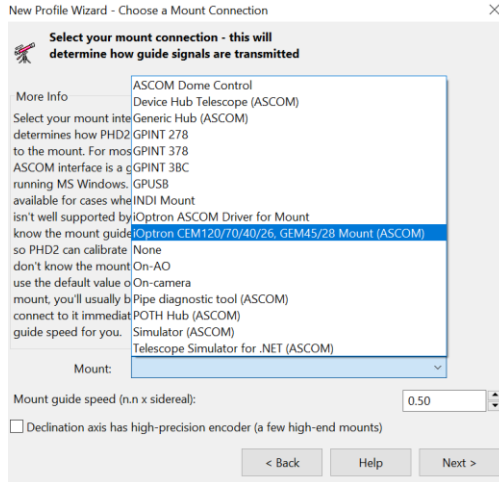
PHD2 will fill the pixel size (3.75um) automatically, if the camera is connected to the computer Enter 120mm into guide scope focal length tab, and click **Next**.



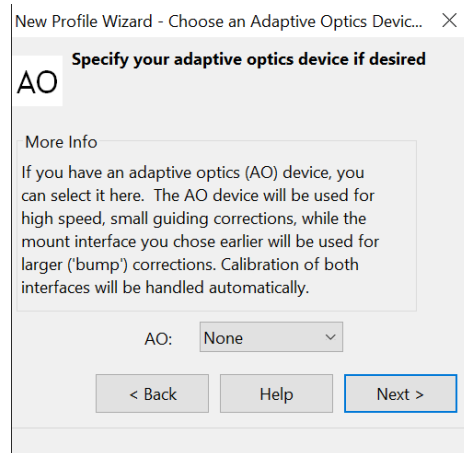
If the program displays the following error, please exit “iOptron iPolar” software.



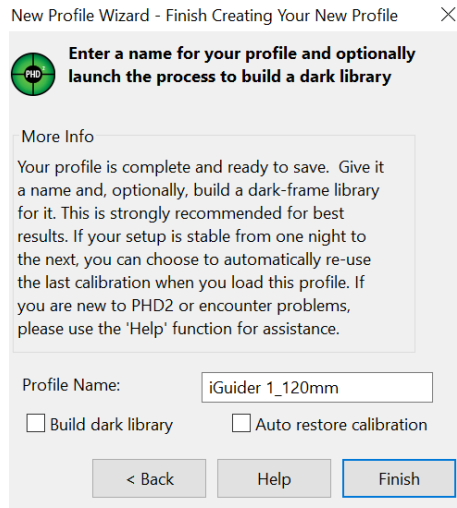
Select a mount that connected to the computer via ASCOM from the dropdown menu. Here “**iOptron CEM120/70/40/26,GEM45/28 Mount (ASCOM)**” is selected. A default guiding speed is 0.5X. Click **Next**.



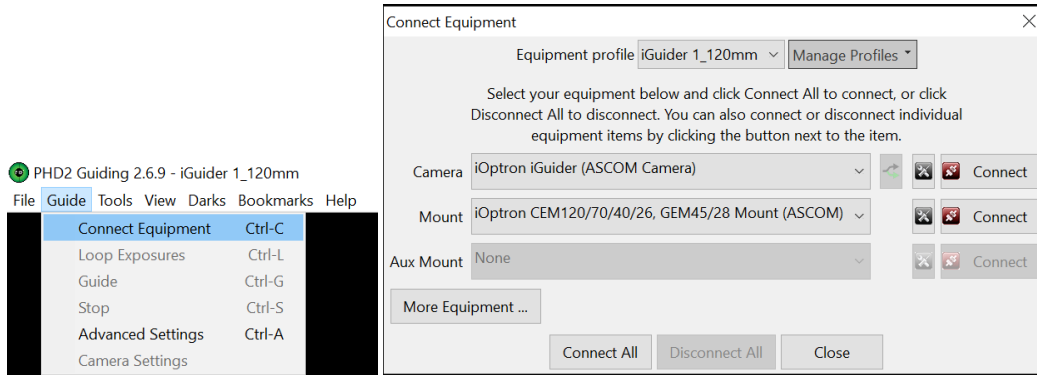
In next Adaptive Optics Device setting window, select **None** and go to **Next**.



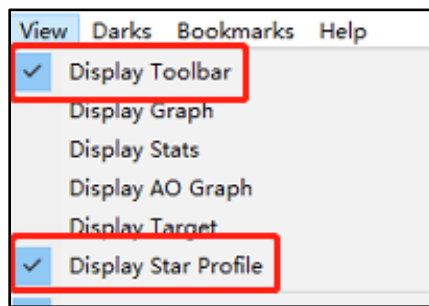
Save the Profile Name. Do not check **Build dark library**. You may do it at a late time. Click **Finish** to complete the Profile setup.



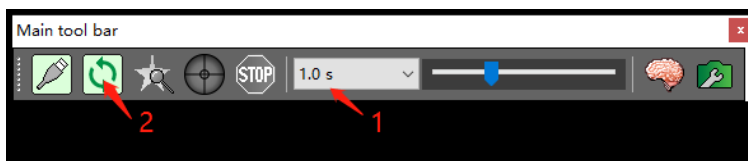
Click on Guide/Connect Equipment and connect all the devices.



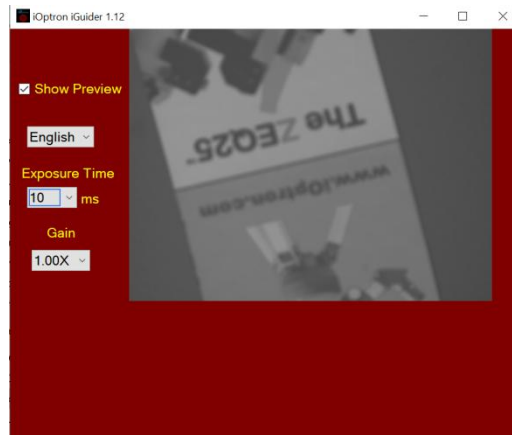
To view the image via iGuider, check **“Display Toolbar”** and **“Display Star Profile”** in **View** menu.



Select proper **“Exposure Time”** in **Main tool bar** and click on **“Continues Exposure”**, you should see star images in the main window. Make sure you remove the lens cover.



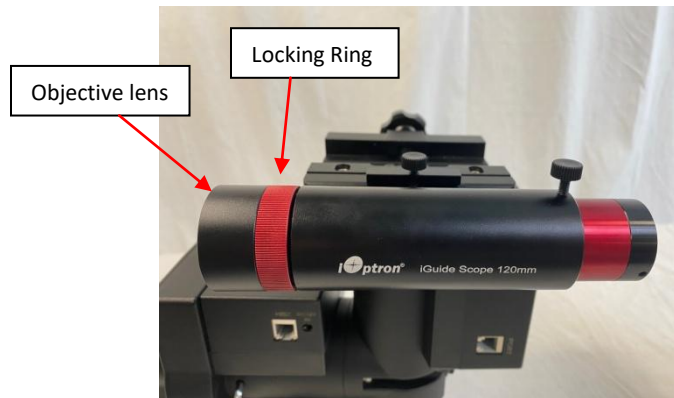
You may also check the iGuider camera during daytime by checking **Show Preview** in iOptron iGuider ASCOM window. Adjust **Exposure Time** and focuser to show the image.



5. iGuiding Focus Adjustment

To adjust stand alone iGuider 1 focus:

- (1) Remove iGuider lens cover.
- (2) Run PHD2 software and select "**iOptron iGuider (ASCOM Camera)**"
- (3) Go to a bright star
- (4) Turn the Object Lens to bring the star to show in the main window.
- (5) Click on the star to look at the **Star Profile**. Further fine adjusting the Object Lens to bring the **Peak** to maximum value.
- (6) Turn the Locking Ring to lock the Objective Lens.



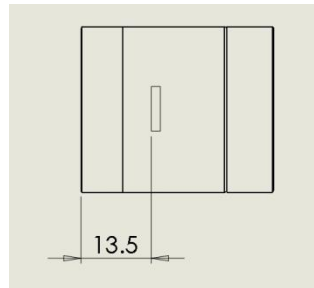
6. Specifications

iGuide Scope:

Weight: 200 g (including iGuide Scope and iGuider camera)
Aperture: 30mm
Focal length: 120mm
Focal ratio: F/4
Dovetail: 19mm wide
Mounting Saddle: 2XM3, 30mm apart

iGuider 1 Camera:

Pixel size: 3.75 μ m
Pixel array: 1280*960
Mega pixel: 1.2 MP
Chip size: 1/3"
Resolution: 6.44 arcsec/pixel (coupled with iGuide Scope)
Back focus: 13.5mm
Guiding method: Support Pulse Guiding (ASCOM Guiding), not support ST-4 Guiding



Back Focus

7. iGuider ASCOM Driver

<https://www.ioptron.com/Articles.asp?ID=328>

After install iGuider ASCOM Driver, you may connect the iGuider using any ASCOM compatible guiding software, not only the PHD2.

8. iGuider Firmware Upgrade

<https://www.ioptron.com/Articles.asp?ID=327>