

The D3S: on assignment



Bill Frakes
Sports/Photojournalism (U.S.A.)

From the bustling metropolis of Sydney to aboriginal villages in the Outback, from a cold and dusty Aussie rules football pitch in Tasmania to the sun-baked desert in Nambung National Park, Sports Illustrated staff photographer and award-winning photojournalist, Bill Frakes roamed Australia for three weeks, testing the D3S relentlessly to serve his seemingly limitless photographic imagination.

“ Every time I put the D3S to my eye, it's like opening a surprise present. It makes the child in me come out and play. Everything I see can be captured accurately and fluidly, and by combining still capture and D-Movie, I can meld motion and emotion into multidimensional expressions of visual and audio exploration.



I make career-defining decisions in milliseconds, and I want the best possible image quality every time I push the button. No matter who you are, or how you work, you never know when the cosmos will align in such a way that the perfect image is available. When it happens, I have to be ready in every conceivable way. This is why the D3S excites and motivates me. I need a camera that responds precisely, quickly and consistently. The D3S does that and more, and this kind of power gives me enormous freedom. ”



Vincent Munier
Nature/Wildlife (France)

As an artist with an immense respect for nature, award-winning wildlife photographer, Vincent Munier waits patiently in severe weather until his animal subjects grow to accept his presence. Only then will he begin photographing them. Vincent recently took the D3S on assignment with him to Norway and Finland. There, he and the D3S sat quietly in the wind and rain while getting to know the creatures of the Nordic forest.

“ Animal photography is a passion more than a profession. Sometimes I sit in the rain and snow for weeks just to experience a single brief moment with an animal. I need the best and most reliable equipment available so that I can take full advantage of the rare opportunities inherent in my work.



Many of my subjects are active only after the sun goes down. Yet with the D3S, I managed to photograph things that my eyes were practically unable to see. For example, I remember a brown bear that was just meters from my cabin in the Finnish taiga. It was the middle of the night, but just a short glimpse of his wet nose permitted me to focus, resulting in a surprisingly sharp picture. Capturing images like this is what makes the D3S invaluable. ”



Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. April 2011

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WARNING

TO ENSURE CORRECT USAGE, READ MANUALS CAREFULLY BEFORE USING YOUR EQUIPMENT. SOME DOCUMENTATION IS SUPPLIED ON CD-ROM ONLY.



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At the heart of the image

Nikon

D3s

D3s

En

60
million
NIKKOR



What would you do if the laws of photography changed? With the introduction of the new Nikon D3S, professional photographers around the world will reconsider this question entirely, and re-examine the power, potential and reach that photography can now achieve. The D3S's abilities are so revolutionary that photographers will experience an entirely new level of performance and creativity, pushing them further into the uncharted waters of possibility. Standing on the shoulders of the incredibly fast and versatile D3, the new D3S makes spectacular improvements that will enable you to think and shoot in ways you never thought possible: commercial-quality low-noise images as high as ISO 12800, the ability to

Redraw Your Boundaries

shoot HD movies at high ISOs with stereo sound*, saving a selected frame from D-Movie as a JPEG for immediate print and web publication, light sensitivity beyond what your own eyes can see clearly, and the consistent accuracy and reliability that Nikon is known for. All of these things are now at your command. The new Nikon flagship will quite literally make you see things differently, and help you approach your next assignment with a new sense of excitement. It's time to redefine the true power of photography and the future of imaging. What could you accomplish if you could redraw the boundaries of photography? Find out, with the D3S.

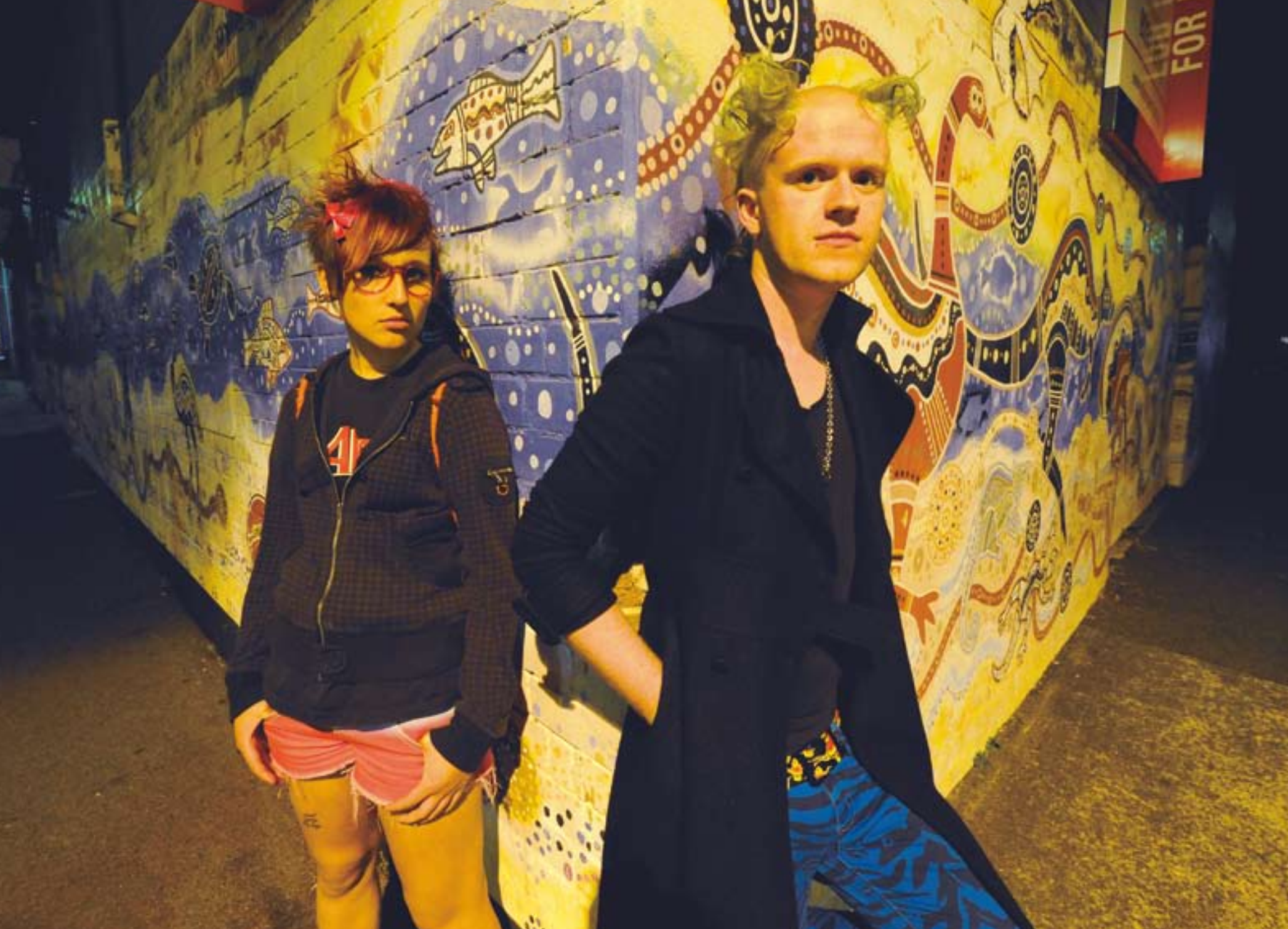
*When using an optional external stereo microphone.



• Sensitivity: ISO 12800 • Lens: AF-S NIKKOR 600mm f/4G ED VR • Image quality: 14-bit RAW (NEF) • Exposure: [M] mode, 1/1,000 second, f/4 • White balance: Cloudy • Picture Control: Standard ©Bill Frakes



• Sensitivity: ISO 12800 • Lens: AF-S NIKKOR 400mm f/2.8G ED VR • Image quality: 14-bit RAW (NEF) • Exposure: [A] mode, 1/500 second, f/2.8 • White balance: Cloudy • Picture Control: Vivid ©Vincent Munier



• Sensitivity: ISO 12800 • Lens: AF-S NIKKOR 14-24mm f/2.8G ED • Image quality: 14-bit RAW (NEF) • Exposure: [M] mode, 1/20 second, f/6.3 • White balance: Auto • Picture Control: Standard ©Bill Frakes

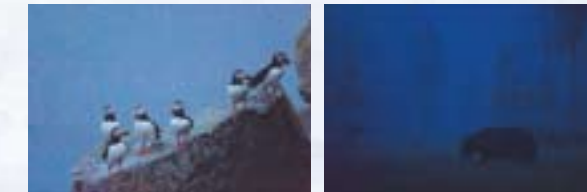
Evolution of the D3: Standard ISO 12800

ISO performance: ISO 12800 as standard, expandable to 102400 equivalent (Hi 3)

Whether shooting indoor sports, stadium events at night, theatrical and concert performances, weddings, dimly-lit spot news or in any condition where light is limited and Speedlights are not an option, the D3S will change how you are able to approach assignments, even more dramatically than its predecessor, the legendary D3. Photographers can now depend on ISO 200 to ISO 12800 as the professional standard. Imagine: tack-sharp action images in low light at action-freezing shutter speeds without worrying about excessive, image-degrading noise – even at ISO 12800. When needed, the D3S expands into uncharted territory, reaching the amazing ISO equivalent of 102400. At this setting, the D3S lets you still reveal color and detail, even in extremely low-lit places. The D3S's exceptional low-noise performance also applies to D-Movie capture. What can you accomplish with still or movie images in extremely low-light situations? Consider the new possibilities.



©Bill Frakes



Images taken at Hi 3 (ISO 102400 equivalent) ©Vincent Munier

• Sensitivity: 3 EV above ISO 12800
• Lens: AF-S NIKKOR 400mm f/2.8G ED VR • Image quality: 14-bit RAW (NEF) • Exposure: [A] mode, 1/500 second, f/2.8 • White balance: Auto • Picture Control: Standard

• Sensitivity: 3 EV above ISO 12800
• Lens: AF-S NIKKOR 400mm f/2.8G ED VR • Image quality: 14-bit RAW (NEF) • Exposure: [A] mode, 1/50 second, f/2.8 • White balance: Cloudy • Picture Control: Vivid

Large pixel pitch: the 12.1-megapixel FX-format advantage

Dedicated to raising the bar of the legendary D3 performance, Nikon engineers completely redesigned the image sensor of the D3S, further optimizing the inner structure while maintaining the pixel count and the large pixel pitch for even greater latitude in high ISO performance. As a result, the D3S captures and renders light in ways that no other camera has yet achieved. This in turn contributes to a significantly higher signal-to-noise ratio and a wide dynamic range, which translates into unmatched image quality throughout the broadened ISO sensitivity range for both still images and movies. Combined with the unmatched accuracy of NIKKOR lenses, the D3S and its FX-format sensor deliver a quality all their own.

D-Movie: new dimensions to your creativity

From well-lit scenes to extremely low-lit situations, Nikon's D-Movie mode delivers unique versatility. Its Motion-JPEG gives you HD quality (1,280 x 720 pixels) movies at 24 fps. By controlling the aperture from the widest f-stop, the large FX-format sensor renders low-noise images with beautiful bokeh effects from a large selection of NIKKOR lenses. Use High-Sensitivity Movie mode to shoot at up to ISO 102400 in places too dark to see clearly with your own eyes. Movie footage is easy to trim in-camera by choosing the starting or ending points for easy transfer. You can even save selected movie frames as JPEGs for immediate print and web publishing needs. The D3S has both an internal monaural microphone and an external stereo microphone input, enabling higher fidelity audio recording.



Still image saved from D-Movie ©Vincent Munier

Image Sensor Cleaning: assured protection

After relentless testing, Nikon engineers successfully developed the Integrated Dust Reduction System that will satisfy high expectations. The D3S's Image Sensor Cleaning function generates vibrations at four specific frequencies to optimize dust removal. This function can be set to operate automatically when the camera is turned on and off, or manually.





• Lens: AF-S NIKKOR 24-70mm f/2.8G ED • Image quality: 14-bit RAW (NEF) • Exposure: [M] mode, 1/320 second, f/10 • White balance: Cloudy • Sensitivity: ISO 640 • Picture Control: Standard ©Bill Frakes



Image Quality Further Refined: EXPEED

EXPEED: Nikon's comprehensive approach to quality digital images

Nikon understands that image quality, accuracy and speed are equally critical to professional photographers. Further refining these essential performance requirements is what brought about EXPEED, Nikon's fast, comprehensive, and energy-efficient approach to in-camera image processing. The rich initial data maintains its integrity through 14-bit A/D conversion and a 16-bit image-processing pipeline, which shows the enormous creative potential inherent in the NEF (Nikon Electronic Image Format). Combined with Nikon's FX-format sensor, the D3S produces an exceptional tonal range, and minimized tone jumps. Expect finer tonal gradation in highlights even with extremely bright subject matter – as well as colors that were once considered altogether impossible, such as skin tones and strong reds in the same frame without over-saturation.



• Lens: AF-S NIKKOR 70-200mm f/2.8G ED VR II • Image quality: 14-bit RAW (NEF) • Exposure: [M] mode, 1/2,500 second, f/18 • White balance: Auto • Sensitivity: ISO 200 • Picture Control: Standard ©Bill Frakes



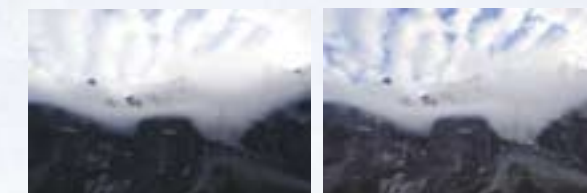
Lateral chromatic aberration reduction With Without ©Bill Frakes

Lateral chromatic aberration reduction: edge-to-edge sharpness

The D3S corrects color fringes caused by chromatic aberrations that, in some instances, can appear at the edges between differing subject elements, thereby improving image quality throughout the entire frame. Because lateral chromatic aberrations are corrected regardless of lens type – whether telephoto, wide-angle, non-CPU and other types of NIKKOR lenses – this important aspect of the D3S contributes substantially to the highly refined image integrity that professionals demand.

Active D-Lighting: rescuing tone in highlights and shadows

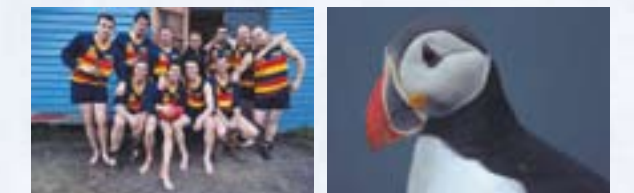
The days of choosing between shadow or highlight detail are over. Nikon's Active D-Lighting automatically regulates the dynamic range of high-contrast scenes to pull out shadow details and preserve highlights. Simply choose the appropriate setting – Auto, Extra high, High, Normal, Low or Off – prior to shooting. Auto setting controls the regulation value appropriately. You can also bracket Active D-Lighting strength levels up to five frames and select the best rendition afterwards.



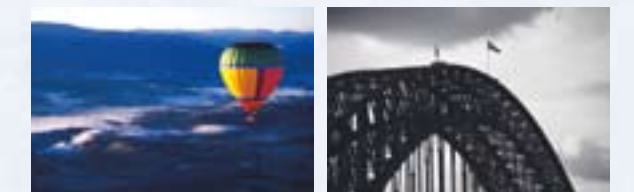
Active D-Lighting [Off] Active D-Lighting [High] ©Vincent Munier

Picture Control: custom-tailored tone and color

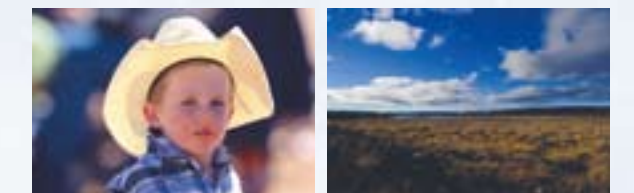
Nikon's powerful and intuitive image adjustment tool helps you define the look and feel of your images by custom-tailoring sharpness, saturation and other parameters to match your creative intentions. Think of it like selecting certain types of film for specific shooting situations. The D3S comes with four pre-installed Picture Control profiles, which can be fine-tuned and saved as new custom Picture Control profiles that match your personal preferences and shooting style or particular shooting conditions. Fast, easy and powerful, custom profiles are easily copied to additional cameras.



Standard ©Bill Frakes Neutral ©Vincent Munier



Vivid ©Bill Frakes Monochrome ©Bill Frakes



Portrait* ©Bill Frakes Landscape* ©Bill Frakes

* Can be downloaded from the Nikon website.



• Lens: AF-S NIKKOR 400mm f/2.8G ED VR • Image quality: 14-bit RAW (NEF) • Exposure: [A] mode, 1/6,400 second, f/2.8 • White balance: Cloudy • Sensitivity: ISO 800 • Picture Control: Standard ©Vincent Munier



Lightning Speed and Razor-Sharp Accuracy

Speed and readiness throughout the workflow

The D3S optimizes workflow speed and fluidity throughout the entire process: from setup to shooting to data recording and transfer. Start-up time is approx. 0.12 seconds* and release time lag is minimized to approx. 0.04 seconds.* Autofocusing, image processing, buffer memory, memory card access and recording, USB interface and the optional wireless transmitter work together to keep you focused and moving forward. And for sport and spot news photographers, many of the D3S's JPEG files are print-ready with little or no post-production: an extra edge when time is short.

* Based on CIPA Guidelines.

9-frames-per-second* shooting rate in FX format, 11 fps* in DX crop

The D3S's continuous shooting rates are quite impressive, but what makes them truly unique is that the camera's powerful stepping motor allows for a steady delivery of fast continuous shooting speeds at a wider range of aperture settings than conventional digital SLRs. Professionals will now have greater control and fewer limitations when making the images they desire, and with DX crop mode, photographers can also add a 1.5x picture angle and a faster frame rate to their arsenal. Furthermore, the factory-installed buffer memory is twice the capacity of the D3, dramatically increasing the power of continuous shooting.

* Based on CIPA Guidelines.

Scene Recognition System: enlightened accuracy and intelligence

Nikon's exclusive 1,005-pixel RGB sensor precisely reads brightness and color information to raise the overall accuracy of AF, AE, i-TTL flash control and auto white balance to new heights via the Scene Recognition System. The D3S's AF delivers superb subject tracking and subject identification performance. Highlight analysis used for AE reproduces brightness faithful to what your eyes see, and light source identification makes auto white balance uniquely precise and reliable.

51-point AF: fast and accurate subject acquisition

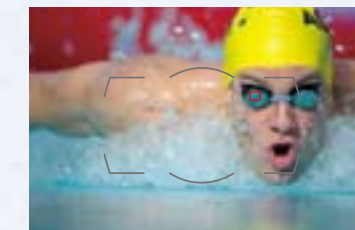
This dense net of 51 AF points delivers faster focus, even with quick and/or erratic subject movement. The 15 cross-type sensors in the center of the frame maintain the same outstanding performance with any AF NIKKOR lens f/5.6 or faster. There are four Dynamic-area AF options including 51 points (3D-tracking), which accurately pursue your subject by shifting focus points using color and brightness information from the Scene Recognition System. This is useful when composition is important, but your subject's movement is extremely erratic. Single-point and Auto-area AF modes are also available.

Sophisticated AE with highlight analysis

Nikon's exclusive 3D color matrix metering II is highly praised for its outstanding performance and faithful exposure results – even in complex, unforgiving lighting conditions. Using highlight analysis from the Scene Recognition System and then carefully selecting from a database containing information from over 30,000 actual shooting situations, the D3S now takes accurate exposure further.

Informed auto white balance

Leading professionals often note that Nikon's auto white balance exhibits remarkable results, even in challenging mixed lighting conditions. With the D3S, auto white balance makes even further progress. Professionals can expect white as truly white in a wider variety of settings.



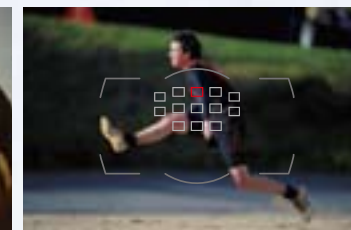
Single-point AF mode

©Bill Frakes



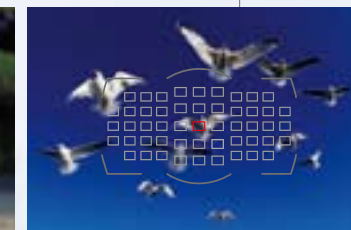
Dynamic-area AF using 9 points

©Bill Frakes



Dynamic-area AF using 21 points

©Bill Frakes



Dynamic-area AF using 51 points

©Vincent Munier



Dynamic-area AF using 51 points (3D-tracking)

©Bill Frakes





• Lens: AF-S NIKKOR 70-200mm f/2.8G ED VR II • Image quality: 14-bit RAW (NEF) • Exposure: [M] mode, 1/125 second, f/20 • White balance: Auto • Sensitivity: ISO 640 • Picture Control: Standard ©Bill Frakes



True Versatility: Total Imaging System

NIKKOR lenses: the heart of the Total Imaging System

NIKKOR

The conditions of photographic assignments are fluid, while the requirement for professionals to deliver stunning images remains constant – and stunning images begin with world-famous NIKKOR interchangeable lenses. NIKKOR lenses represent decades of optical engineering experience and the benefits of exclusive Nikon technologies such as Super Integrated Coating to reduce ghost and flare. Nikon's Nano Crystal Coat further minimizes ghost and flare caused by internal reflections, even when the light source is in the frame. These, and a myriad of additional design considerations, are brought together in a skillful blend of both art and science to create the optical quality on which so many professionals rely.



AF-S NIKKOR 70-200mm f/2.8G ED VR II



• Lens: AF-S NIKKOR 24-70mm f/2.8G ED • Image quality: 14-bit RAW (NEF) • Exposure: [M] mode, 1/250 second, f/7.1 • White balance: Auto • Sensitivity: ISO 640 • Picture Control: Standard ©Bill Frakes

Creative Lighting System: the light of inspiration

The D3S's Scene Recognition System delivers refined i-TTL flash control from your SB-900, SB-700 and SB-400 Speedlights. You can achieve accurate exposure results, even with small subjects and highly reflective objects. The Creative Lighting System offers various flash techniques, including Advanced Wireless Lighting, which gives you immediate and total control, making commanding multiple remote Speedlights as easy as controlling one Speedlight mounted on your camera.

Wireless Transmitter WT-4A/B/C/D/E*

Photographers working in large venues will appreciate the WT-4A/B/C/D/E, which supports IEEE 802.11a/b/g. The Thumbnail Selector quickens workflow by first sending thumbnails to a remote computer. Editors can select images before their full data is sent, saving precious time.

* Product name varies according to region, depending on local frequency channels available.

GPS Unit: GP-1

With the GPS Unit GP-1, latitude, longitude, altitude and time are automatically recorded to each image's EXIF data, making it easy to exchange data, create original maps or display image location on Google Maps™ using ViewNX software (provided). GP-1 is also useful for travel records, news reporting and academic research. Time Adjustment lets you adjust your camera's time zone, which is useful for group assignments that require several D3S cameras to be synchronized.

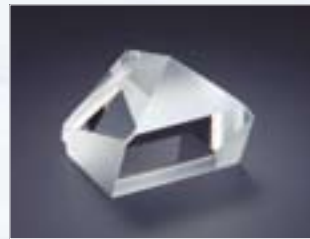
Nikon's exclusive software

Nikon offers powerful software to give professionals extra reach and definition for their images. Camera Control Pro 2 (optional) for remote camera operation, ViewNX (provided) for browsing, and Capture NX 2 (optional) for developing the greatest potential of NEF (RAW) postproduction processing and photographic editing.



60 million
NIKKOR

Flagship Reliability and Improved Operation



■ Approx. 100% frame coverage

The D3S's large prism gives you the FX-format visual advantage when you shoot. The viewfinder image is not only large and bright, but the focusing screen is also carefully designed to help you to intuitively sense sharp focus, be it manual or autofocus.



■ Magnesium alloy: rugged dependability

The body, exterior cover, chassis and mirror box are comprised of strong-yet-lightweight magnesium alloy to perform in demanding real-world conditions and assure superb, reliable performance and longer life.



■ Comprehensive sealing against dust, moisture and electromagnetic waves

Assured protection against invasive moisture, dust and even electromagnetic interference. A comprehensive series of O-rings and other specialized seals, combined with additional Nikon engineering, keeps you shooting when lesser cameras would fail.



■ Shutter durability

For the reliability professionals demand, the shutter of the D3S has been tested for 300,000 cycles. And to ensure rigorous real-world conditions, the testing is always performed on fully assembled cameras.



■ Self-diagnostic shutter

Shutter speeds range from 1/8,000 s to 30 s with an internal mechanism that automatically monitors and corrects possible variances between the designated shutter speed and the actual shutter timing over the shutter mechanism's life span.



■ Mirror balancer

Minimizes mirror bounce and extends viewing time, which allows more time for AF operation – one reason why the D3S can offer autofocus and Focus Tracking even at high-speed continuous shooting.



■ Info button

Makes it easy to view and change settings. Push once to see the settings. Push again for a direct shortcut to the menu page of the camera setting you want to alter.



■ Live View button

The dedicated Live View button gives you instant access, offering two Live View modes: Tripod mode for accurate AF operation and Hand-held mode for more versatile shooting angles. The speed for Contrast-detect AF in Tripod mode has also been improved for enhanced practicality.



■ 7.5 cm (3-in.), approx. 921k-dot color, 170° viewing angle LCD monitor

The large, high-resolution LCD monitor delivers bright, crisp image playback with up to 27x enlargement for immediate and precise image confirmation. Each LCD is covered with scratch resistant tempered glass and individually calibrated and fine-tuned at the factory to deliver consistent performance.



■ Quiet Shutter-release mode

Imagine a scene where silence is essential. Simply select "Q" on the release mode dial and reduce the sound of the camera's mirror-down during shooting.



■ Twin CF card slots

Record two full CF cards of data, record the same data onto two cards (backup), record RAW and JPEG simultaneously onto separate cards, and transfer data from one card to another. You can also designate the slot for data-heavy D-Movie recording.



■ Long-life battery

The D3S uses EN-EL4a rechargeable batteries. Power consumption and power management systems have been engineered for greater operating efficiency, so you can expect long battery life. You can shoot up to 4,200 images* per charge.

* Based on CIPA Standards.



■ Electronic Virtual Horizon

Instant, accurate confirmation of your "horizontal level." In Live View shooting, display the Electronic Virtual Horizon on the LCD, above the monitor image, for landscape and architectural photography.



■ Extended menu banks

Store up to four combinations of exposure mode, shutter speed and aperture value. A timesaver for photographers who must regularly switch quickly between fixed camera settings according to different shooting situations.



■ Multiple exposure

You can also designate this function to the bracketing button for repeated multiple exposure operation. That way you can continue multiple exposures without coming back to the menu each time.



■ In-camera edit function

The D3S offers various retouch menus such as NEF (RAW) Processing for on-the-spot alterations, without the need of a computer. Resize function and D-Movie editing convert image data or movie clips to smaller sizes while maintaining the original – useful when transmitting speed is important.



■ Enhanced playback function

Review images in a variety of useful ways. The thumbnail display shows up to 72 frames at a time for quicker search and select. The D3S can also check histograms of a selected and magnified portion of an image.



■ 1.2x crop mode

When you need both the telephoto effect and a large enough file size, use 1.2x (30 x 20) format with approx. 8.4 megapixels.

Type	
Type	Single-lens reflex digital camera
Lens Mount	Nikon F mount (with AF coupling and AF contacts)
Picture Angle	Equivalent to angle produced by lens focal length (1.5 times when DX format is selected)

Effective Pixels	
Effective Pixels	12.1 million

Image Sensor	
Image Sensor	CMOS sensor, 36.0 x 23.9 mm; Nikon FX format
Total Pixels	12.87 million
Dust-reduction System	Image Sensor Cleaning, Image Dust Off reference data (optional Capture NX 2 software required)

Storage			
Image Size (pixels)			
Image area	Large	Medium	Small
FX format (36 x 24)	4,256 x 2,832	3,184 x 2,120	2,128 x 1,416
1.2x (30 x 20)	3,552 x 2,368	2,656 x 1,776	1,776 x 1,184
DX format (24 x 16)	2,784 x 1,848	2,080 x 1,384	1,392 x 920
5:4 (30 x 24)	3,552 x 2,832	2,656 x 2,120	1,776 x 1,416

File Format	
1) NEF (RAW)*: 12 or 14 bit, lossless compressed, compressed, or uncompressed, 2) TIFF (RGB), 3) JPEG: JPEG-Baseline compliant with fine (approx. 1:4), normal (approx. 1:8), or basic (approx. 1:16) compression (Size priority); Optimal quality compression available, 4) NEF (RAW) + JPEG: Single photograph recorded in both NEF (RAW) and JPEG formats	
* Can be processed with in-camera NEF (RAW) Processing function, or by using software such as ViewNX (supplied) or Capture NX 2 (optional).	

Picture Control System	
Four setting options: Standard, Neutral, Vivid, Monochrome; each option can be adjusted	

Storage Media	
CompactFlash (Type I, compliant with UDMA)	
Slot 2 can be used for overflow or backup storage or for separate storage of NEF (RAW) and JPEG images; pictures can be copied between cards	
File System	
Compliant with DCF 2.0, DPOF, Exif 2.21, and PictBridge	

Viewfinder	
Viewfinder	Eye-level pentaprism single-lens reflex viewfinder
Frame Coverage	FX (36x24): Approx. 100% (vertical/horizontal), 1.2x (30x20): Approx. 97% (vertical/horizontal), DX (24x16): Approx. 97% (vertical/horizontal), 5:4 (30x24): Approx. 100% (vertical) and approx. 97% (horizontal)
Magnification	Approx. 0.7x (50mm f/1.4 lens at infinity; -1.0 m ⁻¹)
Eye point	18 mm (-1.0 m ⁻¹)
Diopter Adjustment	-3 to +1 m ⁻¹
Focusing Screen	Type B BriteView Clear Matte VI screen with AF area brackets
Reflex Mirror	Quick return
Depth-of-field Preview	When Pv (depth-of-field preview) button is pressed, lens aperture can be stopped down to value selected by user (A and M modes) or value selected by camera (P and S modes)
Lens Aperture	Instant return, electronically controlled

Lens	
Compatible Lenses	1) Type G or D AF NIKKOR*: All functions supported (PC Micro-NIKKOR does not support some functions), 2) DX NIKKOR: All functions supported except FX-format (36x24)/1.2x (30x20)/5:4 (30x24) image size, 3) Other AF NIKKOR*: All functions supported except 3D color matrix metering II, 4) AI-P NIKKOR: All functions supported except autofocus and 3D color matrix metering II, 5) Non-CPU: Can be used in exposure modes A and M; color matrix metering and aperture value display supported if user provides lens data (AI lenses only) Electronic rangefinder can be used if maximum aperture is f/5.6 or faster *1. IX-NIKKOR lenses cannot be used *2. Excluding AF-NIKKOR lenses for F3AF

Shutter	
Type	Electronically-controlled vertical-travel focal-plane shutter
Speed	1/8,000 to 30 s in steps of 1/3, 1/2 or 1 EV, bulb, X250
Flash Sync Speed	X = 1/250 s; flash synchronization at up to 1/250 s

■ Nikon Digital SLR Camera D3S Specifications ■

Release	
Release Modes	1) Single-frame [S] mode, 2) Continuous Low-speed [CL] mode, 3) Continuous High-speed [CH] mode, 4) Quiet Shutter-release mode [Q], 5) Self-timer [Ⓢ] mode, 6) Mirror-up [Mup] mode
Frame Advance Rate (CIPA Guidelines)	• DX (24x16): Up to approx. 9 fps (CL) or approx. 9 to 11 fps (CH) • Other image areas: Up to approx. 9 fps
Self-timer	Electronically controlled timer with duration of 2, 5, 10 or 20 s

Exposure	
Metering	TTL full-aperture exposure metering using 1,005-pixel RGB sensor
Metering System	1) Matrix: 3D color matrix metering II (type G and D lenses); color matrix metering II (other CPU lenses); color matrix metering (non-CPU lenses if user provides lens data) 2) Center-Weighted: Weight of 75% given to 12-mm circle in center of frame, diameter of circle can be changed to 8, 15 or 20 mm, or weighting can be based on average of entire frame (non-CPU lenses use 12-mm circle or average of entire frame) 3) Spot: Meters 4-mm circle (about 1.5% of frame) centered on selected focus point (on center focus point when non-CPU lens is used)
Metering Range	1) 0 to 20 EV (Matrix or center-weighted metering), 2) 2 to 20 EV (Spot metering) (ISO 100 equivalent, f/1.4 lens, at 20°C/68°F)

Exposure Meter Coupling	
Combined CPU and AI	
Exposure Modes	
1) Programmed Auto (P) with flexible program, 2) Shutter-Priority Auto (S), 3) Aperture-Priority Auto (A), 4) Manual (M)	
Exposure Compensation	
±5 EV in increments of 1/3, 1/2 or 1 EV	
Exposure Bracketing	
2 to 9 frames in steps of 1/3, 1/2, 2/3 or 1 EV	
Exposure Lock	
Exposure locked at detected value with AE-L/AF-L button	
ISO Sensitivity	
ISO 200 to 12800 in steps of 1/3, 1/2 or 1 EV; can also be set to approx. 0.3, 0.5, 0.7 or 1 EV (ISO 100 equivalent) below ISO 200 or to approx. 0.3, 0.5, 0.7, 1, 2 or 3 EV (ISO 102400 equivalent) above ISO 12800; auto ISO sensitivity control available	
Active D-Lighting	
Can be selected from [Auto], [Extra high], [High], [Normal], [Low] or [Off]	
ADL Bracketing	
2 frames using selected value for one frame or 3 to 5 frames using preset values for all frames	

Focus	
Autofocus	Nikon Multi-CAM 3500FX autofocus sensor module with TTL phase detection; 51 focus points (including 15 cross-type sensors); AF fine tuning possible
Detection Range	-1 to +19 EV (ISO 100 at 20°C/68°F)
Lens Servo	1) Autofocus: Single-servo AF (S); Continuous-servo AF (C); predictive focus tracking automatically activated according to subject status, 2) Manual focus (M) with electronic rangefinder
Focus Point	Can be selected from 51 or 11 focus points
AF-area Mode	1) Single-point AF, 2) Dynamic-area AF [number of AF points: 9, 21, 51 (3D-tracking)], 3) Auto-area AF
Focus Lock	Focus can be locked by pressing AE-L/AF-L button or by pressing shutter-release button halfway (Single-servo AF)

Flash	
Flash Control	1) TTL: i-TTL balanced fill-flash and standard i-TTL flash for digital SLR using 1,005-pixel RGB sensor are available with SB-900, 800, 700, 600 or 400 2) Auto aperture (AA): Available with SB-900, 800 and CPU lens 3) Non-TTL auto (A): Available with SB-900, 800, 28, 27 or 22S 4) Range-priority manual (GN): Available with SB-900, 800 or 700
Flash Modes	1) Front curtain sync, 2) Slow sync, 3) Rear-curtain sync, 4) Red-eye reduction, 5) Red-eye reduction with slow sync
Flash Bracketing	2 to 9 frames in steps of 1/3, 1/2, 2/3 or 1 EV
Flash-ready Indicator	Lights when Speedlight such as SB-900, SB-800, SB-700, SB-600, SB-400, SB-80DX, SB-28DX or SB-50DX is fully charged; blinks after flash is fired at full output
Accessory Shoe	ISO 518 hot-shoe with sync and data contacts, and safety lock
Nikon Creative Lighting System (CLS)	Advanced Wireless Lighting supported with SB-900, SB-800, SB-700 or SU-800 as commander and SB-900, SB-800, SB-700, SB-600 or SB-R200 as remotes; Auto FP High-Speed Sync and modeling illumination supported with all CLS-compatible flash units except SB-400; Flash Color Information Communication and FV lock supported with all CLS-compatible flash units
Sync Terminal	ISO 519 sync terminal with locking thread

White Balance	
White Balance	Auto (TTL white balance with main image sensor and 1,005-pixel RGB sensor), Incandescent, Fluorescent (7 options), Direct Sunlight, Flash, Cloudy, Shade, preset manual (up to 5 values can be stored), and color temperature setting (2,500 K to 10,000 K), all with fine tuning
White Balance Bracketing	2 to 9 frames in steps of 1, 2 or 3

Live View	
Modes	Tripod, Hand-held
Autofocus	• Tripod: Contrast-detect AF anywhere in frame • Hand-held: TTL phase-detection AF with 51 focus points (including 15 cross-type sensors)
Flicker Reduction	50 Hz and 60 Hz

Movie	
Frame Size (pixels)	1,280 x 720/24 fps, 640 x 424/24 fps, 320 x 216/24 fps
File Format	AVI
Compression Format	Motion-JPEG
Audio	Microphone sensitivity can be adjusted
ISO Sensitivity	ISO 200 to 12800 (ISO 6400 to Hi 3 in high-sensitivity movie mode)

Monitor	
LCD Monitor	7.5 cm (3-in.), approx. 921k-dot (VGA), 170-degree wide-viewing-angle, 100% frame coverage, low-temperature polysilicon TFT LCD with brightness adjustment

Playback	
Playback Function	Full-frame and thumbnail (4, 9 or 72 images) playback with playback zoom, movie playback, slide show, histogram display, highlight display, auto image rotation, image comment (up to 36 characters), and voice memo input and playback

Interface	
USB	Hi-Speed USB
Video Output	NTSC or PAL; simultaneous playback from both the video output and on the LCD monitor available
HDMI Output	Type C HDMI connector; camera monitor turns off when HDMI cable is connected
Audio Input	Stereo mini-pin jack (3.5-mm diameter)
10-pin Remote Terminal	Can be used to connect optional remote control, GPS Unit GP-1 or GPS device compliant with NMEA 0183 version 2.01 and 3.01 (requires optional GPS Cable MC-35 and cable with D-sub 9-pin connector)

Supported Languages	
Supported Languages	Chinese (Simplified and Traditional), Czech, Danish, Dutch, English, Finnish, French, German, Indonesian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish

Power Source	
Battery	One Rechargeable Li-ion Battery EN-EL4a/EL4
AC Adapter	AC Adapter EH-6/EH-6a/EH-6b (optional)

Tripod Socket	
Tripod Socket	1/4 in. (ISO 1222)

Dimensions/Weight	
Dimensions (W x H x D)	Approx. 159.5 x 157 x 87.5 mm (6.3 x 6.2 x 3.4 in.)
Weight	Approx. 1,240 g/2 lb. 12 oz. without battery, memory card, body cap or accessory shoe cover

Operating Environment	
Temperature	0-40°C/32-104°F
Humidity	Under 85% (no condensation)

Accessories	
Supplied Accessories*	Rechargeable Li-ion Battery EN-EL4a, Quick Charger MH-22, USB Cable UC-E4, Audio Video Cable EG-D2, Camera Strap AN-DC5, Body Cap, Accessory Shoe Cover BS-2, Eyepiece DK-17, Battery Chamber Cover BL-4, USB Cable Clip, Software Suite CD-ROM * Supplied accessories may differ depending on country or area
Main Optional Accessories	Wireless Transmitter WT-4A/B/C/D/E*, GPS Unit GP-1, Magnifying Eyepiece DK-17M, AC Adapter EH-6/EH-6a/EH-6b, Stereo Microphone ME-1, Capture NX 2 Software, Camera Control Pro 2 Software, Image Authentication Software * Product name varies according to region, depending on local frequency channels available

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