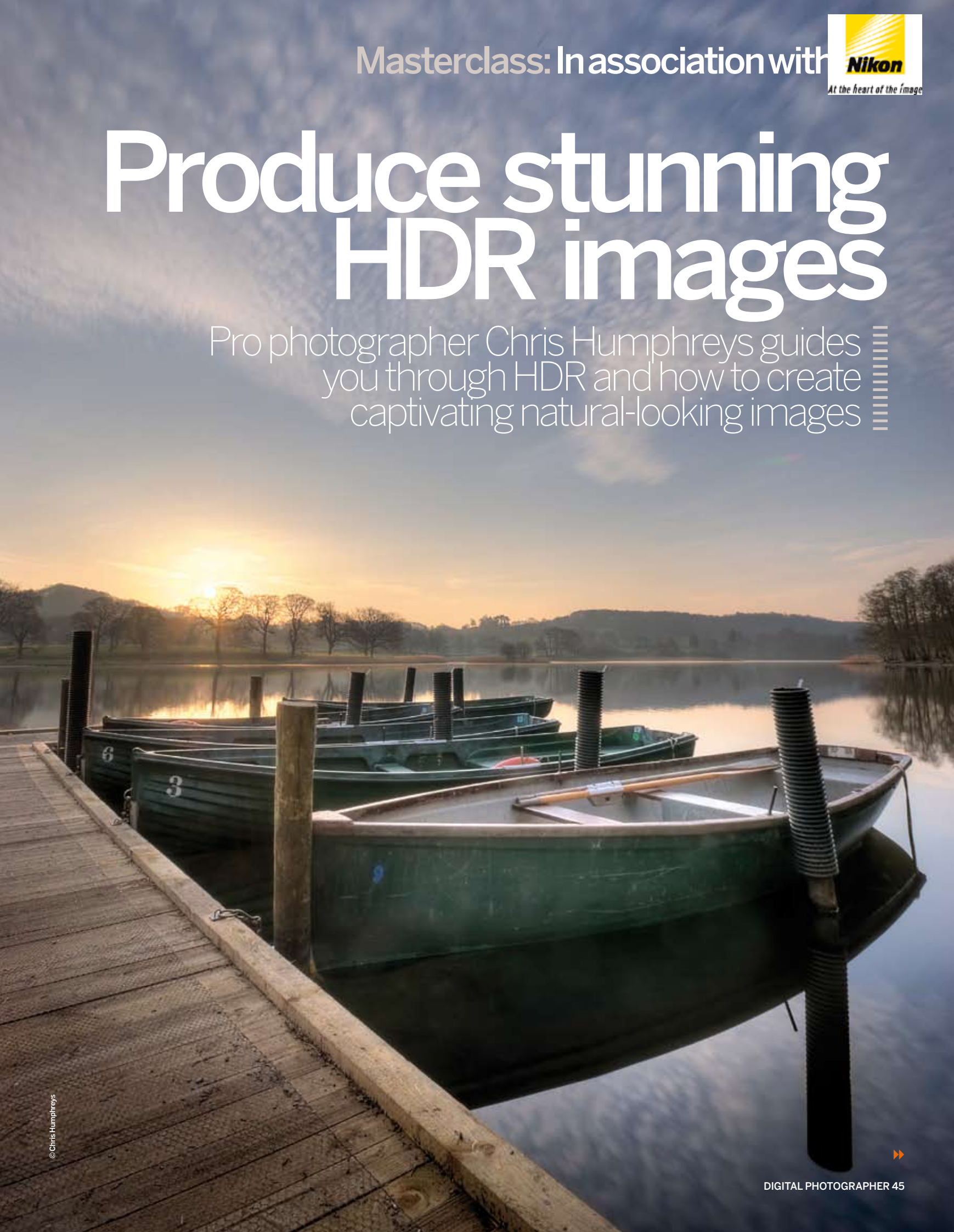


Masterclass: In association with



Produce stunning HDR images

Pro photographer Chris Humphreys guides you through HDR and how to create captivating natural-looking images



“A high-contrast scene which looks natural to the human eye can be difficult to capture with a camera”

HDR, or high dynamic range imaging, is the process of combining several exposures into a single image to capture a wider dynamic range of light that is possible from a single photograph alone.

Cameras are becoming more sophisticated, but they simply cannot compete with the human eye for dynamic range. A high-contrast scene which looks perfectly natural to the human eye can often be difficult to capture with a camera. This is because the camera's meter is doing what it does best, measuring the available light in the scene and selecting an average exposure. With high-contrast scenes, the limited dynamic range of the sensor will often leave shadows underexposed and/or highlights overexposed.

Software packages such as Photoshop and Photomatrix open up options to produce HDR images which more accurately represent the scene. However, HDR has received bad press recently, with many photographers experimenting with the possibilities and producing 'overcooked' and unrealistic images. While this is sometimes a deliberate and valid

approach to produce a surreal effect, more often than not it produces results which detract from the original subject and natural light.

When used carefully, however, high dynamic range imaging can allow you to capture a scene with a natural look, just as you saw it. The key is selecting the right type of scene for HDR, capturing the best possible images to merge and taking control of the software. But how do you recognise the right opportunity for a high dynamic range image? If you are shooting a white rabbit in snow, the chances are your camera will easily be able to capture the full dynamic range of the scene in a single capture, so there is no need to take more than one shot.

A good candidate for an HDR image is a scene with a high contrast ratio and a varied composition that would make it difficult – if not impossible – to capture the full light range in a single photograph. This might be a landscape with a broken skyline which would make an ND grad filter impractical, an interior architectural shot where the view through a window is important, or a cityscape where buildings create deep shade and bright reflections.

Once you have made the decision to capture a scene using HDR, it is worthwhile making a note of how the scene looked to your eye, so you can refer to it in post-processing later. This can be written down or simply remembered, but it is an important step in producing a realistic image which reflects your original impression of the scene.

You'll need a sturdy tripod to make sure that each photograph aligns with the next and to ensure there is no movement in the camera on the long-exposure shots. Taking a landscape scene as an example, start by setting your camera to Aperture Priority mode and lock your aperture; for a wide-angled lens, f11-f16 will ensure front-to-back sharpness. You will also want to keep your ISO low at around 100. If possible, shoot in RAW format to allow the camera to record the best possible information.

Before you put the camera on the tripod, set the camera to Spot metering mode, aim at the darkest shadow of the scene and make a mental note of the shutter speed. Next, aim at the brightest part of the scene and note the shutter speed. If the scene includes the sun, aim at the sky away from the sun. ▶▶

CLIMATE CHANGE

Early morning sun tempered to show the cloud detail. The HDR effect has also been used to enhance slightly flat foreground lighting
Shot details: Nikon D80 with 10-20mm lens at 12mm and f14, 1/20-1sec, five exposures, ISO 100





© Chris Humphreys

Buying advice

The things you'll need to make HDR shooting easier



NIKON D700

Nikon's full-frame D700 is one of the leaders in the full-frame market. The D700 has

many features, one of the most useful for HDR being the ability to bracket three, five, seven or nine shots, giving you ultimate flexibility for HDR photography. Any of the programmable buttons can be set to the bracket auto function, and the high-speed continuous burst rate makes handheld HDRs easy. If your budget won't stretch to the D700, try the D90 or new D7000, which both feature autobracketing.

What you get: Incredible image quality from a full-frame sensor and a high level of setup flexibility.

Expect to pay: £1,700 (body only)

Essential info: 12.1MP FX-format CMOS sensor, 14-bit and 12-bit shooting, Nikon EXPEED image processing engine, 5fps shooting rate, or up to 8fps when teamed with the MB-D10 battery pack. www.nikon.com



MANFROTTO 055XPROB TRIPOD

To take multiple exposures with a range of shutter speeds for HDR images, you need a good sturdy tripod combined with a quality head. The Manfrotto 055XPROB tripod has an

incredible range of adjustments combined with good stability to ensure that your camera will remain steady in any position. It features quick release catches, a centre column (which can be used in vertical or horizontal position) and a spirit level. It is perfectly partnered with a Manfrotto 322RC2 heavy-duty grip ball head, allowing quick positioning with enough strength for a heavy camera setup.

What you get: Compact yet sturdy tripod in three sections, with a huge range of adjustments and quick set up.

Expect to pay: £159

Essential info: Maximum load 7kg, extended height 178.5cm, minimum height 10cm, weight 2.4kg. www.manfrotto.com



PHOTOMATIX PRO

Photomatix was first launched in 2003 and has become one of the market leaders in HDR creation software. Within plug-in

options for Photoshop and Lightroom, you can have a seamless transition with your favoured editing software. The main interface is clearly set out and guides you through the process in easy steps. For the more experienced user there are numerous adjustments and settings, but great results can still be achieved with the default settings.

What you get: Standalone program for HDR image creation and processing, merge to HDR and tone mapping, exposure fusion, automatic alignment of handheld photos, options for reduction of ghosting, noise and chromatic aberrations, automation with powerful batch processing, Lightroom plug-in

Expect to pay: £75

Essential info: www.hdrsoft.com



© Chris Humphreys

▲ PSEUDO HDR

A 'pseudo HDR' on a single exposure to bring out detail in the cloud, useful in a situation where ghosting artefacts may be difficult to deal with in moving water

Shot details: Nikon D80 with 18-135mm lens at 18mm and f9, 1/125sec, ISO 100

◀◀ EXPOSURE FUSION

Exposure fusion is often best used for architectural photography. This five-shot image was converted to TIFF files before merging to better control the white balance

Shot details: Nikon D700 with 16-35mm lens at 16mm and f11, 1/80-1/5sec, five exposures, ISO 200

▼ ENHANCE THE DETAILS

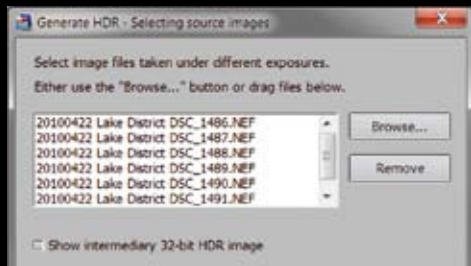
Use of Photomatix on a handheld single exposure to create a 'pseudo HDR', bringing out the rich colour and detail in the shadow areas of the building

Shot details: Nikon D80 with 10-20mm lens at 10mm and f7.1, 1/100sec, ISO 100



© Chris Humphreys

Create HDR images with a Photomatix Pro step-by-step



1 Select source images The first step is to click on the Load Bracketed Photos button and select your source images. If you have shot in RAW, use these – the data contained in the files is unprocessed and far more suitable for manipulation by the HDR software.



2 Photo merge dialog box If you shot handheld, select Align by matching features, otherwise leave as horizontal and vertical shifts. Select Reduce ghosting artefacts if you had moving elements. Noise reduction helps with darker scenes, WB can be set now or later.



3 Start with the presets Photomatix will take a minute or two to merge your photos and the first screen you will see has a control panel on the left with a set of preset options at the base. The presets are a useful starting point and show the enormous range of possible outputs.



4 The natural look! This type of effect is what has given HDR imaging a bad name, however you need to understand how to achieve it in order to know how to avoid it. Pay attention to what is happening to the control panel on the left as you toggle through the presets, particularly the 'smoothing' control. Also, keep an eye on what is happening to the histogram.



5 Details Enhancer – easy with the Smoother! There are a number of ways to adjust images using Photomatix, but Details Enhancer gives you the most control. The control that most affects the appearance of the final image is the Smoother. This is a slider, so use it and see what works best – keep it closer to the middle or the right-hand end for more realistic results.



6 Histogram and close-up loupe Using the histogram and close-up 'loupe' box as a guide, play around to set the levels, brightness and colour balance. The micro smoothing, shadow smoothing and highlights smoothing sliders are useful to control noise when used with the close-up box. Hover over the preview image and a box appears, click anywhere to see a close-up of that area.



▶▶ The shadow area of the scene might, for example, have a shutter speed of one second and the highlights 1/1000sec – ten stops of difference in light. Mount your camera onto your tripod and switch to Manual mode, compose your shot and fix your focus. Next, set your shutter speed to one second (exposing for the shadows) and using a remote or cable release, take your first shot. Now, working quickly but smoothly, increase your shutter speed by two stops (1/4 of a sec) and take another shot. Keep increasing your shutter speed

and taking shots two stops apart until you have reached your exposure for highlights of 1/1000sec (six shots).

There is no hard and fast rule about the number of shots that make a good HDR image, as it depends upon the scene. However, you should avoid taking more than eight to nine shots, as you'll increase the chance of camera movement affecting the final image and increase processing time. You can control the number of shots to merge by increasing or decreasing the number of stops between each shot.

Once you've taken all of the exposures, make a final check of the histogram for each shot at the extreme ends. The shadow exposure should have the shadows just touching the left-hand edge of the histogram, and the highlights exposure should have the highlights just touching the right hand edge with no clipping.

You are now ready to transfer your shots to your computer and import them into your favoured HDR program. Refer back to your notes for how the scene looked to ensure the final result reflects this. **DP**

▶▶ EXPOSURE CONTROL

This scene would have been lost to near darkness, however HDR allowed the dark foreground to be properly exposed without overexposing the sky

Shot details: Nikon D80 with 10-20mm lens at 10mm and f14, 1/4-4sec, three exposures, ISO 100

In association with



At the heart of the image



▲ BLACK AND WHITE

HDR is not just for colour images – it can be used to great effect to show subtle detail in B&W images

Shot details: Nikon D700 with 16-35mm lens at 16mm and f11, 1/125-1/15sec, five exposures, ISO 200

© Chris Humphreys



© Chris Humphreys

Autobacket your way to great HDR images

The usual method of combining a number of exposures, ranging from the deepest shadow to the brightest highlight, undoubtedly produces the best results. However, it can also result in a large number of exposures being required and it takes time to set up properly.

Fortunately, most modern DSLRs have an auto exposure bracketing feature that will allow you to take anywhere from three to nine exposures without having to touch the shutter speed dial. Even better than this, some higher-end cameras have a Burst mode, which allows you to hold down the shutter release and take a number of shots in quick succession.

These functions can sometimes be used in combination with hand-holding to allow you to capture a scene that you might otherwise miss if you didn't have your tripod to hand. If you use this approach, limit yourself to three bracketed shots and a minimum shutter speed of around 1/80sec. This will reduce the amount of movement between shots and give the software the best chance of aligning the images correctly.



© Chris Humphreys

▲ CLEVER CONTRASTING

A subtle use of HDR to bring out some detail in the clouds and rocks, however the most important aspect was to maintain the original scene's contrast

Shot details: Nikon D80 with 18-135mm lens at 24mm and f16, 1/15-1/4sec, three exposures, ISO 100

NEXT MONTH ACTION

Learn to tackle high-speed scenes and subjects with confidence. Pro sports photographer Mark Pain shares his expert techniques