

NIKON D4



ALL WORKED UP

Nikon doesn't introduce a new model number for its pro-grade D-SLRs without doing something special and so the D4 is a whole lot more than just a new sensor in a smart new body. **Report by Paul Burrows.**

With the D4 and the D800 being launched so close together inevitably there have been comparisons, but the two are actually very different animals. Yes, the D800 has a remarkable 36.8 megapixels sensor from which the E version extracts even more imaging performance, and, yes, it's half the price of the D4, but these numbers don't tell nearly the full story.

Nikon's new pro-grade D-SLR is more about the complete package than the individual elements. This is a camera designed not only to be exceptionally durable and reliable, but to operate at a level of efficiency and speed that the D800 can't possibly match. And while the D800 is built tough too, it's just not in the same league as the D4 which is also superior in terms of its ergonomics, handling and operational conveniences. Start drilling down into the D4's myriad capabilities and features, and it's quite easy to see why it's significantly more camera than the D800 or, for that matter, the Canon EOS 5D Mark III.

Since the D3 was launched in 2007, the biggest change in D-SLRs has been the addition of video recording which has opened up a whole new sector of professional users. Mainly due to the huge popularity of the 5D Mark II, Canon has stamped a fair degree of ownership on this sector, something it hopes to continue with the Mark III. Nikon's interim D3S and D300S didn't quite cut the mustard here mainly because their video capabilities seemed to be a little undercooked.

With the D4 Nikon has been back to the drawing board for a close look at every element of its professional D-SLR, including its video functionality. So, although the video side of the camera has indeed been significantly improved – enough, in fact, to give Canon a bit of a prod – there has been tweaking and tuning just about everywhere. Consequently, while on paper the D4 actually doesn't look like quite the same 'great leap forward' as the D3, in practical terms it all adds up to a D-SLR that's equally as right for the times.

Just about every element of the camera is new or revised – the bodyshell, the sensor, the processor, the metering system, the autofocus module, the monitor screen, the optical viewfinder and even support for the XQD high-speed memory cards. Consequently, all the key specs have been upgraded, including the

continuous shooting speed, burst lengths, ISO range, autofocusing low-light sensitivity and the number of shutter cycles (tested, incidentally, in fully-assembled cameras). As we said, it's all about the complete package in terms of professional usage.

The increase in resolution is modest – up from the 12.87 megapixels to 16.6 megapixels – in keeping with the 'big pixel' philosophy established with the D3, but it will be enough to make a difference. The pixel size drops slightly – down to 7.3 microns from 8.45 microns – but with the improvements in noise reduction inherent in the later-generation sensor and Nikon's Expeed 3 processor, the new imager does better in terms of its signal-to-noise ratio, enabling the sensitivity range to span the equivalent of ISO 100 to 12,800 with a one-stop 'pull' to ISO 50 and a four-stop push to ISO 204,800. Given the size of the pixels – and based on experience with both the D3 and D3S – the higher native ISO setting is going to be usable too.

FORMATS AND FRAMES

While it's the D800 that's being touted as the nemesis of 40 MP (or lower res) digital medium format capture systems, it's still really the D4 that these manufacturers have to fear because it's not a case of how many pixels it has, but just what it's doing with them... in terms of key performance indicators such as dynamic range.

Significantly, too, the Expeed 3 processor is sampling RAW image data at 16-bits which ensures increased detailing and smoother tonal gradations as well as an enhanced tonal range.

The effective resolution of 16.2 megapixels delivers a maximum image size of 4928x3280 pixels and the D4 then offers a host of capture formats and file sizes. For instance, RAW files (in the NEF format) can be in 12-bit or 16-bit RGB colour and uncompressed, lossless compressed or compressed. JPEGs can be recorded at one of three compression levels or it's possible to select 'optimal quality compression'. In the 'FX' format – Nikon's designation for its 36.0x23.9 mm (i.e. 35mm-sized) sensor, there's the option of two smaller image sizes, but there is also the choice of three smaller formats, namely 5.4, 'DX' and 1.2x (each with a choice of large, medium and small image sizes). 'DX' is, of course,

Nikon's designation for its 'APS-C' format sensors and the D4 can set to switch automatically between FX and DX if one of the smaller format Nikkor lenses is fitted. As with the previous models, images can be saved as RGB TIFF files.

The maximum continuous shooting speed rises to 10 fps with continuous autofocusing and exposure control adjustments, or 11 fps with the AF (and, in some conditions, also the AE) locked to the first frame. In terms of achieving the D4's shooting speed, Nikon claims shutter lag is reduced to just 0.042 seconds.

The buffer memory is increased in size so, in concert with an XQD memory card – the quoted burst length is around 100 RAW frames or 200 best-quality JPEGs. With the CompactFlash format reaching the end of the road in terms of what's going to be achievable in faster data transfer speeds, Nikon has shown considerable foresight by supporting XQD even though it's still very new. So far only Sony has XQD products on the market, but neither SanDisk nor Lexar Media are likely to be very far behind. It needs to be pointed out too, that XQD is a creation of the CompactFlash Association so there's no doubt this is the way the CF brands will all go. Canon, of course, is backing SDXC, but XQD's PCI Express interface has the potential to achieve a write speed of 5.0 Gbps. The CF slot supports the latest UDMA-7 speed cards and there is a range of ways data can be managed between the two cards including an automatic

"Although the video side of the **Nikon D4** has been significantly improved – enough, in fact, to give Canon a bit of a prod – there has been tweaking and tuning just about everywhere."



✚ The D4 is the first digital camera of any sort to provide support for the new XQD format memory cards which have faster data transfer rates, extending the burst lengths possible with continuous shooting.



✚ Live view now has its own control which incorporates a switch for selecting between the still photography and movie modes.



✚ The rear monochrome LCD panel allows for direct setting of the ISO, white balance and image quality. Note the built-in microphone on the right for appending audio notes to an image file.



The D4 once again demonstrates the value of big pixels even if in-camera noise reduction processing is becoming steadily more efficient. A wide dynamic range, smooth tonal gradations and exceptionally low noise levels up to ISO 6400 are the hallmarks of its imaging performance. Image quality at ISO 1000 is as good as ISO 100 on an 'APS-C' format D-SLR. Test images captured as JPEG/large/fine files and taken at between ISO 200 and 1000 with an ND grad filter and fill-in flash via SB-910. ADL set to Low and the 'Picture Control' to Vivid. AF-S Nikkor 24-120mm f4.0G ED zoom lens with VR image stabilisation activated.

'overflow', simultaneous recording of files for back-up or the separate recording of RAW files and JPEGs simultaneously.

SETTING THE SCENE

The new metering system is based on a 91,000 pixels RGB sensor, giving birth to the third-generation version of Nikon's '3D Colour Matrix' metering. Each pixel analyses colour and brightness information so the new 91K sensor is not only employed in exposure metering, but also face detection, AF tracking, auto AF point selection, auto white balance adjustments, contrast control and TTL flash output control.

Together with the imager, the 91K sensor also drives the D4's 'Advanced Scene Recognition' system which is designed to better tune the AF, AE and white balance to the subject matter and/or lighting situation (and not to be confused with the auto scene mode selection capabilities found on consumer-level D-SLRs).

Using data inputs from either or both sources, Advanced Scene Recognition performs, among other things, light source identification to enable white balance correction, highlight analysis to enable contrast correction, subject tracking and face detection (which, incidentally, is no longer exclusive to live view).

Low light sensitivity is extended to -1.0 EV (at ISO 100) and, as before, the multi-point metering is supplemented with centre-weighted average or spot measurements. The latter is centred on a 4.0 mm diameter central spot while the former has an adjustable central weighting area which can be set to 8.0 mm, 12 mm, 15 mm or 20 mm. Nikon very much sticks with tradition in terms of the D4's exposure control modes so there's just the standard 'PASM' set with program shift, an AE lock, up to +/-5.0 EV compensation and auto bracketing. The bracketing sequence can be up to nine frames with adjustments of plus/minus 1/3, 2/3 or 1.0 EV per frame. The D4 also has auto bracketing for white balance, flash, exposure and flash, and the 'Active D-Lighting' contrast control.

The shutter speed range remains at 30-1/8000 second, but as noted earlier, the shutter unit – which has built-in monitoring and correction if speeds vary – is now tested to 400,000 cycles. Flash sync is up to 1/250 second and the TTL flash metering also benefits from the new 91K metering sensor particularly in terms of balancing fill-in flash with

the available light. The D4 remains without a built-in flash and external units sync via the hotshoe or a PC terminal, the former now fully enclosed by a weatherproof cover when not in use.

SEEING IN THE DARK

While the autofocusing has the same 51-point configuration as the D3S, the AF module has been upgraded to 'Advanced' spec to give improved low-light performance, faster detection overall and allow more focus points to be operational with slower lenses.

The full 51 points – which includes 15 cross-type sensor arrays in the centre – are available with a lens speed of f5.6 or faster, dropping to 15 (nine acting as cross-type) with speeds between f5.6 and f8.0 and 11 with f8.0 speed lenses (one acting as a cross type array). This is primarily to retain autofocusing with Nikkor supertelephotos that are combined with a 2.0x teleconverter which effectively reduces the maximum aperture to f8.0. The Advanced Multi-CAM 3500FX module's minimum sensitivity is down to -2.0 EV (at ISO 100) which essentially also the minimum sensitivity of the human eye.

There is a choice of four AF area modes, namely single-point (i.e. manually selected), 'Dynamic area', '3D tracking' and 'auto-area AF' (i.e. auto point selection). The 'Dynamic area' mode uses data from the points around the selected point to assist with keeping moving subjects in focus and this can be set to a cluster of nine or 21 points or the full 51. Alternatively, in the '3D tracking' mode, the points are automatically selected as the subject moves within the frame.

As on the D3S there's an 'AF Fine Tune' function which allows the autofocusing to be adjusted for the particularly focusing characteristics of individual lenses, up to 20 models in all. This corrects for a lens which may suffer from slight front- or back-focusing when fitted to a particular camera body.

The auto white balance control is supplemented by new less than 12 presets for different lighting types, seven of them covering gas-ignition lamps ranging from sodium-vapour at 2700 degrees Kelvin to Mercury-vapour at 7200 degrees Kelvin. The auto correction has a range of 3500 to 8000 degrees Kelvin, but there's the option of a 'Keep warm lighting colours' 'Auto 2' setting... which does what it says on the lid

when shooting under incandescent lighting. Fine-tuning for all the presets is available in five mired increments across the green-to-magenta and blue-to-amber ranges, or the colour temperature can be set manually from 2500 to 10,000 degrees Kelvin (in very fine ten-degree increments). Four custom white balance measurements can be taken and stored for future recall. As with the AEB, the white balance bracketing sequence can be up to nine frames with adjustments of five, ten or 15 mireds.

IN THE PICTURE

The D4 finally gets the full set of 'Picture Control' presets found on the lower-end Nikon D-SLRs, instead of just four. So, added to Standard, Neutral, Vivid and Monochrome are now Portrait and Landscape. All the colour presets have adjustments for sharpness, contrast, brightness, saturation and hue while the Monochrome preset replaces the last two with B&W contrast filters and toning effects. Nikon continues to offer an impressive range of in-camera B&W toning options with nine colours, each with seven levels of density. Up to nine modified 'Picture Controls' can be created and stored with provisions for each to be named using titles of up to 19

characters in length. Alternatively, custom 'Picture Controls' can be created in Nikon's ViewNX 2 or Capture NX 2 software and loaded into the camera via a memory card.

New to the D4 is a multi-exposure HDR capture mode, presumably for use when things get a bit beyond the scope of the 'Active D-Lighting' corrections. The HDR mode captures two images in quick succession – one underexposed, the other overexposed – with a preset exposure adjustment of 1.0, 2.0 or 3.0 EV or automatic variation (based on the prevailing brightness range), and smoothing (between the boundaries of the two frames) set to High, Normal or Low. HDR capture can be set to self-cancel or continue until manually cancelled and it can be combined with the D4's intervalometer.

The 'Active D-Lighting' processing options are further expanded with the addition of a new setting called 'Extra High 2'. ADL combines exposure and tone curve adjustments to optimise brightness and dynamic range, and essentially works like the 'Shadow/Highlight' adjustment in Photoshop, but without the scope for precise manual control. Nikon has been progressively adding more aggressive 'high' settings since the D3, presumably because in many situations it's hard to see the 'Low' or 'Normal' settings making much of a difference... at least in bright Australian sunshine. The 'Extra High 2' setting is, in effect, introducing yet more underexposure to deal with the extremely bright highlights which occur with very contrasty lighting. ADL bracketing can be applied over sequences of two, three or five frames.

'Active D-Lighting' correction is performed on-the-fly (so it will slow the camera down) and the alternative is to process the image in-camera later, using the 'D-Lighting' function available in the camera's Retouch Menu. This creates a new file and, usefully, provides both a preview and a comparison with the original.

CORRECTION CENTRE

The D4 performs a number of in-camera correction routines for lens aberrations. 'Vignette control' and 'Auto Distortion Control' are selectable from the main Shooting Menu while correction for lateral chromatic aberrations is always applied automatically with JPEG capture. It works by compensating for the differences in the resolving

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✦ The menu system's design and navigation remains unchanged from the D3-series cameras. Progressive right-clicks move from the chapter tabs through the sub-menus to the settings.



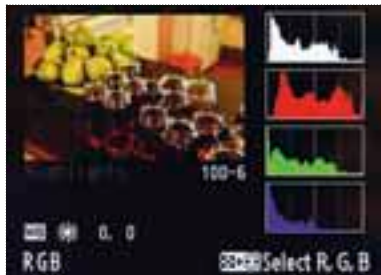
✦ The D4 now has the full complement of 'Picture Control' presets found on Nikon's lower-end D-SLRs. Up to nine customised presets can be created, named and stored.



✦ In-camera corrections are provided for both vignetting and distortion (with lateral chromatic aberration operating in the background).



✦ The 'Retouch Menu' includes a small number of filter effects and the in-camera processing of RAW files.



✦ Replay screens include a full set of histograms with an optional highlight warning which can be cycled through the red, green and blue channels.



✦ Four pages of image data can be cycled through with image replay, including detailed lens information.

index for each colour wavelength rather than just correcting for any colour fringing at a contrast edge.

Consequently, it's particularly effective at eliminating the chromatic aberrations that occur at the edges of the frame when shooting with older wide-angle lenses. The correction for brightness fall-off can be set to Low, Normal or High while the distortion correction is simply either on or off. Both only work with either D-type or G-type Nikkor lenses.

Both high ISO and long exposure noise reduction is provided, the former with four settings – 'High', 'Normal', 'Low' or 'Off' – although off actually isn't completely off because, as on the D3-series models, noise reduction is automatically applied with any of the boosted sensitivity settings.

Returning to the Retouch Menu, the other offerings are red-eye correction, adjustments to colour balance, (using RGB histograms for guidance), trimming, B&W conversion (with the option of either sepia or cyanotype toning), skylight or warm filter effects, side-by-side comparisons, image overlay (for two RAW files with the capacity to balance the exposures as required), resizing, in-camera RAW-to-JPEG conversion and basic movie editing. New additions are straightening, distortion control and perspective control. The process of converting RAW files in-camera has been greatly streamlined, eliminating the need to return to each of the camera settings – i.e. the processing parameters – separately to set them as required. Now all adjustments can be made via the four-way navigator pad which greatly speeds things up.

VIDEO STAR

Nikon is heavily promoting the D4's video credentials – it's been tagged "the multi-media D-SLR" – which include stepping up to (finally) 1080p Full HD quality, clip lengths extended to the maximum 29 minutes and 59 seconds allowed before the camera would be classed as a camcorder (for duty purposes), the use of more efficient MPEG-4/H.264 compression and the ability to plug-in stereo headphones for monitoring sound.

The built-in microphone is still monaural, but presumably Nikon thinks anybody serious about their video shooting will plug in an external stereo pick-up anyway (and Nikon is offering its own ME-1 unit). The really big deal on the video side is

the availability of an uncompressed output from the camera's HDMI connector for recording to external devices... with *big* storage capacities! It can also be used to stream live video to a monitor.

Video can be recorded in one of three formats... 'FX' at 16.2 megapixels, a 'DX' crop at 6.8 megapixels with the 1.5x focal length increase, or a crop based on the 1920x1080 pixels Full HD resolution which effectively gives a 2.7x focal length increase. The frame rate can be set to 24 or 25 fps in the PAL standard and there are high-quality and normal corresponding to 24 Mbps and 12 Mbps respectively. In the high-quality mode the maximum clip length is 20 minutes. Movie clips can also be recorded at 1280x720 pixels and either 25 or 50 fps.

The D4's video functionality is excellent and allows for the manual adjustment of apertures, shutter speeds and the sensitivity (across the full range up to ISO 204,800) to be adjusted during recording. Autofocusing – via contrast-detection, of course – with face detection, auto tracking and wide-area point selection is also available, so are the 'Picture Control' presets. Indexing is available to make a frame easier to locate during editing, and this function can be assigned to the preview button, the 'Fn' button (both on the camera's front panel) or the new, secondary multi-selectors on the back panel (more about these controls shortly).

The D4's live view operation has also been revised, replacing the old 'Hand Held' and 'Tripod' modes – which dictated the method of autofocusing – with 'Silent' and 'Quiet' modes. In the 'Quiet' mode, the mirror remains locked up and the shutter open continuously, but shutter release noise is still audible. In the 'Silent' mode, the camera makes no noise at all and JPEG images are captured in five-second bursts at either 12 or 24 fps. The downsides are that the resolution is reduced to 2.5 megapixels and neither ADL or HDR processing is available. That said, for many press photography applications 2.5 MP is going to be more than enough image data.

BODY BUILDING

Although close to the same proportions as the D3-series – and the D3X continues on at the moment – the D4's new bodyshell is quite a lot smoother in its styling. It's still been penned by

Italy's Giugiaro Design, but the ergonomics have been given a big tidy-up, particularly in regard to the vertical grip which is now very much more comfortable to hold. The grip area has been increased and a thumbrest added. On the main grip, the shutter release has been further tilted forward by 35 degrees so your trigger finger falls more naturally on to it and – praise be – there's now a dedicated video start/stop button located immediately alongside.

The front input wheel – which Nikon calls the "sub command dial" – has been moved closer to the shutter release. The three-position AF mode selector switch at the base of the lens binnacle has been replaced by an arrangement similar to that used on the D7000... namely an AF/MF selector with a central button for engaging the AF mode and focus point settings (in conjunction with the input wheels).

The metering mode selector – for a long time an awkward little control on the side of the pentaprism housing – has been moved to the top panel as part of the three-way selector for bracketing and the flash modes. The drive mode selector at its base remains unchanged. On the back panel are two new joystick-type controllers which join the main multi-directional rocker switch – and so are called the "sub multi-selectors." These are used for quicker changing of the AF points – and also serve as the AE lock – with the second, lower control for when the D4 is being held vertically. The higher-end Canon D-SLRs have had a similar control for quite a while (and the rival EOS-1D X also has a pair of them). The top control can also be set to serve as the AF/AE lock as a dedicated button for this has been deleted. Handily, the locking switch for the main selector locks both the sub-controllers too. The live view button has been upgraded to incorporate a switch to select between the still photography and movie modes.

Particularly welcome is the addition of back illumination for many of the D4's external controls. This is activated when the mono LCD panels' illumination is switched on via a spring-loaded position on the main power switch. In general, the D4's more curvaceous body feels much more comfortable in the hand and the various ergonomic revisions undoubtedly improve the operational efficiencies.

The body covers are magnesium alloy with full sealing against dust,

moisture and electromagnetic radiation. Beefy gaskets surround all the various openings which, on the D4, now number eight... memory card compartment, the battery compartment and a total of six covers for the camera's many connections. Two on the front panel are for the PC flash and wired remote control terminals while, on the side, are those for the USB (surprisingly, 2.0 standard, not 3.0), HDMI, Ethernet (RJ-45), stereo audio in, stereo audio out and peripheral connections. This last one is new and used to connect the compact WT-5 wireless transmitter which is powered from the camera and also allows remote operation of the D4 via the Nikon Camera Control Pro 2 software.

ON DISPLAY

The LCD monitor screen size is increased to 8.1 cm, but the resolution remains at 921,600 pixels. An ambient light sensor has been added to provide automatic brightness control and there's an anti-reflection layer to improve viewing in bright conditions. Up to 30x magnification (in the FX format) of the monitor image is possible.

The optical viewfinder has a new, brighter pentaprism which provides 100 percent frame coverage for the FX format in the uncropped 3:2 aspect ratio. It's also lower profile which helps give the D4 its smoother, more flowing top-panel lines. The viewfinder's eyepiece now has something called a "thermal shield finish" which is some sort of coating, although the ascribed benefit is a vague "supports comfortable viewing in more diversified situations." Er, right-o.

The battery pack has the same form factor as the D3's, but is actually lower-powered due to new regulations now in force in Japan. Nikon says the D4's improved power efficiencies more than account for the difference. As a result of a different contact placement, however, the new pack can't be used in the D3-series bodies or recharger and the D3-series EN-EL4a batteries can't be used in the D4. It's an inconvenience for anybody who was planning to run the old and the new side-by-side.

The menu system remains unchanged in its design and navigation which makes sense because it's still one of the most logical and efficient in the D-SLR world. The electronic level display – which can either be superimposed

over the live view image or, at other times, simply shown in the monitor screen – has been upgraded to dual-axis to include a front-to-back tilt (i.e. pitch as well as roll). The monitor screen can be set to serve as a comprehensive information display with direct access to some of the selected capture functions, including 'Active D-Lighting' and noise reduction plus the camera's 'Custom Settings Banks' (up to four of these can be configured from the D4's 48 customisable settings).

The replay/review screens number eight, including a thumbnail with a set of brightness and RGB histograms and three pages of image data (including copyright details). Additional pages are displayed if the optional GPS receiver has been used and IPTC presets are embedded. The highlight warning can be cycled through the RGB channels separately and a grid display can be superimposed both over the optical viewfinder and the live view image. The live view display can also include a real-time histogram.

SPEED AND PERFORMANCE

We weren't expecting to find Nikon's claims for the D4's continuous shooting speed overexaggerated and, loaded with a 16 GB Sony XQD card, it fired off 60 JPEG/large/fine frames in 5.493 seconds. This represents a shooting speed of 10.92 fps which just a fraction below the claimed 11 fps. The camera had all additional image processing – such as ADL – switched off and the shutter speed was set to 1/250 second.

The XQD card allows for longer burst lengths than a UDMA-7 speed CF card, but we stopped at 60 just because it seemed as a good a number as any. The camera would have happily gone on rattling off frames. The 60 test shots took just over 20 seconds to write to the XQD card after shooting stopped.

The D3 and D3S set the bar high for the D4, but it hurdles over it with reasonable ease. Once again, it's the dynamic range that is the most outstanding aspect of the imaging performance, particularly at the black end of the scale where the tonal variations are remarkable and only matched by digital medium format equipment. The highlights, in particular, benefit from using ADL with the best balance, in our tests, achieved with either the High or Extra High 1 settings. The smoothness of the tonal gradations and the overall colour fidelity (using the Standard



✦ Metering mode selection is now via the multi-function control on the D4's top panel, rather than the D3's small selector on the pentaprism housing. The D4 has an all-new 91,000 pixels RGB metering sensor.



✦ Top display panel provides a comprehensive set of read-outs and indicators, numbering over 30.



✦ The D4 boasts an impressive level of connectivity, including a new Ethernet connector, enabling images to be uploaded to a laptop or an FTP server. In the HTTP server mode, images can be captured or viewed remotely from a computer, iPad or iPhone via a Web browser interface.



✦ Also new is a dedicated connector for the new, compact WT-5 wireless transmitter which is powered from the camera and allows for remote camera control, file uploading and the HTTP server mode.




✦ Both a stereo audio input and an output are provided, the latter allowing for the monitoring of soundtracks during video recording.

'Picture Control') are exceptional. Low noise is the element that put the D3 and D3S in a class of their own and the D4 still maintains exceptional definition, smoothness of tone and colour saturation all the way up to ISO 6400. Graininess increases progressively up to ISO 25,600, but the image quality is still quite acceptable. Images captured at ISO 51,200 are still usable if they are kept small, but the two 'six figure' settings are pretty much join-the-dots stuff. However, as with the 12 MP D3 models, ISO 1000 is the new ISO 100 on the D4 and it takes a while to get used to the idea that it delivers just as much sharpness and saturation with a lot of extra flexibility in terms of using faster shutter speeds and/or smaller apertures. The new metering system is stunningly accurate even in the most contrasty of lighting, and the autofocus is fast and reliable, including in low light conditions which would normally result in time-wasting hunting.

THE VERDICT

There was much less of a compulsion for D3 owners to step up to the D3S unless shooting video was a requirement – and, even then, 720p was no great shakes – but the D4 is a very different proposition indeed. It's been so comprehensively upgraded it has to have D3 and D3S owners drooling. The D4's video capabilities are exceptional, but they don't overshadow the benefits for still photographers delivered by the new metering system, increased shooting speed, improved AF reliability and a host of expanded functions. Throw in the excellent ergonomics, the even more efficient operation – the amount of control customisation possible is remarkable – and the supremely comfortable handling, and it all adds up to one helluva camera.

Just about everything about the D4 is impressive with the possible exception of the changes to the battery pack (which were outside Nikon's control anyway) for anybody hoping to make use of their D3-series spares. Despite the obvious attractions of the D800, the appeal of the D4 is that it's still very much a traditional pro-level D-SLR – big in every department, but with an attention to detail that ensures it works with supreme effortlessness. The Nikon D4 very much represents the pinnacle of D-SLR design and so, consequently, desirability is arguably its biggest asset. 

NIKON D4 \$8799*

VITAL STATISTICS

Type: Professional digital SLR with Nikon F (D-type) bayonet lens mount
Focusing: Automatic via 51-point wide-area system using phase-detection type CCD sensor with 15 cross-type arrays. Focus points may be selected manually or automatically and either as single points or in groups (9/21/51). Points re-orientated for vertical shooting. One-shot and continuous modes both with a predictive function. 3D Tracking mode. Sensitivity range is EV -2 - 19 (ISO 100). AF assist provided by built-in illuminator. Contrast detection autofocus in live view mode and with video recording.
Metering: 91,000 pixels RGB '3D Color Matrix III', centre-weighted average (with variable diameter weighting – 8.0mm, 15mm or 20mm), spot (4.0mm/1.5%), and i-TTL flash via 1005-pixel sensor. Metering ranges are: 3D Color Matrix and C/W average = EV -1 to 20, spot = EV 2 to 20 (f1.4/ISO 100).
Exposure Modes: Continuously-variable program with shift, shutter-priority auto, aperture-priority auto, metered manual, i-TTL auto flash and manual flash.
Shutter: Electronically-controlled, vertical travel, focal plane type, 30-1/8000 second plus 'B'. Flash sync to 1/250 second. Exposure compensation up to +/-5.0 EV in 1/3, 1/2 or one stop increments.
Viewfinder: Coverage = 100% vertical/horizontal. Magnification = 0.70x (50mm lens at infinity). LCD displays and LED focus point indicators. Standard focusing screen has AF zones and on-demand grid lines. Eyepiece strength adjustment and built-in shutter provided.
Flash: No built-in flash. External flash units connect via hotshoe or PC terminal.
Additional Features: Magnesium alloy bodyshell sealed against dust and moisture, illuminated buttons, auto exposure bracketing (up to nine frames), depth-of-field preview, AE lock, flash compensation, all exposure adjustments in 1/3, 1/2 or full stops; variable delay self-timer (two to 20 seconds), mirror lock-up, quiet and silent shutter modes, two external LCD read-out panels with built-in illumination, audible signals, wired remote control terminal, wireless remote control, 48 custom functions.

Additional Digital Features: Active sensor cleaning, dual-axis 'virtual horizon' display, live view functions (with contrast-detection AF), 8.1 cm LCD monitor (921,600 pixels resolution) with histogram displays (brightness and/or RGB channels) and highlight alert; 'Active D-Lighting' contrast control (Auto, Low, Normal, High, Extra High 1, Extra High 2), ADL bracketing, six 'Picture Control' presets (Standard, Neutral, Vivid, Monochrome, Portrait, Landscape), adjustable 'Picture Control' parameters (Sharpening, Contrast, Brightness, Saturation, Hue), B&W filters and toning effects, nine user-defined 'Picture Control' modes, multiple exposure facility (up to ten frames with Auto Gain), intervalometer, HDR multi-shot capture (Smoothing High/Normal/Low, Exposure Differential 1/2/3 EV), sRGB and Adobe RGB colour spaces, long exposure noise reduction (Off, On), high ISO noise reduction (Off, Low, Normal, High), auto ISO with auto minimum shutter speed control, auto distortion control, vignetting correction, image comments input (up to 36 characters), auto image orientation, adjustable image display time, slide show, 4/9/72 thumbnail displays, playback zoom, in-camera editing functions (D-Lighting, Red-Eye Correction, Trim, Monochrome, Filter Effects, Colour Balance, Image Overlay, RAW Processing, Resize, Straighten, Distortion Control, Perspective Control, Edit Movie, Side-By-Side Comparison). May be fitted with optional WT-4 or WT-5 wireless data transmitters and GP-1 GPS receiver.
Power: One 10.8 volt, 2000 mAh rechargeable lithium-ion battery pack (EN-EL18 type).
Dimensions (WxHxD): Body only = 160.0x156.5x90.5 mm.
Weight: Body only = 1180 grams (without battery pack).
Price: Body only = \$8799.
Distributor: Nikon Australia Pty Ltd, telephone 1300 366 499 or visit www.nikon.com.au

DIGITAL SECTION
Sensor: 16.6 million pixels CMOS with 36.0x23.9 mm area. Sensitivity equivalent to ISO 100-12,800 (extendable to ISO 50 and 204,800).
Focal Length Increase: None.
Formats/Resolution: Three JPEG compression settings (1:4, 1:8 and 1:16), and lossless compressed or compressed RAW files. Three resolution settings at 3:2 aspect ratio; 4928x3280, 3696x2456 and 2464x1640 pixels. Three resolution settings at 1.2x image size (30x20 mm); 4096x2720, 3072x2040 and 2048x1360 pixels. Three resolution settings at 5:4 (30x24 mm); 4096x3280, 3072x2456 and 2048x1640 pixels. Three resolution settings in 'DX' format (24x16 mm); 3200x2128, 2400x1592 and 1600x1064 pixels. Additionally, still images can be captured in the movie mode in the 'FX' and 'DX' formats and 3:2 or 16:9 aspect ratios, again at three resolution settings.
Video Recording: Full HD = 1920x1080 pixels at 25 or 24 fps (progressive) and 16:9 aspect ratio. HD = 1280x720 pixels at 50 or 25 fps (progressive) and 16:9 aspect ratio. SD = 640x480 pixels at 25 fps and 4:3. MPEG 4 AVC/H.264 compression. 'FX', 'DX' or '16:9 Movie Crop' frame formats. Mono sound recording with auto/manual adjustable levels. Stereo microphone input and headphone output provided. Clip duration limited to 29 minutes and 59 seconds.
Video Features: Index marking, power aperture control, live frame grab, time lapse recording, auto flicker detection, uncompressed output via HDMI connection.
Recording Media: Two slots for CompactFlash (UDMA compliant) and XQD memory cards. Overflow, Backup and RAW Primary, JPEG Secondary file management modes.
Continuous Shooting: Up to 170 frames at 11.0 fps in JPEG/large/fine mode, up to 75 frames in RAW mode (14-bit, lossless compressed). Low speed continuous shooting mode can be set from 1.0 to 10.0 fps. At 11.0 fps AF and AE fixed at the first frame. Continuous AF and AE adjustment at up to 10.0 fps. Up to 200 frames at 11.0 fps is possible when shooting in the 'DX' format.
White Balance: TTL measurements using 91,000 pixels RGB metering sensor. Auto/manual control with 12 presets and four custom settings. White balance fine-tuning

* body only

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