16.2 MEGAPIXEL FX-FORMAT CMOS SENSOR

Image Sensor

Newly Developed Nikon FX CMOS Sensor
  - 36.0mm x23.9mm

16.2 Million Effective Pixels
  - Total pixels 16.6MP

Lo1 (ISO 50 Equivalent)
  - Base ISO 100 (normal range)

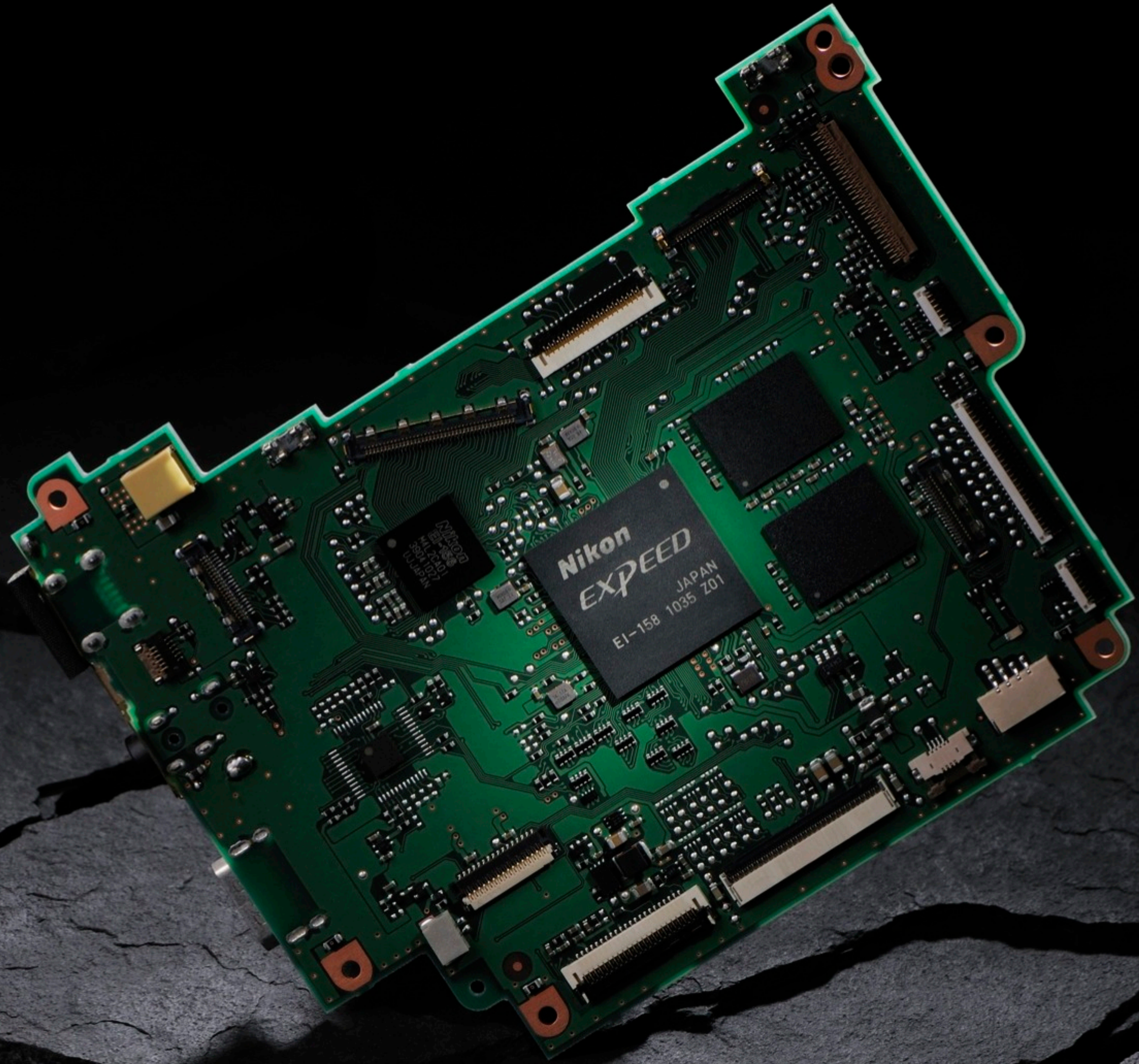**Hi 4 (ISO 204,800 Equivalent)**
  - Hi ISO 12,800 (normal range)

Live View supported

Full HD video supported

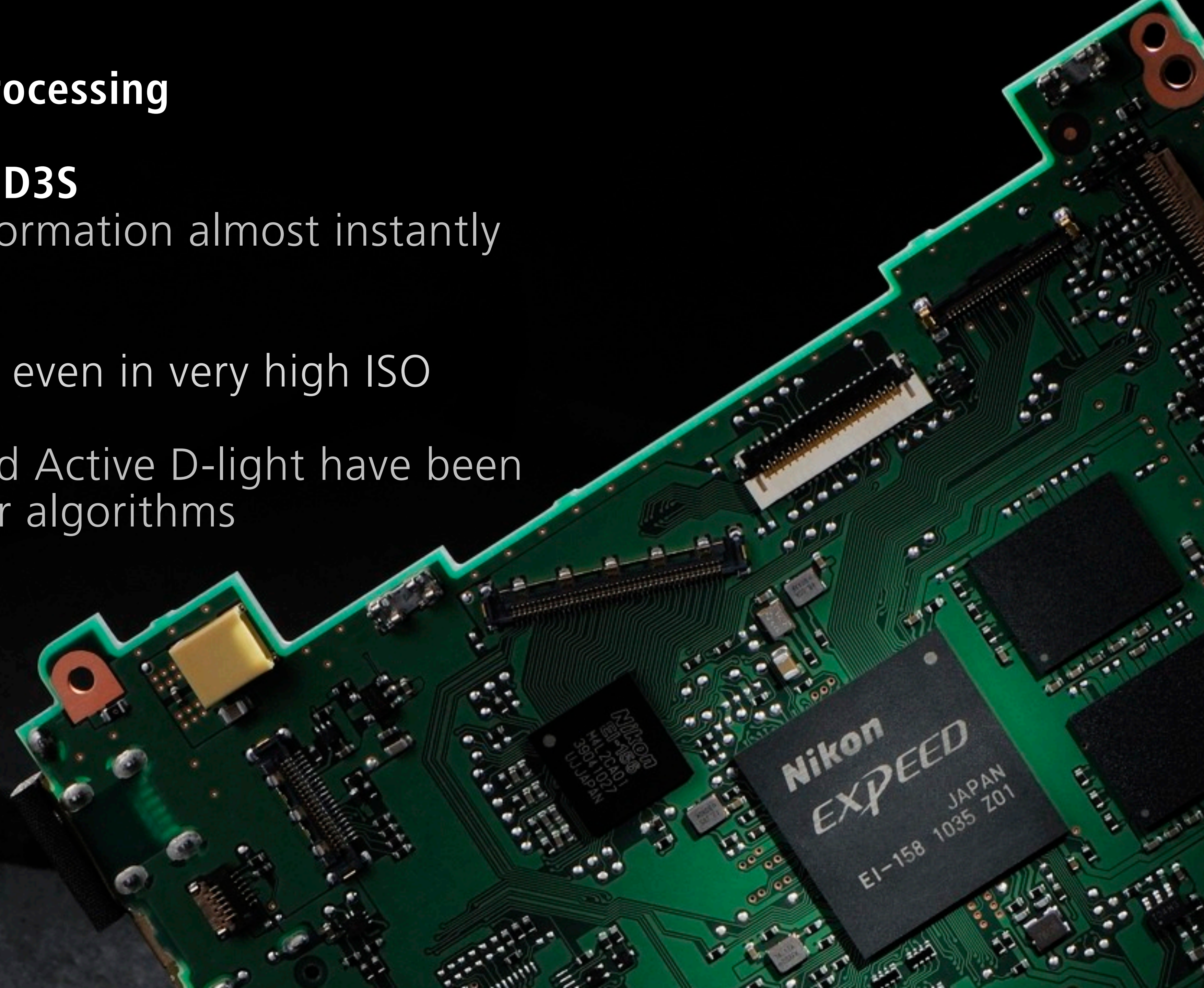**Up to 11fps**
  - 10fps with AF/AE
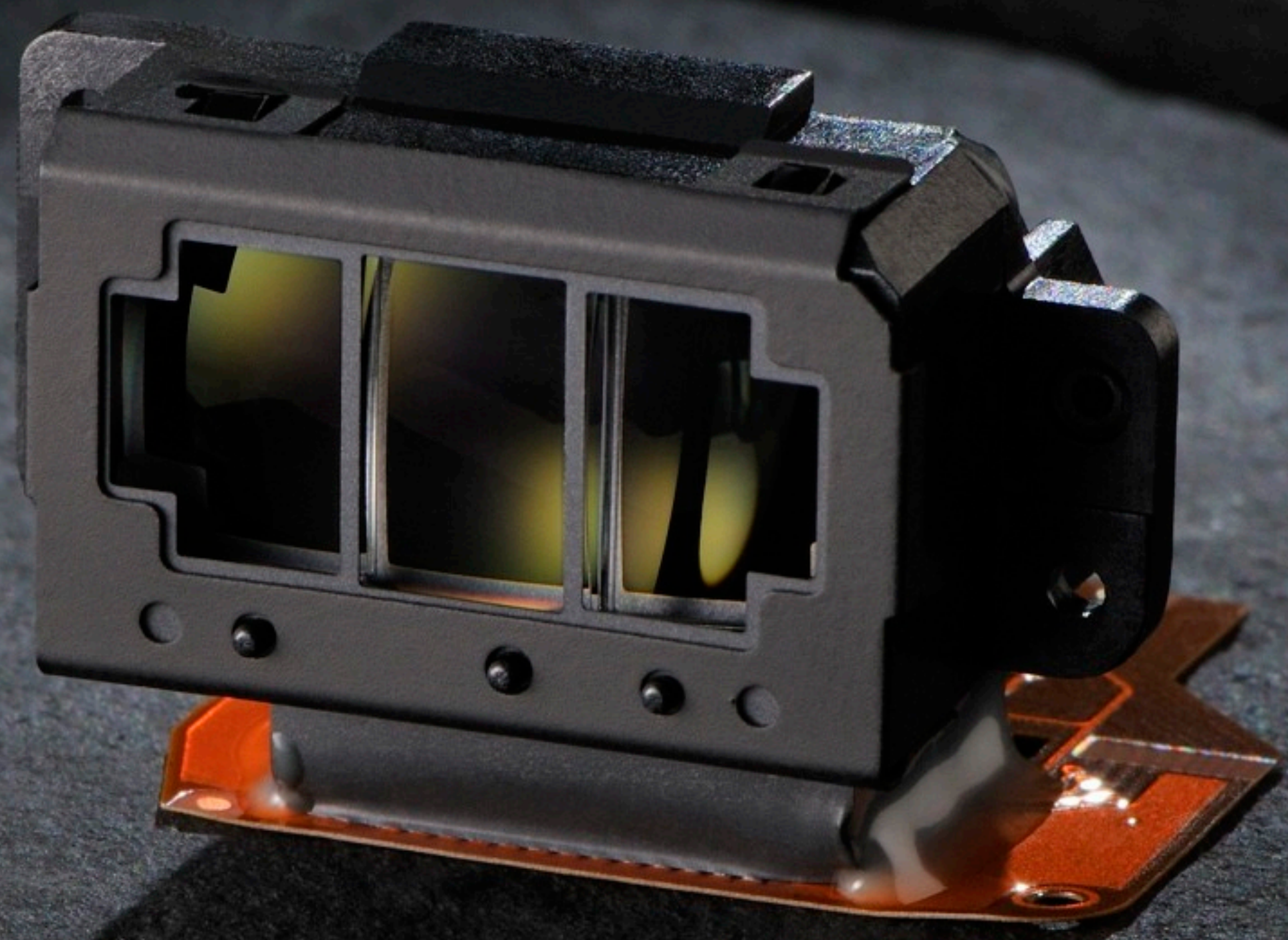
EXPEED 3 Image Processing

Significantly faster than D3S
  - Able to process information almost instantly

Superb noise reduction
  - Cleaner movie files even in very high ISO settings
  - Noise reduction and Active D-light have been improved with better algorithms

Redesigned Advanced Multi-cam 3500 FX

51 AF points
    -15 Cross hair points in the centre
    - Faster acquisition time
    - Improved subject tracking

Improved lowlight performance
    - Now operates in very low light (-2EV)
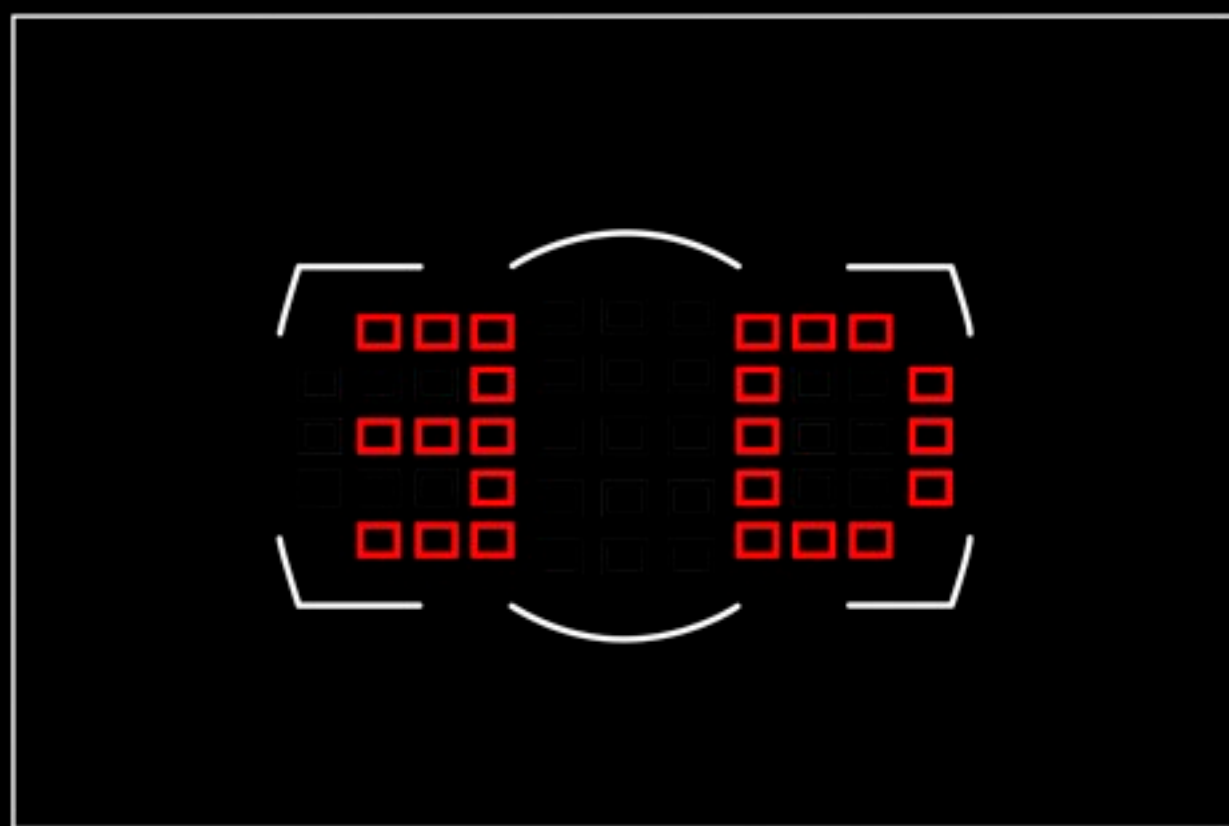   enabling use even under moonlight

Redesigned AF switch
    - Photographer doesn't need to take their eye
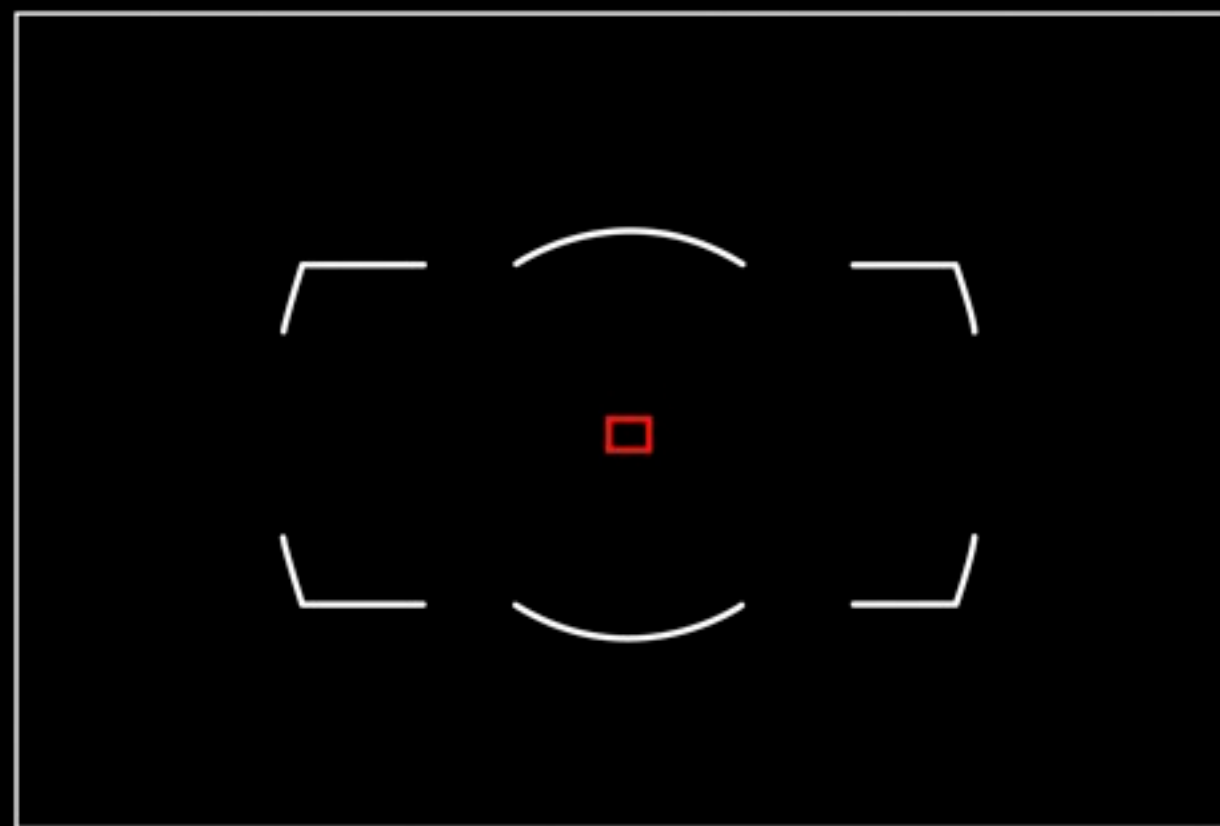   away from the viewfinder to switch modes

Impossible to select conflicting options
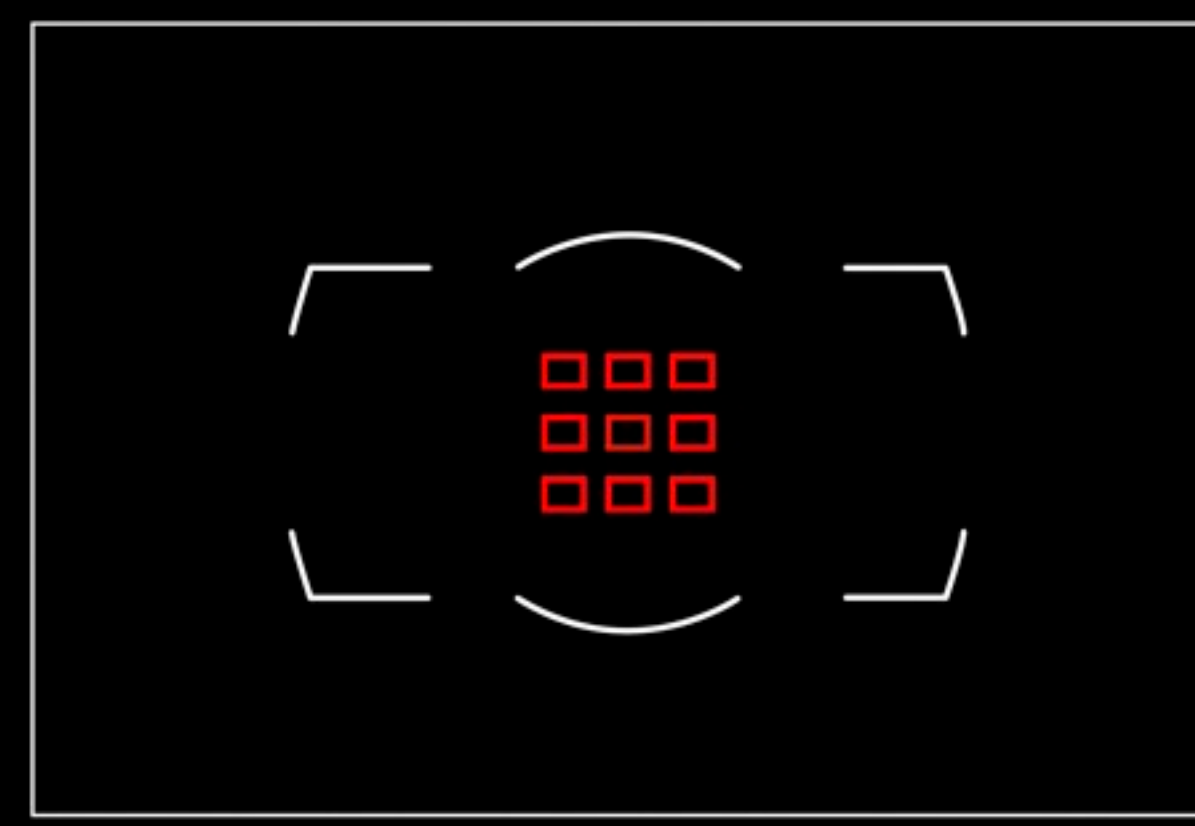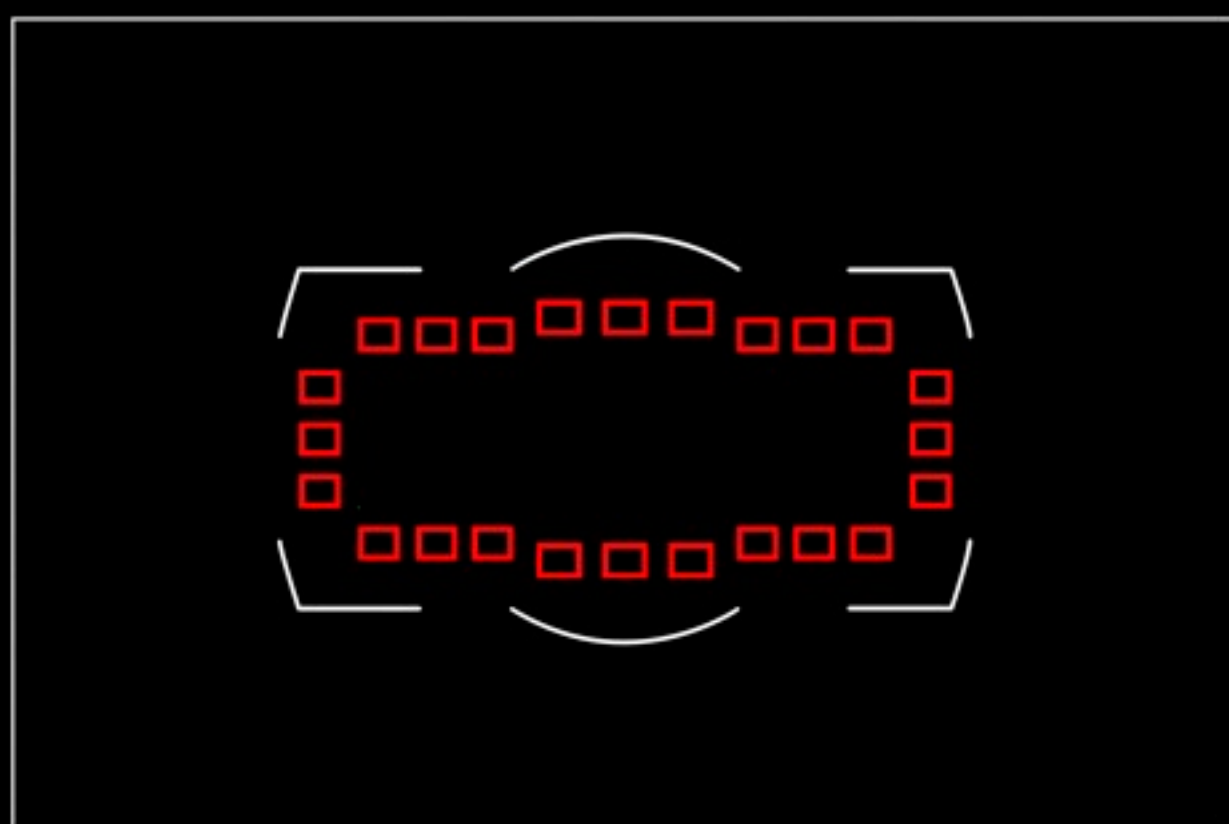   - Conflicting options cant be chosen

3D Colour Tracking

Single Point

9 Point Tracking

Auto Area
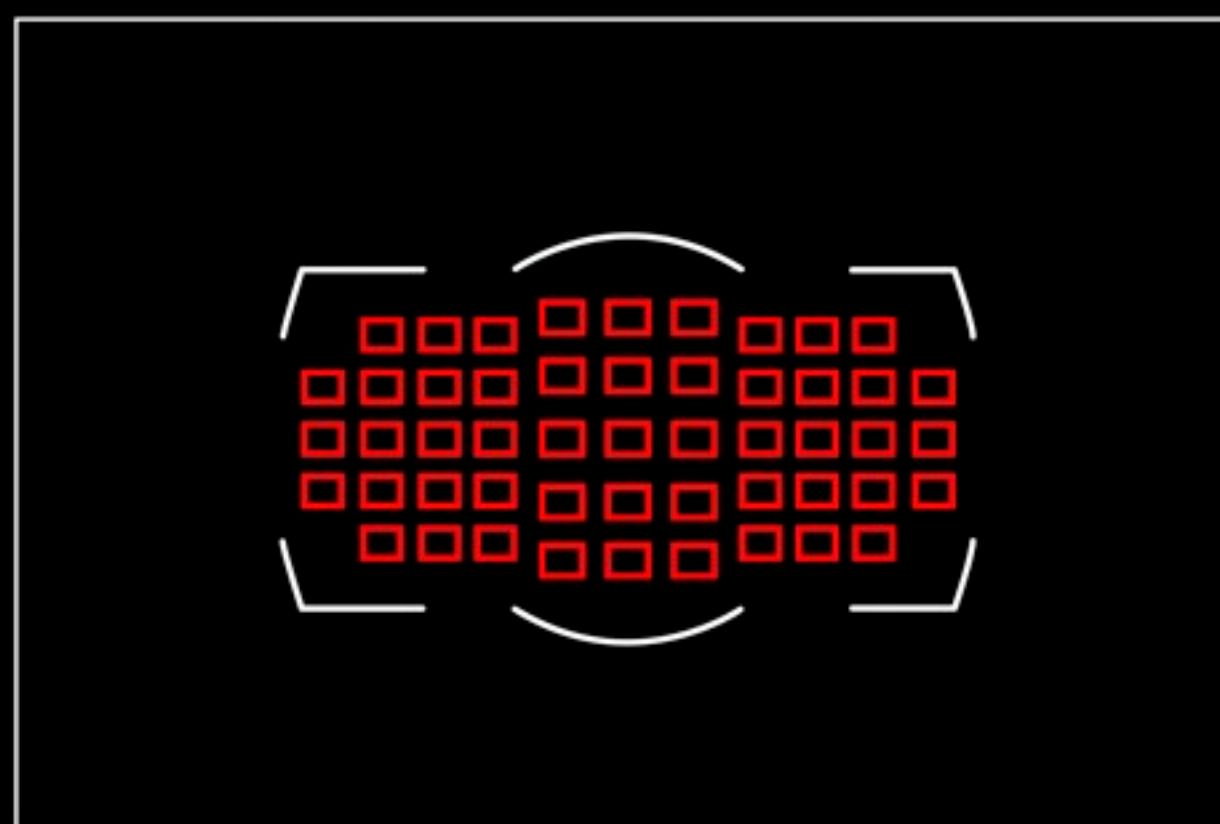
51 Point Tracking
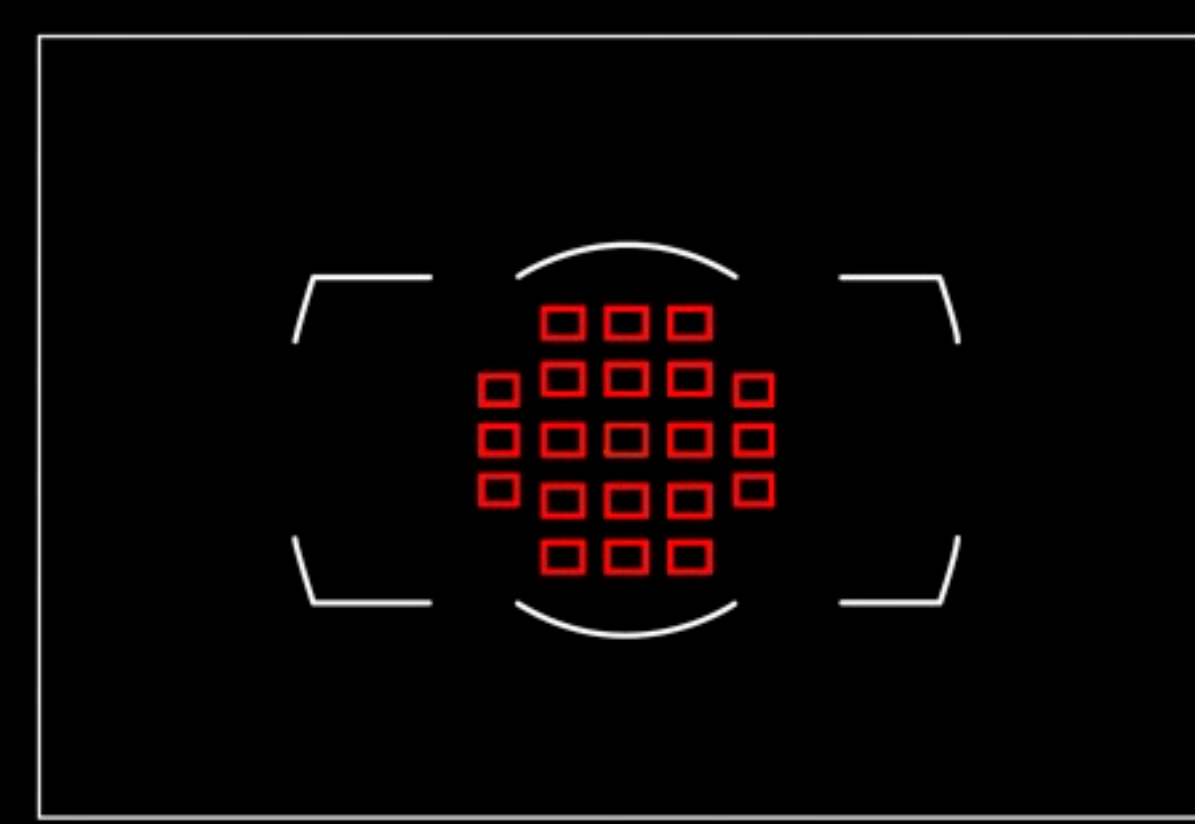
21 Point Tracking

Lens	TC-14E II	TC-17E II	TC-20E III
600mm f4	840mm f5.6 all 51 focus points	1020mm f6.7 15 points and 9 cross	1200mm f8 11 points 1 cross
500mm f4	700mm f5.6 all 51 focus points	850mm f6.7 15 points and 9 cross	1000mm f8 11 points 1 cross
200-400mm f4	280-560mm f5.6 all 51 focus points	340-680mm f6.7 15 points and 9 cross	400-800mm f8 11 points 1 cross
400mm f2.8	560mm f4 all 51 focus points	680mm f4.8 all 51 focus points	800mm f5.6 all 51 focus points
300mm f2.8	420mm f4 all 51 focus points	510mm f4.8 all 51 focus points	600mm f5.6 all 51 focus points
200mm f2	280mm f2.8 all 51 focus points	340mm f3.3 all 51 focus points	400mm f4 all 51 focus points
70-200 f2.8	98-280mm f4 all 51 focus points	119-340mm f4.8 all 51 focus points	140-400mm f5.6 all 51 focus points

Advanced Scene Recognition System

3D Colour Matrix Metering III

New 91k pixel metering sensor
- Metering per pixel

Linked communication
- Image, Metering and Focus system all communicate with each other

Improved subject detection/tracking
- 3D Colour Focus Tracking, face detection, white balance, auto AF

Increased resolution and processing allow for unrivalled accuracy in difficult shooting conditions; the ability to recognise faces within the frame results in the subject being better exposed, even with a backlit background.
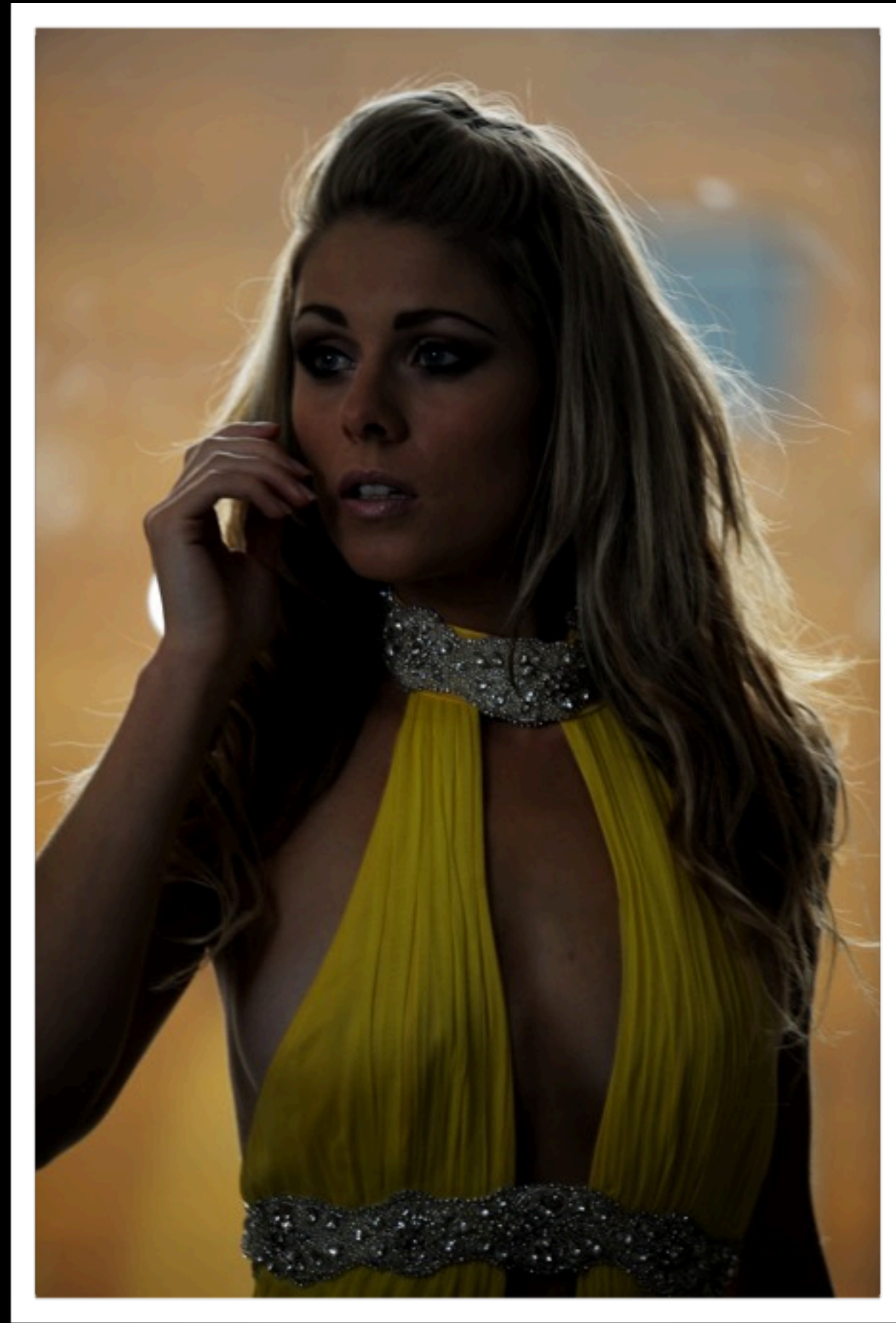
With conventional model
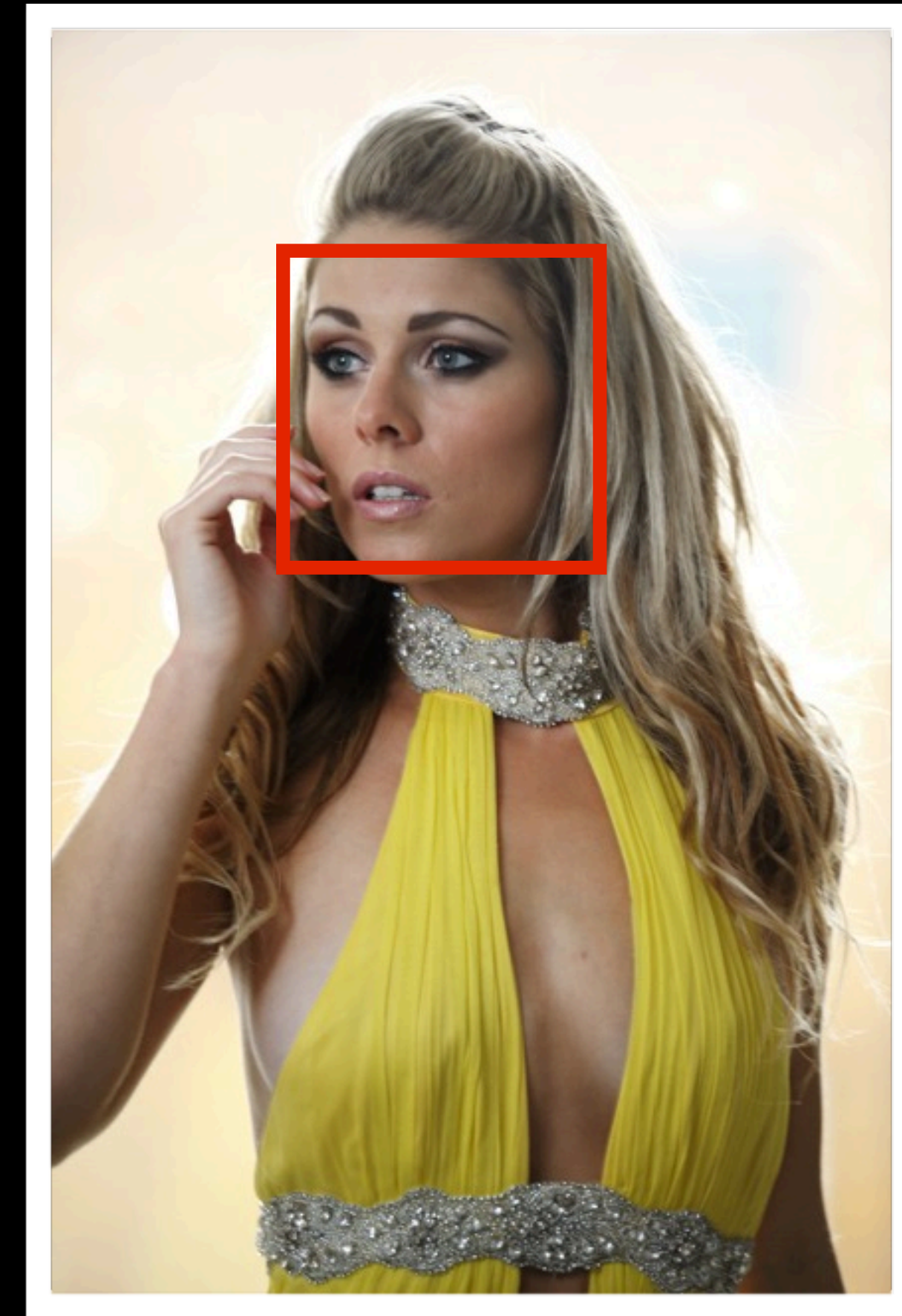
D4 with face detection information applied

Ergonomics

New AF control switches
- Aids quick repositioning of AF point

Vertical shooting improved
- Control layout is mirrored for improved ergonomics in both landscape and portrait shooting

AF point automatically moves with orientation
- Focus point moves as camera is tilted to landscape or portrait
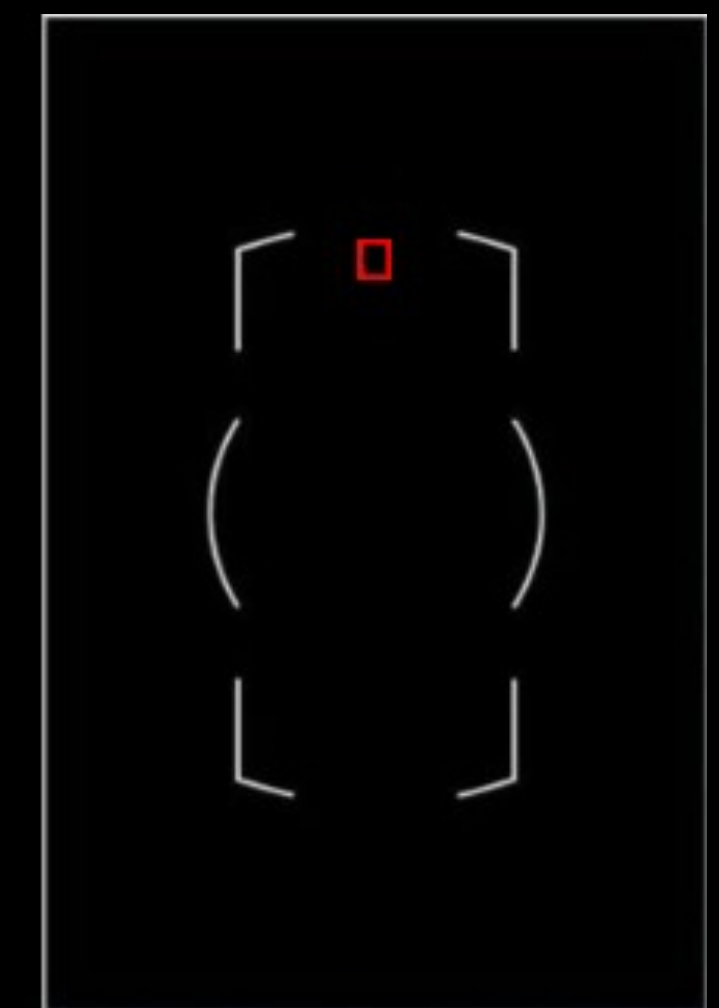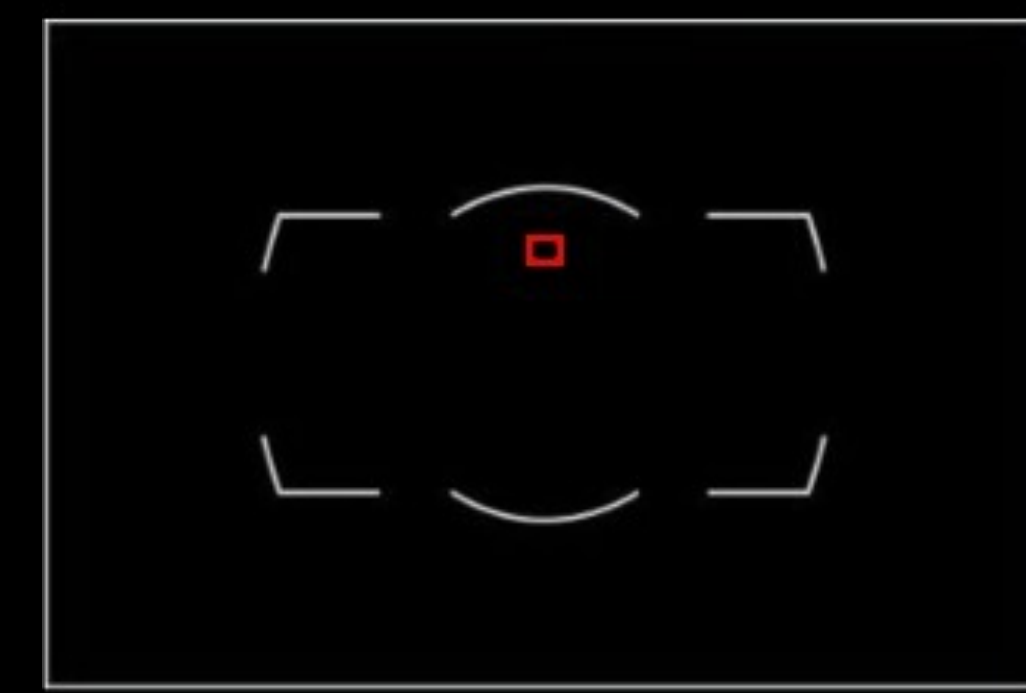
Re-designed shutter button positioning

35°

Movie Record Button

P 125 F5.6

SHOOT A
CUSTOM A CF 380 [1]

Vertical Function button

Illumination detection

New 3.2-in. LCD monitor
- Vastly improved colour range which is very close to sRGB
- 921k-dot resolution

Automatic brightness control
- A sensor automatically adjusts the brightness, contrast, saturation and gamma depending upon the ambient conditions

LCD integrated glass and panel
- Improves the viewing angle and decreases light loss by using a resin between the glass and screen

Movie Modes

Full HD 1920x1080p at 30/25/24 fps

Slow motion 60/50 fps in 1280x720p

Microphone in port
 - 20 adjustment levels and Auto

Headphone out port
 - 30 volume levels

Visual sound level monitoring

29 min. 59s maximum record time

200 - 204,800 ISO (equivalent) selectable

Manual exposure control

Index Marking
- Index data is recorded to assist with editing

Power aperture
- Available in A and M modes for smooth and quiet adjustment

Remote start/stop (via ten-pin & PC connection)

Live frame grab
- 2MP still image can be saved without stopping the recording

H.264 compression using B Frame compression data

Clean HDMI out at 1080/720
    - Offering the live view feed without compression

Dual video out
    - When shooting in 1280x720p
    both video out and HDMI out
    are possible

Time-lapse
    - The D4 not only includes a
    time-lapse function but will also
    encode the file for immediate
    playback

Multiple frame sizes
FX, DX and a pixel matched 1920x1080

Format	Focal Length (to match framing)	DOF at 3m f2.8
FX	50 mm	0.6m approx
DX	33 mm	1.5m approx
1920 x 1080	18.5 mm	10.5m approx

1920DX1080

Improved image workflow

Improved image workflow

IPTC can be added in camera
- 14 fields available and 10 presets

Wired Lan port built in
- Supports10 BaseT / 100 Base TX

Improved network set-up wizard
- FTP and PC control
- New HTTP Mode

GPS adapter GP-1 compatible
- Can be set to update internal clock from GPS signal

New WT-5 wireless transmitter

Supports 802.11 a/b/g/n
- Works with infrastructure and Ad-hoc networks

Linked release mode
- Up to 10 remote units can be triggered simultaneously

New HTTP mode supported
- FTP and PC control also available

WT-4 also supported

Just one more thing.....

Just one more thing.....

iPad

iPhone

iPhone and iPad compatibility

Remote control of:
- Shutter
- Shooting modes P,S,A,M
- Live View
- ISO
- Focus modes
- Metering
- White Balance
- File format
- Focus position
- Movie start/stop

Remote viewer
- Browse
- Slideshow
- Download

Further features

Newly developed shutter mechanism

Tested to 400,000 cycles
- Release time lag of 0.042sec (based on CIPA Guidelines)

Power saving design
- Re-designed to drain minimal power during live view / movie operation

Faster shooting operation in Live View
- The new design allows for a quicker return to live view after taking a picture

Improved battery performance
- Despite a lower capacity battery the D4 out performs the D3S in continuous mode (approx 5,500 - approx 2,600 in single frame mode CIPA standard)
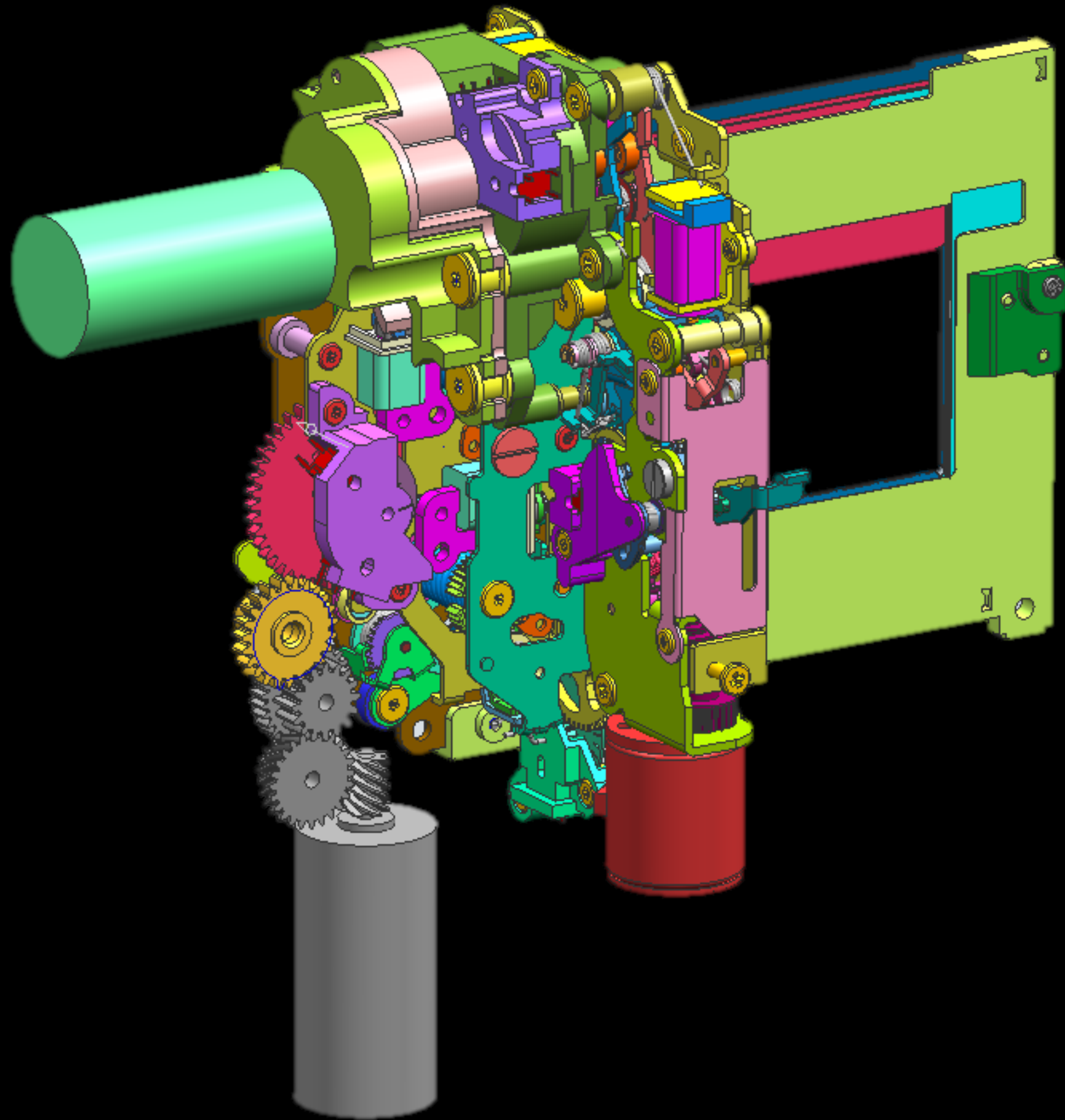
Two Axis Virtual Horizon
Can be displayed on LCD or via Viewfinder

LiveView

Viewfinder

Dual card memory slots
    - One for CF and one for XQD

Compatible with UDMA 7 CF cards

New XQD memory
    - Announced by Compact Flash Association as the advancement of CF cards

Simultaneous recording
    - Overflow, Backup, RAW/JPEG, Copying and Movie recording selectable

Super high speed data transfer
- 125MB/s the fastest in the industry

Camera / Card	RAW (compressed)	JPEG Large Fine
D4/XQD	98 shots (approx. 10 sec)	170 shots (approx. 17 sec)
D4/UDMA 7	79 shots (approx. 8 sec)	130 shots (approx. 13 sec)
D3S/Extreme IV	43 shots (approx. 4.3 sec)	82 shots (approx. 9.1 sec)

D4 Summary

Picture quality:
- Newly developed Nikon FX-format CMOS sensor *[NEW]*
- Effective pixels: 16.2 million (recording pixels: 16.2 million) *[NEW]*
- Wide sensitivity range of ISO 100 to 12800
  Can be decreased down to ISO 50 equivalent (Lo 1), or increased up to ISO 204800 equivalent (Hi 4) *[NEW]*
- Further improved image-processing engine EXPEED 3 *[NEW]*
- Advanced Scene Recognition System *[NEW]* enhanced with the new 91K-pixel RGB sensor *[NEW]*
  - Face detection prior to exposure possible even in viewfinder shooting
    ⇒ can be applied to exposure control and Auto-area AF *[NEW]*
  - 3D color matrix metering Ⅲ achieves highly accurate metering based on face detection information *[NEW]*
  - Improved subject tracking performance in 3D-tracking with finer subject acquisition
- Rich gradation equivalent to current models achieved while increasing the compression ratio of compressed RAW files *[NEW]*
- Active D-Lighting employs a new option "Extra high 2" ("Extra high" is now designated as "Extra high 1") *[NEW]*
- HDR (High Dynamic Range) combines images to produce a single image with a wider dynamic range
- Auto option is added to "Minimum shutter speed" in "Auto ISO sensitivity control" menu *[NEW]*
- Refined white balance control
  - Choice of steps in color temperature setting *[NEW]*
    Finer setting in 10-Kelvin steps possible
  - White balance setting possible in the monitor *[NEW]*
    Minimizes the difference in color reproduction between resulting image using flash and monitor image,
    that is likely to occur in live view
  - Newly setting is added that enables exposure compensation in flash shooting to be applied to background brightness only *[NEW]*

High-speed performance

- Advanced AF system featuring 51 focus points
  - Advanced Multi-CAM 3500FX autofocus sensor module
  - Improved performance in subject acquisition/tracking even in low-light conditions
  - Higher AF speed is achieved with new lens drive algorithm and AF drive that is activated even during shutter release
  - Refined operation in focus point, AF mode and AF-area mode selection
  - Improved operability
- 11 focus points in the central area are compatible with f/8 *[NEW]*
- Contrast-detect AF with improved operability, accuracy and speed (in live view/movie recording)
- Quick response with approx. 0.12 s* startup time and approx. 0.042 s* shutter-release time lag
  > * Based on CIPA Guidelines
- High-speed continuous shooting at approx. 11 fps* (without AE/AF) or 10 fps* (with AE/AF) in FX format *[NEW]*
  > * Based on CIPA Guidelines
- Greatly increased number of images taken in continuous shooting *[NEW]*
- Dual card slots — one for CF card, one for new memory card *[NEW]*
  - XQD memory card realizes approx. 100 shots in continuous shooting for compressed RAW (12 bit) images
- Higher workflow speed of photographers *[NEW]*
  - Wired LAN function incorporated in the body *[NEW]*
  - Wireless Transmitter WT-5A/B/C/D *[NEW]*/WT-4A/B/C/D/E (both optional) supported
- Wired LAN transmission capability besides wireless LAN support *[NEW]*
- New shutter/mirror/diaphragm drive mechanism to support high-speed operation *[NEW]*

Superior operability

- Glass pentaprism viewfinder with approx. 100% frame coverage and approx. 0.7x magnification
- Approx. 921k-dot, wide-viewing angle, 8-cm/3.2-in. LCD monitor with reinforced glass *[NEW]*
  - Automatic monitor brightness control with ambient brightness sensor
  - Easier-to-use live view functions
    - Live view button: enables start/stop of still image live view and movie Live View
    - LV (live view) selector: selects still image live view or movie live view *[NEW]*
    - Contrast-detect AF possible: AF-S/AF-F (full-time-servo AF), face-priority AF/subject-tracking AF available
    - Silent shutter-release option makes the shutter release virtually noise-free in live view photography
- Four types of image area: FX format, DX format, 5:4, 1.2x (same as D3S)
- Improved grip holding, inclined shutter-release button and flat design of the power switch
- "Sub-selector" for horizontal shooting and "Multi selector for vertical shooting" are newly employed for efficient operation *[NEW]*
- Picture Control button (doubles as Protect/Help button) enables direct setting of Picture Control *[NEW]*
- Two-axis Virtual Horizon can be displayed on LCD monitor and in viewfinder *[NEW]*
- Lightweight body further enhances mobility *[NEW]*
- Illuminated icons of controls ensure better visibility in dark situations *[NEW]*

Reliability

– Newly developed shutter unit with excellent durability proved by 400,000 cycles of shutter release testing; shutter speed up to 1/8000 s, flash synchronization up to 1/250 s *[NEW]*

– Light and rugged magnesium alloy body; dust/water-drop resistance (equivalent to D3S)

– Thermal shield finish is applied to the viewfinder to restrain temperature rise on body surface *[NEW]*

– Highly efficient energy-saving design that achieves approx. 2,600 shots[1] (with EN-EL18, in Single-frame mode), and approx. 5,500 shots[2] (with EN-EL18, in Continuous mode)

[1] Based on CIPA Standards   [2] Under Nikon's test conditions
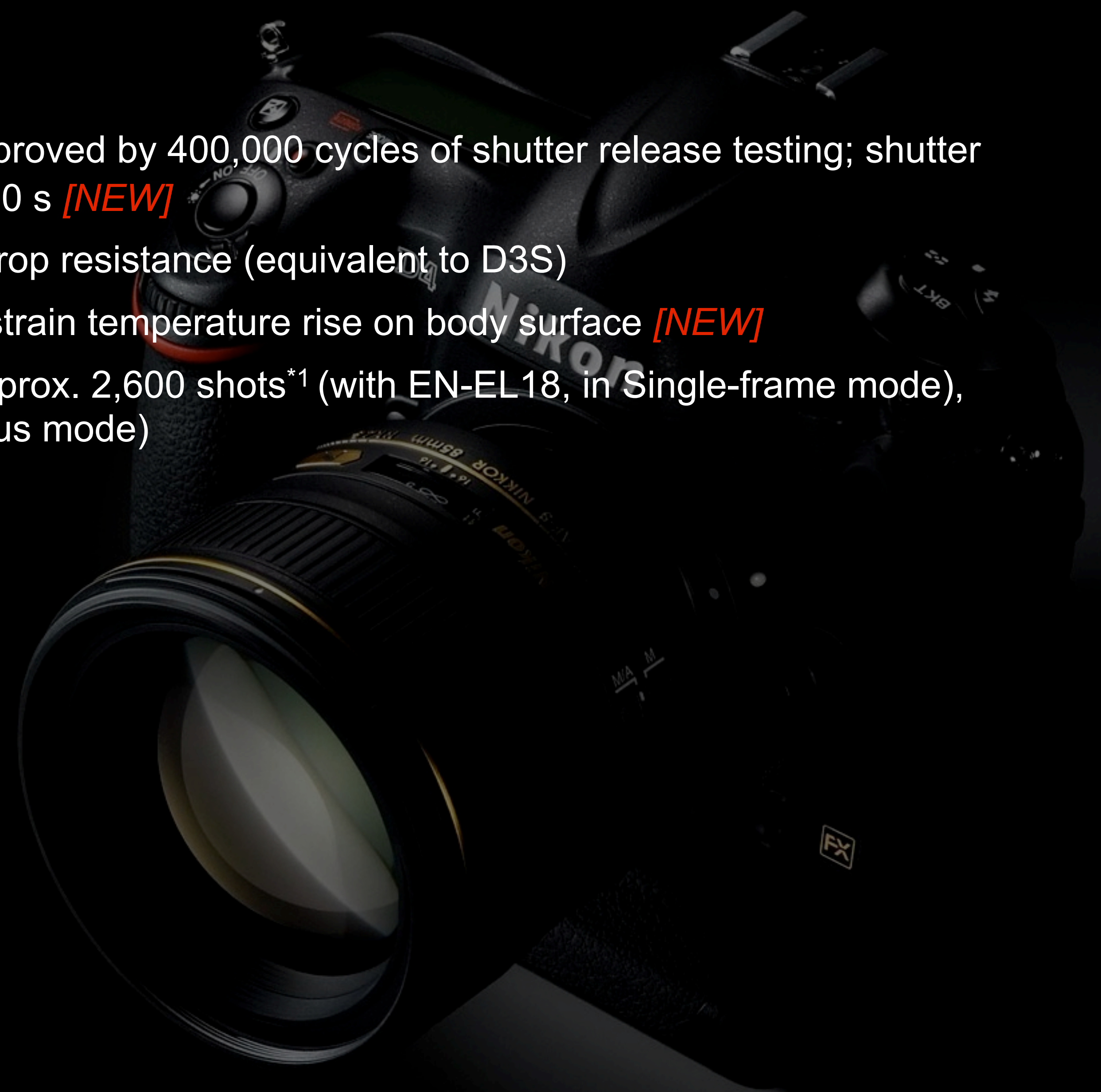
Full HD movie recording

- Full HD 1,920 x 1,080/30p supported: outstanding image quality in Full HD 1,080p size with rich gradation
- Max. recording time of approx. 29 min. 59 s achieved with high compression and high image quality
- Multi-area mode Full HD D-Movie *[NEW]*

• Image size of movie can be selected from 3 options according to image area format

• New format [1,920 x 1,080 crop] *[NEW]*

- Selectable frame rate from 30p/25p/24p (1,920 x 1,080p), 60p/50p/30p/25p (1,280 x 720p), 30p/25p (640 x 424p), 30p/25p/24p (1,920 x 1,080 crop) *[NEW]*
- Smooth recording start by pressing "Movie-record button", located next to the shutter-release button *[NEW]*
- ISO sensitivity range: ISO 200 to 12800 in standard setting; can be set to ISO 204800 equivalent (Hi 4) *[NEW]*
- Contrast-detect AF: AF-S/AF-F (full-time-servo AF), face-priority AF/subject-tracking AF available
- External stereo microphone compatible
- Sound level monitor function *[NEW]*
- Increased number of steps in manual setting of microphone sensitivity: up to 20 steps *[NEW]*
- Headphone connector incorporated *[NEW]*
- Improved operability in movie editing *[NEW]*

• Start/end points can be set simultaneously *[NEW]*; selected frames can be saved as still images

- Custom setting for movies *[NEW]*

• Power aperture/Index marking/Live frame grasp/On-screen display of still image

- Improved image quality of movies

• MPEG-4 AVC/H.264 compression format and movie noise reduction function enhance movie image quality

• Setting flicker reduction to "Auto" decreases differences in metering and AWB between live view monitor image and resulting image *[NEW]*

- Time-lapse photography function *[NEW]*

Enhanced retouch menus

- Vignette control and D-Lighting available in NEF (RAW) processing

- Straighten, Distortion control, Perspective control are employed

- Functions of the D3S are inherited: D-Lighting, Red-Eye Correction, Trim, Monochrome, Filter effects, Color balance, Image overlay, NEF (RAW) processing, Resize, Movie editing (choose start/end point/save selected frame)

HDMI output supported

- HDMI mini connector employed

- Enables live view shooting while confirming images on HDTV *[NEW]*

- Images can be recorded in external hard disk connected with HDMI during live view shooting *[NEW]*

	Nikon D4	Nikon D3S
Image sensor	36.0 x 23.9 mm, CMOS	36.0 x 23.9 mm, CMOS
Effective pixels	Approx. 16.2 million	Approx. 12.1 million
Image-processing engine	EXPEED 3	EXPEED
ISO sensitivity	ISO 100 to 12800, Lo 1, Hi 1, 2, 3, 4	ISO 200 to 12800, Lo 1, Hi 1, 2, 3
AE	91K-pixel RGB sensor (Advanced Scene Recognition System)	1005 pixel
Phase-detection AF	51 points (15 cross-type sensors; 11 sensors compatible with f/8: five central focus points and three points to the left and right of them in the middle line [with f/8, center point performs as a cross sensor, other points perform as line sensors])	51 points (15 cross-type sensors; compatible with a maximum aperture of f/5.6
Continuous shooting	Approx. 11 fps (without AE/AF) Approx. 10 fps (with AE/AF) Maximum number of shots: 200	FX, 1.2x, 5:4: Approx. 9 fps (with AE/AF) DX: Approx. 11 fps (without AE/AF) Maximum number of shots: 130
Movie	H.264, Contrast-detect AF, 1,920 x 1,080/30p support, Multi-area mode Full HD D-Movie, external microphone connector, 29 min. 59 s max. recording time (full HD), headphone connector	Motion-JPEG, Contrast-detect AF, 1,280 x 720/24p support, external microphone connector, high-sensitivity movie mode (ISO 6400 to Hi 3 [ISO 102400-equivalent])
Live View	Yes; Contrast-detect AF (Face-priority AF/subject-tracking AF)	Yes; Contrast-detect AF
Image editing	Active D-Lighting, HDR, Picture Control, variety of retouch menus	Active D-Lighting, Picture Control, variety of retouch menus
Viewfinder frame coverage	Approx. 100%	Approx. 100%
LCD monitor	8-cm/3.2-in, approx. 921k-dot, LCD monitor	7.6-cm/3.0-in, approx. 921k-dot LCD
Card slots	Dual card slots for CF card + new memory card	CF card + CF card
Others	Shutter tested to 400,000 cycles (with the unit actually loaded), higher-speed workflow	Shutter tested to 300,000 cycles
Weight (approx.)	1,180 g/2 lb 9.6 oz (body only), 1,340 g/2 lb 15.3 oz (with batteries)*	1,240 g/2 lb 12 oz (body only)
Sales start	February 2012 (planned)	December 2008

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AF-S NIKKOR 85mm f/1.8G

9 elements in 9 groups

7 Rounded diaphram blades

Minimum focus 0.8m

Pricing and availability

D4 Body only:
- £4799.99 / €5658.00
- 16th February 2012 (TBC)

AF-S 85mm NIKKOR f/1.8
- £469.99 / €554.00
- 22nd March 2012 (TBC)

WT-5
- £499.99 / €589
- 16th February 2012 (TBC)

Q&A

Film by Corey Rich shot on a Nikon D4