



iOptron[®] iGuider[™] Autoguiding System Operation Manual

Product #3360

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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 sutoguiding 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:

😰 Setup - iOptron iGuider ASCOM Driver 1.2.0.1 – 🗆 🗙	
License Agreement Please read the following important information before continuing.	5
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.	:
This work is licensed under the Creative Commons Attribution-No Derivative Works 3.0 License. To view a copy of this license, visit http://creativecommons.org/licenses/by-nd/3.0/ or send a letter to Creative Commons, 171 Second Street, Suite 300, San Francisco, California, 94105, USA.	
 I accept the agreement ☐ I do not accept the agreement 	
Next Cancel]

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 **Mound** to start the PHD2 New Profile Wizard:



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

New Profile Wizard	Camera V2 simulator (ASCOM) CCD Labs O-Guider	
Select you	Fishcamp Starfish i-Nova PLC-M INDI Camera	
More Info Select your guide cameras supporte ASCOM cameras a shown, it is either camera driver is no know the camera length in order to parameters. When given the option t get the pixel-size a choose a binning- binning.	iOptron iGuider iOptron iGuider (ASCOM Camera) Long exposure LXUSB webcam Long exposure Parallel webcam MagZero MZ-5 Meade DSI I, II, or III None Omegon Pro Camera OpenCV webcam 1 OpenCV webcam 2 Orion StarShoot DSCI QHY Camera SAC4-2	
Guide Camera: Guide came Binning leve	SBIG SBIG Rotator Simulator Simulator (ASCOM) Starlight Xpress SXV II 1 →	,
Guide scop	e focal length (mm):	

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*.

New Profile Wizard - Choose a Mount Connection					\times
Select your mo	ount connection - th guide signals are t	is will ransmitted			
More Info Select your mount inte determines how PHD2 to the mount. For mos ASCOM interface is a g vanilable for cases whe isn't well supported by know the mount guide so PHD2 can calibrate don't know the mount use the default value o mount, you'll usually b connect to it immediat guide speed for you.	ASCOM Dome Conth Device Hub Telescop Generic Hub (ASCOM GPINT 378 GPINT 378 GPINT 380 GPUSB INDI Mount IOptron ASCOM Driv IOptron ASCOM Driv IOptron ASCOM Driv IOptron Com On-AO ON-AO ON	rol e (ASCOM) /) /////////////////////////////////	8 Mount (ASC	OM)	
Mount:	record proper birring and		7	~	
Mount guide speed (n.	n x sidereal):			0.50	•
Declination axis has	high-precision encod	er (a few high-en	d mounts)		
		< Back	Help	Next	>

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

New Profile Wizard - Choose an Adaptive Optics Devic	×
AO Specify your adaptive optics device if desired	
More Info	
If you have an adaptive optics (AO) device, you can select it here. The AO device will be used for high speed, small guiding corrections, while the mount interface you chose earlier will be used for larger ('bump') corrections. Calibration of both interfaces will be handled automatically.	
AO: None ~	
< Back Help 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.

New Profile Wizard - Finish Creating Your New Profile					
Enter a name for your profile and optionally launch the process to build a dark library					
More Info					
Your profile is complete a a name and, optionally, b for it. This is strongly recor- results. If your setup is st the next, you can choose the last calibration when you are new to PHD2 or please use the 'Help' fund	and ready to save. Juild a dark-frame I mmended for bes able from one nigh to automatically re you load this profil encounter problem tion for assistance.	Give it ibrary tt use e. If Is,			
Profile Name: iGuider 1_120mm					
Build dark library					
< Back	Help	Finish			

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

				Connect Equ	ipment						×
				Equip	oment profile	Guider 1_120mm 🖂	Manage Profi	les 🔭			
	Select your equipment below and click Connect All to connect, or click Disconnect All to disconnect. You can also connect or disconnect individual equipment items by clicking the button next to the item.										
PHD2 Guiding 2.6.9 - iGuider 1_120mm				Camera	iOptron iGu	uider (ASCOM C	amera)	~	-\$	8	Connect
File Gu	ide Tools View Dark	s Bookmarks	Help	Mount	iOptron CEI	M120/70/40/26	, GEM45/28 Mount	t (ASCOM) 🗸	*	S	Connect
	Loop Exposures	Ctrl-L		Aux Mount	None			~	×	S	Connect
	Guide	Ctrl-G									
	Stop	Ctrl-S		More Equi	pment						
	Camera Settings	Ctri-A				Connect All	Disconnect All	Close			

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:30mmFocal length:120mmFocal ratio:F/4Dovetail:19mm wideMounting Saddle: 2XM3, 30mm apart

iGuider 1 Camera:

Pixel size:	3.75µm
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	I: 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