Video Recording Eyewear Turning Heads

Meaghan Ziemba, Editor, WDD

Pivothead's unique eyewear redefines true point-of-view video and photography so consumers can get the perfect shot every time.

For the adventurers, explorers, and extreme athletes, getting the perfect shot or photo can be quite cumbersome with a regular, hand-held camera or camcorder; especially when both hands are needed to maneuver a certain situation or action. New York start-up, Pivothead [1], has created a solution that redefines true point-of-view video and photography so consumers can get the perfect shot every time.

Founded in 2011 by Christopher Cox, Pivothead's goal was to create a device that would record the things that people enjoyed without having to worry about a hand-held camera or recording device, creating the opportunity for the product to cross over in various industries; such as medical, aviation, and sporting.

"We have created 17 different styles to appeal to the different industries," explains Zach Barbitta, Director of Operations at Pivothead. "We have a version with photochromic lenses for the consumers who want to record events indoors, so the lenses remain clear. Once they go outside, the lenses will change into a darker tint."

One style is wrapped in camouflage for the avid fishermen and huntsmen who like to record fishing and hunting trips. "This style is also great for those who enjoy camping," says Barbitta. "Some of our consumers are even using the eyewear to record dance recitals, construction of big stadiums, law enforcement situations, etc."

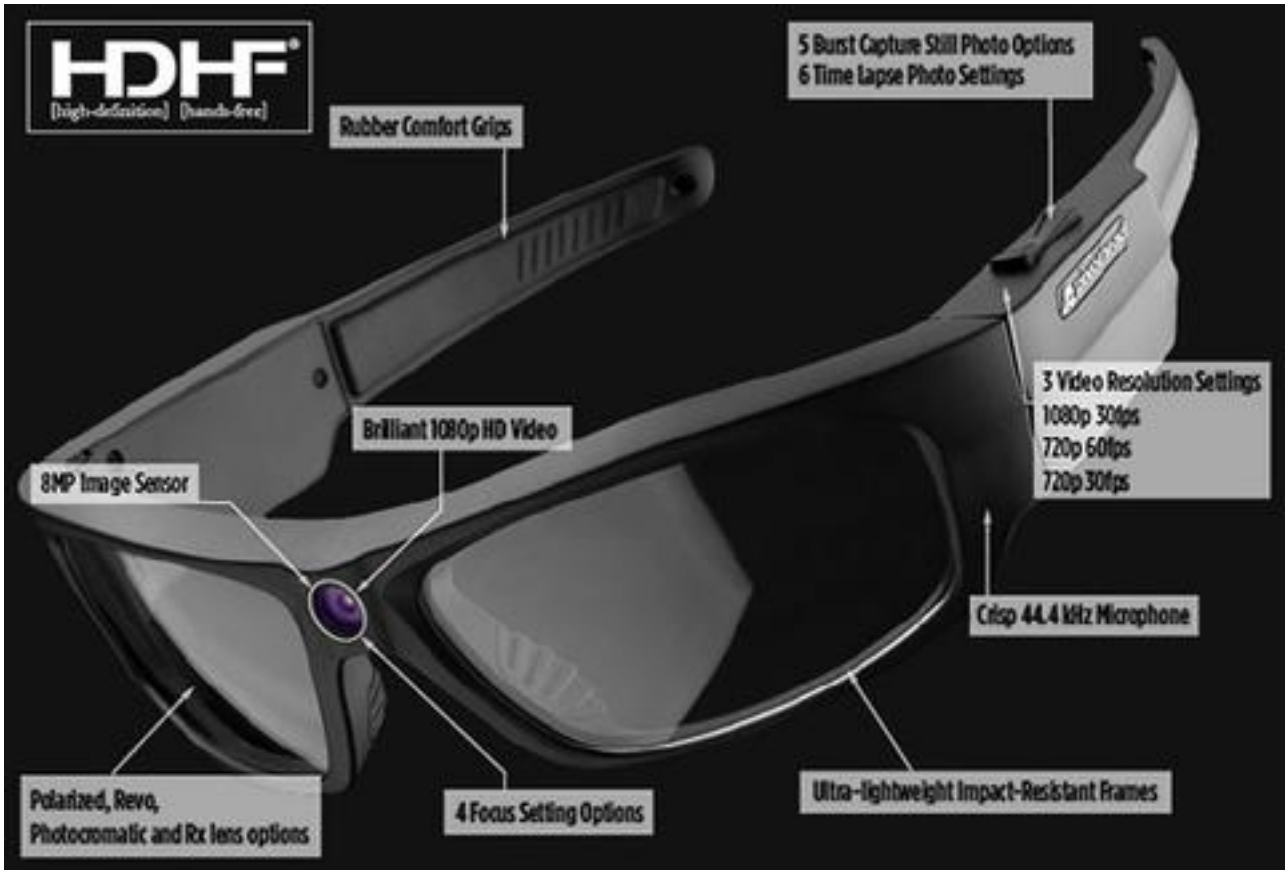
Camera Mode

The eyewear not only takes high-definition (HD) photos, but it also records HD video as well as audio. “The glasses’ highest resolution is at 1080p at 30 frames per second,” says Barbitta. “If customers are doing an activity where they are shaking a little bit or going really fast, they can change the resolution from 1080p at 30 frames per second to 720p at 60 frames per second.”

To conserve battery power, Barbitta explains how consumers can drop the resolution down one more level from 720p at 60 frames per second to 720p at 30 frames per second. “It still shoots great video at high definition, it’s just not at the same frame rate because it is reserving power to help reserve power,” he says.

Consumers can shoot continuous video for up to one hour when they have the camera set to 1080p. While Barbitta admits that may not seem like a lot of time for recording, he has found that consumers don’t typically leave the glasses on for a straight hour. They turn them off and on, allowing the eyewear to last up to three-quarters of a day. When they start to run low on power, Pivothead offers accessories to charge the glasses on the go. The power supply is self-contained for aesthetic reasons, so consumers have to get the charging accessories directly from Pivothead.

Focus Settings



Pivothead supplied their video recording eyewear with four focus settings: fixed, macro, auto, and continuous.

All POV cameras have a fixed – focus setting for consumers, which means the camera is fixed on capturing the whole scene.

The Macro setting is used for shots that are extremely close to the user. Examples include a doctor performing surgery, or an electrician working on wiring for a certain project. With the macro setting, close-up shots can be taken and the small details can be captured.

The auto setting of the eyewear automatically calibrates what the user is looking at, and focuses on that particular point once the camera is turned on.

With continuous focus, the camera lens constantly auto-focuses on points at different distances so the camera is taking the most crisp and clear shots. This focus setting is intended for more advanced users.

Quick vs. Manual Mode

Users who want the camera to do most of the work will enjoy the quick mode that Pivothead has incorporated into the eyewear. “In quick mode, there is a predefined menu of options that customers can pick from; such as action mode and black and white mode,” explains Barbitta. “If I am going to go jump out of a plane, I will click action mode and the resolution will automatically get set to 60 frames for the faster shots, and it will also set the white balance and other setting for that particular event.”

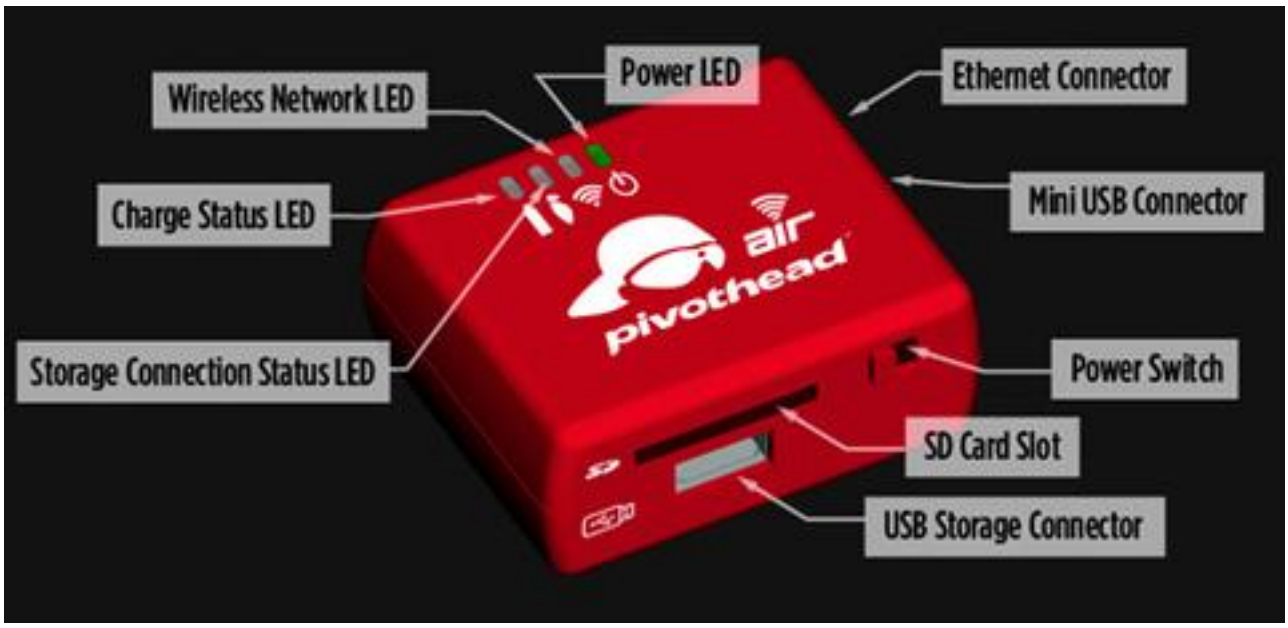
The manual mode option is more for the camera-savvy consumers who can gain access to the different features and options on the app, which can be downloaded on any mobile device from Pivothead’s website. “This app lets consumers change the ISO rate, access different modes, and manually control everything that they would want to control with the glasses,” says Barbitta.

Design Challenges

Pivothead faced two major challenges when designing the glasses. The first dealt with the heat dissipation of the battery and other electronic components. “We designed the Pivothead logo that is located on the left temple, to act as a heat sink to prevent the power supply and other components from overheating,” explains Barbitta.

“Another issue we had, was to wait for the technology to catch up to our imaginations,” says Barbitta. “The reason it took us so long to come to market is because we were waiting for a specific chip from a specific chip company that allowed extremely low-power consumption, yet produced the highest quality HD video.”

Wireless Technology



Pivothead also offers an Air Pivothead accessory that allows consumers to wirelessly upload, download, and stream videos. This accessory enables consumers to dump their data from their glasses to WiFi-enabled devices. It also provides an energy boost to the battery supply.

With the iOS and Android applications, consumers can:

- Wirelessly view videos and photos.
- Change eyewear video and image capture settings.
- Trim and post video to your favorite social networks.
- Post and share images online.
- Download videos and photos to various devices.

“We are thinking about the next generation and what we can incorporate,” says Barbitta. “We have no initial plans for 3D technology, but we are in the works to apply more technologies that we are considering. We’re going to stick to what we do best in creating HD optics, and try to make things smaller and lighter with longer battery power and more memory.”

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http://www.wirelessdesignmag.com/articles/2013/04/video-recording-eyewear-turning-heads

Links:
[1] http://pivothead.com