High Dynamic Range (HDR) Imaging

By Paul Smith

Venice Pier (Florida) 5 shot HDR Image

There are some scenes that are too high in contrast to capture with just one frame. High Dynamic Range (or HDR for short) imaging solves that problem. By photographing that scene with bracketed exposures, there is now software available that will combine those bracketed frames to give you 1 frame where there is detail in both the highlights and shadows.

To create HDR images, one must shoot a number of bracketed frames. The number of bracketed exposures depends on the range of contrast. The more contrast, the more bracketed exposures are needed. In most situations however, shooting brackets between +2 and -2 are usually sufficient. This technique virtually eliminates the need for graduated neutral filters. Typical situations where this technique can be successfully applied are at sunrise and sunset. Good technique is critical for success as all of the bracketed frames must line up. Be sure to use a sturdy tripod and cable release!

This technique may also be used if you are photographing inside a building or house where windows are included with bright sunlight outdoors. You could not capture the range of contrast in such a situation with a graduated neutral density filter, nor could you capture such an image previously without using a flash unless you took 2 frames at different exposures and layered them in Photoshop and then used a mask. HDR is much easier and better than layering and masking. Another appropriate use of this technique is when you have a scene without an even or well defined uninterrupted horizon line such as when photographing mountains, or structures/buildings/lighthouses, etc. (where a graduated neutral density filter would also affect the mountains or structures).

HDR images can be produced from RAW files or JPG's. "Pseudo" HDR images may be produced from 1 RAW file but not from a single JPG. An appropriate situation to try the "Pseudo" HDR approach is when there may be movement of objects in a scene.

In the second image, there are people who are walking, so a multiple shot HDR image would have shown

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ghosting of the people. To avoid this, I used 1 RAW capture to produce a "Pseudo" HDR image. The sky in this image was much brighter than the building which was in the shade. There's no way to properly use a graduated neutral density filter in this case since the building protrudes into the sky.

There are several software packages on the market that will process HDR images. The most popular (and best in my opinion) is Photomatix. What makes Photomatix so superior to other software packages is the tone mapping function. The Tone Mapping/Details Enhancer function allows you to use many controls to tweak the appearance and exposure of the final image. These controls include: Strength of HDR, Color Saturation, Luminosity, Light Smoothing, Tone Settings, Color Temperature Setting, and Micro Smoothing. The software is rather intuitive and it is really easy to produce quality images with just a little experimentation. I have heard that Photoshop CS5 has technology that is similar to Photomatix for tone mapping, but I have not seen it for myself.

You may download a trial version of Photomatix at: ***www.hdrsoft.com***. If you decide to purchase the software, there are 2 discount codes that you may use: TonySweet will get you a 15% discount; NAPP members can get a 20% discount by entering: NAPP20

The cost of Photomatix is only $99 before any discounts! There are tutorials on the Photomatix website and more tutorials may be found here: ***www.stuckincustoms.com***. People may also visit Tony Sweet's website and blog for more information on HDR: ***www.tonysweet.com*** For Tony's HDR gallery: ***http://gallery.me.com/tonysweetphoto#100047***

There is an extensive HDR image gallery on Flickr: ***http://www.flickr.com/search/?q=hdr***

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