



HDR Imaging

What is HDR?

HDR stands for high dynamic range and refers to an image, which contains a very large degree of exposure or brightness values. Such an image cannot be printed on paper or displayed on a screen, as these media do not have sufficient range, but the data recorded by an HDR image is a much closer representation to the range of brightness levels perceived in the real world and is a very powerful tool for the 3D visualiser.

Realising that this exciting visualisation technique offers new creative possibilities and significant financial advantages for location or studio shots, experienced photographers are applying their expertise to 3D rendering using HDR imaging to get the perfect image.

Spherocam HDR

One of the most advanced HDR cameras available today is the Spherocam HDR camera. This uses a 32bit per colour CCD mounted in a rotating scanning camera mechanism mounted on a tripod. Using a standard Nikon Fish Eye lens the camera records a series of 180 degree vertical scans representing the full 360 degree scene, capturing both the colour and exposure data, up to 26 f-stops in one image. This scanning and recording process is fully automated and the final HDR image is available in a native HDR format via the attached laptop. This elegant one-step solution is very efficient when compared with using multiple bracketed exposure techniques, which require significant post processing to get a final HDR image.

- **Choose location and set up camera**

With the help of the camera's built-in electronic level it's simple to set up the camera on location or in a studio. Other than attaching a lens, SpheroCam needs no other manual adjustments – everything is controlled directly from the attached laptop.

- **Preview and optimise settings**

Quick preview mode allows you to assess and adjust your camera settings to the scene. Either select from a choice of pre-set sensitivities and colour temperatures or manually optimise focus, white balance and exposure levels.

- **Capture spherical scene in one shot**

Set the scan resolution and hit start. The results are instantly visible and the whole process takes just a few minutes. The scan is saved to hard disk and remains safe and secure as a read only file whatever format you choose to save it for post processing.

- **Prepare digital background image**

A high-resolution digital back plate image is a vital part of your final 3D image. Capture your background at the same time as your spherical scan to ensure consistency of lighting in your final rendered image.



An example 360 degree scene captured with SpheroCam

SpheroCam HDR Specifications

- 32 Bit Technology - (3 x 32 bits RGB)
- DC motor with more than 2 million positions per revolution
- Image file size - up to 50 megapixels
- Dynamic range - 26 f-stops with HDR depth
- Scanning time 360° - from 30 seconds up to several minutes, depending on exposure time and lens used
- Calibrated tripod for 3d measurement