



**Atik One User Manual**  
Version 1.0 – March 2014



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## **1 Introduction**

Congratulations on your purchase of an Atik One camera. This manual will help you get the most out of your Atik camera: please take the time to read it thoroughly, and you will be ready to discover new worlds.

Atik cameras provide superior performance and unrivalled ease of use. Our cameras are the result of extensive research and development, each one having been designed and built with the requirements of the most demanding astro-imager in mind. Your Atik camera incorporates state-of-the-art design and materials, and it will be your trusted astro-photography companion for a long time to come.

### **1.1 Further information**

For installation instructions and other useful information please refer to the Quick start guide which was shipped with the camera. Information on the software is given in the Artemis Capture guide, a PDF file of which is copied to your computer hard drive by the software installer. Further information is available on our website at <http://www.atik-cameras.com>.

## 2 Pack Contents

This pack includes:



1. Atik One camera
2. USB cable
3. Car lighter type power cable
4. Quick start Guide
5. CD with software and manuals
6. M42-2" adapter
7. 1.5 and 2mm Allen keys

### 3 Getting to know your camera

#### 3.1 Camera Ports



**Aux Power** – 2.1mm center positive socket, for external devices (Max 2A)

**USB hub** – For connecting accessories like guiders, focusers, etc.

**USB port** – For connecting to the computer.

**DC in** – For powering the camera (2.1mm center positive)

The USB hub is capable of powering a USB 2.0 class device, like a small guider camera, so that cables are kept to a minimum. Aux power can be used to power a 12V DC device, like a guide camera or a focuser/rotator, so that you can have only 2 cables for your entire system.

**WARNING:** Make sure that the total current drawn on the Aux port does not exceed 2 Amps!

### 3.2 Mounting options

There are two possibilities connecting the camera to a telescope. The M42 “T-thread” adapter in the front, which is compatible with any T threaded device (like reducers or flatteners), or with the supplied T to 2” adapter, which can be used on any 2” focuser. Smaller 1.25” adapters are not recommended, because they might vignette with faster telescopes, and the attachment will be weaker.



There are 1/4” tripod threaded holes on each side of the camera. These can be used to mount the camera on a tripod, or as cable fixing points.

### 3.3 Sensor

The sensors available in the Atik One cameras are listed below:

	<b>Black and White</b>
<i>Atik One 6.0</i>	SONY ICX694/5AL
<i>Atik One 9.0</i>	SONY ICX814/5AL

As these CCD typically have few hot pixels and relatively low dark current, dark frames are unnecessary in many cases. The low noise, which stands at an amazing 5 electrons RMS typical, allows the camera to image very faint objects.

### 3.4 Optical Window

The optical window used in front of the CCD is a 2mm BK7 with BBAR coatings on both sides to minimize reflection artifacts in your images.

### 3.5 Analog to Digital Converter (ADC)

The Analog to Digital Converter (ADC) has a 16-bit dynamic range. This means that your Atik camera will allow you to record subtle levels of gray, providing you with detail in both the faint and bright parts of an image.



### 3.6 Power Consumption

Your Atik camera was designed to have low power consumption: please see the table in section 5 for details specific to your camera model. The 2.1mm centre-positive DC input is compatible with a wide range of 12V DC supplies.

**WARNING:** If you have purchased the optional mains power adaptor, please note that it is for indoor or observatory use only. There is a risk of electric shock if the adaptor is used in damp environments or outside. If in doubt do not use the adaptor and consult a trained electrician.

### 3.7 Cooling

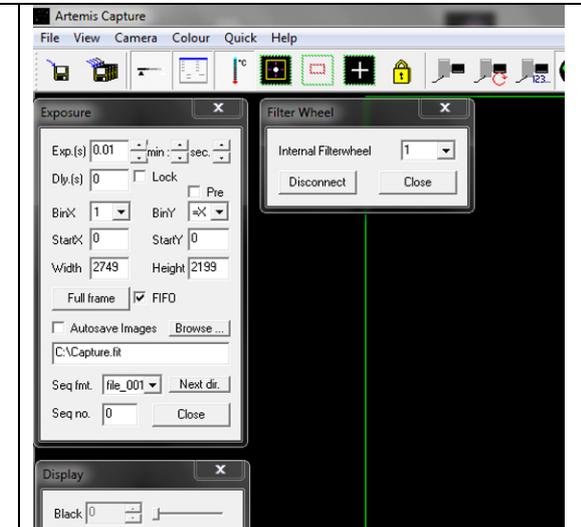
All Atik One cameras have a robust, regulated cooling system, ensuring the CCD is kept at the desired temperature throughout the observing session. The efficient cooling, means that dark frames are not necessary in most situations, allowing you to spend more time imaging and less time taking calibration frames, but if very long exposures are to be used and high precision data is required, dark frame libraries will be easy to maintain.

The Atik One features a CCD chamber that has been purged with high purity Argon, to eliminate moisture from the sensor and to optimize cooling.

## 4 Changing the filters

The Atik One features a 5 position, mechanically indexed filter wheel. The wheel was designed to be simple to use, and changing the filters can be done in one of 2 ways:

### 4.1 Method 1

	
<p>Connect camera to computer</p>	<p>Open Artemis Capture. Disk will reset to position 1.</p>



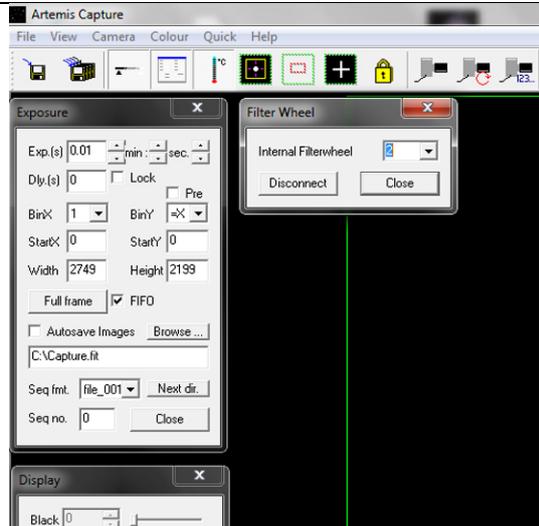
Unscrew the M42 adapter



Using the supplied tool, place the filter on tool as shown.



Insert tool in the opening and gently tighten the filter. It may help to catch the first thread if you unscrew first.



On Artemis Capture wheel control, move to filter 2 and repeat the previous step. Repeat for all filters.

## 4.2 Method 2



On a clean table, unscrew the 4 front screws.



Place the camera sideways and gently separate the wheel module.



Turn down the wheel module onto the table.



Lock the motor with the supplied 1.5mm Allen key.



Unscrew the central holding screw.



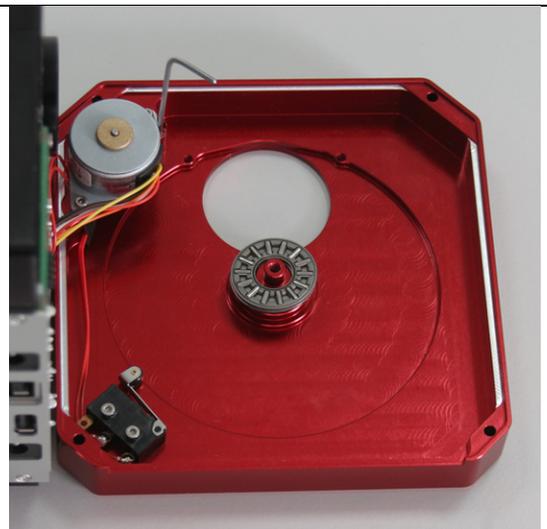
Take the washer off.



Take the disk off.



Remove the bearing by turning disk upside down. Parts should look as above.



Install filters on disk



Make sure the lower bearing and washer are centred.



Install disk. Make sure the disk clears the mechanical index on the lower left. If needed, use a pen tip to lower the blade.



Gently push down the disk, while rotating to the right. You should feel the force of the spring below.



Place the top bearing in place and the washer as well. Tighten back the screw, and make sure the wheel rotates well, rotating to the right.

Hold the motor and take the allen key out. Release the motor.



Rotate the wheel module back, and attach to camera.

Tighten back the screws.

## 5 Technical Information Summary

	<b>Atik One 6.0</b>	<b>Atik One 9.0</b>
<b>Sensor Type</b>	Sony ICX694/5	Sony ICX814/5
<b>Resolution</b>	2750x2200 pixels	3380x2704 pixels
<b>Pixel Size</b>	4.54x4.54µm	3.69x3.69µm
<b>ADC</b>	16 bit	16 bit
<b>Readout Noise (typical)</b>	5 e <sup>-</sup>	5 e <sup>-</sup>
<b>Interface</b>	USB 2.0	USB 2.0
<b>Power</b>	12V DC 2A	12V DC 2A
<b>Maximum Exposure</b>	Unlimited	Unlimited
<b>Minimum Exposure</b>	1/1000s	1/1000s
<b>Cooling</b>	Thermoelectric Delta T = -38°C	Thermoelectric Delta T = -38°C
<b>Weight</b>	Approx. 990g	Approx. 990g
<b>Backfocus (no adapter)</b>	24mm	24mm
<b>Backfocus (T-thread)</b>	28mm	28mm



The following table gives the angular resolution per pixel with certain focal distances. The formula to calculate any other focal length is:

$$(Pixel\ Size\ (\mu m) / Focal\ Distance\ (mm)) * 206.3 = angular\ resolution\ (arcseconds/pixel)$$

<b>Focal Length</b>	<b>Atik One 6.0</b>	<b>Atik One 9.0</b>
250	3,75	3,04
300	3,12	2,54
350	2,68	2,17
400	2,34	1,90
450	2,08	1,69
500	1,87	1,52
550	1,70	1,38
600	1,56	1,27
650	1,44	1,17
700	1,34	1,09
750	1,25	1,01
800	1,17	0,95
850	1,10	0,90
900	1,04	0,85



## 6 Declaration of Conformity



EU Declaration of Conformity.

This product carries the CE Mark in accordance with the related European Directive. CE Marking is the responsibility of:

Perseu, SA  
R. Dr. Agostinho Neto, 1D  
2690-576 Sta Iria da Azoia  
Portugal

### **Critical Applications.**

This product is not designed for any “critical applications”. “Critical applications” means life support systems, medical applications, connections to medical devices, commercial transportations, nuclear facilities or systems or any other applications where product failure could lead to injury to persons or loss of life or catastrophic property damage.

This product is not a toy.

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

### **6.1 Disposal of the camera**

When no longer required do not dispose of this electronic device with general household waste. To minimise pollution and protect the environment the camera should be recycled. Local recycling drop off points available under the Waste from Electrical and Electronic Equipment (WEEE) regulations which will accept the camera. For further information contact Perseu SA at the above address, or the shop from which the camera was bought.





## **7 Servicing**

Repairs, servicing and upgrades are available through your local dealer or at [Support@Atik-Cameras.com](mailto:Support@Atik-Cameras.com)

Please note that modifications to the camera and/or accessories which are undertaken without the manufacturer's written permission will void the warranty.

## **8 Warranty**

The equipment is guaranteed against defective design, manufacture or materials for a period of one year from the date of purchase.

This means that Atik Cameras will repair or replace the equipment at its sole option, at no charge to the purchaser for parts or for labour, if the fault is reported within the guarantee period, provided however that Atik Cameras is able to duplicate the defect or problem at its facilities. This warranty does not apply to damage that occurred as a result of abuse or misuse, abnormal service or handling, damage which may have been caused either directly or indirectly by another product, or if the equipment has been altered or modified in any way, or if the damage was caused by repairs or service provided or attempted by anyone other than Atik Cameras. This warranty does not include or provide for incidental or consequential damages.

To exercise your rights under this warranty, you must return the equipment to the dealer from whom it was purchased together with proof of purchase and a clear description of the fault. If it's not possible to return the equipment to your dealer, you should contact Atik Cameras. Equipment returned to Atik Cameras must be sent in appropriate packaging and at your expense (insurance is recommended), together with proof of purchase, a return address and a clear description of the fault.

This does not affect your statutory rights.