

# How to Take High Dynamic Range Photographs:

## A Complete Visual, Step-by-Step Lesson for the Latest Photo Imaging Technique

© Jim Austin M.A., A.C.E.

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### Why High Dynamic Range (HDR) ?

Taking HDR picture allows for superb detail in shadows and highlights. HDR photography tries to capture the full array of tones that are in a scene, in an accurate way. You will learn how, through this visual, step-by-step Photoshop lesson in the latest photo imaging technique.



### What will I need? Hardware: A

cable release, mini-pod/ tripod, batteries, memory chip, and a camera capable of setting Aperture Priority. Software: Photomatix®: free trial at ([www.hdrsoft.com](http://www.hdrsoft.com)). Next, you'll secure your camera, take multiple shots, download, and combine the pics in the software. It helps to have Photoshop®, or other photo editing software.

ISO Sensitivity Auto; ISO 100, 100, 100, 800 equivalent  
ISO is the sensitivity to light of a digital camera's sensor.

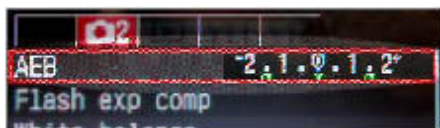


**1. CABLE RELEASE:** Attach one to your camera for sharpest results.

**2. SETUP:** With the camera on, choose medium size .jpg images. Start with an ASA / ISO of 200 to balance the speed with noise. Since digital cameras don't use film, their ASA is the light sensitivity of the digital sensor. Set the mode to Aperture Priority. Tripod mount your camera: heavier tripods are best for HDR. Ensure the tripod is stable, for if your camera does not have AEB, you will have to manually change the shutter speed, without budging the camera.



Mirror Lock Up



Shutter	Aperture	Picture
1/125	F 8	1
1/45	F 8	2
1/15	F 8	3



Aperture Priority (A or Av)

**3. MIRROR LOCKUP** (Optional Step): Find and turn on the Mirror Lock Up. Camera mirrors can vibrate, causing blur in an image. Check your instruction book.

**4. AUTO BRACKET:** If your camera offers Auto-Exposure Bracketing (AEB), set it on Continuous Shooting mode. Set it to a 3 shot bracket. The exposure increment shown is  $\pm 1.5$ . One one shot will be underexposed 1.5 f-stops, one will be right on, and one will be overexposed 1.5 stops. While you can take 3, 5, 7 or 9 shots, it's easiest to learn HDR with a 3 shot set, from -1.5, 0, to +1.5 to get the hang of HDR. At left is Canon's AEB menu ( -2 to +2), set to a spacing of  $\pm 1.5$  f-Stops.

**5. APERTURE PRIORITY MODE:** Set the camera to Aperture Priority mode (Av). Set the aperture to f-8 at first. Keep the aperture the same for all your shots, so you do not change depth of field.

**6. START CAPTURING HDR SHOTS:** Take a 3 shot set. Try not to have movement in your scene, as it means you will spend more time later in the software getting rid of ghost images.

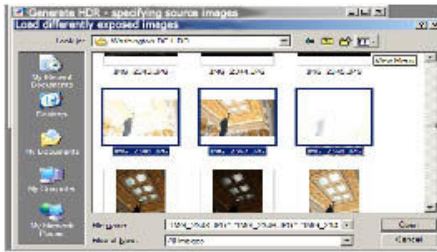
**7. DOWNLOAD and SAVE:** Save the images to a file on your Mac or PC hard drive.

**8. SOFTWARE:** Steps 8 to 23 are in Photomatix®. Open your HDR Software on your computer: you will benefit by having 512 megabytes or more of RAM. For my workflow, it is easier to have both Photomatix® and Photoshop® open simultaneously, as I use Photoshop® after Photomatix® for photo editing.

**9. PHOTOMATIX(ver 2.5 here):**

Launch Photomatix®, and close the overview box. Click HDR > GENERATE to combine the differently exposed pictures.

**10. The GENERATE HDR SPECIFYING SOURCE IMAGES**  
box appears. To find your pictures, click the BROWSE button.



**11. LOAD THE PICTURES:**

The LOAD DIFFERENTLY EXPOSED IMAGES box appears. Highlight all the pictures you took in your bracketed series.

**12. Click Open. Click OK.** You put all the shots together when the box (GENERATE HDR- OPTIONS for MERGING SOURCE IMAGES to HDR) appears. Check the ALIGN SOURCE IMAGES. If your camera and tripod were rock solid for the entire image set, you can uncheck ALIGN SOURCE IMAGES. I often uncheck it when I use my tripod, because Photomatix® processes faster that way.



Check the TAKE TONE CURVE OF COLOR PROFILE box also.

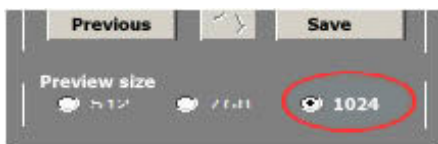
With these 2 boxes checked, click OK.

You can check “Attempt to reduce ghosting artifacts” if you have people moving inside the scene that you shot.

*Note: If the Exposure Values for Generation of HDR images box comes up, put in the numbers for the amount you bracketed. For example, if you took 3 shots, enter in (what is called an F-stop range) -1.5, 0 and +1.5. What Photomatix® is looking for is the range of of auto bracketing used by your camera.*



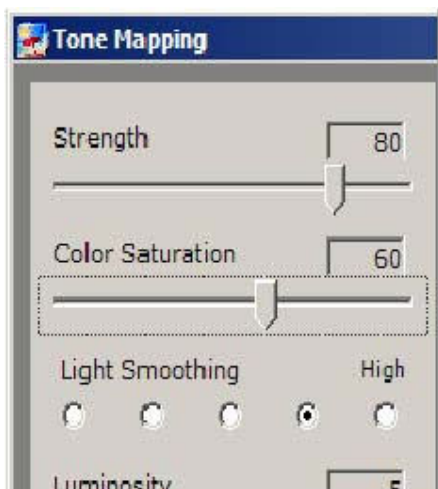
**13. ALIGN:** A box will pop up and show Generate HDR, Loading Source Images... Aligning...then your HDR image. After a wait, an HDR viewer and an image will both appear. The more images you shot in your series, the longer this will take. The preview looks odd now, because it has not yet been tone mapped.



**14. TONE MAPPING STEPS:** The reason the preview may look odd is because there are more tones in the HDR image than the monitor can show. We must convert the wide intensity range in the image. Tone mapping is the way your software changes the wide range to a lower range that your monitor can show.

Click HDR > TONE MAPPING. There will be a pause. Then the large tone mapping box appears with many options. Don't panic. In the Method box, start with DETAILS ENHANCER checked (If you like shadows, choose TONE COMPRESSOR for its dark film noir shadows with details and less noise.)

At the bottom left of the TONE MAPPING dialog box, find the 512 to 1024 Preview size. Check 1024, the pixel width, to make your preview larger.



**15. STRENGTH:** In the TONE MAPPING Box, in the upper left of the screen, your first settings are STRENGTH, COLOR SATURATION, LIGHT SMOOTHING, and LUMINOSITY.

Set the STRENGTH to 80. You are controlling the strength of the contrast. High numbers give a lot of contrast overall. STRENGTH and LIGHT SMOOTHING have a profound effect on flatness and halos in the image;

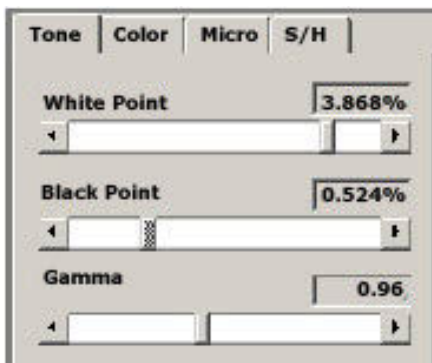
experiment with these - they work in tandem.

**16. COLOR SATURATION:** More saturation means more intense colors. Set the slider to 60 to start. While it is tempting to slide it higher, many photographers tend to make their HDR pictures way over-saturated at first.

**17. LIGHT SMOOTHING:** Set Light Smoothing to High, the fourth circle from left on the slider. You can change it later to Very High or Medium. This setting adjusts the changes in the light variations in your picture: a higher number for Light Smoothing gives the tone mapped picture a more natural look. When smoothing is Medium or Low, weird halos around objects occur.

**18. LUMINOSITY:** Set at 5. You can raise it later. Luminosity controls the overall compression of the tonal range.

Settings for the next four Photomatix Tone Mapping controls will depend on your picture, and your preferences.

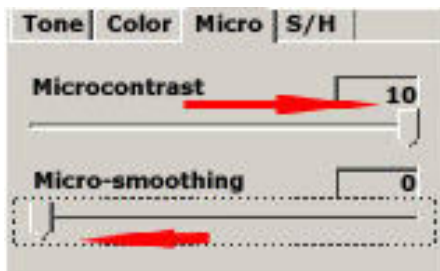


**19. TONE: WHITE POINT, BLACK POINT, GAMMA:** Tone is the next setting. Slide the White Point slider to the right to get white highlights that you like, and note the effects on the histogram. Set the Black Point slider to where you get shadow blacks that are deep and solid. The black point slider sets a value for the minimum of the tone mapped image, pure black. Gamma adjusts the mid-tones, and shifts the white histogram left or right.



**20. COLOR: TEMPERATURE, SATURATION HIGHLIGHTS, SATURATION SHADOWS;** Sliding TEMPERATURE to the right gives a warmer look, relative to the source image. SATURATION

SHADOWS boosts color saturation in dark areas. See the effects by sliding all the way left, observe what it now in black and white, then all the way right, and see how the areas are affected. Adjust for your picture.



**21. MICRO: MICRO-CONTRAST and MICRO-SMOOTHING:**

Position these opposite each other: micro-contrast all the way to the right, micro-smoothing all the way to the left. Adjust micro-smoothing to the right to reduce any noise in your image, but not too far that it reduces detail you want to preserve.



**22. S/H SHADOWS SMOOTHING and CLIPPING:**

Smoothing maximizes detail at a setting of 0, and reduces detail at 100. Clipping makes highlights bright and wipes out detail as you approach values of 100. The effect is subtle. For instance, Shadows Smoothing, as shown at left, darkens the shadows at 100 and gives slightly less detail. You will often do well to leave these settings at their default value of 0.



**23. OUTPUT DEPTH:** Check 8 bit output. Click OK. Wait.



Photomatix Help

**24. SAVE:** Click **FILE > SAVE AS**, and in the Windows/Mac File Name box, give your HDR picture a name. Descriptive image names are easier to locate later on your hard drive. If you get lost in Photomatix, click **HELP > Help Tutorial** or **Help Topics** (you must be online).



**25. PHOTOSHOP:** Use Photoshop® for final editing. Levels, Hue and Saturation, and Smart Sharpening enhancements in Photoshop® are effective.

Click here for: [A Flickr gallery of Jim Austin's HDR images](http://www.flickr.com/photos/jimaustin/sets/72157594465689774/)  
(<http://www.flickr.com/photos/jimaustin/sets/72157594465689774/>). Austin is a digital photo consultant, teacher, writer, and Adobe Certified Expert.

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