



Atik 4000/11000 User Manual
Version 1.3 – August 2011



Table of contents

1 Introduction.....	3
1.1 Further information.....	3
2 Pack Contents.....	4
3 Atik Instruments 4000/11000.....	5
3.1 Camera Parts.....	5
3.2 Sensor.....	6
3.3 Analog to Digital Converter (ADC).....	6
3.4 Power Consumption.....	6
3.5 USB Port.....	6
3.6 Thermal Stabilization and regulation.....	7
3.7 Optical window heater.....	7
4 Technical Information Summary.....	8
5 Declaration of Conformity.....	9
5.1 Disposal of the camera.....	9
6 Warranty.....	10

1 Introduction

Congratulations on your purchase of an Atik 4000/11000 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 exceptional value for money, 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.

Repairs, servicing and upgrades are available through your local dealer or at <http://www.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, details of which are given at the back of this manual.

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 is available on our website at <http://www.atik-cameras.com>.

2 Pack Contents

This pack includes:



1. Atik 4000/11000 camera
2. USB cable
3. Car lighter type power cable
4. AC mains adapter (Universal)
5. 2" nosepiece adapter
6. CD with software and manuals
7. Quick start guide
8. Pelican case

3 Atik Instruments 4000/11000

3.1 Camera Parts



1. Water cooling pipes
2. 2.1mm centre-positive 12V DC input
3. M6 screw slots
4. USB port

Note: the M6 screw slots are provided as a means to attach anything to the camera (cable harness, etc.).

WARNING! The screws should never protrude inside the camera more than 5mm, or damage will occur.

3.2 Sensor

The sensors used in the Atik 4000/11000 cameras are listed below:

	Black and White	Color
<i>Atik 4000</i>	Kodak KAI-4022	Kodak KAI-4022C
<i>Atik 11000</i>	Kodak KAI-11002	Kodak KAI-11002C

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.

3.3 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.

3.4 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: The mains power adaptor supplied with the camera 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.

3.5 USB Port

The Atik 4000/11000 cameras use a USB 2.0 high-speed interface to minimize image download times. A higher speed “preview” mode is also available, providing roughly twice the speed of the normal mode.

3.6 Thermal Stabilization and regulation

Atik cameras are thermally stabilized to allow your CCD to produce the best result that it can deliver. This is a thermoelectric process and therefore it takes some time to stabilize. After switching the camera on you should wait about 5 minutes until thermal stabilization is achieved.

Additionally, the temperature is also regulated, which means you can select a fixed temperature where you want the CCD to be maintained. This will allow making calibration frame libraries (darks, bias) at different temperatures settings, avoiding the need to waste precious imaging time with them.

One additional bonus is the ability to use liquid cooling. This is especially interesting on very warm summer nights, where the air system won't allow you to reach the desired temperature. By using water as a heat transport medium, lower temperatures can be achieved.

3.7 Optical window heater

Because the CCD can be cooled to well below zero, conditions of very high humidity can sometimes lead to condensation forming on the outside of the optical window. To counteract this, the camera is equipped with an internal heater which can gently heat the window to prevent condensation forming. To avoid unnecessary power consumption, the heater is turned off by default. To turn it on, you should do the following:

- Install the Application "Atik Config", which is located on the CD
- Run the application, press "connect", followed by "EEPROM"
- Locate the option "Aux power"; initially it will be set to 0
- Increase the power level to 255
- Press "Write to Memory" and exit
- Press "Disconnect" and close Atik Config

WARNING: Don't change ANY of the other settings on EEPROM!!!

As a suggestion, first increase the power level to 125 to see if it prevents dew from appearing.

4 Technical Information Summary

	Atik 4000	Atik 11000
Sensor Type	Kodak KAI-4022	Kodak Kai-11002
Horizontal Resolution	2048 pixels	4008 pixels
Vertical Resolution	2048 pixels	2672 pixels
Pixel Size	7.4x7.4µm	9x9µm
ADC	16 bit	16 bit
Readout Noise (typical)	11 e ⁻	13 e ⁻
Interface	USB 2.0	USB 2.0
Power	12v DC 2A (max)	12v DC 2A (max)
Maximum Exposure	Unlimited	Unlimited
Minimum Exposure	1/1000 s	1/1000 s
Maximum QE	55%	50%
Anti blooming	>1000x	>1000x
Full Well	40.000e	60.000e
Cooling	Thermoelectric, 2 stage Liquid ready	Thermoelectric, 2 stage Liquid ready
Weight	Approx. 990 g	Approx. 990 g
Backfocus distance	18mm	17mm
Optical window thickness	4mm	4mm

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

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

Focal Distance (mm)	Angular resolution (arcsec/pixel) Atik 4000	Angular resolution (arcsec/pixel) Atik 11000
350	4.36	5.30
400	3.82	4.64
450	3.39	4.13
500	3.05	3.71
550	2.78	3.38
600	2.54	3.09
650	2.35	2.86
700	2.18	2.65
750	2.04	2.48
800	1.91	2.32
850	1.80	2.18
900	1.70	2.06
950	1.61	1.95
1000	1.53	1.86

5 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.

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 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.