

Technique

Part 1: Kit and shooting

Sphere amazement

360° and VR photography is new. And it's amazing. But for traditional photographers used to working within the confines of a rigid frame it can be a bit scary, too. Well don't worry, *PN* is here to show why taking the leap is just as much fun as it is challenging, and once you rise to it, you'll start seeing a whole new world of possibilities...

Photography is all about discovery; shooting new places, new subjects and in new ways; and it doesn't come much newer than VR and 360° photography. What these cameras can do is truly amazing, but on first glance they can seem at odds with traditional photography. After all, one of the biggest parts of photography is precise framing and if you can see everything, where does that leave you?

The answer is with a lot more possibilities, and the chance to view the world in a new way. When you think about it, many of us gravitate towards fisheye and wide-angle lenses anyway, so these cameras are really just the next step. Throw in innovative ways of viewing the views you create and your imagination will start to pop with the possibilities.

Wider than wide

Let's start with the simplest application; shooting stills. 360° cameras like Kodak's Pixpro SP360 4K have incredibly wide lenses, so they're capable of shooting astonishingly immersive images. The Pixpro's 360° lens, for instance, creates a 235° field of view, and that's way beyond the reach of even the most extreme fisheye optics you'll find for DSLRs and CSCs.

In stills mode you can shoot in either a traditional rectangular view, or a spherical one and you can set the resolution of either, up to eight megapixels. In software, you can

then centre the wider composition on a particular subject or detail; you can think of it as a kind of Raw format for composition, allowing you to capture the moment, then seek out the best bits afterward from the ultra wide view, a bit like shooting and knowing you can adjust the exposure after the event.

Just like a regular camera, you can also choose to shoot with different colour settings, and change the white-balance to suit the scene you're in (though with such a wide view, it's often advisable to stay in Auto mode). There's also a burst mode, for recording action sequences. So far, so good, right?

Virtual reality

The next level of stills is VR; essentially an interactive use of the still image you've shot. This adds an even more immersive feel than a regular wide-angle view, as the view of the picture can be controlled on a computer screen by dragging with the mouse. These kinds of images can also be viewed using VR headset devices.

To create the VR effect, a photo from the Pixpro or a similar system is taken, then exported through the camera's processing software, usually to a platform like Facebook where the file is viewed in all its interactive glory. This means, so long as you pick the right mode, thanks again to the very wide lens of the Pixpro, you don't need to shoot VR to order; in fact, you can



take pictures and decide later whether you'll use them in the VR format.

Immersive video

It's no surprise that most 360° and VR cameras are used for video; and even less of a surprise when you see what cameras like the Pixpro can create. Results are amazing, and the wide-angle view again puts the viewer right at the heart of the action.

Like stills, video mode comes with all the usual stuff you'd find on a DSLR or CSC's movie mode. You pick the resolution to record at, which could be Full HD, or 4K, and the format; on the Pixpro, this means either shooting in the spherical 'Global' mode or the front

view. In the former you can process the video into an exciting series of styles. There's Pano, which gives a full 360° pano effect, Dome with an arching view, and Segment, which pushes the video into a 'front and back' view, so you can put the camera on your dashboard or handlebars and film yourself driving as well as the road ahead. There are timelapse and high-speed video modes so you can shoot slow-mo, or show the passage of time.

Making a connection

Most VR and action cams don't have traditional screens, and of course, with such a broad field of view, you may well end up in the frame, particularly

if a camera like the Pixpro is pointed upwards and therefore taking in a 360° horizontal view. To address this you've got two options. Either embrace the action-cam look, and realise you're part of the composition (especially when recording sports), or second, use a wireless connection and compose from a distance. On the Pixpro SP360 4K, it's simple to connect to your smartphone and use that as the screen. What's more you can change modes and trigger the movie or stills functions from afar. With the huge field of view, this means you only need to be a few meters away to remain anonymous.

▶ kodakpixpro.com/Europe

> Step-by-step: Shooting with a VR camera



1 Being small and light, you can place the Pixpro pretty much anywhere, and its accompanying accessory pack includes all you need.



2 Next you need to set the mode; here we went for the Global view mode which gives a high-resolution 2880x2880 output.



3 Hit the Record button, see that the time-code is running and you're good to go. Now, with the camera mounted you can start the action with your exploits recorded in the Global view ready for editing.



4 Import the file into the Pixpro's free software and you can edit it down, control the look of the image, and output it as a VR file online.

Technique

> VR movement

To get an idea of how pictures captured with the SP360 turn into immersive VR, take a look below. The Global view captures a 235° sphere, and you can mount cameras back to back for the full effect. In software, the two files are stitched and the viewing mode is picked allowing you to navigate around as if turning your head.



Get to know a VR camera

If you're a traditional photographer, cameras designed for 360° and VR applications are going to look pretty weird; but this definitely one of those times that weird is good. You'll also find that there are far more similarities than differences; of course it still has a lens (or lenses), input controls and a display, so like any new piece of kit, with a little guidance you'll be right at home. Here's a breakdown of the main areas of interest on the Kodak Pixpro SP360 4K, which is almost identical in design to the original Pixpro SP360. The Pixpro SP360 4K features 4K video, Wi-Fi connection and other upgrades over its predecessor.

CONNECTIONS

For full connectivity, the Pixpro SP360 4K has USB and HDMI connection protected by a weather-sealed flap. This is also where you'll find the memory card slot, with the camera using microSD cards like those used in mobile phones. This allows loads of storage as well as keeping the size down.

LENS There's no missing the Pixpro SP360's most prominent feature, its bulbous lens element. This is where the huge field of view comes from and it focuses as close as 50cm, so you can get right up to your subject. To protect the lens, the Pixpro comes with a clear protective lens cover and rubberised hoods for further durability.



CONTROLS All the Pixpro SP360's controls are grouped on one side of the cube, making it nice and easy to see what's going on. The on/off button doubles up to switch between Modes, then a menu button to access settings. The big Rec button is easy to find in the middle and also confirms settings, with the Wi-Fi button to its right.



LCD There's no large screen for menus and image review, but the small LCD does all you need it to, navigating through camera settings as well as set-up functions like Wi-Fi. Speaking of which, all you need to do to get a live view of what you're shooting is connect the camera to your smartphone or tablet with the free Kodak Pixpro app.

Specs

▶ **Prices**
Pixpro SP360 4K Extreme Pack £379

▶ **In the box**
Rechargeable Li-Ion battery, USB cable, AC adapter, quick start guide, glass lens cover, protective cover, battery charger, carrying case, cleaning cloth

▶ **Extreme pack**
Standard housing, tether, vented helmet mount A and B, waterproof housing, bar mount, head strap mount, surfboard mount, suction cup mount, quick clip, lens ring, lens cover, battery charger, USB cable, tool, double-sided adhesive

▶ **Resolution**
12.4 megapixels

▶ **Number of recording pixels**
Still image: 8MP, 2880x2880; 4MP: 2304x1728; 2MP: 1920x1080
Video: round video 2880x2880: 30fps; 2048x2048 30fps; flat video 3840x2160 30fps, 1920x1080 60/30fps high-speed video 720x720 120fps

▶ **Lens**
360° spherical lens with 235° field of view, 0.850mm f/2.8 [8.20mm, 35mm equivalent].

▶ **Focusing range**
Fixed focus: 50cm to infinity

▶ **Anti-shake system**
Electronic Image Stabilization

▶ **File formats**
Stills: JPEG, Movie: MP4 [Image: H.264; Audio: AAC]

▶ **Shooting modes**
Still, burst shot (10fps), movie, time lapse, loop, hi-speed movie

▶ **ISO sensitivity**
Auto, 100-800

▶ **Recording media**
Micro SD/Micro SDHC card (Up to 32GB support)

▶ **Internal memory:** 8MB

▶ **Power**
Rechargeable Li-Ion battery LB-080, 160 still shots, 55mins for video

▶ **Dimensions (WxHxD)**
48x50x52.5mm

▶ **Weight**
128g with battery and card

▶ **Contact**
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> Getting attached

Just like a regular camera, you can attach the Pixpro to a tripod using its 3/8in thread. But being a small and light action cam design, it's possible to do way more than just that. If you plump for the Pixpro SP360's Extreme pack you'll be well served when it comes to mounting the camera for shots on the move.

There's a glut of attachments, letting you easily position the camera on a headband, helmet, handlebars, a surfboard, window pane and loads more via adhesive pads. Plus you get a case to increase its protection from water splashes and dust for those more extreme environments.



Stop press! New Pixpro announced

Normally, if you want to shoot a full 360° VR image you need to mount two cameras back to back, or flip one camera through 180° between recordings. Not any more. Just announced at Photokina, the Kodak Pixpro 4KVR360 comes with two lenses mounted back to back, getting the job done in one streamlined unit. Like the Pixpro SP360 and SP360 4K, the 4KVR360 has a 235° field of view lens, with the second offering a 155° view. Allied to the lenses is a 20-megapixel CMOS sensor, and just like before you can upload 360° content to Facebook or YouTube in



seconds using the free desktop package or smartphone app. The Kodak Pixpro 4K VR360 will be available in December.

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