

# BuckEye Cam™

## APOLLO

Scouting Camera  
Model RC-5060



Owner's Manual  
Revision 1.1

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# 1. Camera System Specifications

## APOLLO Camera System Specifications

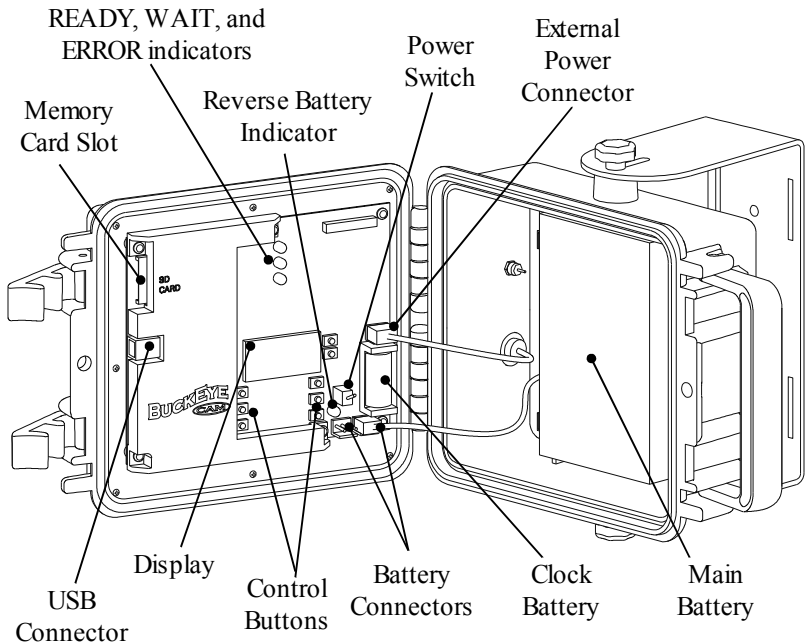
Resolution options	3 Mpixel (2048x1536) 1.3 Mpixel (1360x1016) 0.8 Mpixel (1024x768) 0.3 Mpixel (640x480)
Video resolution options	VGA (640x480) 1 frame/second QVGA (320x240) 3 frames/second
Video clip length	5 seconds to 60 seconds
Reaction speed <sup>1</sup>	0.2 seconds
Stamps on the picture	Date , Time Moon Phase Temperature 4 custom text fields
Minimum delay between pictures or video clips	1 sec. (0.3Mp and Video) 5 sec. (0.8Mp) 10 sec. (1.3Mp) 15 sec. (3Mp)
Time lapse photography	Yes
Camera scheduling	Yes (for each day of week)
Additional settings	Adjustable image compression Burst mode

<sup>1</sup> Time from the moment the motion is recognized by the sensor till the moment the picture or the first frame in the video frame sequence is captured.

## 2. Camera System Overview

### 2.1. Camera Controls

The following figure describes the inside detail of the camera.



**Battery Connectors** - Two battery connectors are available on the camera. These connectors can be used to “hot-swap” the battery without powering down the camera.

**READY Indicator** – After you press the SAVE PICS TO CARD button, this light will turn on to notify you that it is safe to remove the memory card.

**WAIT Indicator** – This light will turn on when you first turn on the power and when accessing the memory card. Do not remove the memory card when this light is on.

**ERROR Indicator** – This light will turn on when there is an error writing to the memory card. If this light turns on consistently, try a different memory card.

*Reverse Battery Indicator* – This light will turn on if you plug the battery cable in backwards. If this happens, simply unplug and reverse the cable.

*Power Switch* – This switch turns power on and off to the camera.

*Control Buttons* – used to setup and configure the camera or to send commands to remote cameras from a Portable Base.

*Clock Battery* – The clock battery powers the internal clock while the camera is turned off.

*Main Battery* – 6V lead acid battery powers the camera. It provides a significant amount of charge and operates well in low temperatures.

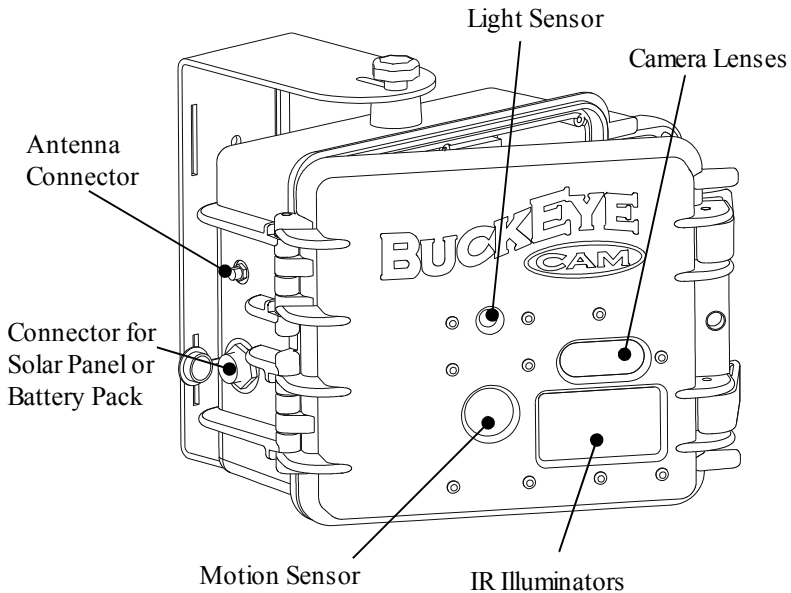
*Display* – This displays all messages and menus.

*External Power Connector* – This connector is used to supply external power. Do not disconnect this connector. ***Do NOT plug the battery into this connector.***

*Memory Card Slot* – SD Memory Card connector.

*USB Connector* – **DO NOT USE.** For factory use only.

The following figure illustrates the exterior of the camera.



*Connector for Solar panel or Battery Pack* – Connect an external battery pack or a solar panel to increase the battery life of the camera.

*Light Sensor* – Camera uses the light sensor to determine the amount of light and exposure when it is capturing a picture.

*Motion Sensor* – Passive Infrared sensor is used to detect motion of animals and people.

*IR Illuminator* – Infrared illuminator is used to capture pictures at night without being detected.

*Antenna Connector* – This connector is used on a wireless system only. On your Apollo camera, this connector should be protected by a vinyl cap. **DO NOT** remove or discard this cap. For information on how to upgrade your Apollo camera to a wireless camera visit [www.buckeyecam.com](http://www.buckeyecam.com).

## 3. Camera Setup and Operation

### 3.1. Changing Time and Date

*Note 1: The BuckEye Cam APOLLO uses Military settings when displaying the time.*

*Note 2: The time and date is maintained with a 3V Lithium battery located next to the On/Off switch.*

To change the time and date on the stand-alone camera:

1. Press and hold the **SET CLOCK** button for two seconds until **HOURS** appears on the display. Release the **SET CLOCK** button.
2. Press the **UP** or **DOWN** buttons to set the Hour.
3. Press the **SET CLOCK** button to display **MINUTE**.
4. Press the **UP** or **DOWN** button to set the Minute.
5. Repeat steps 3 and 4 to update **SECOND**, **DAY**, **MONTH**, and **YEAR**.  
Note, when updating seconds, pressing **UP/DOWN** button will reset the seconds to 00.

### 3.2. Changing Settings on the Camera

Settings on the camera can be changed through the memory card.

Any time a card is inserted into the camera, the camera would verify and make sure the software to change settings and the settings file are present on the card. If the software or settings file is not present, or the file is corrupted, the camera would update the necessary files on the card. This is done automatically and no user intervention is required. If you purchase a new blank memory card or accidentally deleted the program, to place a copy of the software along with the settings file just insert it into the card slot on a stand-alone camera.

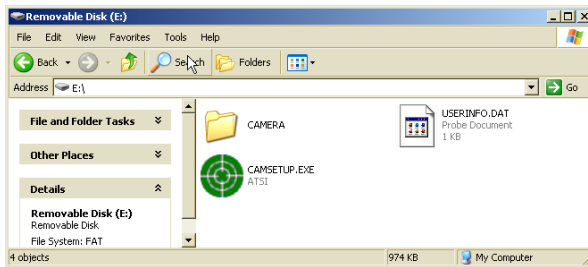
To copy the setup software to the memory card:

1. If the memory card was not inserted, insert the memory card into the card slot on the camera.
2. The **WAIT** light will flash once. If the light stays on for longer than 1 second it means that the program is copied to the memory card.
3. Press **SAVE PICS TO CARD** button. This will indicate that you are about to remove the memory card and the camera will not attempt to access the card giving you time to remove the card.
4. Wait till the **READY** light turns on, indicating that the operation was completed successfully.
5. Remove the card from the card slot by lightly pushing the card

into the card slot and releasing it. The card will be ejected from the card slot.

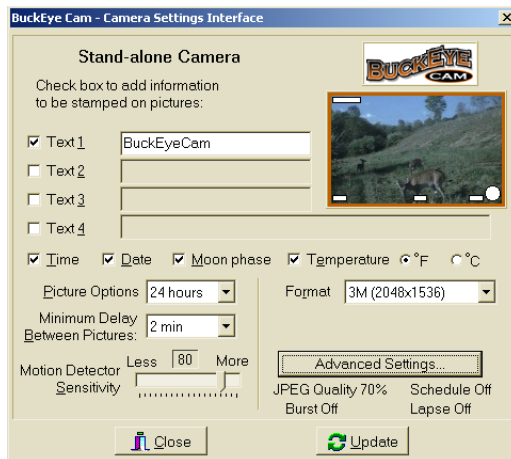
After you connect the card reader to your computer and insert the memory card, a window will pop up displaying the contents of the memory card. If the window does not appear automatically, click the Start button on the task bar and select My Computer. In the opened window double-click onto the removable disk icon that corresponds to the memory card.




Example of the content of the memory card is shown in below.



In the open window, click on the camsetup.exe file to open the User-Options software as shown below.

Note: Do not worry if you only see camsetup and not camsetup.exe. Your computer is probably set up to hide the three letter extension and there are no problems with the files.



To change the camera settings, select the options you want by clicking on the corresponding check box and filling in the fields. If you make any changes, the  button at the bottom of the window is enabled. When you are done updating settings, click the  button to save the changes and close the software. After that, you can remove the card from the card reader. Insert the card into the card slot on the camera to update settings. The camera will automatically detect and new settings on the card and a message  will be displayed. This indicates that the new settings were accepted.

### **Camera Options:**

In the settings software, you can enter up to 4 custom text labels onto the picture. To add a label to the picture, place a check box next to the text field and type in the text. You can enter 31 characters into Text 1, Text 2, and Text 3, and up to 63 characters into Text 4. Please note, as you click on a text box, the location of the corresponding label is highlighted in the sample picture in the upper right hand corner.

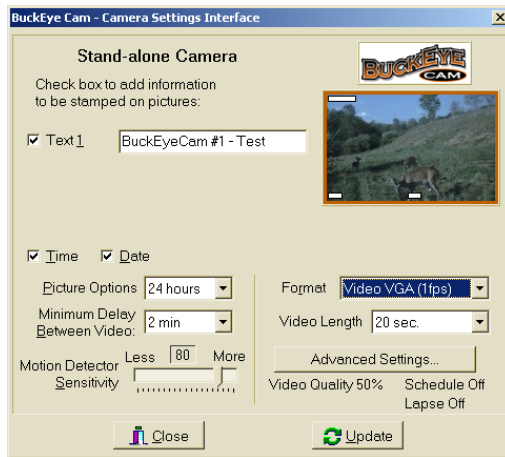
The date, time, temperature, and moon phase at the time the picture was taken can also be stamped on the picture. Click on the corresponding check boxes to add or remove the stamps from the picture. Location of the stamp will also be highlighted in the sample picture area.

The **Picture Options** setting will determine if the camera will take pictures during Day only, Night only, or both (24 hours). If the user selects *Day* only, the camera will not be taking pictures at night. If the user selects *Night* only, the camera will not be taking pictures during daytime. The default setting is *24 hours*.

The **Format** allows you to choose the size of the picture the camera will take, or choose a video format for the camera to record. You can choose one of 6 possible formats:

- a) Picture, 0.3 megapixel (640 by 480 pixels)
- b) Picture, 0.8 megapixel (1024 by 768 pixels)
- c) Picture, 1.3 megapixel (1360 by 1016 pixels)
- d) Picture, 3.0 megapixel (2048 by 1536 pixels)
- e) Video, VGA (640 by 480 pixels) 1 frame/second
- f) Video, QVGA (quarter VGA 320 by 240 pixels) 3 frames/second

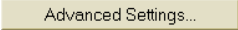
If one of the video modes is selected, some of the options will not be available.

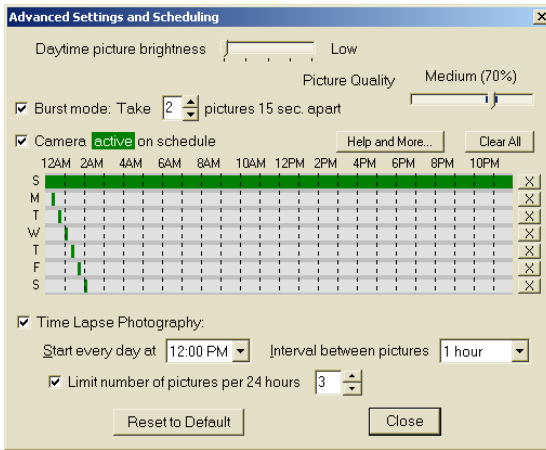


The **Video Length** option lets the user choose the maximum length of the video clip. You can choose the video length to be anywhere from 5 seconds to 60 seconds. After the camera is triggered it will record the video clip for up to the selected number of seconds. However, the recording may stop earlier if the camera does not see any motion for approximately 5 seconds.

The **Minimum Delay Between Pictures/Video** setting allows you to choose how much time elapses before the camera can take another picture upon next activation. You can choose up to 2 hours delay. The lowest delay available depends on the selected resolution and is 1 second for 0.3 megapixel resolution, 5 seconds for 0.8 megapixel resolution, 10 seconds for 1.3 megapixel resolution, and 15 seconds for 3.0 megapixel resolution.

The **Motion Detector Sensitivity** setting allows you to increase or decrease how sensitive the camera is to detecting a change in motion/heat pattern of the animal or individual. The default factory setting is 80.

More advanced options can be opened up by clicking on the  button. This will open the advanced settings window.



The **Daytime picture brightness** setting allows you to adjust the brightness of the picture or video captured by the camera. **Low** setting may give a better picture for general use with dark or normal background. **High** setting may be used when there is significant amount of bright background such as snow or sky present. To change the brightness level, click and drag the slider.

The **Picture/Video Quality** allows you to adjust the amount of compression to be applied to the JPEG picture files. The default setting for a remote camera is 70% for still pictures and 55% for video clips. A “Higher” quality setting will reduce the amount of compression and result in a larger file size. A “Lower” quality setting reduces the file size.

Since Quality is “in the eye of the beholder”, we suggest you experiment with this setting until you find something that produces pictures of acceptable quality and at the same time keeps the file size to its minimum thus allowing you to save more pictures to the memory card.

**Burst Mode** provides you the ability to take a preset number of pictures when the camera detects an activation.

**Camera active on schedule** allows you to select time intervals during which you do not want the camera to be taking pictures of anything moving in front of it. Click on the check box to activate the schedule feature. Once activated, you can select any of the predefined schedules, or you can define your own schedule. To access predefined schedules, click on the **Help and More...** button and select **Schedules**. Here, you will have a list of predefined schedules:

**Nights and Weekends** – the camera will trigger after 5PM until 8AM

on the next day, and all day on Saturday and Sunday.

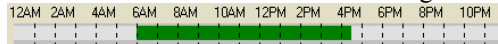
**Monday ... Friday, 8AM-5PM** – the camera will trigger only between 8AM and 5PM on Monday through Friday.

**Nights Only** – Camera will trigger only after 5PM until 8AM on the next day.

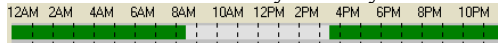
The green area on the schedule shows the time when camera is active. Gray area indicates the time when the camera is inactive. There are several types of activation patterns you can define. You can have only one deactivation and one activation for any day of the week not counting the midnight activations and deactivations.

#### Possible activation patterns:

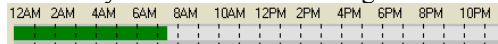
1. Camera is activated and later deactivated during one day:



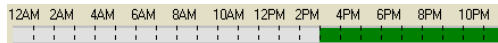
2. Camera is activated at midnight and deactivated later that day. It is activated once more on the same day and stays active till midnight:



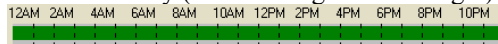
3. Camera is activated at midnight and deactivated later on the same day. The camera stays deactivated till midnight:



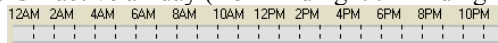
4. Camera is activated some time during the day and stays active until midnight:



5. Camera is active all day (from midnight till midnight):




6. Camera is inactive all day (from midnight till midnight):



To select a time interval, click and hold down the left mouse button while dragging it across the day. You will also notice a text label describing the current interval you are selecting. Release the mouse button to complete the interval. You can start and stop at every hour or 30 minutes after the hour. To get a 10 minute resolution, hold the *Alt* button on the keyboard while highlighting the schedule.

To clear the schedule for any given day of the week click on the



corresponding  button locator to the right of the schedule. You can leave a day blank, which will deactivate the camera for the entire day.

You can copy schedule from one day to another day. To copy, while holding down the *Ctrl* key on the keyboard, drag the day you want to copy to another day.

**Time Lapse Photography** allows user to tell the camera to take pictures or record video clips at a certain time of day. **Interval between pictures/video** defines how often you want the pictures to be taken. **Start every day at** defines the time the camera should start counting the intervals. Thus if the interval between pictures is 8 hours and the start time is 8:00AM, the camera will take one picture at 8:00AM, at 4:00PM, and at 12:00AM. If the start time is 2:00PM with 8 hours interval, the camera will take a picture at 2:00PM, then at 10:00PM, and then at 6:00AM on the next day. You can also limit the number of pictures taken after the start time. You can do so by selecting **Limit number of pictures/videos per 24 hours** and selecting the number of pictures. For example, you want the camera to take 7 pictures at 8PM, 9PM, 10PM, 11PM, 12AM, 1AM, and 2AM in the morning. To do so, select the start time as 8:00PM, 1 hour interval between pictures, and limit number of pictures to 7.

Please note, time lapse photography is not restricted by the schedule since the schedule only disables the motion sensor.

You can make any setting to be the same for all cameras by right-clicking on the corresponding option and selecting **Make the same for all cameras**. This feature can save you time when you are trying to define the same schedule, lapse photography, or a text label for multiple cameras.

When you are done updating settings, click the  **Update** button to save the changes and close the software. After that, you can remove the card from the card reader. Insert the card into the card slot on the camera to update settings. The camera will automatically detect and new settings on the card and a message  will be displayed. This indicates that the new settings were accepted.

### 3.3. Changing Settings Using a Palm® Handheld<sup>1</sup>

Settings can also be changed using a Palm® handheld that supports SD memory cards. To change the settings, remove the card from the camera and insert it into the card slot on the Palm® handheld. The handheld will

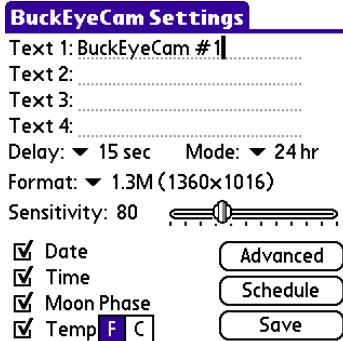
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<sup>1</sup> Palm is a registered trademarks owned by Palm, Inc.

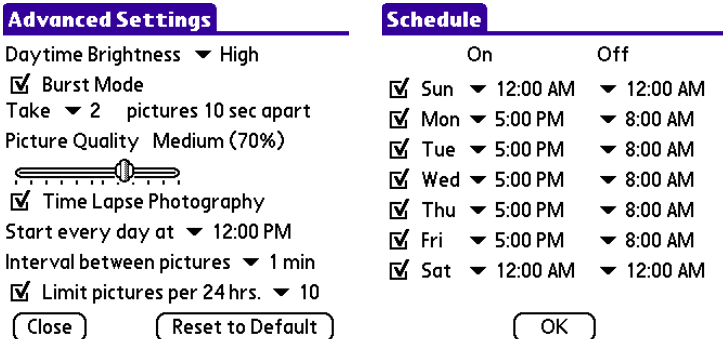
immediately show the launch icon for the CamSetup program.



Tap on the CamSetup icon to launch the program. After the settings are loaded, the main screen will appear.

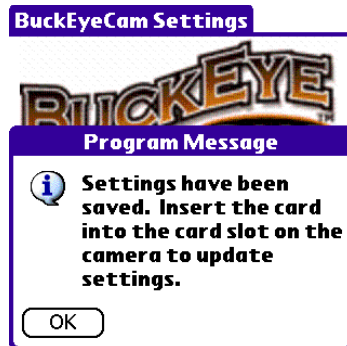


On this screen you can change the basing settings of the camera. To open advanced settings, tap on the Advanced button. To change the schedule, tap on the Schedule button. The Advanced Settings screen and Schedule screen are shown below.



On the schedule screen, to disable the schedule and make the camera operate continuously uncheck all the checkboxes. To activate a schedule, check the box for those days during which you want the camera to be activated. For each selected day of the week using the drop-down options choose the time of activation (On) and deactivation (Off). For example, on the screen above, the camera is set to operate during nights and weekends.

Once the settings are changed, click on the Save button on the main screen. When the settings are saved you will be prompted to insert the card into the card slot on the camera.



Tap the OK button. After the program is closed, you can remove the card from the Palm® handheld. Insert it into the card slot on the camera to update the settings.

### 3.4. Taking a Test Picture

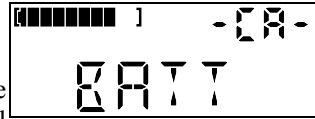
You can tell the camera to take a test picture or capture a video clip by completing the following steps.

1. Press **MENU** button on the base. You should see **TAKPIC** on the displayed
2. Press **SELECT** button. This should tell the camera to take a picture/capture a video clip.

Once the picture is taken or video clip is recorded, the picture counter should increment. Please note, if the video mode is enabled the length of the video clip will depend on the selected video length and presence of any motion in front of the camera.

### 3.5. Checking Battery Level

To check the battery level on a standalone camera, press the **BATTERY** button. The battery level will be displayed as shown to the right. The bar at the top will display the actual battery level. When the battery level drops below 2 bars, the battery will need to be charged.



### 3.6. Replacing the Battery on Camera

You should periodically check the battery level on the camera. The battery should be replaced if the level drops below 2 bars. If the battery is not replaced, the camera will go into the low battery mode and will stop taking pictures, or responding to the user commands. When the camera is in low battery mode it will have a **LOW BATT** message on the display.

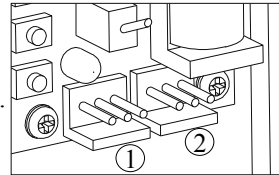
We recommend to have at least two batteries available for each camera. In this case you can charge one battery while the camera is running off the second battery. When the second battery gets low, you simply swap the battery and charge the first one.



*Warning: Do not attempt to connect any battery other than the one provided with the camera. Doing so may damage the camera and will void the warranty.*

To replace the battery on the camera without turning it off:

1. Open the camera enclosure
2. Connect the charged battery to the second available battery connector (connector 1 or 2 on figure to the right).
3. Unplug the discharged battery from the other connector.
4. Remove the battery from the enclosure and replace it with the new battery.
5. If the camera is in Low Battery mode (**LOW BATT** is shown on the display), alert the camera about the new battery by pressing the **MENU** button. The camera should go back to the normal operating mode.



If the camera is in Low Battery mode and you do not press the **MENU** button after swapping the battery, the camera will automatically come out of the Low Battery mode within a few minutes.

### 3.7. Charging the Battery

The camera batteries are charged using a special battery charger designed to charge 6V Sealed Lead Acid (SLA) batteries.



*Warning: Do not attempt to charge the batteries using any other type of battery charger. Charging the battery with the wrong charger may reduce the battery life or damage the battery.*



*Warning: Do not attempt to charge any type of battery other than 6V Sealed Lead Acid (SLA) batteries using the provided battery charger.*

Before you plug the battery charger into the wall, make sure the alligator clips on the charger are not touching each other.

To charge the battery, plug the battery charger to the wall. Connect the RED alligator clip of the charger to the positive RED terminal on the battery. Connect the BLACK alligator clip to the negative BLACK terminal on the battery. The indicator on the battery charger should turn RED, indicating that the battery is charging.

When the battery is charged, the indicator will turn solid GREEN or flashing GREEN. At this point, you may disconnect the battery from the battery charger.

*Note: It is OK to leave the battery charger connected to the battery even after the battery is charged. In this case, the charger will switch to the floating state and will maintain the charge on the battery.*

### 3.8. Using the Optional Solar Charger

The Solar Charger provides a constant charge to the battery with reduces the number of trips to the Camera site. The Solar Charger is not required for the camera to operate.

To ensure an efficient operation of the Solar Charger:

- Mount the panel so that it can be exposed to the most sun light throughout the course of the day. It is generally recommended to mount the charger facing South. If you are living in the southern hemisphere (South America, Africa, Australia) mount the Solar Charger facing North.

- Make sure falling leaves will not cover the panel. Efficiency of the panel can be significantly reduced even when only one segment (cell) is covered.
- Do not place the panel on the ground as it may get covered with leaves and dirt.
- In winter, make sure the panel is not covered with snow.

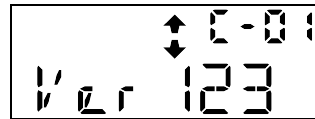
### 3.9. Reading Firmware Version and Serial Number

To get the firmware version, the serial number:

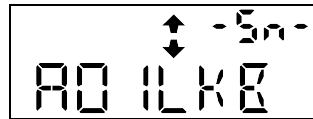
1. Press **MENU** button
2. Using **UP/DOWN** buttons select **INFO**.
3. Press **SELECT** button
4. The version number will be displayed as show to the right.

**C-01** in the upper right corner of the display indicates that this unit is

registered as Camera #1. On a portable base, **BASE** will be show on the display. For a standalone camera **CR** is shown. If the camera is not registered, **C---** will be shown.



5. Press **DOWN** button
6. The serial number will be displayed as shown to the right. **-5n-** in the upper right hand corner indicates that the serial number is on the display. In this example the serial number is A01LKB.



## 4. Troubleshooting

Description of a Problem	Possible Reason of Failure	Possible Solution
Error1 message appears on the display when inserting a memory card.	File structure is corrupted on the card.	Reformat the card on the computer using FAT16.
	Card is bad.	Replace the card.

## 5. Replacement Parts

Replacement parts and optional accessories can be purchased via our website at [www.buckeyecam.com](http://www.buckeyecam.com) or by calling (866) 325-8172.

## **6. How to Contact BuckEye Cam**

If you have any questions while using your BuckEye Cam APOLLO Camera, you can contact us via any of the following:

E-mail: [buckeyecam@buckeyecam.com](mailto:buckeyecam@buckeyecam.com)

Website: [www.buckeyecam.com](http://www.buckeyecam.com)

Telephone: 1-866-325-8172

Monday through Friday - 8:00 am–5:00 pm E.S.T.

## Appendix A. Display Character Set

A	B	C	D	E	F	G	H	I	J	K	L	M
A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

a	b	c	d	e	f	g	h	i	j	k	l	m
a	b	c	d	e	f	g	h	i	j	k	l	m
n	o	p	q	r	s	t	u	v	w	x	y	z
n	o	p	q	r	s	t	u	v	w	x	y	z

1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0