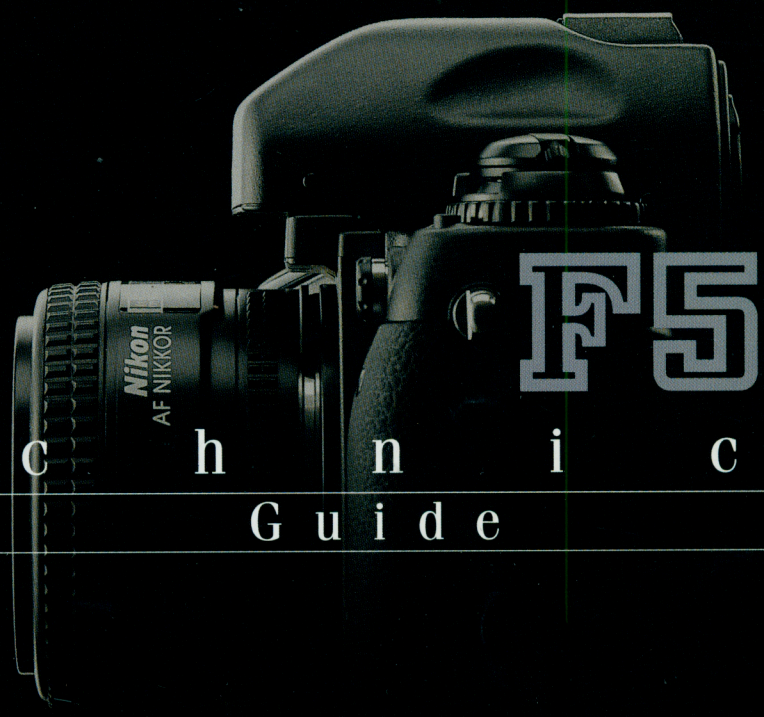


F5

Technical Guide

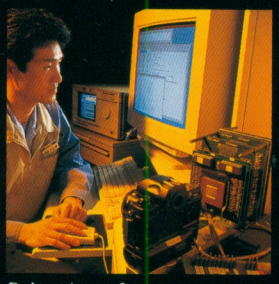
Nikon

Across an enormous range of picture-taking conditions, you'll discover that the F5 has the features you need to help you make great photos. From manual to automatic, Nikon designers have examined how pictures are made and what is needed to help make them better. That thought is at the foundation of the F5's design. If you prefer manual exposure control with autofocus, but with some exposure compensation — the F5 can do it. If you want totally automatic operation, but need to bracket in two picture increments — the F5 can do it. If your area is sports and action photography, and you need everything to operate at peak performance and fast — the F5 can do it. In short, no matter what your photo specialty — nature, commercial, portraiture, action/sports, photojournalism, scientific, industrial, forensic, studio — you'll find that the F5 has just the right combination of features and performance. And after you've learned how to use your favorite features, start experimenting and learn all about the F5's leading-edge performance. "Imported from the future," the F5 can bring your photography with you into the future of your profession.

Moreover, all the power and features of the F5 won't get in the way of your creativity. Designed to enhance your performance, you'll find each feature works naturally — intuitively. Nikon doesn't ask you to change the way you make pictures, rather, we've designed the F5 to be compatible with you and your style. Experiment with the F5 and you'll learn that the power is there for you to use, but you can always choose to do it your own way. Work manually when you need to, or go automatic when it's appropriate. Or, choose a combination of manual with automatic that meets the conditions. No other camera offers the wide combination of performance that makes the F5 such a powerful creative tool. For tomorrow's technology today, the F5 is "Imported From The Future."

IMPORTED FROM THE FUTURE


Design meeting


Debugging software


Adjusting AF sensors


Cold-resistance test

The New Standard For Professional Photography

Professional photographers who use 35mm cameras choose Nikon more often than all other brands combined; there are many good reasons why they do!

Since the first Nikon SLR camera, the Nikon F, innovative designs which help photographers expand their picture-taking potential has been at the forefront of Nikon's vision. Year after year, performance has been enhanced. Nikon's technical advances lead the market, providing greater advances for the future.

At the beginning, there was the Nikon F lens mount — a lens mount that was years ahead of its time, now incorporated into the most advanced 35mm and Electronic Imaging Professional System for the world's photographers. In recent years, we've produced the 3D Matrix Meter, Automatic Balanced Fill-Flash, and Fast Flash Sync Shutters.

Now, Nikon re-writes the book on professional photography with the F5 — a Nikon SLR that offers more for professional photography than previously imagined. With durability, speed, versatility and much more. Housed in a precision aluminum alloy chassis, the F5 is built to take the "world's worst assignments." With a combination of high-performance features that were created to surpass that of every other camera that has ever existed — not by some small amount, but by a huge margin! You'll discover that the F5 is a combination of everything you've appreciated about a fine camera, but now with the world's most advanced new technology, invented by Nikon to create the new F5 — for professionals.

Designing by CAD

Electronic circuit assembly line

Advanced Autofocus System

- New Multi-CAM1300 sensor with five focus detection areas (three of which are full-time cross-type sensors) for fast focusing with accuracy. Speed means nothing without accuracy!
- Powerful new CPU and software control operation with speed and precision.
- Two AF area modes — Dynamic AF and Single Area AF modes with the new thumb controlled focus area selector — the F5's AF operation is designed to enhance your operation. Not restrict it.
- The world's fastest autofocus at motor speeds up to eight frames per second, including Focus Tracking with Lock-On™.
- Wide Cross-Array with five sensing areas that handle both vertical and horizontal framing and action.

Advanced Exposure Metering System

A new concept in Multi-Segment Light metering with powerful software and more sensors to provide more information — new kinds of information to increase exposure accuracy to the highest level.

- 1,005 CCD pixels detect more information about scene brightness and contrast.
- Color information is also detected to enhance scene identification.
- Algorithmic patterns from a database of more than 30,000 scenes for exposure evaluation.
- The world's first Flexible Center-Weighted Meter.
- Spot Meter corresponds to AF sensor selected.

Exposure Control

- P, S, A, M, Flexible Program for ambient light and flash, Exposure Compensation, Auto Exposure/Flash Bracketing — all built in.
- Shutter speeds up to 1/8000 second.
- 1/3 EV steps for shutter speed and aperture control.

3D Multi-Sensor Balanced Fill-Flash

- Five-segment TTL flash sensor.
- Unique Monitor Pre-flash system with SB-28 and SB-27 Speedlights.
- Distance Information integration.

Advanced Performance Flash System

- Flash sync up to 1/300 second through new Custom Setting Control.
- FP High-Speed Sync capability with sync speeds from 1/250 to 1/4000 second with accessory Nikon SB-28 Speedlight.
- Slow Sync and Rear-Curtain Sync.

High-durability Design

- Floating mechanical design for smoother and quieter operation.
- Rugged and reliable construction with precision die-cast chassis, all metal outer cover with titanium viewfinder cover and resilient exterior rubberized surface for superior gripping.
- Enhanced resistance to rain and dust penetration.
- Exclusive and world's first self-diagnostic double-bladed shutter — monitors every shutter release and automatically adjusts for consistent accuracy. Tested for ruggedness and reliability to an incredible standard of 150,000 cycles.

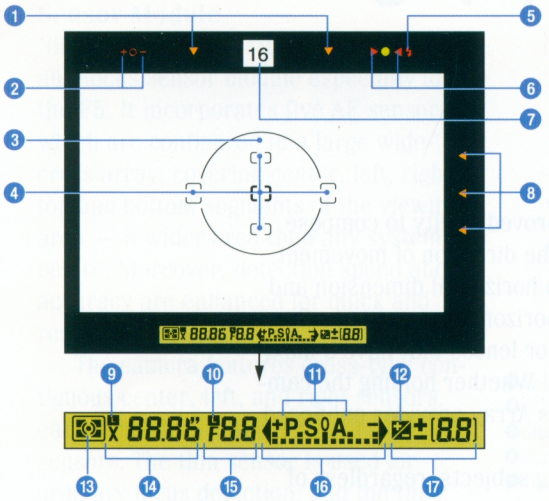
More Features Designed for Superior Performance

- 10-pin remote terminal for versatile remote control and remote camera operation.
- Dual shutter release and AF start control for horizontal and vertical handling.
- Electronically controlled depth-of-field preview function in every exposure control mode.
- Fast and quiet power film rewind (4 sec. with 36-exp. film roll*), plus totally silent manual rewind too.
- Operates with eight AA-type alkaline or lilthium batteries standard for up to 7.4 fps; or optional Ni-MH (Nickel-Metal Hydride) Battery Unit MN-30 for top 8 fps performance.
- Custom Settings for personal control of 24 optional settings.
- Personal Computer Link for additional custom settings, remote control operation and picture-taking data download.
- Nikon F mount for maximum versatility and utility.

** With optional Ni-MH battery unit MN-30 at normal temperatures.*

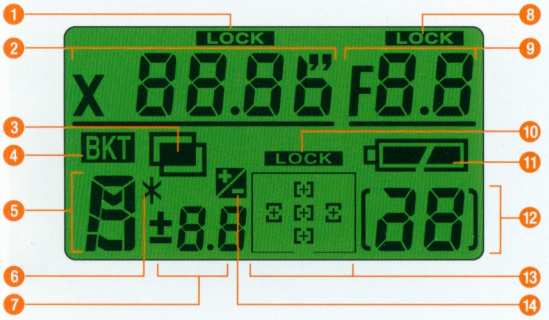
1. Exposure compensation (±) button
2. Exposure mode (**MODE**) button
3. AF area mode button (▯)
4. Sub-Command Dial
5. Depth-of-field preview button
6. Mirror lockup lever
7. Sync terminal
8. Self-timer indicator LED
9. Lens release button
10. Focus mode selector
11. Film rewind lever **2**
12. Film rewind lever **2** lock release
13. Alert LED
14. Finder release button
15. Eyepiece shutter lever
16. Viewfinder eyepiece
17. Auto Exposure/ Autofocus Lock (**AE-L /AF-L**) button
18. AF start (**AF-ON**) button
19. Main-Command Dial
20. Film cartridge confirmation window
21. Focus area selector
22. Film rewind button **1**
23. 10-pin remote terminal
24. Rear control panel cover
25. Rear LCD panel
26. AF start (**AF-ON**) button for vertical shooting
27. Film speed (ISO) button
28. Flash sync mode (⚡) button
29. Auto Exposure/Flash Exposure Bracketing (BKT) button
30. Shutter speed/aperture/focus area lock (L) button
31. Custom Setting Menu(CSM) button
32. Film advance mode selector lock release
33. Camera back lock release
34. Interchangeable focusing screen
35. Multiple exposure (▣) button
36. Power/LCD panel illumination switch
37. Shutter release button
38. Power switch lock release
39. Film rewind crank
40. Film rewind knob
41. Film advance mode/self-timer selector
42. Film plane indicator
43. Top LCD panel
44. Accessory shoe
45. Camera strap eyelet
46. Battery holder
47. Battery holder release knob
48. Diopter adjustment knob
49. Metering system selector
50. Camera strap eyelet
51. Vertical-shooting shutter release button
52. Lock lever for vertical-shooting shutter release button

Viewfinder Information



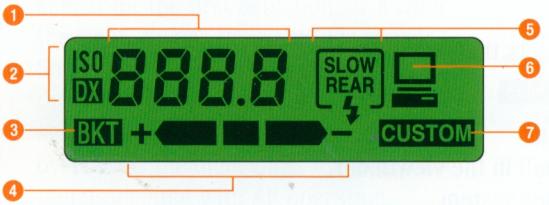
1. Focus area indicators
2. Exposure level
3. 12mm-dia. reference circle for Center-Weighted Metering
4. Focus brackets/Spot Metering (4mm-dia.) area
5. Ready light
6. Focus indicators
7. Aperture direct-readout
8. Focus area indicators
9. Shutter speed lock indicator
10. Aperture lock indicator
11. Exposure mode
12. Exposure compensation
13. Metering system
14. Shutter speed
15. Aperture
16. Electronic analog exposure display
17. Frame counter/exposure compensation value

Top LCD Panel Indications



1. Shutter speed lock
2. Shutter speed
3. Multiple exposure
4. Auto Exposure/Flash Exposure Bracketing
5. Exposure mode
6. Flexible Program
7. Exposure compensation value
8. Aperture lock
9. Aperture
10. Focus area lock
11. Battery level
12. Frame counter
13. Focus area/AF area mode
14. Exposure compensation

Rear LCD Panel Indications



1. Film speed/bracketing information/custom setting
2. Film speed setting mode
3. Auto Exposure/Flash Exposure Bracketing
4. Bracketing bar graphs
5. Flash sync mode
6. PC link connection
7. Custom setting

Controls

1 All mode depth-of-field preview button

When you use a lens with an automatic diaphragm, the viewfinder image is set to maximum aperture. The depth-of-field preview button stops the lens down electronically to the aperture set in all exposure modes, enabling you to verify the focusing situation of the composition.

2 Mirror lockup lever

When using super-telephoto lenses for celestial photography, or with photomicrography, it is necessary to eliminate camera vibration as much as possible. Locking up the reflex viewing mirror provides an additional edge for sharper pictures under this demanding condition. To lock the reflex viewing mirror in the "up" position, rotate the mirror lockup lever until it stops. (In this case, the exposure meter cannot be used.)

3 Sync terminal

A separate sync terminal is provided on the Nikon F5. It accepts all standard PC-type plug-in sync cords, and is threaded for use with a Nikon screw-in sync cord. Use this terminal to attach flash units which do not have the standard ISO hot shoe.

4 Top and rear LCD panel with illuminator

The Nikon F5 has two LCD panels—top and rear. Both LCDs can be illuminated by rotating the power switch.

5 ISO film speed setting

You can manually select the film speed from ISO 6 to 6400 in 1/3 steps. The rear LCD shows the setting. DX automatic operation is also possible.

6 Film rewind

You can use power-rewind which takes a mere 4 seconds with the optional Ni-MH battery unit (6 sec. with eight AA-type alkaline or lithium batteries), or rewind the film by hand—ideal when silence is required. There is no battery drain with manual rewind.

7 Self-timer

The F5's self-timer provides a 10-second delay. Duration can be changed from 2 seconds to 60 seconds by selecting Custom Setting #16 (see P. 22).

8 Shutter speed/aperture /focus area lock button

You can lock the focus area, selected shutter speed and/or selected aperture to prevent any accidental change of settings. This is especially useful for photographers who prefer to keep using the same settings, e.g., studio photography.

9 10-pin remote terminal

Accepts Personal Computer Connecting Cord MC-33/34, Remote Cord MC-20 or MC-30, Modulite Remote Control Set ML-3 and other accessories.

10 Built-in diopter adjustment

Enables near- or far-sighted photographers to adjust the eyepiece diopter within a range of -3 to +1. Optional diopters can also be used.

11 Two button reset

By simultaneously pressing the green Bracketing (BKT) and Custom Setting Menu (CSM) buttons for over two seconds, you can reset the camera to its factory default settings including Custom Settings (A or B settings specified at Custom Setting #0).

HIGHLIGHTS

Five-area autofocus

- Five AF sensors configured in a Wide-Cross Array provide improved ability to compose creatively and track moving subjects — almost regardless of the direction of movement. Holding the camera horizontally, the sensors cover 44% of the horizontal dimension and 30% of the vertical dimension of the viewing area. The three horizontal sensors are Cross-Type, providing full-time cross-type operation with all AF Nikkor lenses that have a maximum aperture of f/5.6 or faster — that's every AF Nikkor lens! Whether holding the camera for vertical or horizontal composition, the Wide-Area-Cross Array provides enhanced performance.
- Dynamic AF handles quick-moving, and even erratically moving subjects, regardless of direction of movement.

Focus Tracking

- Focus Tracking possible at up to eight frames per second with optional Ni-MH Battery Unit MN-30.
- Unique overlap servo method for consistently sharp exposure.
- Nikon's exclusive Lock-On™ feature holds focus, even on subjects that are momentarily blocked or fall out of the AF sensing area.

Fast and accurate autofocus

- Delivers precise focusing — even with subjects that appear small in the viewfinder.
- Focuses and focus tracks subjects that are closer than any other system.
- Fast and accurate AF operation with AF, D-type AF and AF-S Nikkor optics.

Plus

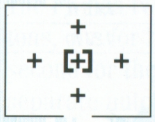
- Wide EV range for AF operation (EV –1 to 19 at ISO 100).
- Secondary AF start buttons.
- Manual focus with Electronic Rangefinder.
- Freeze Focus available with Nikon MF-28 Multi-Control Back.

1) Multi-CAM1300 Autofocus Sensor Module

Nikon designed the Multi-CAM1300 autofocus sensor module especially for the F5. It incorporates five AF sensors which are configured in a large wide-cross array, covering center, left, right, top and bottom segments of the viewing area — a wider area than any system before. Moreover, detection speed and accuracy are enhanced for quick and responsive operation.

The camera features cross-type contiguous center, left, and right sensors, each consisting of two kinds of CCD line sensors. The thin sensor is used for ordinary focus detection, and the thick sensor for focus detection in low light. This dual focus system maximizes autofocus speed and accuracy in most lighting conditions.

In normal AF operation, the F5 detects focus inside the viewfinder's focus brackets. But in the Focus Tracking and Dynamic AF mode, part of the focusing area is automatically expanded to keep the moving subject in accurate focus.



2) Dynamic AF Mode

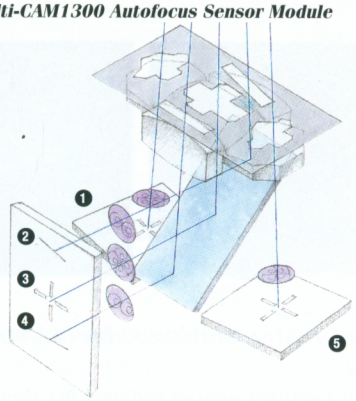
With this mode, five AF sensors track the movement of the subject in the viewfinder area. For creative composition, the photographer selects which sensor will be used for the first detection of the subject. Following that detection, the AF system will then follow the movement of the subject. If the subject moves out of the area of the priority sensor,* the F5 will detect that movement and automatically scan and switch focus among the five sensors so that the subject's movement can be followed and sharp focus can be maintained. For example — if the subject is coming from the left, choose the left-side sensor for the first detection, or if from the right, choose the right-side sensor. Sensor selection is quick and intuitive through the exclusive thumb operated sensor selection control. This operation overcomes the older bulls-eye composition associated with AF operation.

** Priority AF sensor remains highlighted in the viewfinder and the top deck LCD.*

3) Single Area AF Mode

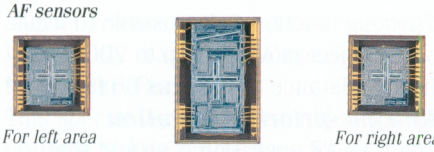
In addition to Dynamic AF operation, the F5 provides a Single Area AF mode. It's like having a choice among five logically positioned AF spot sensors. The selected focus area is indicated on the top-deck LCD and in the standard EC-B type screen. Users can also confirm the focus area through the focus indicators (orange pointers) in the viewfinder. In Single Area AF mode, focus can be locked from any of the five sensors selected.

Multi-CAM1300 Autofocus Sensor Module



❶*Cross-type CCD sensor for the focus area on left*
❷*CCD sensor for the top focus area*
❸*Cross-type CCD sensor for the center focus area*
❹*CCD sensor for the bottom focus area*
❺*Cross-type CCD sensor for the focus area on right*

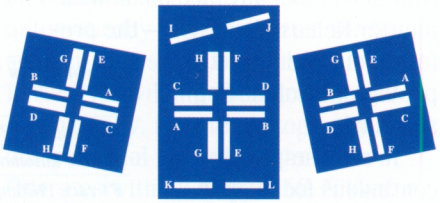
AF sensors



For left area *For right area*

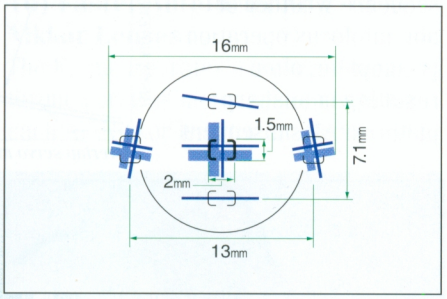
For top, center and bottom areas

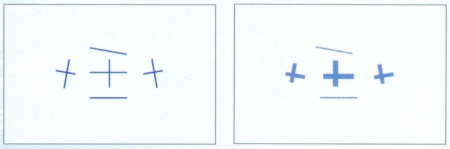
Layout of CCD elements



Sensor pairs: A & B, C & D, E & F, G & H, I & J, K & L
Thin sensors: A, B, E, F; used for ordinary focus detection
Thick sensors: C,D, G, H; used for focus detection in low light

Position of AF sensors in the viewfinder





Normal condition *In low light*

Search Process in Dynamic AF

Selected area	2nd	3rd	4th	5th
Center	Bottom	Top	Left	Right
Bottom	Center	Top	Left	Right
Top	Center	Bottom	Left	Right
Left	Center	Bottom	Top	Right
Right	Center	Bottom	Top	Left

The first priority is on the user-selected area. If the first sensor (user-selected area) is out of focus, the second sensor is activated and continues through all five sensors, as needed. For subsequent detection, the focus search begins from the selected area, but the second area searched will be the area used in the previous search process.

4) Choice of Autofocus Modes

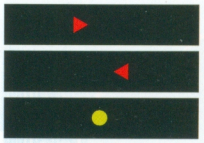
The Nikon F5 has two autofocus modes: Single Servo AF with focus priority and Continuous Servo AF with release priority. In the focus-priority Single Servo AF mode, the shutter will not operate until the focus detection system indicates accurate focus. While in the release-priority Continuous Servo AF mode, the shutter will release anytime the user presses the shutter release button, regardless of focus detection status. In either autofocus mode, and in any film advance mode, Focus Tracking automatically activates when a moving subject is detected. The choice of release or focus-priority can be changed through Custom Setting #1 and #2.

5) Wide EV Range

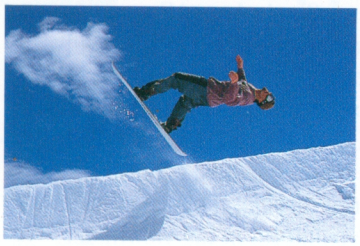
Multi-CAM1300 operates throughout the range of EV minus 1 to EV 19 — that's an eight-second exposure with an f/2.0 at ISO 100. The F5 AF system works through this expanded EV range — even in situations so dark the human eye has problems focusing.

6) Electronic Rangefinder

The F5's Electronic Rangefinder, which is more reliable than optical rangefinders, simplifies manual focusing when used with any Nikkor lens which has a maximum aperture of f/5.6 or faster. Arrows in the viewfinder indicate which direction to turn the lens focusing ring and once focus is achieved, an in-focus indicator (green dot) appears. The viewfinder's clear matte focusing screen also makes checking focus status easy. This feature also works very effectively with the F5's optional Multi-Control Back's Freeze Focus operation.



Rotate focusing ring to right
Rotate focusing ring to left
In focus




7) Focus Tracking with Lock-On™ (up to 8 fps)

Precision Focus Tracking

Each time you depress the shutter release button in Single Servo AF or Continuous Servo AF mode, Focus Tracking will be automatically activated if the subject is moving. Subject movement is analyzed and the lens will be precisely focused at the split-second moment that the shutter fires. This precision autofocus operates regardless of the direction of the subject's movement — at motor rates of up to eight frames per second.

Overlap servo method

Unlike AF systems that use the stepped or intermittent method in which focus is detected and the lens is driven *alternately*, the F5's autofocus system *simultaneously* detects focus and drives the lens. As a result, lens focus is constantly adjusted, even during lens driving, in accordance with the latest focus data. This means the camera can track even subjects moving erratically... for consistently sharp exposures, frame after frame.

Shoot faster moving subjects up close

Nikon performance standards for the F5's AF system demonstrate focus tracking on subjects that are moving faster and are closer. For example, using a 300mm lens with the F5's Focus Tracking function, it is possible to focus on a subject moving at up to 200 mph from a distance as close as 66 ft.

Release-priority operation

The F5's AF operation is so fast that autofocus will reliably operate using continuous film advance mode with Shutter Release Priority — the preferred method for action photography of moving subjects.

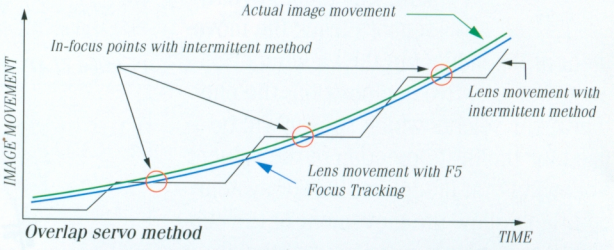
In release-priority continuous focus, with other systems, the shutter is released for the first frame of a sequence whether or not autofocus operation is complete, often resulting in unsharp pictures. All subsequent frames are controlled by focus priority which can slow the framing rate when AF operation is indecisive. Using continuous motor operation, the F5 can be set for shutter-release-priority. (Continuous Servo AF mode assures consistently sharp focus whenever shot, even with the first frame of a sequence. With the F5, all subsequent frames are controlled by shutter-release-priority as well.)

Lock-On™

When the F5's Multi-CAM1300 AF sensor module detects a moving subject, the autofocus system activates Focus

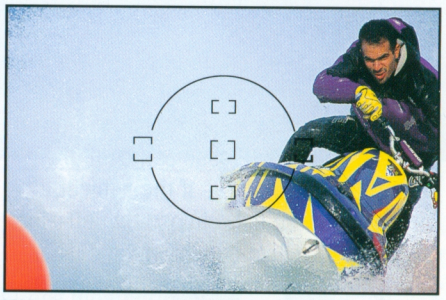
Closest Focus Tracking distance

	300mm lens	*600mm lens*
100m sprint (22mph)	*22 ft.*	*44 ft.*
Trains, automobiles (62mph)	*36.7 ft.*	*73.5 ft.*
F1 race (186mph)	*63.3 ft.*	*127 ft.*



Overlap servo method

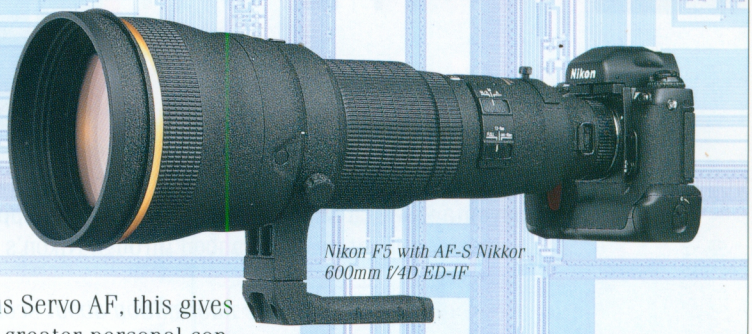




Dynamic AF: Focus stays on the subject even though the subject moves out of the selected area by shifting focus area.



Lock-On™ autofocus



Nikon F5 with AF-S Nikkor 600mm f/4D ED-IF

Tracking, and locks on the subject. Even if focus detection is momentarily interrupted by something blocking the camera's view, or if the subject momentarily moves out of the focus area, Focus Tracking with Lock-On™ will continue to track the original subject, keeping sharp focus for subsequent frames. This feature was designed for sports, nature and other action photography.

Focus Tracking in any mode

Unlike systems that require setting the camera to continuous servo mode to use Focus Tracking, the F5's Focus Tracking with Lock-On™ operates with all autofocus modes, AF area modes, and film advance modes.

8) Secondary AF Start Buttons

The F5 has two secondary AF start buttons, one for horizontal release and a second for the vertical release, which separate autofocusing functions from the shutter release buttons. When used with Custom Setting #4, photographers can use the shutter release button exclusively for shutter release operation and the secondary AF start button for AF activation. Combined with Dynamic AF and Continuous Servo AF, this gives the photographer greater personal control and enhances the versatility of automatic shooting as well. It's also perfect for sports and other quick-action shooting because it allows photographers to concentrate solely on shutter release timing, while being able to instantly reactivate AF operation.

9) Freeze Focus

This special feature is available with the optional Multi-Control Back MF-28. Used with all compatible Nikkor lenses and manual focusing, Freeze Focus will automatically fire the shutter when a subject moves into the plane of focus. Perfect for wildlife photography, macro photography, remote photography and other manual focusing techniques. Operates with all compatible Nikkor lenses, including AF, AF-S as well as manual focus Nikkor lenses with f/5.6 or faster!

10) Faster Autofocus with All AF Nikkor Lenses

The F5 incorporates a powerful high-torque coreless motor system to drive each AF Nikkor lens for autofocus. The F5's motor is faster and stronger than all earlier motors, and as a result photographers will notice a significant increase in AF speed, even with their older AF Nikkor lenses. Through Nikon's exclusive design approach, the F5 drives AF Nikkor with its built-in AF motor, and it also uses Nikon's system of AF-S Nikkor optics which features Silent Wave Motors built into each lens for AF operation. Fast and accurate autofocus is the foundation of the F5's operation. With its powerful AF drive motor system, Nikkor telephotos focus faster than ever, autofocusing quickly and stopping at precisely the right moment — the moment of sharp focus. AF operation is quieter and with the AF-S lenses, it's nearly silent. With Nikon's Internal Focusing (IF) technology, lens focusing movement is faster without lens barrel extension. Each D-type AF Nikkor lens' CPU provides a data interface with the camera body, as well as Distance Information used to enhance exposure metering performance. Nikon's performance-proven Extra-low Dispersion (ED) glass and Nikon Integrated Coating (NIC) are also available for enhanced performance of selected telephoto optics.

11) Autofocus with AF Illuminator

Nikon Speedlight models SB-28, 27, 23 and 22s provide an auxiliary light source to enable autofocus operation when there's no available light. This enables autofocus operation in virtual darkness using the center focus area with Single Servo AF mode.

HIGHLIGHTS

3D Color Matrix Metering

- Shooting data from more than 30,000 scenes is stored in the F5's database, providing a reference source for scene identification. More accurate scene identification is a major advantage which enhances the F5's ability to apply appropriate exposure compensation. Scene identification is enhanced through Nikon's creative new 3D Color Matrix Metering's features:
  1,005 pixels provide more information about scene brightness and contrast conditions than any other system.
  A series of RGB sensors gathers data about the colors in the scene, further enhancing scene identification.
  Distance Information is provided when a D-type AF Nikkor lens is used, indicating subject distance which aids in making more accurate exposure calculations.
  When Automatic Balanced Fill-Flash is being used, the SB-28/27's Monitor Pre-flash provides still more information about subject reflectance values — for still more accurate calculations.
  A powerful computer system evaluates all the information and calculates the optimum exposure — all in an instant — infinitely faster than you could even dream of doing manually.

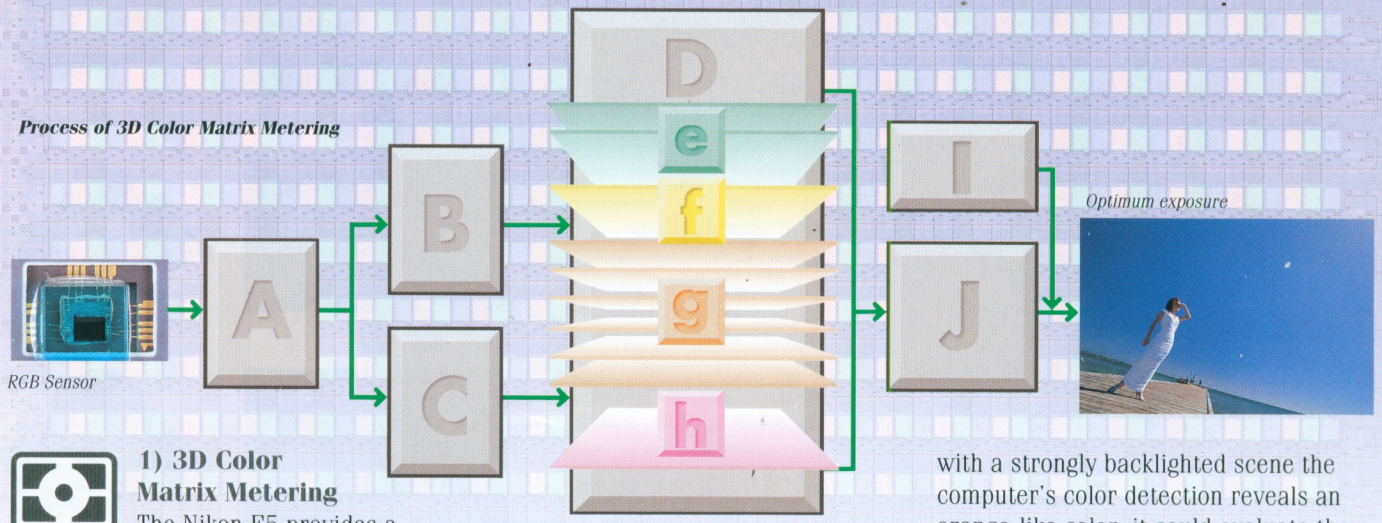
Flexible Center-Weighted Metering

- The F5's Center-Weighted Metering concentrates 75% of its sensitivity within a 12mm circle in the center of the viewfinder, and the remaining 25% is read from the peripheral area. With Custom Setting #14, Flexible Center-Weighted Metering allows you to change the size of the circle, making the circle smaller for photography of smaller or more distant subjects, or larger or closer subjects. You can even custom-set the system to convert the Center-Weighted Metering into an averaging metering!

Spot Metering

- Each of the five available Spot Sensors reads its exposure from a tiny 4mm-diameter area which corresponds to the focus area selected when using Single Area AF mode. When using Dynamic AF mode, you may choose any one of the Spot Metering areas (selection will remain unchanged even though the Dynamic AF mode changes focus area).

Process of 3D Color Matrix Metering



1) 3D Color Matrix Metering

The Nikon F5 provides a new metering sensor consisting of a 1,005-pixel CCD (charge coupled device). Each pixel (picture element) has one R (red), G (green), or B (blue) filter, so the sensor evaluates not only each scene's brightness and contrast but also the scene's colors.

Using classic metering techniques, a photographer would ordinarily measure scene brightness against a standard of 18% reflectance, and then through their experience they would visually evaluate factors such as contrast and special conditions of reflectance within the scene. This process takes time and requires extensive experience and knowledge.

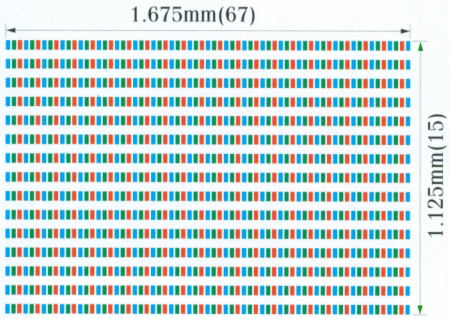
The F5's 3D Color Matrix Metering evaluates scene brightness, contrast, selected focus area, Distance Information and the scene's color characteristics. Then its powerful microcomputer and database guide it to unequaled exposure control. All this happens in an instant — faster than anyone could even dream of accomplishing manually — making it perfect for automatic exposure control.

Color information provides a way to enhance scene identification. This added information enables the system's computer to then more accurately determine the scene and give optimum exposure. For example, if the meter "sees" a scene which has a band of blue across the top with green across the bottom, and an extremely bright area in the upper corner, it will interpret this scene to be a landscape with the sun in the upper area. Similarly, if together with a strongly backlighted scene the computer's color detection reveals an orange-like color, it could evaluate the scene as a silhouette being taken at sunset! The 3D Color Matrix Metering can even detect tungsten and fluorescent lighting conditions, as well as many other typical picture-taking scenes. With computer software, designed to "think" like a photographer, together with data from more than 30,000 scenes from actual photography, the F5 is capable of exposure control which surpasses all other systems before it.

A. *Brightness and color data from 1,005 pixels*
B. *Color data*
C. *Basic data (grouped into overlapped areas)*
D. *Parameters*
- ***e.*** *Color data*
- ***f.*** *Average brightness data*
- ***g.*** *Contrast data*
- ***h.*** *Position of focus area selected*

I. *Distance Information (from D-type lenses)*
J. *Database*

1,005-pixel arrangement



Sensor pitch
Horizontal : 0.025mm
Vertical : 0.075mm

Examples of color that can be detected by the F5

Color Determination	Automatic Exposure Tendency
Tungsten illumination	Under exposes
Fluorescent illumination	Creates green tint
Bright yellow	Underexposes
Tender green	Underexposes
Normal green	Slightly overexposes

3D Matrix Meter gives optimum exposures even for above scenes.

New 1,005-pixel RGB metering sensor

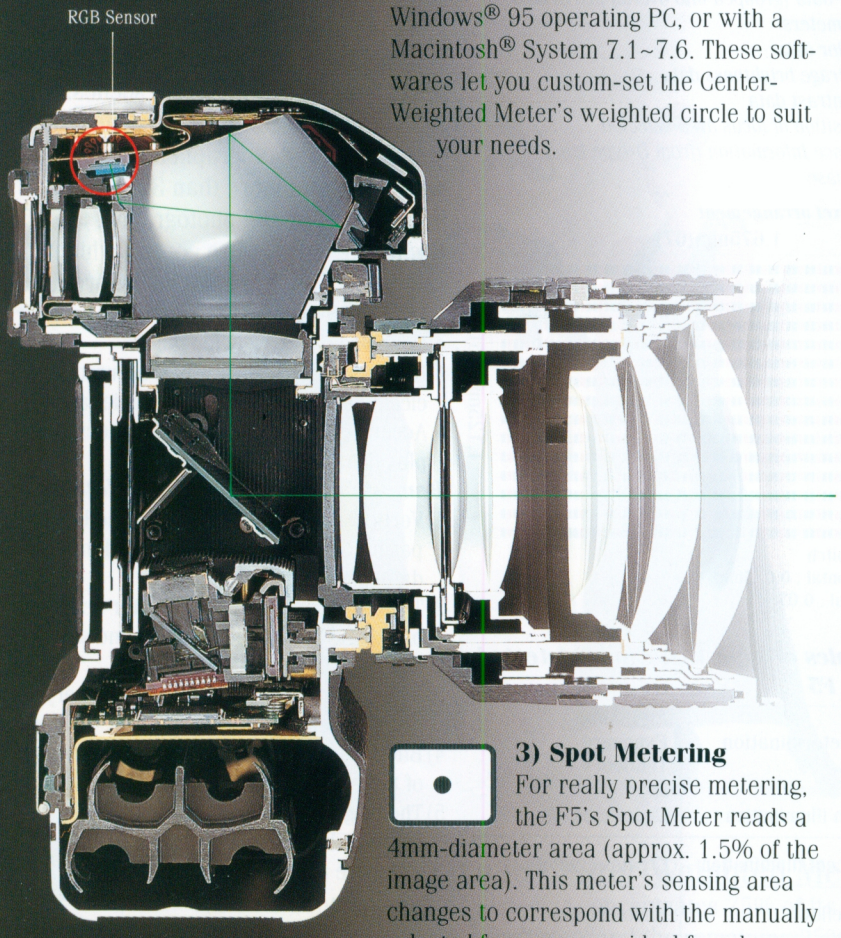
- Designed exclusively for the F5
- Features high sensitivity, high accuracy, low electrical noise and a wide dynamic range
- Accurate performance proven under complex lighting conditions

Benefits of 3D Color Matrix Metering

1) Vertical compositions are covered by comparing vertical scene data stored in the database.
2) The 1,005 sensors enable better detection of poorly illuminated subjects and small details within each scene.
3) Small subjects located at the periphery are more easily evaluated.
4) Backlit subjects are evaluated regardless of their position within the scene.
5) The brightness value of subjects with vivid colors, which ordinarily fool a light meter, are more precisely evaluated.

2) Flexible Center-Weighted Metering

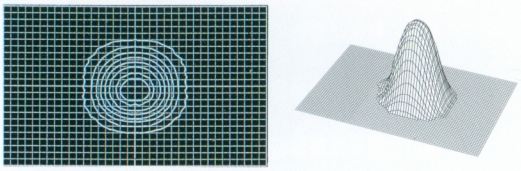
The F5 includes Nikon's classic Center-Weighted Meter which concentrates 75% of its sensitivity within a 12mm circle, and 25% in the peripheral area. It's the classic meter for those who shoot portraits, or simply want to take personal control. But if the subject is too small, too near or too far, the 12mm circle may not be the size you need. So with the F5, Nikon introduces the world's first *Flexible* Center-Weighted Meter. Using the F5's built-in Custom Setting #14, you can change the size of the sensing area to 8mm, 15mm, 20mm or an average meter—making your personal choice based on the subject's size and distance. For even more effective control, you can use the F5's optional computer link softwares with a Windows® 95 operating PC, or with a Macintosh® System 7.1~7.6. These softwares let you custom-set the Center-Weighted Meter's weighted circle to suit your needs.

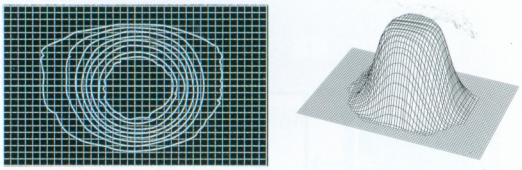


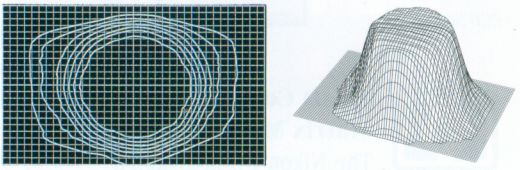
3) Spot Metering

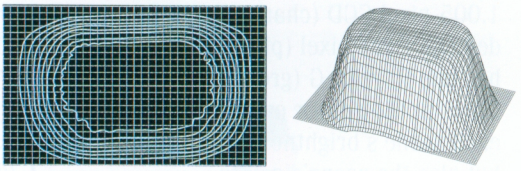
For really precise metering, the F5's Spot Meter reads a 4mm-diameter area (approx. 1.5% of the image area). This meter's sensing area changes to correspond with the manually selected focus area — ideal for when individual control is crucial. Spot Meter is especially effective when used with the camera's Single Area AF mode.

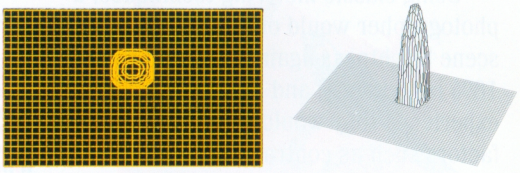
When the optional DW-30 and DW-31 viewfinders—which don't have metering sensors—are used, the F5's autofocus sensor can also function as a spot metering sensor.

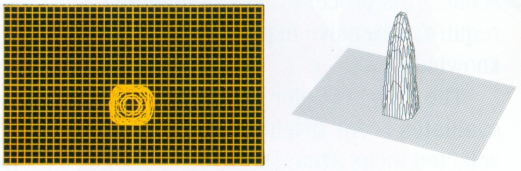

8mm-dia.

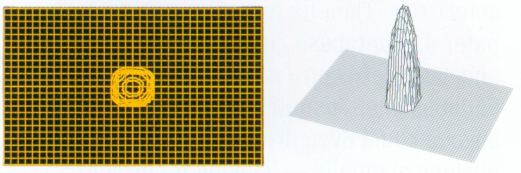

12mm-dia.

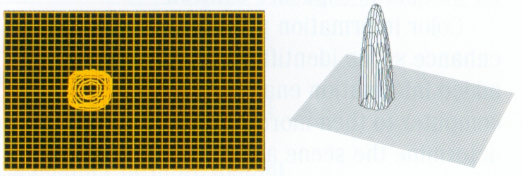

15mm-dia.

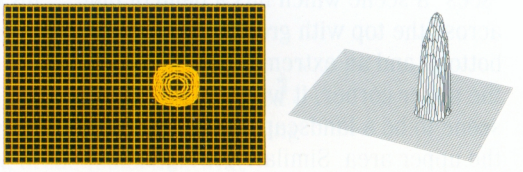

20mm-dia.


Top area

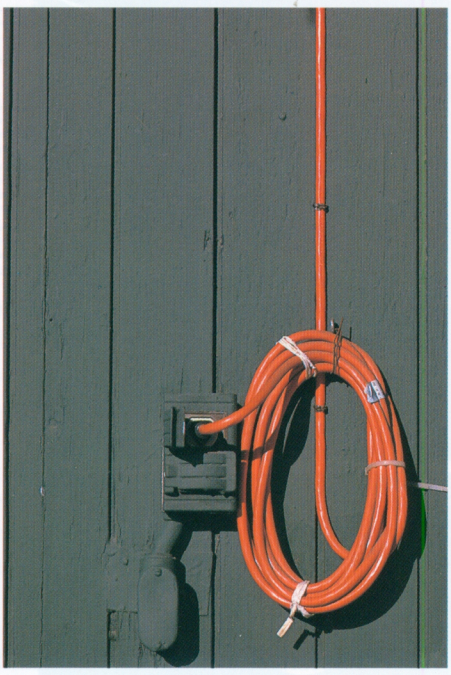

Bottom area


Center area

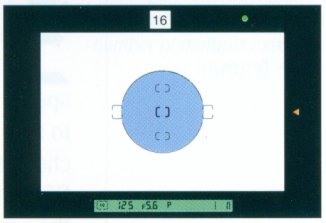

Left area

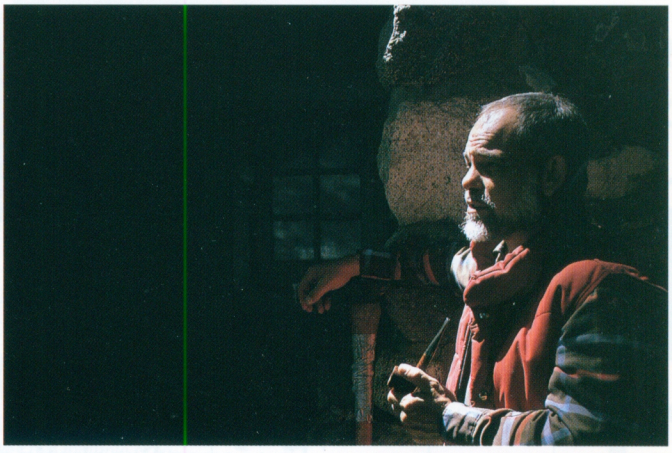

Right area

3D Color Matrix Metering

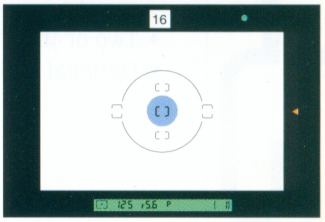


Center-Weighted Metering

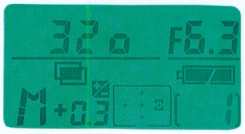




Spot Metering



HIGHLIGHTS

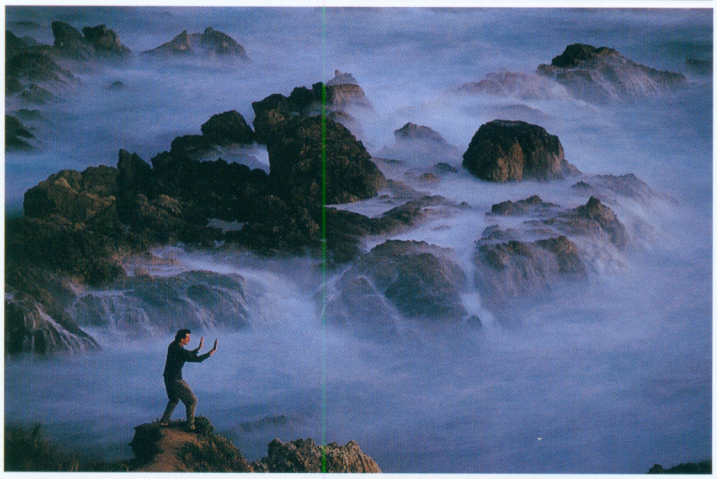


Four exposure modes are available

- Programmed Auto with Flexible Program.
- Shutter-Priority Auto.
- Aperture-Priority Auto.
- Manual exposure control.

AE/AF lock

- Via AE-L/AF-L button.



Multiple Exposure

- Making several exposures on the same frame is easy as pressing a button.

Exposure compensation

- ±5 EV in 1/3 EV increments.

Exposure Bracketing

- Two or three frames selectable.
- Optional Multi-Control Back MF-28 offers up to nine frames.

1) Exposure Modes

P *Programmed Auto Exposure Mode*

Programmed auto operation is ideal for quick operation and is the simplest method for exposure control. Together with 3D Color Matrix Metering, it is extremely accurate and reliable.

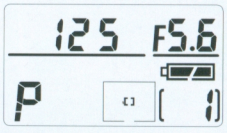
Programmed Auto Exposure mode can only be used with lenses with a built-in CPU (i.e., D-type AF, AF, AF-S and AI-P-type Nikkor lenses). For lenses without a CPU, exposure modes available include Aperture-Priority Auto (A) and Manual (M).

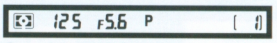
You can activate Flexible Program by turning the Main-Command Dial until the desired shutter speed or aperture value appears in the viewfinder and in the LCD panel. The Flexible Program indicator (i.e., "*") then appears to indicate that the program has been shifted. The shifted program is maintained after the photo has been taken as long as the exposure meter stays on.

When using a Nikon TTL Speedlight, Flexible Program is controlled from 1/60 sec. to the highest sync speed possible. Selecting Slow or Rear on the Speedlight will enable Flexible Program to operate at shutter speeds from 30 seconds to the highest speed possible.

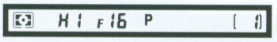
LCD and viewfinder indication in P mode

Controlled aperture value and shutter speed are virtually steplessly selected, and are indicated in the viewfinder and top deck LCD in 1/3 EV steps.

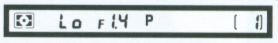




Correct exposure

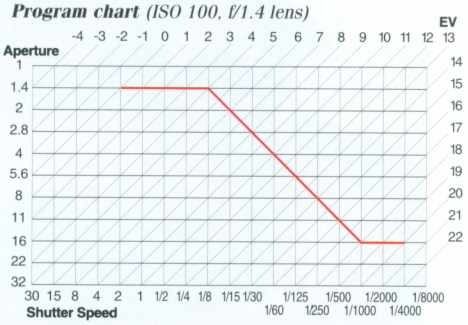


Overexposure; use film with a lower ISO speed or use Nikon ND filter



Underexposure; use a Nikon Speedlight or use film with a higher ISO speed

***Program chart** (ISO 100, f/1.4 lens)*



S *Shutter-Priority Auto Exposure Mode*

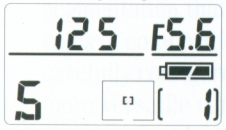
This mode lets you choose shutter speeds manually. Use a fast shutter speed to stop action, or create motion effects by choosing a slower shutter speed. The Nikon F5's microcomputer automatically selects the correct aperture to match the selected

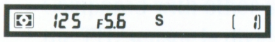
shutter speed.

This mode is available with lenses having a built-in CPU (i.e., D-type AF, AF, AF-S and AI-P-type Nikkor lenses).

LCD and viewfinder indication in S mode

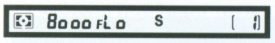
Rotate the Main-Command Dial to select desired shutter speed from 30 sec. to 1/8000 sec. in 1/3 EV steps. Aperture is controlled steplessly within the aperture range of the lens and indicated in 1/3 EV steps.





Correct exposure

Overexposure; select higher shutter speed or use Nikon ND filter



Underexposure; select lower shutter speed

Aperture-Priority Auto Exposure Mode

This mode operates with virtually all Nikon lenses. Select the aperture using the lens' aperture ring or Sub-Command Dial. When using a lens with built-in CPU, using the Sub-Command Dial will allow the aperture to be adjusted in precise 1/3 EV steps. When used with any optical system such as a reflex lens, microscope, telescope, bellows, etc., the Nikon F5's microcomputer automatically selects the correct shutter speed to match the aperture of the system.

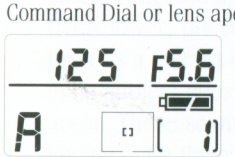
Aperture-Priority Auto is the recommended mode when depth of field is your prime consideration. For less distinct backgrounds, as in portraiture, use larger apertures to obtain a shallow depth of field. For overall sharp, clear pictures, as in scenic photography, use smaller apertures. (See the lens compatibility chart on P. 23.)

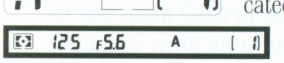
When using a variable aperture zoom lens or Micro-Nikkor lens (at 1 : 1 or 1 : 2), the F5 retains the set aperture (Nominal Aperture*) provided that you select an aperture that is not wide open.

** Nominal Aperture is set in the A and M modes and by using the F5's Sub-Command Dial. With personal computer links, Effective Aperture can also be set.*

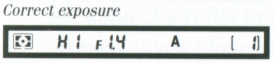
LCD and viewfinder indication in A mode

Set lens to desired f-number by rotating the Sub-Command Dial or lens aperture ring. Shutter speed is controlled virtually steplessly from 30 sec. to 1/8000 sec. and indicated in 1/3 EV steps.

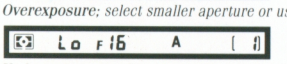




Correct exposure



Overexposure; select smaller aperture or use Nikon ND filter



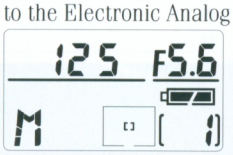
Underexposure; select larger aperture

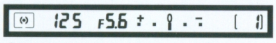
Manual Exposure Mode

In the Manual Exposure mode, both shutter speed and aperture will be set manually, with settings in 1/3 increments of change. For precise 1/3 EV adjustments, set the shutter speed with the Main-Command dial and the aperture with the Sub-Command Dial. It is possible to set f/stop via the lens aperture ring (but not in 1/3 aperture increments). In addition, shutter speeds of up to 30 minutes can be selected with Custom Setting #19.

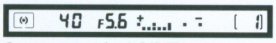
LCD and viewfinder indication in M mode

Adjust aperture and/or shutter speed referring to the Electronic Analog Display in the viewfinder LCD. The Electronic Analog Display range is +2 EV to –2 EV, in increments of 1/3 EV.

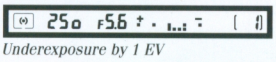




Correct exposure



Overexposure by 1-2/3 EV



Underexposure by 1 EV

2) AE-L (Auto Exposure Lock)

When you press the AE-L/AF-L button, the F5 memorizes the metered exposure value with focus lock. This is great for situations where you want to change the composition or put creative emphasis on a specific part of the picture. Recommended for the Center-Weighted and Spot meter features.

Auto exposure and focus are locked by pressing the AE-L/AF-L button. Additional Exposure Lock features are available through Custom Settings #5, 7 and 21 (see page 22).

3) Multiple Exposures

Taking any number of exposures on precisely the same frame is easy.* Rotate the Main-Command Dial while pressing the multiple exposure button. This will prevent the film from advancing after the shutter is released. Depress the shutter release button again to take the next shot. Note that during multiple exposure operation, exposure compensation may be required, depending on subject brightness, background brightness and the number of exposures you take.

** In normal operation, the F5 takes two multiple exposures and then cancels. With Custom Setting #13, any number of multiple exposures can be set.*

4) Exposure Compensation

Using the exposure compensation button with the Main-Command Dial, you can compensate exposure within a range of ±5 EV in 1/3 EV increments.

While pressing the exposure compensation button, rotate the Main-Command Dial to set the desired compensation value. The dial is graduated in 1/3 EV increments. Minus values indicate underexposures and plus values indicate overexposures.

Because the exposure compensation mark and value appear in the viewfinder as well as the top deck LCD panel, you can set the compensation value with your eye on your subject through the viewfinder.

5) Exposure Bracketing

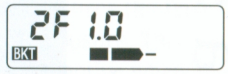
The F5's built-in Exposure Bracketing function offers exposure bracketing of two or three frames in 1/3 to 1 EV steps with all exposure modes including Manual. Exposure Bracketing starts from the original value.* Moreover, with the optional MF-28 Multi-Control Back, you can get exposure bracketing for up to nine frames. In flash photography, the flash output level is also varied. If you wish, you can use Custom Setting #24 to bracket either ambient exposure or flash exposure (see P. 22 for details in Custom Settings).

** You can change the order of bracketing using Custom Setting #3).*

Rear LCD indication for Exposure Bracketing

Number of frames
EV steps

Original value and +0.3 EV



Original value and –1EV

Original value and +0.7 EV

3 frames in 0.3 EV steps

Original value and +1EV

3 frames in 0.7 EV steps

Original value and –0.3 EV

3 frames in 1 EV steps

Original value and –0.7 EV

HIGHLIGHTS

3D Multi-Sensor Balanced Fill-Flash

- Features Nikon's exclusive five-segment TTL Multi Sensor for precise flash exposure control
- Beautifully blends fill-flash with ambient light as measured by the 1,005 pixels
- Unique Monitor Pre-flashes measures reflectance values of the main subject.
- Works with all exposure meters and modes

Slow Sync

- Automatically selects slower shutter speeds so the background will appear more naturally exposed.

Rear-Curtain Sync

- Turns available light into a stream of light that follows the flash illuminated subject.

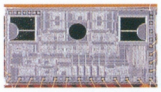
1/300 TTL High-Speed Sync

- X-sync speed can be set up to 1/300 sec. by Custom Setting #20.

FP High-Speed Sync

- Fill-in flash at 1/250 to 1/4000 sec. with optional SB-28 Speedlight.

1) 3D Multi-Sensor Balanced Fill-Flash



Exclusive five-segment TTL Multi Sensor

Nikon's pioneering TTL Multi Sensor is designed with a logical pattern segmentation that conforms to classic rules of composition. It has been carefully configured so it can handle more versatile composition requirements. Compared with other systems, in which the TTL sensor is divided into segments (one of which is weighted to the focus point selected), Nikon's five-segment sensor has been proven to contribute to better flash exposure results. Also, unlike systems in which the TTL multi-segment sensor works only in the autofocus mode, Nikon's TTL Multi Sensor works in the manual focus mode as well.

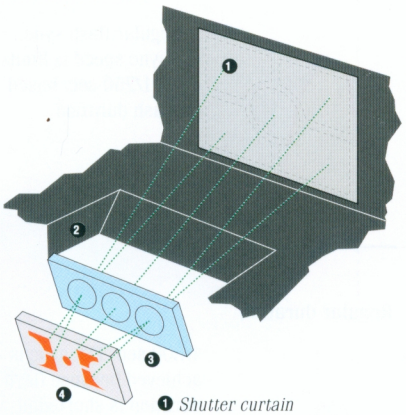
Monitor Pre-flash and Distance Information

Monitor Pre-flash is a high-tech simulation of the series of test flashes that professionals usually perform with a separate flash meter before actually taking flash photographs. Nikon's flash system adapts this technique for practical use under virtually any picture-taking situation.

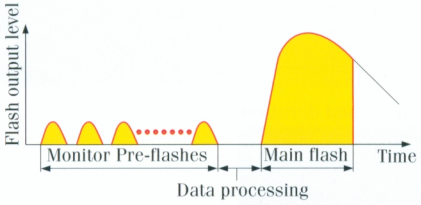
The Nikon SB-28 (or SB-27) Speedlight fires a series of imperceptible pre-flashes just after the mirror goes up but before the shutter opens. Upon reaching the subject, the pre-flash reflects back to the camera's TTL Multi Sensor. Then, the camera's CPU uses this flash data to determine in which of the TTL Multi Sensor's five segments the subject is located, taking distance and aperture setting information from the D-type AF Nikkor lens in use into consideration. In this way, the computer analyzes and decides which segments of the TTL Multi Sensor to use and what amount of main flash is necessary.

For example, if some segments indicate a reflected light amount comparatively lower, the computer judges that there is a distant background and the main subject does not belong to those areas. These segments are then ignored for the main flash output control. The computer even informs the system about the subject's reflectance. This entire process takes place in a millisecond.

Monitor Pre-flash

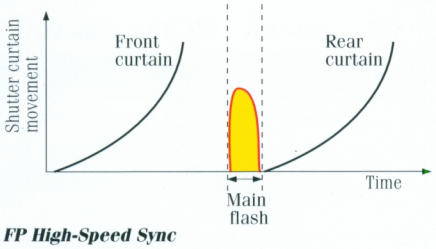


1. *Shutter curtain*
2. *Base portion of mirror box*
3. *Condensor lens array*
4. *TTL Multi Sensor*

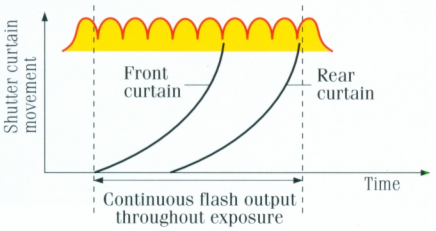


In this scene, the F5 ignores the center segment for TTL flash control. This is because the degree of light reflected from the Monitor Pre-flash burst was exceptionally strong in that segment, thus indicating there is no subject in that area.

Rear-Curtain Sync



FP High-Speed Sync



3D Multi-Sensor Balanced Fill-Flash works with all metering and exposure modes

The F5's 3D Multi-Sensor Balanced Fill-Flash works with the camera's 3D Color Matrix, Color Matrix, Center-Weighted and Spot metering modes. You can also use this feature with each of the F5's exposure control modes: P (Programmed Auto), S (Shutter-Priority Auto), A (Aperture-Priority Auto) and Manual.

Moreover, this function is also available when other creative options are used, including exposure compensation, exposure bracketing, flash bracketing and Flexible Program. This means that you get maximum creative freedom while benefiting from fully automatic flash operation.

2) Slow Sync

When flash pictures are taken at high shutter speeds in dim light, the background may come out dark. The use of Slow Sync extends the automatically controlled shutter speed range in the P and A modes (which is normally controlled between 1/250 sec. and 1/60 sec.) to the full range of available shutter speeds from 1/250 sec. to the slowest speed, 30 sec. Slow Sync is selected from the F5's flash controls.

3) Rear-Curtain Sync

The F5's Rear-Curtain Sync setting enables all Nikon TTL Speedlights to operate with Rear-Curtain Sync. Using this function, the flash fires just before the shutter curtain closes, unlike Normal Sync which fires the flash at the beginning of the exposure. This technique is especially effective when slow shutter speeds are used. The effect: available light turns into a stream of light that follows the flash-illuminated subject.

Rear-Curtain Sync is selected from the F5's flash control when using all Nikon ISO type TTL Speedlights.

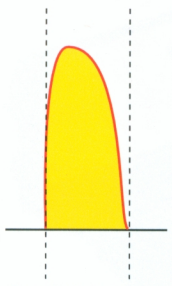
4) FP High-Speed Sync

With the Nikon SB-28 set at the manual FP mode, you can use flash synchronization with high shutter speeds from 1/250 to 1/4000 sec. This means you can capture fill-flash pictures even when using film with a high ISO rating, and still maintain wide aperture settings for expanded control of depth of field.

5) 1/300 TTL High-Speed Sync

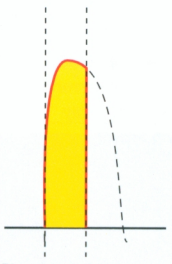
You can use the Custom Setting #20 to enable 1/300 sec. TTL flash sync control. Although the guide number of the Speedlight used will be reduced to 46 (ISO 100, ft.), this feature is effective for flash photography of moving subjects, or when photographers want to use a wider aperture in bright light. It's also suited for Manual exposure control, making this an ideal sync speed to use with studio strobes and sports photography. The indication "X300" appears on the LCD panel at the X setting located before the slowest set shutter speed.

1/300 TTL Sync Method



Regular duration

In regular flash sync., the sync speed is limited to 1/250 sec. based on flash duration.



Shortened duration

1/300 sec. TTL sync is achieved because flash duration is shortened.

6) Nikon Speedlights

Nikon's SB-28 Speedlight boasts a powerful guide number of 164 (ISO 100, ft.; with zoom head set at 85mm), Monitor Pre-flash, Repeating Flash, FP High-Speed Sync, built-in AF-assist illuminator, automatic zoom flash covering 24mm to 85mm, built-in wide flash adapter to cover 18mm or 20mm, TTL/Manual flash output level compensation and built-in bounce card.

The compact SB-27 offers a guide number of 112 (ISO 100, ft; zoom head set at 50mm), Monitor Pre-flash, AF-assist illuminator, automatic zoom flash covering 24mm to 50mm, a built-in diffuser card and bounce flash adapter.

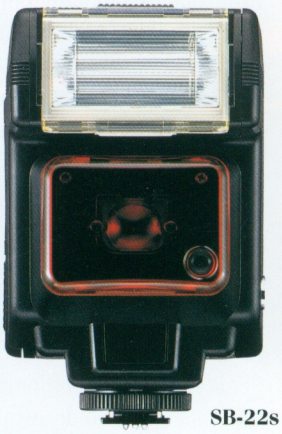
The SB-23 offers a guide number of 66 (ISO 100, ft.), AF-assist illuminator capability and exceptional portability.

The economical and lightweight SB-22s boasts a guide number of 92 (ISO 100, ft.) and 66 (with wide-flash adapter), AF-assist illuminator, wide-flash adapter to cover 28mm and tilting flash head from -7° to 90° for bounce flash shooting.

SB-28

SB-27

SB-23



SB-22s

Speedlights/feature cross reference chart

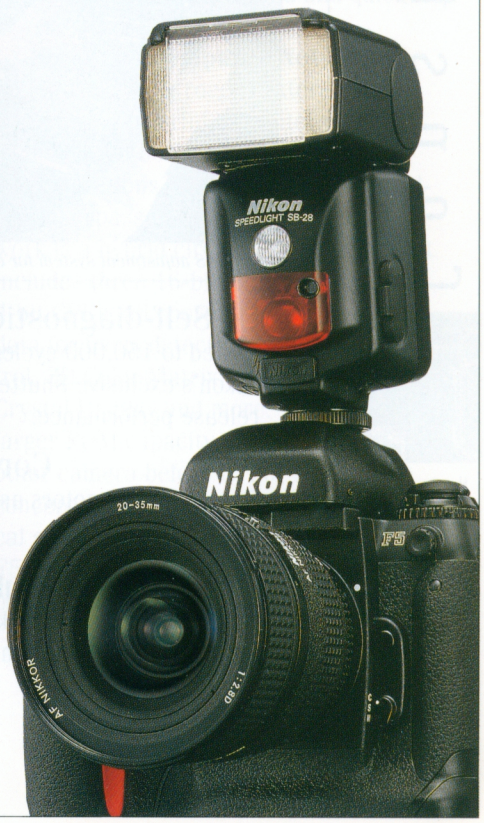
	SB-28	SB-27	SB-23	SB-22s	SB-16B	SB-17	SB-16A	SB-21B	SB-21A
Connection	Direct	Direct	Direct	Direct	Direct	Via AS-6	Via AS-6	Direct	Via AS-6
TTL Auto	✓	✓	✓	✓	✓	—	—	✓	—
Non-TTL Auto	✓	✓	—	✓	✓	✓	✓	✓	✓
Manual	✓	✓	✓	✓	✓	✓	✓	✓	✓
AF assist illuminator	✓	✓	✓	✓	—	—	—	—	—
Slow Sync	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rear-Curtain Sync	✓	✓	✓	✓	✓	✓	✓	✓	✓
Repeating Flash	✓	—	—	—	—	—	—	—	—
Flash output level compensation	✓	✓	—	—	—	—	—	—	—
FP High-Speed Sync	✓	—	—	—	—	—	—	—	—
1/300 sec. TTL flash	✓	✓	✓	✓	✓	—	—	✓	—

✓ Available — Not available

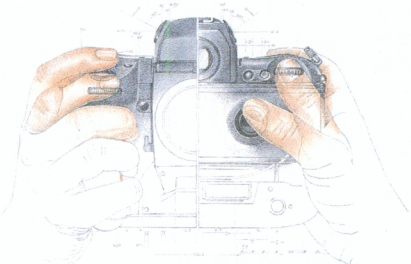
3D Multi-Sensor Balanced Fill-Flash

1/300 TTL High-Speed Sync

Slow Sync



HIGHLIGHTS

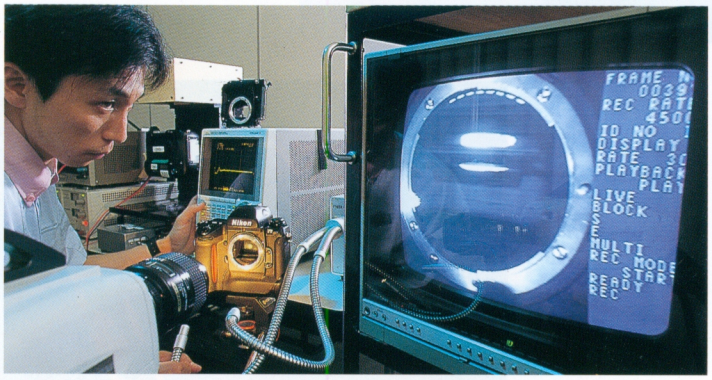


Solid and durable body

- Major components crafted from durable metals.
- Vibration-tested and put through extremes of temperature.

Floating mechanism for silent operation

- Motors and gears are attached to the camera body indirectly via a rubber "shock absorber" construction.



Performance test of Mirror Balancer by ultrahigh-speed camera

Nikon IBIS adjustment system for checking every product

Self-diagnostic double-bladed shutter

- Tested to 150,000 cycles.
- Nikon's exclusive Shutter Monitor assures constant shutter release performance.

Coreless motors

- Four coreless motors assure powerful and secure camera operations.

Powerful computer network

- Large computer network system with five Central Processing Units (CPU) including three 16-bit CPUs.

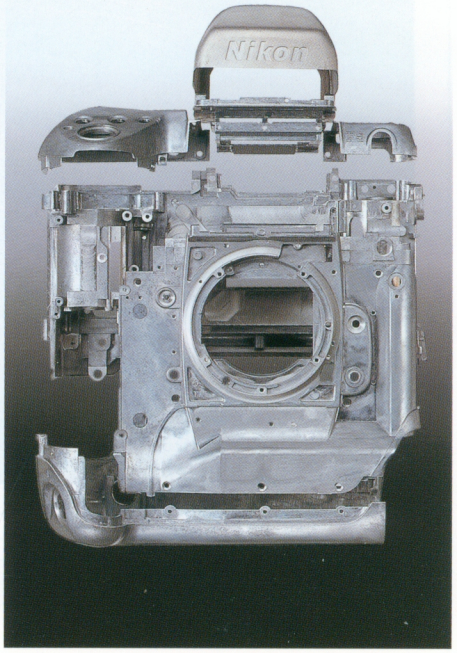
Mock-up version designed by Giugiaro.

1) Solid and Durable Body Construction

The F5 is extremely strong and is built to take "the world's worst assignments." The chassis, top shoulders, bottom and the front-grip covers are made of tough aluminum alloy, giving them the rigidity and strength needed to maintain precise alignment. The viewfinder's top cover is made of titanium for extra resistance to impact. Rubber surfaces cover selected areas of this structure and are textured for secure holding and to provide a buffer against the environment and any impacts. The F5's design has been rigorously tested to assure reliable performance under demanding professional conditions. It is tested to resist moisture and dust, and is vibration-tested and put through extremes of temperature. Nikon's engineers envisioned how you will use it, then put it to real-life testing to ensure its high reliability in actual use.

2) Floating Mechanism for Silent Operation

The interior of the F5 is designed to pro-



vide quick, precise, whisper-quiet movement. Thanks to a floating-type design, the coreless motors and gears are quieter, too. With their shock-absorber-like rubber-armored construction, they minimize internally induced vibration. In the Continuous Silent film advance mode, you get a film advance that's not just quiet, but also with a quality of sound that isn't metallic or shrill.

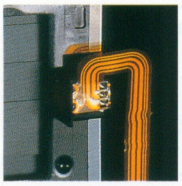
3) Double-Bladed Shutter with Nikon's Patented Shutter Monitor System

Material used for shutter blades

The F5's shutter blades are made using two different materials. Six of the blades are made using a special epoxy which has carbon fiber reinforcement. The two other blades are made with aluminium alloy.

Dual-curtain system

To permit the Nikon F5 to have a mirror lockup, and to ensure that there is virtually no chance of light leaks, Nikon designed a unique shutter with a dual-curtain system. Unlike ordinary vertical focal-plane shutters, the F5's rear shutter curtain is closed until the shutter is released. In other words, the F5 uses both front and rear curtains to avoid the possibility of light leaking past the edges of the shutter blades, while most cameras use only front curtain.



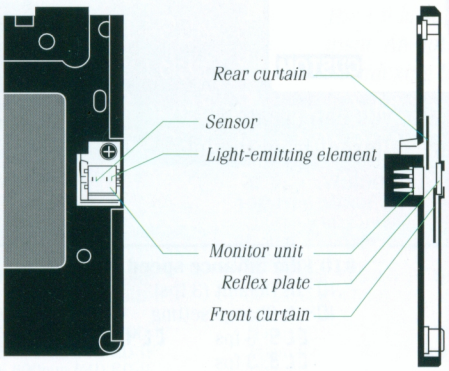
Patented Shutter Monitor System

The F5 features a Shutter Monitor to maintain consistently accurate shutter performance. The Shutter Monitor checks the shutter every time it's released. If speeds begin to shift from the calibrated speed, the camera automatically compensates to maintain an accurate exposure. If in an extreme instance the shutter fails to operate, the F5 will alert you. It provides complete reliability even under the most demanding conditions.

4) Nikon's Exclusive Mirror Balancer

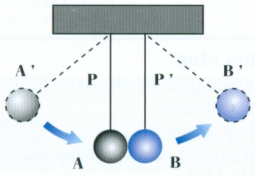
The F5's mirror balance mechanism minimizes mirror bounce, thus reducing the time required to bring the mirror down. This results in smoother AF detection and also contributes to the F5's fast and accurate Focus Tracking and 8-frames-per-second film advance speed.

Shutter Monitor

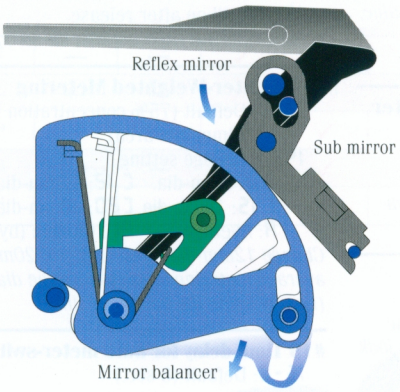


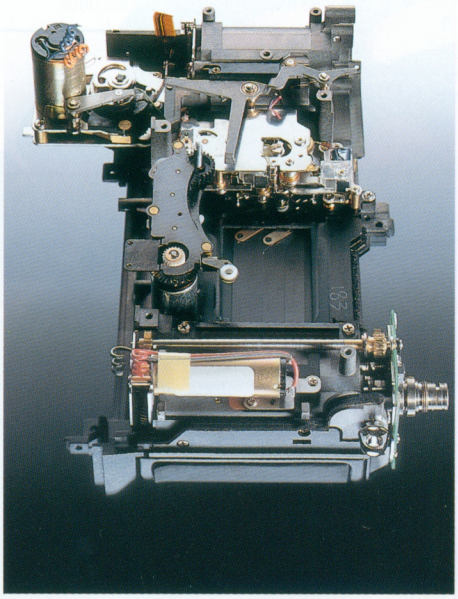
The light emitted from the monitor unit reflects off the reflex plate during exposure. This monitor makes it possible to detect actual exposure time and shutter operation malfunctions.

Mirror balancer



The theory of the mirror balancer can be explained by the swing of the pendulum. When the pendulum P swings down to impact the pendulum P', the pendulum P' swings up from B to B'. If the mass of P equals that of P', the pendulum P instantly stops at position A. The same relationship exists between the reflex mirror and mirror balancer in the F5 camera body.





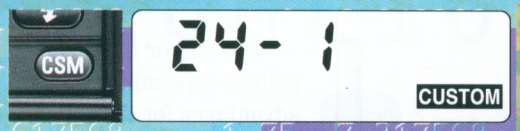
The Mirror Balancer (as opposed to a pellicle-type mirror), provides distinct advantages for the F5 at fast motor rates. The balancer enables the mirror to operate at maximum speed. The effectively longer viewing time provides more time for AF operation, and is one reason why the F5 can provide autofocus and Focus Tracking at motor speeds up to eight frames per second—picture after picture. Pellicle mirrors also accumulate dust and haze which can adversely affect image quality. The F5's moving mirror will never interfere with image quality in that way. The mirror balancer also stabilizes mirror movement and reduces vibration. This is advantageous when making long exposures. Combined with the F5's bright and easy-to-see viewing system, the Mirror Balancer provides distinct advantages which will help make sharper pictures.

5) Coreless Motors

The F5's shutter charge, film winding, rewinding and lens drive motors are all coreless. Unlike conventional cored motors, which demand great inertia to rotate, coreless motors require a much smaller degree of inertia to do the same. This results in higher power with a minimum of electricity, smoother motor rotation, reduced vibration and electric noise, and extremely quick response — all ideal features for smooth and quick drive operation.

6) Powerful Computer Network

Beneath the F5's rugged exterior is a network of powerful computers doing what they do best—taking care of complex operations, calculations and providing unsurpassed capabilities. The network is a hybrid circuit construction that includes three 16-bit, one 8-bit and one 4-bit CPUs, all coordinated to process data for focus detection, sequence control, 3D Color Matrix Metering, Liquid Crystal Display and more. The F5 has a larger ROM capacity, in fact, than any other camera before it. For those more concerned with performance than technical specifications, this simply means the F5 works better than anything that came before it.



Using the Custom Settings feature, you can create a combination of functions that are different from the initial factory settings. They are listed below.

Custom Setting Menu

#0 Selecting Custom Settings
0-A: Custom settings A
0-b: Custom settings B
You can specify the setting combinations you want for A and for B; this makes it easy to switch from one setting combination to another.

#1 Continuous Servo AF
1-0: Release-priority
1- 1: Focus-priority
Change from release-priority to focus-priority.

#2 Single Servo AF
2-0: Focus-priority
2- 1: Release-priority
Change from focus-priority to release-priority.

#3 Bracketing order
3-0: Original value, below original value, above original value
3- 1: Below original value, original value, above original value
Change the order to under the original value, the original value and over the original value.

#4 Autofocus activated when shutter release button is lightly pressed
4-0: Activated
4- 1: Disabled
Delete shutter release button's AF activation function.

#5 AE Lock
5-0: Exposure value
5- 1: Shutter speed and aperture value
Lock shutter speed and aperture for AE lock function.

#6 Direction of command dial rotation
6-0: Default
6- 1: Opposite
Change from left-to-right to right-to-left when increasing values.

#7 AE lock when shutter release button is lightly pressed
7-0: Disabled
7- 1: Activated
Lock exposure when the shutter release button is lightly pressed.

#8 Automatic film advance to frame #1
8-0: Disabled
8- 1: Enabled (when power is on)
The film automatically advances to the first frame when you close the camera back.

#9 Film advance speed in CH
9-0: Default (8 fps)
9- 1: Change setting
CH8: 8 fps CH6: 6 fps
Change from 8 frames per second to 6 fps.

#10 Film advance speed in CL
10-0: Default (3 fps)
10- 1: Change setting
CL5: 5 fps CL4: 4 fps
CL3: 3 fps
Change from 3 fps to 5 fps or 4 fps.

#11 Alert LED in long time exposure
11-0: Does not blink
11- 1: Blinks
Make Alert LED blink during long time exposure.

#12 Auto film stop
12-0: Disabled (film advances until the end of the roll)
12- 1: Change setting
E35: Frame 35 E36: Frame 36
E--: Disabled
Stop film advance at frame 35 or 36.

#13 Multiple Exposure
13-0: Cancelled after release
13- 1: Still on after release
Continue Multiple Exposure after the second shot.

#14 Center-Weighted Metering
14-0: Default (75% concentration in 12mm dia. area)
14- 1: Change setting
C 8: 8mm-dia. C 12: 12mm-dia.
C 15: 15mm-dia. C20: 20mm-dia.
A: Average PC: Custom (by PC)
Change 12mm-dia. area to 8, 15, 20mm, average metering or customize the diameter (i.e., by using the computer link).

#15 Time delay for auto meter-switch-off
15-0: Default (8 sec.)
15- 1: Change setting
L 4: 4 sec. L 8: 8 sec.
L 16: 16 sec. L32: 32 sec.
Choose from 4, 8, 16 or 32 seconds.

#16 Self-timer duration
16-0: Default (10 sec.)
16- 1: Change setting
L 2 to L60: 2 to 60 sec.
Choose from 2 to 60 seconds.

#17 Bracketing in manual exposure mode
17-0: Default (shifts shutter speed)
17- 1: Change setting
1 1A: Shutter speed/aperture combination
10A: Shutter speed
01A: Aperture
00A: Flash output level
Change the shifting factor in the Manual Exposure mode from shutter speed to choice of shutter speed/aperture combination, aperture or flash output level.

#18 Focusing screen compensation
18-0: No compensation
18- 1: Change setting
-2.0 to 2.0: –2 to +2 in 0.5 EV steps
Change the EV level of the focusing screen from –2.0 to +2.0 in 0.5 EV steps. See specific focusing screen instruction manual for required compensation value.

#19 Prolonged shutter speed
19-0: Disabled
19- 1: Enabled
Choose from 40 seconds to 30 minutes duration.

#20 Top TTL flash sync speed
20-0: Default (1/250 sec.)
20- 1: Change setting
300: 1/300 sec. 250: 1/250 sec.
200: 1/200 sec. 160: 1/160 sec.
125: 1/125 sec. 100: 1/100 sec.
80: 1/80 sec. 60: 1/60 sec.
To set top TTL flash sync speed.
1/300 sec. can be selected only in the Shutter-Priority Auto or Manual exposure modes.*
*The shutter speed is controlled to 1/250 in the Programmed Auto or Aperture-Priority Auto exposure modes.

#21 AE-L/AF-L button
21-0: Default (simultaneous lock)
21- 1: Change setting
AEL: AE lock
AFL: AF lock
L-L: Simultaneous lock
Change to AE lock only or AF lock only.

#22 Aperture setting via Sub-Command Dial
22-0: Enabled
22- 1: Disabled
The only way to set aperture is to rotate the lens aperture ring.

#23 ▶ or ◀ focus indicator
23-0: Displayed
23- 1: Not displayed
Don't show the display of ▶ and ◀ (focused at rear or in front of the subject) in the viewfinder during the Autofocus mode.

#24 Auto Exposure/Flash Exposure Bracketing
24-0: Default
(Auto Exposure/Flash Exposure Bracketing)
24- 1: Change setting
0 1E: Auto Exposure (ambient exposure) Bracketing
10E: Flash Exposure Bracketing
11E: Auto Exposure/Flash Exposure Bracketing
When you want only Auto Exposure Bracketing or Flash Exposure Bracketing.

Extensive Nikkor Lens Compatibility

The F5 features the legendary Nikon F lens mount which accepts a huge selection of Nikkor lenses. The camera can also be used with a wide range of non-AF Nikkor lenses from 15mm to 1000mm.

The F5 is supplied with a fixed position AI indexing mechanism. An optional service modification (to add an adjustable AI indexing lever) is required to use non-AI lenses.

COMPATIBLE LENSES

AF Nikkors
- AF 20-35mm f/2.8D IF
- AF 24-50mm f/3.3-4.5D
- AF 24-120mm f/3.5-5.6D IF
- AF-S 28-70mm f/2.8D ED-IF
- AF 28-80mm f/3.5-5.6D
- AF 28-105mm f/3.5-4.5D IF
- AF 28-200mm f/3.5-5.6D IF
- AF 35-70mm f/2.8D
- AF 35-80mm f/4-5.6D
- AF 70-210mm f/4-5.6D
- AF 70-300mm f/4-5.6D ED
- AF-S 80-200mm f/2.8D ED-IF
- AF 80-200mm f/2.8D ED
- AF 80-200mm f/4.5-5.6D
- AF 18mm f/2.8D
- AF 20mm f/2.8D
- AF 24mm f/2.8D
- AF 28mm f/1.4D
- AF 28mm f/2.8D
- AF 35mm f/2D
- AF 50mm f/1.4D
- AF 50mm f/1.8
- AF 85mm f/1.4D IF
- AF 85mm f/1.8D
- AF 180mm f/2.8D ED-IF
- AF-S 300mm f/2.8D ED-IF
- AF 300mm f/4 ED-IF
- AF-S 400mm f/2.8D ED-IF
- AF-S 500mm f/4D ED-IF
- AF-S 600mm f/4D ED-IF
- AF-I Teleconverter TC-14E
- AF-I Teleconverter TC-20E
- AF Fisheye 16mm f/2.8D
- AF Micro 60mm f/2.8D
- AF Micro 105mm f/2.8D
- AF Micro 200mm f/4D ED-IF
- AF Micro 70-180mm f/4.5-5.6D ED
- AF DC 105mm f/2D
- AF DC 135mm f/2D

AI-P-type Nikkor
- 500mm f/4 P ED-IF

AI- and AI-S-type Nikkors
- 35-200mm f/3.5-4.5
- 50-300mm f4.5 ED
- 15mm f/3.5
- 18mm f/3.5
- 24mm f/2
- 28mm f/2
- 35mm f/1.4
- 50mm f/1.2
- 85mm f/1.4
- 105mm f/1.8
- 105mm f/2.5
- 135mm f/2.8
- 200mm f/2 ED-IF
- 400mm f/2.8 ED-IF
- 400mm f/3.5 ED-IF
- 400mm f/5.6 ED-IF
- 600mm f/5.6 ED-IF
- 800mm f/5.6 ED-IF
- Micro 200mm f/4 IF
- UV 105mm f/4.5

Other Nikkors
- Reflex 500mm f/8
- Reflex 1000mm f/11
- PC 28mm f/3.5
- PC 35mm f/2.8

Lens Compatibility Chart

Lens	Focusing		Exposure mode				Metering system		
	AF	Electronic Range-finder	P mode	S mode	A mode	M mode	Color Matrix	Center-Weighted	Spot
AF-S & D-type AF Nikkors	✓	✓	✓	✓	✓[1]	✓[1]	✓[2]	✓[3]	✓[4]
AF-I Teleconverters[5]	✓[6]	✓[6]	✓	✓	✓[1]	✓[1]	✓[2]	✓[3]	✓[4]
Non-D-type AF Nikkors	✓	✓	✓	✓	✓[1]	✓[1]	✓	✓[3]	✓[4]
AI-P-type Nikkor	—	✓	✓	✓	✓[1]	✓[1]	✓	✓[3]	✓[4]
AI-type Nikkors	—	✓[7]	—	—	✓	✓	—	✓	✓
Reflex-Nikkors	—	—	—	—	✓[8]	✓[8]	—	✓	✓
PC-Nikkors	—	✓[9]	—	—	✓[10]	✓	—	✓[9]	✓[9]
AI-type Teleconverters	—	✓[6]	—	—	✓	✓	—	✓	✓
Bellows Focusing Attachment PB-6[11]	—	✓[6]	—	—	✓	✓	—	✓	✓

✓ Compatible — Incompatible

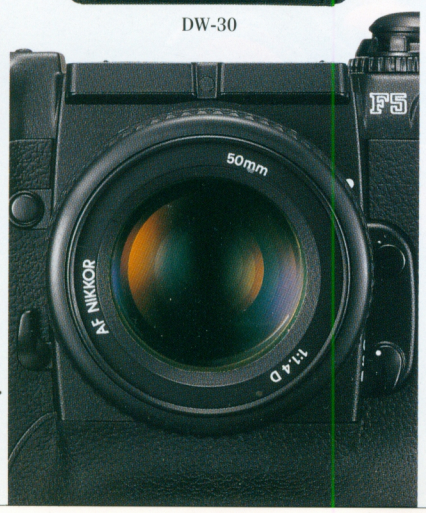
1 Aperture can be selected via Sub-Command Dial.
2 3D Color Matrix Metering is selected.
3 Size of the sensing area can be changed by Custom Setting #14.
4 Metering area corresponds to the selected focus area.
5 Compatible with AF-S Nikkor lenses except AF-S 28-70mm f/2.8D ED-IF.
6 With maximum effective aperture of f/5.6 or faster.
7 With maximum aperture of f/5.6 or faster.
8 Aperture cannot be selected.
9 Without shift.
10 Exposure determined by presetting lens aperture. Exposure must also be determined before shifting; use AE-L/AF-L button before shifting.
11 Auto Extension Ring PK-11A, 12 or 13 is necessary.

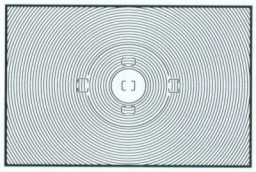
DP-30

DA-30

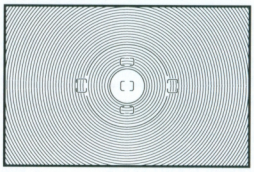
DW-31

DW-30

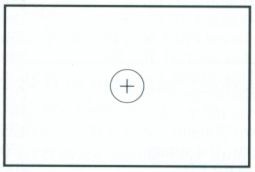




Type EC-B



Types B, U



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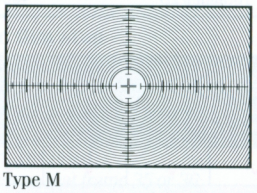
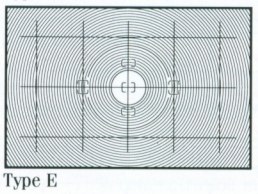
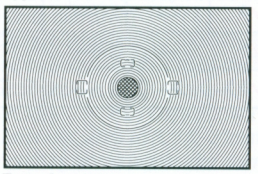


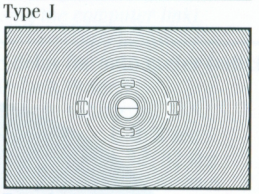
Type M



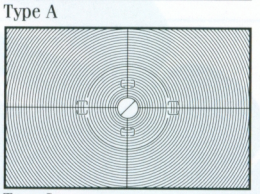
Type E



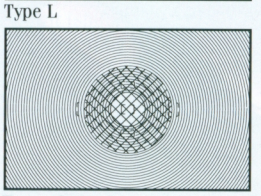
Type J



Type A



Type L



Types G1-4

Interchangeable Viewfinders

The standard Multi-Meter Finder is interchangeable with three other optional viewfinders, all of which offer virtually 100% frame coverage.

Multi-Meter Finder DP-30
High-eyepoint type. Incorporates a built-in diopter adjustment knob –3 to +1 diopters, ISO-standard accessory shoe, eyepiece shutter and metering system selector.

AE Action Finder DA-30
Ideal when normal viewing is difficult or impossible, such as when wearing a helmet or goggles, or when the camera is encased in a special housing for underwater photography.

6× High-Magnification Finder DW-31
For critical high-magnification close-up work and photomicrography. The sophisticated optical system provides a clear, sharp view of the entire image at approximately 6× magnification. Fitted with a –5 to +3 diopter adjustment for individual eyesight correction. Rubber eyecup and rubber eyepiece cap are provided.

Waist-Level Finder DW-30
For use when the F5 is positioned at a low angle or on a copystand. Fold-up type viewing hood provided. The built-in flip-up magnifier provides an approx. 5× magnification at the center of the image for accurate focusing.

Interchangeable Focusing Screens

These special Nikon focusing screens are ideal for manual focusing and assisting in composition, and do not affect the F5's autofocus operation. All are made of Nikon ground glass. Types EC-B, A, B, E, G1-4, J, L and U incorporate focus brackets for five focus areas; Types EC-B, A, B, E, J, L and U, use a 12mm circle for Center-Weighted Metering. Types EC-B, A, B, E, C, J and U feature an advanced BriteView configuration for the brightest, clearest images.

Type EC-B: This new standard screen shows the focus area selected and offers unobstructed viewing and easy focusing on its overall matte surfaces.

Types B, U: These offer unobstructed viewing and easy focusing on their overall matte surfaces.

Types C, M: For high-magnification close-ups and for astrophotography.

Viewfinder/Metering System Compatibility

	Matrix	Center-Weighted	Spot*
Multi-Meter Finder DP-30	✓ (3D Color)	✓	✓
AE Action Finder DA-30	✓ (Five-segment)	✓	✓
6× High-Magnification Finder DW-31	—	—	✓
Waist-Level Finder DW-30	—	—	✓

✓: Available —: Not available

* *For the DP-30, the Spot Metering area is 4mm-dia. when used with EC-B type screen and 6mm-dia. when used with other screens. For other viewfinders, the Spot Metering area is 3mm-dia.*

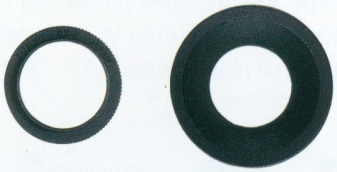
Type E: The grid pattern of this screen makes it ideal for architectural photography.
Type J: The microprism is great for general photography.
Types A, L: Feature a matte Fresnel field with split-image range finder and microprism collar.
Types G1-4: Perfect for shooting in dim light or for fast-moving subjects. There are four models available to match various focal lengths.

Viewing Accessories

DR-4

DG-2

Eyepiece Correction Lenses



DK-7 DK-2

Eyepiece Correction Lenses
These enable near- and farsighted photographers to view the finder image accurately without having to wear glasses. Five lenses are available, –3, –2, 0, +1, +2 diopters.

Rubber Eyecup DK-2
Increases viewing comfort and prevents stray light from entering the viewfinder.

Right-Angle Viewing Attachment DR-4
Provides an upright and unreversed image with right-angle viewing. Individual eyesight adjustment possible. Perfect for copy work.

Eyepiece Magnifier DG-2
Provides 2× magnification of the central portion of the finder image. Eyesight adjustment is provided.

Eyepiece Adapter DK-7
Allows you to attach the DG-2 to the eyepiece of the Multi-Meter Finder DP-30.

The MF-28 can imprint copyright indication. It provides identification for film immediately upon processing and supplements copyright protection.
Fully enforceable copyright protection requires additional legal action by the photographer.

Optional Camera Backs

Multi-Control Back MF-28
The optional MF-28 enables the imprinting combination of data in-frame (7 segments, 6 digits; year/month/day, month/day/year, day/month/year, day/hour/minute, hour/minute/second, film number, serial upcount number or fixed number) or between-frames (alphanumeric, 22 digits; year/month/day/hour/minute/second, year/month/day/hour/up to 8 characters, month/day/hour/minute/up to 8 characters, day/hour/minute/second/up to 8 characters, up to 22 characters, film number, shutter speed/aperture, compensation value in Auto Bracketing, or caption up to 18 characters/year).

In addition, the MF-28 enables the F5 to function in more advanced ways—
Interval Timer: Commencement time, interval time, number of shots taken and number of intervals can be input.
Long Time Exposure: You can choose any duration from one second up to 999 seconds, 999 minutes or 999 hours.
Auto Bracketing: You can shoot up to 9 continuous frames, each with a different exposure.
Freeze Focus: Shutter is automatically released the moment the subject enters in-focus position.

Data Back MF-27
Imprints selected date and time information within frame; your choice of year/month/day, month/day/year, day/Hour/minute—or no imprint.

Close-Up Accessories

Auto Extension Rings PK-11A/12/13
Slide on and off your camera in seconds for a wide range of reproduction ratios.

Bellows Attachment PB-6
Mounts between the F5 and the lens for close-up and macro photography. Optional accessories include PB-6E Extension Bellows, PB-6M Macro Copy Stand and PS-6 Slide Copying Adapter.

Macro Adapter Ring BR-2A
Enables lenses to be mounted in reverse for a relatively high reproduction ratio.

Focusing Stage PG-2
Simplifies close-up focusing when using a tripod-mounted camera.

Close-Up Attachment Lenses
Provides an easy way to explore close-up photography. Seven kinds available — 0, 1, 2, 3T, 4T, 5T, 6T.

TTL Macro Speedlight SB-21B
Gives you the choice of flash front lighting or selective relief lighting.

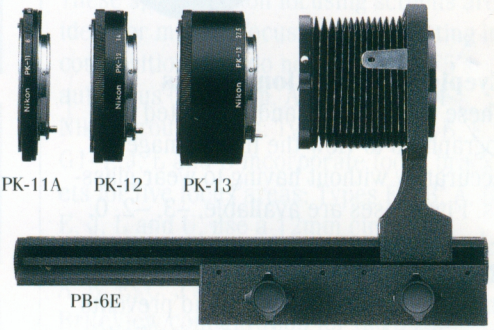

PB-6M


PS-6

SB-21B


No.0 No.1 No.2 No.3T No.4T No.5T No.6T

PB-6


PK-11A PK-12 PK-13

PB-6E

Remote Control Accessories

Modulite Remote Control Set ML-3
Provides infrared LED beam remote control for two separate channels to enable automatic camera operation from a distance of up to 8 meters.

Remote Cord MC-20
Enables remote firing of the F5 and setting of exposures up to 9 hrs. 59 min. 59 sec. long. The LCD tells you the exposure time.

Remote Cord MC-30
Enables remote firing with a trigger-lock function.

Extension Cord MC-21
Available for 10-pin remote accessories.

Connecting Cord MC-23
Connects two F5 cameras for simultaneous or synchronized shutter release. Requires personal computer links software.

Adapter Cord MC-25
Enables the use of Remote Cord MC-12A/12B, Radio Control Set MW-2 and Modulite Remote Control Set ML-2.

Power Sources

The standard MS-30 battery holder accepts eight AA-type alkaline or lithium batteries. The optional Ni-MH Battery Unit MN-30 maximizes power and speed. The External Power Cord MC-32 with two banana-type plugs connects 12V external power source to the F5.


ML-3

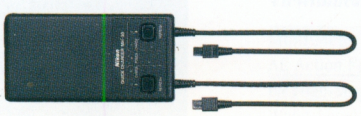

MC-20

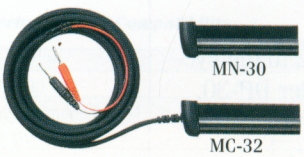

MC-30


MC-21


MC-23


MC-25


Ni-MH Battery Charger MH-30


MN-30

MC-32

Personal Computer Links

Nikon designed two computer link software packages exclusively for the F5. The Nikon Photo Secretary AC-1WE links the camera via Personal Computer Connecting Cord MC-33 with a PC based on Windows 95®; AC-1ME links the F5 via Personal Computer Connecting Cord MC-34 with a personal computer operating on a Macintosh® System 7.1~7.6. These links allow you to set various F5 operations from a personal computer. You can also download shooting data stored on the F5, thus allowing you to manipulate it on your personal computer.

Contents of the software

Install Program

Camera ID Setting Program

Camera Operation

Displays settings of connected cameras
(Displays each setting on the monitor)
Remote camera setting and operation
(Enables setting of 20 items)
Custom Settings
(Enables custom setting of 41 items)
Program shooting
(Enables programming of camera settings for each frame)
Color Matrix Meter status
(Displays distribution of color and brightness in the scene)
Confirming camera ID
(Blinking self-timer LED confirms which camera is in operation)

Film Manager

Data loading
(Downloads the F5's shooting data and files it)
Film viewer
(Displays data for each frame)
File edit
(You can input the titles and comments by frame)
Shooting data finder
(Allows you to search for data on specific frames)
Photo finder
(Lets you scan the images via scanner and link them with shooting data)

List of custom settings

Enables customized settings of the following items in addition to those listed on page 22.

- Slowest sync speed: Choose from 1/60 to 30 sec.
- Effective Aperture setting during zooming: Allows you to vary the aperture according to the focal length setting you choose while zooming.
- Lock button: Pressing this button in combination with the Command Dials lets you change shutter speed and aperture settings.
- Value settings via command dials: Values automatically reset (highest and lowest values are adjacent).
- Focus area selection: Disables diagonal focus area shift (e.g. left to top, or bottom to right).
- Shutter release time lag: Allows you to delay shutter release up to 1 sec.
- Focus area indication: Delete the focus area indication outside finder screen.
- Data imprint on frame #0.
- Bulb/Time selection: Choose from Bulb or Time shutter release options.
- Shutter release indication: Self-timer indicator will light up when shutter is released.
- Data storage option: You can store the data in the F5's memory until it is sent.
- Focus lock in AF-S mode: Lock focus during continuous shooting in AF-S mode.
- Focus area sequencing in Dynamic AF: Allows you to select either horizontal or vertical focus area sequencing.
- Multiple camera shooting: Choose from simultaneous, in-sequence time lag or individual shutter release options.
- Data full warning: Camera warns you when the camera's data recording memory is full.
- Recording data selection: Lets you select shooting data to be recorded in the camera's memory.
- Camera setting lock: You can lock the desired camera settings.

Your Nikon F5 is fully guaranteed against any manufacturing defects for three full years from the date of purchase. During this period, repairs or adjustments will be made free of charge only upon presentation of the Nikon Worldwide Service Warranty Card to any of the Nikon Service facilities listed. Contact an authorized Nikon Dealer or service center for more details.

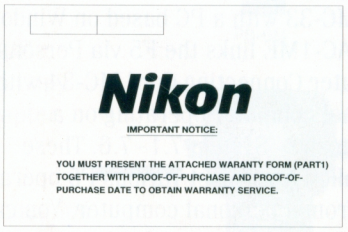
Nikon Service

Nikon Inc. is the official US supplier for high-quality Nikon products. You can confirm that Nikon products serial numbered have been officially imported by checking the following:

* The serial numbered product is supplied with an Official Nikon Inc. Limited Warranty Document, and
* Some products will have additional identification, including either the letters "US" engraved next to the serial number or a special sticker affixed to the product.

If the Nikon product that you purchased in the United States does not include the Official Nikon Inc. Limited warranty Document, it's not an officially imported Nikon product, and it will not be entitled to Nikon Inc. Repair Service. The warranty document must be shown when you send your product for warranty repair, and also for subsequent repair.

Sticker


Nikon

IMPORTANT NOTICE:

YOU MUST PRESENT THE ATTACHED WARANTY FORM (PART1) TOGETHER WITH PROOF-OF-PURCHASE AND PROOF-OF-PURCHASE DATE TO OBTAIN WARRANTY SERVICE.

Warranty document

If the Nikon Inc. product you purchase does not include the official, original Nikon Inc. Limited Warranty Document, even if the vendor claims that it has a US warranty, the product will not be entitled to Nikon Inc. service support.

We urge you to insist that your Nikon purchase be an authentic officially imported Nikon Inc. product. Only with the proper warranty document can you be assured that your product will be entitled to the quality care and service that is available from Nikon Inc.'s highly trained and officially supplied Service Department.

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