Atik Series 3 User Manual

Version 1.5 – July 2015

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1. Introduction

Congratulations on your purchase of an Atik Series 3 camera. This manual will help you get the most out of your Atik camera so please take the time to read it thoroughly and you'll soon be ready to discover new worlds.

Atik Cameras provide exceptional value for money, superior performance and unparalleled ease of use. They 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 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 Quickstart guide which was shipped with the camera. Information on the software is given in the ArtemisCapture guide, a PDF file of which is copied to your computer hard drive by the software installer. Further information, including a number of 'Getting Started' tutorial videos, is available on our website at http://www.atik-cameras.com.

2. Pack Contents

This pack includes:

1. Atik Series 3 camera
2. USB cable
3. Car lighter type power cable
4. CD with software and manuals
5. Quick start guide

3. Getting to know your camera

3.1 Camera Parts

1. ST-4 compatible autoguider port
2. 2.1mm centre-positive 12V DC input
3. 1.25” nosepiece with T2 (M42 x 0.75mm pitch) thread
4. USB port

3.2 Sensor

The sensors used in the Atik series 3 cameras are listed below:

	Monochrome	**Colour**
Atik 314L+	SONY ICX285AL	SONY ICX285AQ
Atik 320E	SONY ICX274AL	SONY ICX274AQ

Due to the very clean nature of these CCDs, dark frames are unnecessary in most cases. This is due to the low noise which stands at an amazing less than 5 electrons RMS.

3.3 Optical Window

The optical window used in front of the CCD is a BK7 with BBAR coatings on both sides ensuring that no reflection will appear in your image.

3.4 Analog to Digital Converter (ADC)

The Analog to Digital Converter (ADC) is a 16-bit ADC. This means that your Atik camera will allow you to record subtle levels of gray, providing you with enhanced dynamic range when capturing an image.

3.5 Power Consumption

Your Atik camera was designed to have low power consumption: please see the table in section 4 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.

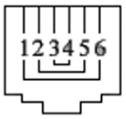
3.6 USB Port

The Atik series 3 cameras use a USB 2.0 high-speed interface, allowing full- frame image downloads in only a few seconds. A higher speed “preview” mode is also present, providing roughly twice the speed.

3.7 Autoguiding Port

The autoguiding port enables you to do autoguiding with any ST4 compatible guiding software when using the optional cable.

Guider port pinout:



1 - NC
2 - GND
3 - West
4 - South
5 - North
6 - East

3.8 Cooling

Atik cameras are thermally stabilized to allow your CCD to output the best result that it can deliver. The very low readout noise, combined with 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. If very long exposures are to be used or high precision data is required (exo-planet searches, for example), dark frame libraries will be easy to maintain.

The cooling delta varies between models and full specifications are available in the Technical Information Summary on page 7. **Please note:** the cooling delta is how far below the ambient temperature the camera can achieve, rather than a fixed temperature it will cool to.

The Atik 314L+ has a regulated cooling system, meaning that the CCD is kept at the desired temperature throughout the imaging session. After switching on the camera, it is advisable to allow at least 2 minutes before taking images in order to allow the temperature to stablilize.

3.9 Replacing the desiccant

Your camera includes a high-performance molecular sieve desiccant tablet which is used to avoid condensation in the CCD chamber. Although this desiccant will last a long time it may eventually need replacement or recharging, in which case please follow the instructions below:

Desiccant Port

- To replace the desiccant, open the desiccant port with the supplied plastic tool and a screwdriver and take out the used tablet.
- To recharge the desiccant, place the tablet in an electric oven at 200ºC for 90 minutes. Take the tablet out the oven (CAUTION: tablet will be very hot) and allow it to cool down.
- Place the recharged tablet back in the camera, replace the port cover and tighten (no need to over- tighten). Wait 24 hours before connecting the camera again.

You will notice that there is a filter inside the desiccant chamber. The purpose of this is to avoid contamination of the chamber when the desiccant is being replaced. The filter is very fragile and should not be touched.

4. Technical Information Summary

	Atik 314L+	Atik320E
Image sensor	Sony ICX285	Sony ICX274
Resolution	1392x1040 pixels	1620x1220 pixels
Pixel size (um)	6,45x6,45	4.4x4.4µm
ADC	16 bit	16 bit
Readout noise (Typ.)	4 e-	4 e-
Cooling Delta	-27	-25
Regulated cooler	Yes	No
Water assist	No	No
Maximum exposure	Unlimited	Unlimited
Minimum exposure	0,001s	0,001s
Maximum Frame Rate	N/A	N/A
PC Interface	USB2	USB2
Power requirements	12VDC 0.8A	12VDC 0.8A
Backfocus distance	13mm ±0.5	13mm ±0.5
Thread on front	M54x0,75	M54x0,75
Weight	400g	350g
Mono or OSC	Either	Either

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

*(Pixel Size (µm) / Focal Distance (mm)) * 206.3 = angular resolution (arcseconds/pixel)*

Focal Distance (mm)	Angular resolution (arcsec/pixel) – 314L	Angular resolution (arcsec/pixel) – 320E
350	3.80	2.59
400	3.33	2.27
450	2.96	2,02
500	2.66	1,82
550	2.42	1,65
600	2.22	1,51
650	2.05	1,40
700	1.90	1,30
750	1.77	1,21
800	1.66	1,13
850	1.57	1,07
900	1.48	1,01
950	1.40	0,96
1000	1.33	0,91

5. Declaration of Conformity

EU Declaration of Conformity CE

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.

5.1 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.

6. Servicing and Repairs

Repairs, servicing and upgrades are available through your local dealer or by emailing 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.

7. 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.