

## *HDR Capture*

HDR capture can be as simple or as complex as you want to make it.

The simple view is to take three shots centered around your meter reading at  $\pm 2\text{EV}$ . Use a stable tripod, a remote shutter release, and you can get a rough estimate when you do HDR processing.

The complex view would include a panorama, a high dynamic range professional camera, careful spot metering, and both pre-and post-processing workflow. For smoother image interpolations, take a larger number of shots at a smaller  $\Delta\pm 1\text{EV}$ . Watch your histogram for highlight clipping. If it clips, back off your exposure range. The same is true for shadow clipping.

In the following exercise, we're going to hit the high points of physical setup, camera set up, and what's the best exposure!

For those of you who want to go to more advanced shooting, we briefly discuss some of the pitfalls of capturing an HDR panorama at Magic Hour when sunrise or sunset light is rapidly changing. Recall, some Magic Hour scenes last less than five minutes.

### *Physical Setup*

1. Tripod & head
2. Alignment
3. Rotating imaging plane causes potential HDR misalignment problems
4. Stabilize tripod - lowering legs or weight from center hook
5. Use remote shutter release
  - a. Using shutter button can cause minor camera orientation shifts
6. Enable mirror lock-up at low shutter speeds to eliminate camera vibration

### *Camera Setup*

1. Shoot raw
2. Shoot in manual mode
3. Set constant aperture, white balance, and ISO
4. Only allow exposure change with shutter speed
5. Set ISO as low as possible
6. If object is moving, increase ISO and use noise reduction tools later
7. Use manual focus - auto-focus may choose different focal points, confusing HDR software later

### ***What's Your Best Exposure Sequence?***

1. Depends on
  - a. Source scene
  - b. How much shadow and highlight to capture
  - c. How many images at what exposure interval w auto bracketing
2. Spot meter shadow and highlight area to gauge dynamic range
3. Decide how many frames at what EV
4. Software interpolates between one recorded point and another
  - a. More data points sampled closer together give better results
  - b.  $\pm 2EV$  skips more luminosity data than finally captured  $\pm 1EV$
5. Extend auto bracket approach @  $\pm 2EV$ 
  - a. Manually select central exposure
  - b. Before shooting, dial  $-2EV$  exposure compensation
  - c. Quickly, but carefully dial  $+2EV$  and finish shooting

### ***RAW Conversion***

HDR tone mapping sets levels, applies a tone curve, and makes contrast enhancement.

Since the HDR image is going to include all data by mapping all input images, it may be less work to perform a straight forward RAW conversion, process and tone map the HDR image, and then make final exposure changes to the end result.

We'll spend considerable time showing how to use Adobe Camera Raw in Bridge to smooth processing of those keepers you're going to share with the public.

### ***Multi-frame Stitched Panoramas***

For stitching multiple panoramic (pano) frames to work well as input to HDR processing, it is almost imperative to ensure camera support is stable and all camera functions are on manual as recommended above.

Keep in mind HDR tone mapping may exaggerate undesirable details in input images. You do not want stitching artifacts to be introduced then subsequently be magnified. The more work the software has to do, the more the quality of the final product may be jeopardized.

If you are shooting outside at sunrise or sunset for example, the light may be changing relatively quickly in your critical shooting window. The more fiddling you do to capture the pano, the more likely light quality may change perceptibly between beginning and end of the sequence. It is also possible moving elements such as clouds or water will shift enough so seamless processing is more difficult.

### *Shorten Your Time and Improve Your Capture Success*

Some examples of things that can help decrease time taken to shoot the entire sequence include:

Use automatic exposure bracketing with a larger EV interval to speed up capture at each pano turning point. Fewer exposure changes means less time taken.

Make sure you choose a good focal point that works across the field of view. Disable lens auto-focus. You don't want to wait for auto-focus to hunt for a new lock at each turning point.

Use a lens focal length that gives a wider angle, which may cut one or more rotation points from the sequence. You can crop later for compositional reasons if you do not mind losing resolution. The risk here is getting an increased amount of rectilinear distortion with some lenses.

Ensure your exposure sequence is not filling up your camera buffer faster than it can write. Find ways to shoot fewer exposures or buy faster CF cards, to avoid waiting on the camera while light changes in front of you.

### *That's a Wrap...*

We'd be remiss if we didn't indicate that multi-image panoramas take precision at a number of levels; capture, camera settings, card speed and size, and post-processing. For example, you want your end result to be an incredible panoramic sunset light capture. Perhaps you've waited a couple of days to simply get just the right weather and best circumstances. Perhaps it's in a very remote area so the logistics require planning and patience. Perhaps you had to return over rough terrain several times.

In short, you worked hard, got gigabytes of information, spent hours post-processing, just to turn it into that award-winning high-profit image!

Naturally, our HDR workshop examples go into considerably more depth to explain processes in Bridge, Adobe Camera Raw, Photomatix, and Photoshop CS3. Here, we are simply trying to give a brief overview...

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