

## **Pivothead HDHF Video Recorder Eyewear High Definition Hand Free Device**

Draft 4 – 2012-5-7

### **Features Recording:**

- Brilliant HD Video & Audio Recording
- Continuous Auto Focus
- Still Image Capture During Video
- Burst Still Image Capture
- Black & White Video / Photo Settings
- Simple to Use and Easy to Share
- Numerous Control Setting Options
- PC, Mac, iOS and Android Apps

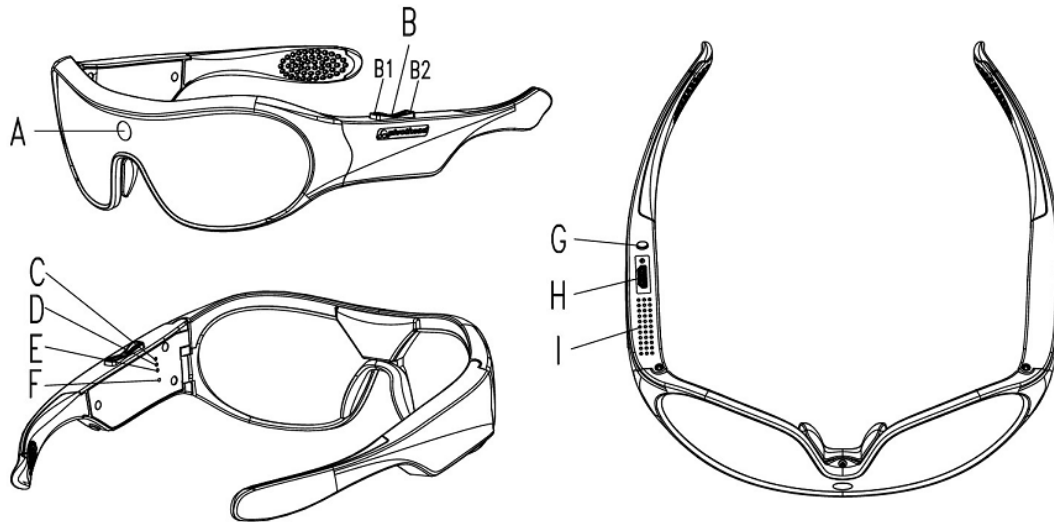
### **Features Sun Glasses:**

- Ultra Light Weight Impact-Resistant Frames
- Polarized, Revo, and Photochromic lenses
- 4 Models, 16 styles

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## 2. Pivothead HDHF Eye Video Recorder Features:



- |                               |                           |
|-------------------------------|---------------------------|
| A. Camera Lens                | E. LED Power Light (Blue) |
| B1. SHUTTER Button Video      | F. Microphone             |
| B2. SHUTTER Button Photo      | G. POWER Button           |
| C. LED Recording Light (Red)  | I. Heat Sink              |
| D. LED charging Light (Green) | H. USB Port               |

### IMPORTANT:

Visit our website at [Pivothead.com](http://Pivothead.com)

You will find more information related to the products, Control Setting software user manual, news, info about our accessories, etc.

Pivothead will also release new features under the form of Firmware and Application Upgrades. Visit our site regularly to get the latest information. You can also register for our monthly newsletter to keep track of the new features.

## 3. Getting started

The product is ready to go out of the box with the battery 70% charged. However, we recommend fully charging the glasses before using your device by plugging the device into a USB charger (see Chapter 10 for more information).

### DEFAULT SETTINGS

Your Pivothead HDHF recorder is configured with the following default settings:

**Video Resolution:** 1080p @ 30fps

**Video mode:** Active

**Still Photo Resolution:** 8 Megapixels

**Pressing the Video Recording Button (B1) will start HD video recording**

**Pressing the Photo Recording Button (B2) will start taking picture.**

**Give it a try!**

#### **4. Powering ON and OFF the glasses**

A Steady Blue LED light (**D**) indicates that the PIVOTHEAD HDHF recorder is switched ON.

- **To power ON the PIVOTHEAD HDHF recorder:**

Press and release the power button when the device is switched OFF. The LED Power Light (Blue) on the left temple of the camera will switch on.

- **To power OFF the PIVOTHEAD HDHF recorder:**

Press and release the power button when the device is switched ON. The LED Power Light (Blue) will switch off.

##### **a) Record Video**

- **To begin recording video:**

Press and release the Front Shutter Button (**B1**). The recorder's Red recording LED light (**C**) will flash while recording continues.

- **To stop recording:**

Press and release the Front Shutter Button (**B1**). The LED Recording Light will stop flashing. Recording will automatically stop when the internal memory is full or the battery runs out of power. Your video will be saved before the camera powers off.

LED indication for low battery or memory full:

(red + blue light continuous blinking) = internal memory is full

(red light on and & blue light continuously blinking) = low power & memory full

(blue light slow blink) = low battery (10%)

(blue light rapid blink = very low power (below 3%), glasses will shut down after five blinks

- **To setup the Video recording Resolution**

Hold Front Pivot Switch down for 4 seconds (Light blinks three times). Resolution has been changed

720p@60fps = Blue light blinks three times

720p@30fps = Red light blinks three times

1080p30fps (Default) = Red and Blue light blink three times together

- **To setup the Video recording Focus**

Hold Back Pivot Switch down for 4 seconds (Light blinks three times). Focus setting has been changed

Auto Focus (AF) = Red light blinks three times

Fixed Focus (FF) = Blue light blinks three times

Continuous Auto Focus (CAF) = Red & Blue light blink three times together

Note: You must use the Control Setting software to change into Macro Focus (MF)

## **b) Take Still Shots**

Short Press (<2s) and release the Back Shutter Button (**B2**). The recorder's Red recording LED light (**C**) will flash quickly indicating focus then one slow flash indicating that picture is taken.

Remark: A long press will change the Video Recording Focus

› See **PHOTO RESOLUTION MODES** for more information

## **c) Real Time Clock**

The Pivothead Recorder is equipped with a Real Time Clock features. You do not need to set up the date into the device. Just plug the glasses into the computer, launch the computer Application (Please refer to Chapter 4). The time in your Glasses is updated to match your computer's time.

If the time indicated on your recording or picture is incorrect, please proceed as indicated above. Ensure also that your computer time and date is correct.

## **d) Auto Power Off**

The Pivothead HDHF Recorder is programmed to automatically turn OFF after a period of inactivity of 2 minutes, to protect battery life time. The Blue LED will turn OFF. Just Press the Power Button once to turn ON the device.

#### **e) NTSC / PAL setting**

This setting controls the video recording frame rate from the Recorder. Please use the Computer App to proceed with the change of this setting.

Remark: Select NTSC if viewing in North America. Choose PAL if viewing on a PAL TV (most televisions outside of North America) or if viewing on a PAL TV in any region. NTSC is the Default setting.

If it is possible to view HD NTSC content on PAL HD TV, and HD PAL content on HD NTSC TV. Please connect to our FAQ to learn more about this.

### **5. Computer and Android device application:**

You can download the latest application for your compatible computer or portable devices in the download section of our website. You can connect to: <http://www.Pivothead.com/download> to learn more.

#### **f) Mac and PC with Windows configuration requirements:**

Mac OS® X 10.4.11 or later / Microsoft Windows® XP or later  
2GHz Pentium 4 or faster 2.0GHz Intel Core Duo or faster  
DirectX 9.0c or later At least 2GB of system RAM

Remark: Playing HD1080 or HD720@60fps may require a specific player or codec. Please check with your player provider in case of problem. You can check our website in the support section for more information.

#### **g) Computer (MAC and PC) Software Download and Installation:**

Connect to our website in the download section and select the application that matches with your computer and operating system  
<http://www.Pivothead.com/download>

Once the download is finished, run the installation and the application will install the software onto your computer. You can find from our website an installation guide if necessary. During the installation, you will be asked to confirm the installation folder (you can change it if needed)

If you have already installed an older Pivothead Application, it will be removed automatically. Just accept when the computer informs you about this old version, and the old application will be removed automatically, then the new one will be installed.

Once the installation is finished, the application will propose you to create a shortcut on the Desktop, and then you're ready to use the Control Setting software.

#### **h) Connecting the Glasses to the computer:**

1. Switch on the Glasses (**your glasses must be powered on before you connect to the Computer**. If not, you will only activate the charging mode but not the data transfer mode).
2. Connect the Glasses to the USB port using the micro USB Cable (if you connect the glasses to the computer without switching them ON, the USB charging mode will start and the Host device will not access to the Glasses.)
3. You can then access your Video and Photos or modify the Camera setting by opening the Pivothead application (The Pivothead application will automatically recognize the Glasses).

##### **4.1 Access your media content using a file explorer:**

If you have autopen setup, Windows will offer to open the Mass Storage (the storage disk name is PIVOTHEAD) into the file explorer. You can then find your media (images and videos) in the folder DCIM\HDHFRxxx\

##### **4.2 Opening the Pivothead Application:**

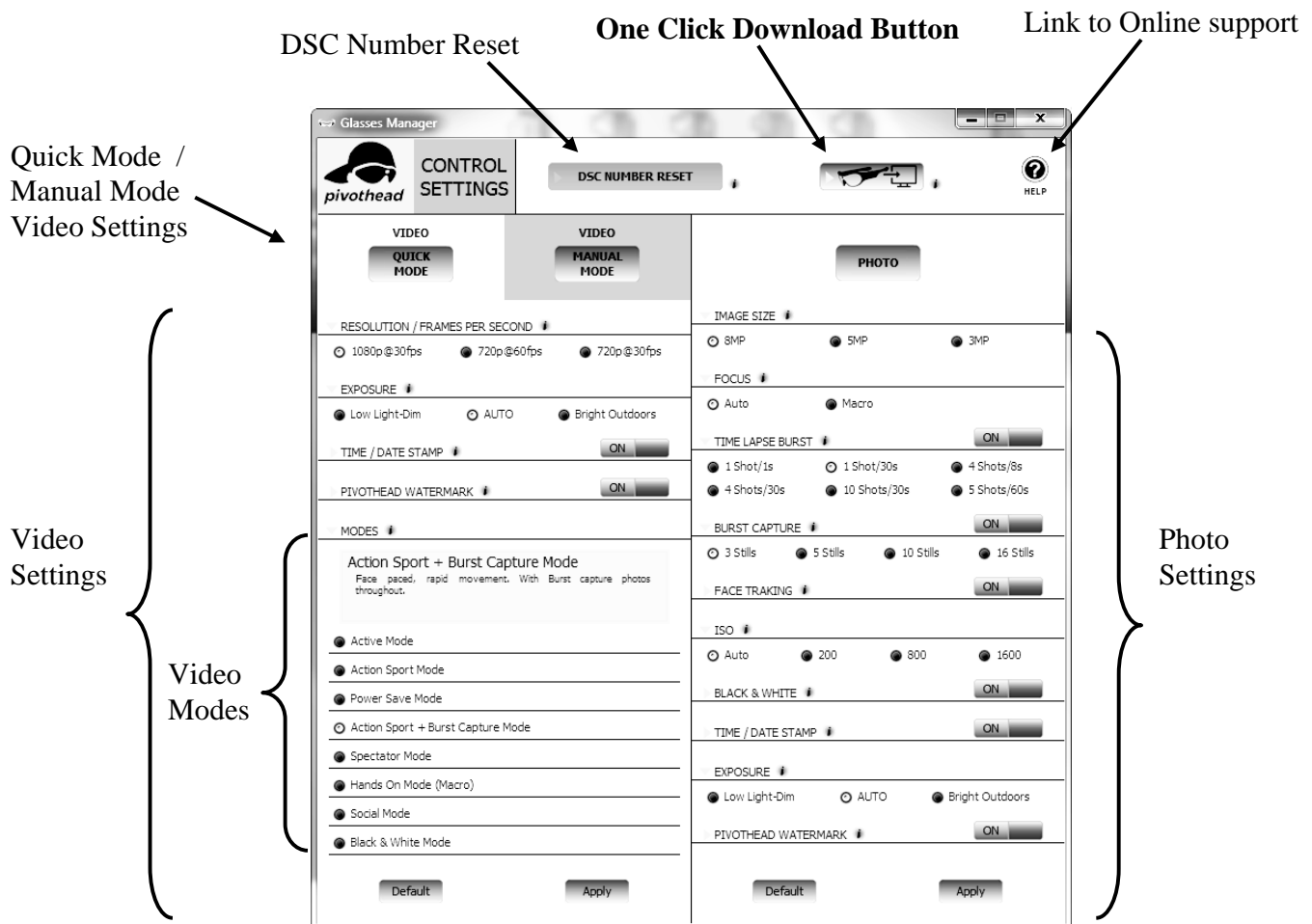
The application allows you to control the different parameters of your Pivothead Recorder. You should have first installed the application (please refer to 3.a in this chapter). Launch the application. You'll now be able to change the parameters on your Pivothead Recorder. Do not forget to save after you have changed the parameters. Remember that Video and Photo settings are independent and must be saved separately.

Problem: If the glasses are not correctly connected to the computer, the storage disk will not appear and the application will not open completely, showing you below image. Go back to step 2 (connect the glasses...) if this happen.



## Computer (Mac/PC) application:

The Application User Interface is separated in 3 zones. The top area provides the User with some general functions: DCS Reset, Files Download and Online Support link. Below, the left side lets the user control the Video settings (pay attention to the Quick mode and the Manual mode) and the right side the photo settings.



Remark: You must save the new settings by clicking **Apply** button and validate by clicking **Yes** in the message box, for both Video and Photo

## **4. Quick Video and Manual Video modes, General video options:**

### **i) Quick Video modes**

The Pivothead HDHF Recorder provides “in one click” several recording modes allowing you to get the best video possible based on your activity or environment:

**Active Mode** (default setting): When you are on the move, looking at things up close and far away (high battery consumption). In this mode, the recorder will record 1080@30 fps, with Continuous Autofocus.

**Action Sport Mode:** Face paced, rapid movement

**Power save mode:** When power conservation is premium; the glasses will be in the lowest resolution, 720p @ 30fps and will be in X focus setting.

**Spectator Mode:** Look directly at the action when video first engaged (the focus is fixed during the action)

**Hands On Mode (Macro Focus):** When all the action is happening within 3 1/2' from you.

**Social Mode:** Turn on your glasses, forget about them and relive the party tomorrow.

**Black and White Mode:** Go old School, find your inner artist

## j) Manual Video modes

### **Focus:**

The focus setting allows the Recorder to adjust the lens to obtain a sharp recording. The Pivothead HDHF Recorder has the below options:

**Continuous Auto Focus (CAF):** The Recorder controls the focus during all recording to get the sharpest picture. This setting can be used when the distance to the subject/action can change from close to far (default setting). On video playback you will see the Recorder continuously focusing depending on the object you're looking at.

**Auto Focus (AF):** The Recorder will focus at the beginning of the recording and then stay fixed going forward. This setting can be used when the distance to the subject/action does not change during the recording.

**Fixed Focus (FF):** The recorder will focus to an intermediate distance. This setting can be used when the subject/action is within 4' to 28' from you.

**Macro Focus (MF):** The Recorder will focus on the shorter distance. This setting can be used when the subject/action is within 3 1/2' from you.

### **Black and White Video Mode:**

Select ON to record video in Black and White. Select OFF to record video in color.

### **Audio Recording**

This option allows you to disable the audio recording during video, by selecting OFF

### **Face tracking:**

If activated, the focus in Continuous Auto Focus or Auto focus will target the face(s) if detected

## k) General video options

### **Resolution:**

The Resolution stands for the size of the picture. The larger the resolution setting, the clearer your video is. A higher resolution will need higher memory storage for the same duration.

The Frames Per Second (fps) stands for the smoothness of the video, or technically how many frames are saved per second from your Recorder. A higher

Frames Per Second setting is recommended for quick action recording. The memory storage for the same recording time will increase, as will the power consumption.

1080@30 fps -> highest resolution setting for general recording (default setting).  
720@60 fps -> highest Frames Per Second setting, for quick action recording.  
720@30 fps -> highest duration storage and the lower battery consumption.

#### **Pivthead Watermark:**

Select ON to add the Pivthead watermark in the Right Bottom corner of your video. Select OFF otherwise.

#### **TIME/DATE Stamp**

Select ON to print the time and date of the recording onto the video while recording. Select OFF otherwise.

#### **EV COMPENSATION**

The Exposure setting allows you to improve the Video quality in extreme light conditions. Auto setting is the best choice for most situations.

Low Light-Dim: To be used while recording indoor with poor light or at night time

Bright Outdoors: To be used while recording during very sunny outdoor activities or when the environment causes lot of reverberations (skiing, sea activities)

### **I) Photo Manual Setting**

#### **Photo while recording Video:**

It is possible to take photos during video recording. The photo settings will be taken according to video setting (meaning that if your setting for video is color and for photo black and white, a photo taken during the video recording mode will be in color and not in White and black).

In 1080p recording, the photo resolution will be 2 Megapixels. In 720p modes, the resolution will be 1 Megapixels.

#### **Image Size:**

The Image Size (or Resolution) stands for the size of the picture. The larger the resolution setting, the clearer your picture will be is. A higher resolution will need more memory storage as well. The recorder comes with the below Image Sizes:

8 MP or 8 Megapixels offers the highest quality Photos (default setting)

5 MP or 5 Megapixels offers a compromise between the quality and the memory storage requirement

3 MP or 3 Megapixels Photos offers the smallest memory storage requirement

We recommend you to keep the 8MP setting unless you really have to take a lot of pictures. Please see our online user manual to understand the impact of choosing lower Image Size for Image Quality.

**Focus:**

The focus setting allows the Recorder to adjust the lens to obtain the sharpest picture. The Pivothead HDHF Recorder has the following options:

Auto: The Recorder will focus from 4' to infinite. This setting can be used when the distance to the subject/action is greater than 3 1/2' (default setting).

Macro: The Recorder will focus on the shortest possible distance. This setting can be used when the subject is within 3 1/2' from you.

**Time Lapse Burst:**

The Time Lapse Burst offers you with the option to take pictures at different time intervals. This mode can be used when you want to take pictures during an event without keeping pushing the Photo Button. Pressing the Photo Button will start the Time Lapse Burst capture. Once activated, pressing the Photo Button will stop the Time Lapse Burst capture. The Recorder has the following options:

- 1 Shot every second
- 1 Shot every 30 seconds
- 4 shots every 8 seconds
- 4 shots every 30 seconds
- 10 shots every 30 seconds
- 5 shots every 60 seconds

**Auto Burst Capture (Continuous):**

The Burst Capture allows you to quickly take more than one photo when pressing the Photo button once. This setting can be used to capture the different movement of an action, like the shot of a basketball player, etc. The Recorder comes with the following options:

- 3 Quick Shots
- 5 Quick shots
- 10 Quick shots
- 16 Quick shots (it takes ~1.2 seconds to take the 16 shots)

Remark: The focus setting is set to Auto Focus, the focus time can oscillate between 1 to 1.5 seconds. The first picture will be taken after the focus is finished.

**Face Tracking:**

If activated, the focus in Auto, will target the face(s) if detected

**Black & White:**

Select ON to take pictures in Black and White. Select OFF to take picture in Color.

Remark: this will affect the photo taken while video is not recording. During video recording, the picture will follow the setup of the video mode.

**ISO:**

The ISO setting represents the sensitivity of the image sensor. A lower number make your Recorder less sensitive to the light. A higher number make your recorder more sensitive to light (better in low light-dim environment). The Auto setting will be the best choice for most situations however the Recorder has the following options to manually control the ISO rate:

Auto: The Recorder will automatically choose the best ISO setting, depending on the environment (default setting):

200: For outdoor activities

800: For indoor activities

1600: For indoor quick action in lower light environment

**Date Stamp:**

Select ON to print the date the picture is taken on the Photo. Select OFF otherwise.

**Pivthead Watermark:**

Select ON to add the Pivthead watermark in the Right Bottom of your pictures. Select OFF otherwise.

**Exposure:**

The Exposure setting allows you to improve the picture quality in extreme light conditions. Auto setting will be the best choice for the majority of situations.

**Low Light-Dim:** Best while taking photos indoor with poor light or at night time

**Bright Outdoors:** Best while taking pictures during very sunny outdoor activities or when the environment causes lot of reverberations (skiing, sea activities)

## 5. To transfer video and photo files to a computer



### The “One Click Download Button”

The Pivothead software provides you a very simple way to download all your Videos and Pictures onto the computer: The “One Click Download Button”. Clicking on this button will copy your glasses media content (Videos and Photos) on your computer, in the Pivothead\Date\ folder located on ~~the~~ your desktop. Once the download is completed, the software will prompt you to delete the media content on the Glasses to prepare them for the next recording (You should press **Yes** on the message box to delete all content on the glasses).

#### Manually copying the file to a PC:

1. Turn on the glasses by pressing the Power Button (**G**)
2. Connect the glasses to a computer with the included USB cable.
3. On your PC double click “My Computer” and locate the “Removable Disk” containing the DCIM folder. If you do not see it, close the “My Computer” folder and then reopen it.
4. Double click the “Removable Disk” icon.
5. Double click the “DCIM” folder icon, then on the HDHFR folder icon.  
(Your photos and videos are saved in the “DCIM\HDHFR\” folder)
6. Copy or Move files to the desired location on your computer’s hard drive

**Remark:** Do not forget to delete the file(s) on the Recorder after copying them so there’s space for your next recording.

#### Manually copying files to a Mac:

1. Turn on the glasses by pressing the Power Button (**G**)
2. Plug the glasses into your Mac with the included USB cable.
3. The Mac will recognize the glasses as an external hard drive (Pivothead). Double click the icon for the external drive having the DCIM to access your video and photo files.
6. Copy or Move files to the desired location on your computer’s hard drive

**Remark:** Do not forget to delete the file(s) on the Recorder after copying them so there’s space for your next recording.

**IMPORTANT FOR Mac USERS:** When deleting files from your Recorder you must empty the trash before unplugging the Recorder. If you do not empty your trash the photo and video files will not be completely erased from your Glasses.

## **6. View your pictures, Play Your Video**

To be detailed

### **Windows PC:**

To be detailed

### **MAC:**

To be detailed

### **Android devices:**

To be detailed

### **IOS devices:**

To be detailed

### **HDTV, DVD player and Set top box supporting USB memory stick**

The recorder is recognized by most of the electronic equipment as USB Mass Storage. If your equipment supports such devices, you can connect the glasses directly to your equipment using the USB cable, then operate the video using your equipment's controls.

Note: You can contact your equipment provider to ask them if your device can supports viewing video/photos from a USB memory stick. Our FAQ shows how to operate from the recent Sony, Samsung HDTV and various DVD players.

Please check our FAQ on Pivothead website if you have problem viewing video on your device.

## **7. Battery**

### **Battery Life**

Fully charged, the battery will provide approximately 1 hour of video recording time in 720p30 (50 minutes in 1080p).

Blue LED blinking slowly indicates that battery level is low (below 10%)

Blue LED blinking quickly indicates that battery level is very low (below 3%). The LED will blink 5 times then the glasses will automatically shut down.

Note: If you are recording when the battery reaches 0%, the recorder will save the file then turn OFF.

### **To charge the battery:**

1. Connect the recorder to a MAC, PC or USB power supply with the included USB cable.
2. Green LED remains ON while the battery is charging.
3. Green LED will turn OFF when the battery is fully charged.

Note: Some computer ports need to be switch ON to powered the USB port.

### **Recording while Charging:**

You can charge the Recorder's battery while recording video or taking photos. Simply plug the recorder into any USB charger (Non host) via the USB port. The green light will switch on.

#### **Remarks:**

- Once connected to a Host device (MAC, PC, Android), the Recorder will not be able to operate to allow the hosting device to access its memory.
- If the temperature is too high during recording while charging, the charging will stop until temperature decrease. To secure the battery charge in this case, you should stop the recording until charge is complete.

### **Temperature control**

When the camera has become too hot and needs to cool down, it will automatically switch OFF.

## **8. Glossary:**

### **AF (Auto Focus)**

A system that automatically focuses the camera lens on the subject. Your camera uses the contrast to focus automatically.

### **EV Compensation**

This feature allows you to quickly adjust the exposure value measured by the camera, in limited increments, to improve the exposure of your photos. Set the EV compensation to -1.0 EV to adjust the value one step darker and 1.0 EV to one step brighter.

### **Exposure**

The amount of light allowed to reach the camera's sensor. Exposure is controlled by a combination of the shutter speed, the aperture value, and ISO sensitivity.

### **H.264/MPEG-4 (or MP4)**

A high-compression video format established by international standard organizations ISO-IEC and ITU-T. This codec is capable of providing great video quality at low bit rates developed by the Joint Video Team (JVT).

### **ISO sensitivity**

The sensitivity of the camera to light; based on the equivalent film speed used in a film camera. At higher ISO sensitivity settings the camera uses a higher shutter speed which can reduce blur caused by camera shake and low light. However, images with high sensitivity are more susceptible to noise.

### **Macro**

This feature allows you to capture close-up photos of very small objects. When using the macro feature, the camera can maintain a sharp focus on small objects at a near life-size ratio (1:1).

### **Resolution**

The number of pixels present in a digital image. High resolution images contain more pixels and typically show more detail than low resolution images.

## **9. Technical Specification**

Operating temperature: 0 °C to 40 °C (32 °F to 104 °F)

Storage temperature: -20 °C to +60 °C (-4 °F to +140 °F)

Used battery: Lithium-ion battery

- High Voltage: 4.2V
- Low Voltage: 3.4V
- Normal Voltage: 3.7V

## **10. IMPORTANT SAFETY INSTRUCTIONS**

For your safety, do not press the buttons on the video Eyewear while moving or during sports activities.

Do not remove, disassemble, crush or puncture the lithium polymer battery

Do not attempt to open, disassemble any electronic components of the video eyewear or attempt to repair or modify the product yourself

Do not subject this product to extreme temperature or moisture

## 11. FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**Caution:**

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orientate, or relocate, the receiving antenna.
- Increase the distance between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

## 12. DISCLAIMER

Cape Evolution, Ltd., the producer of the Pivothead products, does not promote, endorse or intend for its products to be used in high risk, careless or dangerous activities, and is not responsible for any injuries or property damage arising from any user activities. Cape Evolution, Ltd. will not under any circumstances be responsible for injuries or property damages resulting from any misuse, illegal use, or unintended use of its products. Cape Evolution is not responsible for any illegal action taken while recording or editing video or still images captured with our products. The Pivothead products are intended to be used to capture images and recordings in strict compliance with all applicable federal, state and local laws and regulations. It is the user's responsibility to comply with such laws and regulations

## **Correct Disposal of This Product (Waste Electrical & Electronic Equipment)**



(Applicable in the European Union and other European countries with separate collection systems) This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from

other types of waste and recycle them responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

## **Correct disposal of batteries in this product**



(Applicable in the European Union and other European countries with separate battery return systems) This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment. To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.