● SIGMA SD9 Major Specifications

Storage Media	CompactFlash™ (CF) (Type I/II), IBM Microdrive™
Image Sensor Size	20.7x13.8mm
Lens Mount	SIGMA SA bayonet mount
Angle of View	Equivalent to about 1.7x the focal length of the lens (for 35mm cameras)
Compatible Lenses	SIGMA SA mount Lens Group
Image Sensor	FOVEON® X3™ (CMOS)
Pixel Sensors	10.29 Million (2,268 Columns x 1,512 Rows x 3 Layers)
Aspect Ratio	3:2
Image Recording Format	Lossless compression RAW data (12-bit)
File Size	HI : 2.268 x 1,512 x 3 pixels (Approx 8MB), MED : 1,512 x 1,008 x 3 pixels (Approx 4MB), LOW : 1,134 x 756 x 3 pixels (Approx 2MB)
Continuous shooting speed	HI : 1.9 frames/second MED : 2.4 frames/second LOW : 2.5 frames/second
Maximum number of frames for continuous shooting	HI : 6 frames MED : 14 frames LOW : 30 frames
Interfaces	IEEE1394, USB (1.1), Video Out (NTSC/PAL)
White balance	8 types (auto, bright, shady, cloudy, incandescent light, fluorescent light, flash and custom)
Viewfinder	Pentaprism SLR viewfinder
Viewfinder Frame Coverage	97% vertical, 98% horizontal
Viewfinder Magnification	0.77x (50mm F1.4 — ∞)
Eye point	18mm
Diopter Adjustment Range	-3dpt — +1dpt
Auto Focus Type	TTL phase difference detection system
AF Operating Range	EV2 — 18 (ISO 100)
Focus Mode	AF-S (single), AF-C (continuous), with AF motion prediction function
Metering Systems	Can be switched among 8-Segment Evaluative Metering, Center Area Metering, and Center-Weighted Average Metering
Metering Range	EV1 — 20 (50mm F1.4: ISO 100)
Exposure Modes	(P) Program AE (program shift available), (S) Shutter Speed Priority AE, (A) Aperture Priority AE, (M) Manual
ISO Sensitivity	Equivalent to ISO 100, 200, 400
Exposure Compensation	±3EV (in 1/2 steps)
AE Lock	Pushbutton type. Exposure setting is locked while the button is depressed
Auto Bracketing	3 different exposure levels: Appropriate, Under Exposure, and Over Exposure, in 1/2 EV steps up to ±3EV
Shutter Type	Vertical-travel metal focal plane shutter, electronically controlled through entire speed range
Shutter Speed	1/6,000 to 15 sec. (ISO 100), 1/6,000 to 1 sec. (ISO 200, 400), Bulb (ISO100, up to 15 sec.)
External Flash Synchronization	Hot shoe (contact X, synchronized at 1/180 sec. or less, with dedicated flash linking contact)
LCD Monitor	1.8", low-temperature polysilicon TFT color LCD monitor, about 130,000 pixels, coverage area 100%, with white LED backlight.
Reviewing Images	Single frame display, zoom-in display, 9-frame thumbnail display, slide show
LCD Monitor Language	Japanese / English / French / German
Power Source	3V lithium battery (CR123A or DL123A) x 2pcs. 3V lithium battery (CR-V3) x 2pcs., or AA alkaline battery x 4 pcs., or AA Ni-Mh battery x 4pcs., or Nickel Zinc Primary Battery x 4pcs. Dedicated AC adapter.
Dimensions	152mm/6"(W) x 120mm/4.72"(H) x 79mm/3.1"(D)
Weight	805g / 28.4oz (without batteries)

[SD9 accessories]

- ◎ SIGMA Photo Pro Disk
- ◎ Dedicated AC adapter SAC-1
- ◎ AC cable
- ◎ Dedicated USB cable
- ◎ Dedicated IEEE1394 cable (FireWire™ cable)
- ◎ Dedicated Video cable
- ◎ LCD monitor cover
- ◎ Strap

[Optional Accessories for SD9]

- ◎ Electronic Flash [EF-500 DG SUPER / EF-500 DG ST]
- ◎ Battery Grip [Power Pack SD]
- ◎ Remote Controller [RS-21]
- ◎ Cable Release Switch [CR-11]
- ◎ PC-Synchro Terminal Adapter [ST-11]

* Product external appearance, specifications, etc. may change without notice to allow for improvements.

⚠ **Caution : To ensure the correct and safe use of the product, be sure to read the User's Manual Carefully prior to operation.**

SIGMA

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■ SIGMA World Network (HOMEPAGE & E-MAIL ADDRESS)

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http://www.sigma-photo.com (English)	E-Mail : info@sigmaphoto.com (U.S.A)
http://www.sigma-imaging-uk.com (English)	E-Mail : sale@sigma-imaging-uk.com (U.K.)
http://www.sigma-photo.fr (French)	E-Mail : sigma@sigma-photo.fr (France)
http://www.sigma-foto.de (German)	E-Mail : info@sigma-foto.de (Germany)
http://www.sigma-benelux.nl (Dutch)	E-Mail : foto@sigma-benelux.nl (Benelux)
http://www.sigma.com.hk (Chinese)	E-Mail : info@sigma.com.hk (Hong Kong)
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〈2003.2〉

SIGMA

Digital Single Lens Reflex Camera

SD9

High-definition quality with over 10.2 million pixel sensors

[Data]
- Lens : SIGMA MACRO 50mm F2.8 EX
- Aperture : f 22
- Shutter : 1/60
- ISO Speed : 100
- Exposure Mode : Manual
- Focus Mode : Manual
- Raw File Format : Hi 1,512 X 2,268

SEE all of the light

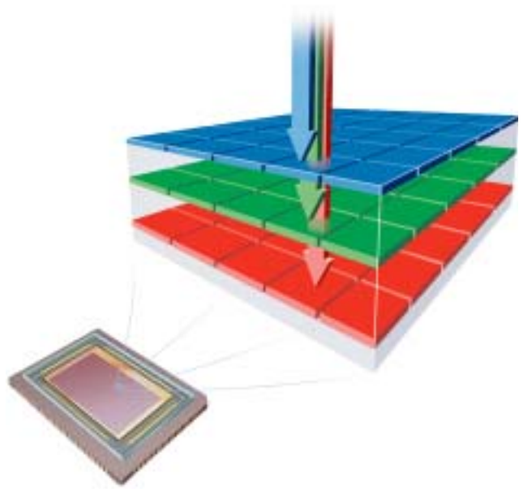
Digital

Digital photos have never looked quite as good as those taken on film. Until now.
Only the SIGMA SD9 digital single-lens reflex camera makes this major breakthrough.
Using FOVEON® X3™ technology with over 10.2 million pixel sensors for more accurate, efficient color reproduction, and sharper resolution, pixel for pixel, than any conventional CCD or CMOS image sensor provides.
So you can capture more of your vision in a truer light.
Go ahead. Get more creative. The SIGMA SD9 puts the advantage of higher technology right in your hands.

FOVEON® X3™ image sensor brings new vision to digital imaging.

The FOVEON® X3™ image sensor is the heart of the first and only full-color capture system for digital cameras. The X3. image sensor uses *three* silicon-embedded layers of pixel sensors, stacked to take advantage of silicon's ability to absorb red, green *and* blue light at different respective depths. A FOVEON® X3™ image sensor can thereby capture full color and detail at each and every pixel location.
The results are a revelation : better color detail, fewer color artifacts and three times the image sharpness, compared to that delivered by more conventional image sensors.

[FOVEON® X3™ image sensor conceptual diagram]



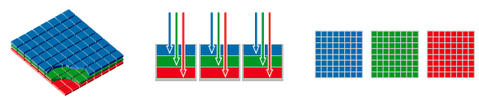
FOVEON

FOVEON Inc.
Founded in California in 1997, FOVEON Inc. is world-renowned for image sensors, user interfaces, and image/digital processing technology.

Other image sensors are no match for the SD9's true full-color capture system

Unlike the SIGMA SD9, other digital cameras' image quality is inherently compromised. Conventional image sensors use a single layer of pixel sensors which are organized in a three-color checkerboard mosaic. Each pixel location has one pixel sensor and captures just one color component — red or green or blue. Regardless of pixel count, mosaic-based image sensors capture only one-third of the information that FOVEON® X3™ full-color image sensors capture per pixel location, and rely on complicated time and energy-consuming processing to interpolate the two-thirds of all the information they miss at each pixel. This leads to color artifacts, loss of image detail, and other disadvantages.

[FOVEON® X3™ image sensor technology diagram]

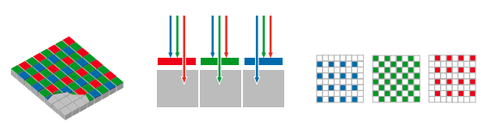


The FOVEON® X3™ image sensor comprises three layers of pixel sensors embedded in silicon.

Silicon absorbs different colors, or wavelengths, of light at different depth, so each layer captures a different color among R, G, and B. The stack of three layers creates a full-color pixel.

Only the FOVEON® X3™ image sensor captures R, G, and B light at every pixel location.

[Conventional image sensor technology diagram]



A conventional image sensor features color filters applied to a single layer of pixel sensors in a tiled mosaic pattern.

The filters let only one wavelength of light — red, green, or blue — pass through to any given pixel location. The pixel location records only that one color,so the other imformation at that site is lost.

As a result, conventional mosaic image sensors capture only 25% of the R (red), 25% of the B (blue), and 50% of the G (green) light.

FOR MORE FLEXIBLE CONTROL OF IMAGE DATA

RAW format recording

The SD9 uses the RAW format — the highest-quality recording method — to record information about light detected by the FOVEON® X3™ image sensor. The RAW data format provides pure data for high-resolution images, and uses lossless compression for more compact, yet uncompromised data files.

Exclusive SIGMA Photo Pro software reads RAW data

The SD9 comes with SIGMA Photo Pro software for changing the look of recorded RAW data image files. It's easy to adjust white balance, exposure, color balance, and contrast, for example, or otherwise manipulate RAW data, without compromising image quality or definition.

< Main Window >
This basic screen for manipulating RAW data is a simple, yet sophisticated user interface for control of various functions.

- Open RAW data files
- Transfer and save RAW image data
- Save images (TIFF, JPEG)
- Mark, lock, rotate, and delete images in the camera or on a PC

< Review Window >
- Display image
- Display adjusting palette
- Highlight and shadow warning
- Mark, lock, rotate, and delete images

< Image Quality Adjustment Palette >
- Adjust exposure, contrast, shadows, highlights, saturation, and sharpness
- Adjust colors
- Adjust gray balance
- Open, save, and delete custom settings
- Check histograms

< Image Information Window >
- Check shooting information
- Check image information
- Copy information to the clipboard

The SIGMA SD9 has exclusive advanced functions

◎ **Data recovery of deleted images*.**

* Recoverable only if no other operation has been performed after deletion of image data using "Delete". If an image is taken right after deletion, the deleted image data cannot be recovered.

◎ **3-color histogram :** Signal levels (appearing as dark to bright areas in an image) can be displayed on the monitor in red, green, and blue. This makes it easy to check light and shadow details.

Seamless recording and playback

Recording and playback modes aren't separated so you can quickly take advantage of photo opportunities and record images even while playing back other images.

Intuitive interface

Clearly marked operation panel buttons make it easy for photographers to identify and use desired functions.

The SIGMA SD9 has an extensive variety of functions

◎ **Lock function / mark function :** Simplifies image sorting.

◎ **Shortcut key settings :** For convenient function setting using the OK button.

◎ **5-stage zoom and pan :** Lets you zoom in up to 400% and pan while zooming, for checking focus and image details in camera.

◎ **Information access :** Accessing information about camera settings, CF card data and image data is simple.

◎ **Customizable view :** You can customize data displayed on the info strip, using exposure warning display ON/OFF, quick preview duration and style setting, and more.

◎ **Slide show settings :** Use lock function/mark function to display only those images that you want to view.

Three resolution settings

Choose among three RAW data resolution shooting modes : HI mode (2,268 x 1,512 x 3) for optimal quality, MED mode (1,512 x 1,008 x 3) for recording more images at high definition, and LOW mode (1,134 x 756 x 3) for capturing the most images per given memory capacity.

Function

Thumbnail screen

Full screen


Zoomed screen


Image Info screen

Easily view images and settings

A 130,000-pixel 1.8-inch TFT liquid crystal monitor built into the SD9's back body panel reproduces clear, beautiful images. With the built-in 4-Way Controller, it also serves as an easy-to-use multifunctional interface.

White balance for the look you like

You can shoot under any lighting conditions with a choice of white balance modes including "bright," "shady," "cloudy," "incandescent light," "fluorescent light," "flash," and "auto". There's even "custom" for customized white balance that you can adjust according to the shot viewed through the back-panel LCD.

White balance / main screen


White balance / sub screen

Frame-by-frame ISO Setting

Frame-by-frame ISO selection is among the SD9's functions that are unmatched by any film camera. Choose among the 100, 200, and 400 ISO settings.

Records on CF cards and Microdrives*

The SIGMA SD9 records on reliable, high-capacity Type I and Type II CF (CompactFlash) cards. Or, you can attach a Microdrive* to hold even larger volumes of data.

* This recording medium uses a high-speed hard disk, so it is more vulnerable to vibration and shock than flash memory CF cards. If you use a Microdrive, take extra care not to expose the camera to shock or vibration, especially during recording and playback.

Pick your power source

For around-the-world shooting versatility, the SD9 can be powered by two CR123A (DL123A) and two CR-V3 lithium batteries ; two CR123A and four AA batteries (including Ni-Mh AA batteries) ; or a dedicated AC adaptor (included with the camera).

IEEE1394 and USB Interfaces

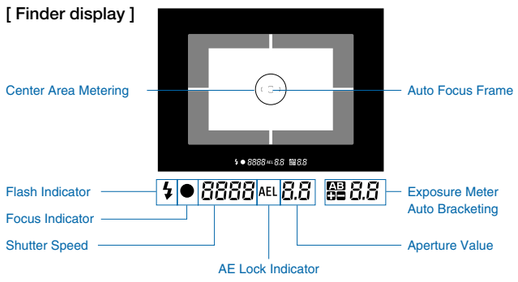
The camera has an IEEE1394 port as well as a USB port for extra-speedy, versatile image transfer from the SD9 to a computer.

Shoots in NTSC and PAL formats

You can switch between the NTSC video standard (used in countries including Japan and the U.S.) and the PAL format (used in Europe and other countries) for image playback on TV monitors in many parts of the world.

[Data]
- Lens : SIGMA MACRO 50mm F2.8 EX
- Aperture : f 8.0
- Shutter : 1/15
- ISO Speed : 100
- Exposure Mode : Manual
- Focus Mode : Manual
- Raw File Format : Hi 2,268 X 1,512

[Finder display]



The Sports Finder won't miss A moment

Now, it's easier to compose and shoot fast-moving action. Because unlike an ordinary single-lens reflex camera with viewfinder showing just what is within the shooting frame, the SD9's unique sports finder offers a view that extends outside of the frame. All the better to anticipate the movement of subjects coming into the frame before capturing the crucial moment.

* When a 130% sports finder is attached to a conventional 35mm SLR, it increases camera body size by 70%.

Speed

non-stop shooting up to 30 frames

A high-speed CPU and high-volume buffer memory enable the SD9 to shoot at 2.5 frames per second for up to 30 consecutive frames in LOW mode, Up to 14 consecutive frames in MED mode, 6 frames in high-quality HI mode.

1/6000-second maximum shutter speed

With a shutter up to 1/6000-second fast, the SD9 can capture what even the human eye cannot see. Drops of water from a splash in the pool can be frozen in detail. Or use a high shutter speed for outdoor shooting with a telephoto lens to create an image in which a subject really stands out from the background.

GET READY TO SHOOT FASTER

AF cross sensoring

The SD9's AF cross sensor in the center of its viewfinder lets a photographer select the subject of focus, according to compositional intention.

SIGMA lens motors for fast AF

Each SIGMA lens has a motor to drive focusing, for AF shooting at speeds appropriate for the lens in use. Attachment of a SIGMA HSM (hypersonic motor) lens keeps shooting fast and quiet. Naturally, full manual focusing is also available.

Predictive movement Auto focus

For subjects moving closer or further away at a fairly steady speed, this feature calculates the distance the subject will travel until the shutter opens, and drives the lens to the optimal focus for the shot. Predictive movement AF operates automatically when the Continuous AF mode is on.

* If subject motion is irregular or motionless, predictive movement AF won't be activated.

Two focus modes

■ Continuous AF mode [C, AF]

In this mode, the camera continues focusing on a moving subject while the shutter button is pressed halfway. For example, when shooting athletes or moving vehicles, the motion prediction mechanism will activate and control focus, predicting the subject's traveling distance from the time the shutter button is pressed to the instant the shutter is released.

■ Single AF mode [S, AF]

In this focus-priority AF mode, AF ranging starts when the shutter button is pressed, and the shutter is released once the subject is in focus. When the subject comes into focus, the focus indicator turns on in the finder (with an electronic sound), and the Focus Lock (AF Lock) / AE Lock functions* activate, fixing the focus.

* When the AE Lock button is pressed, exposure is fixed at that point in time. Use this mode if the area that you want to meter and the subject that you want to focus on are not one and the same.

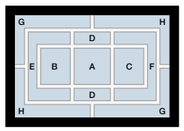
Mirror-lock mechanism prevents camera shake

The mirror-lock mechanism raises the mirror so you can release the shutter without the vibration of the mirror popping up. This prevents camera shake, and is especially effective for macro shooting and shooting scenes using telephoto lenses. Use of a remote controller or cable release (sold separately) also reduces the possibility of camera shake.

WHERE DIGITAL AND 35mm SLR ADVANTAGES CONVERGE

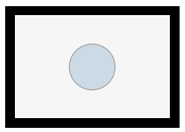
The SD9 features three metering methods for greater control of photography's essence : light.

■ 8-segment evaluative metering



This metering mode, offering exposure control with minimal error, divides the screen into 8 independently metered segments, whose data is comprehensively evaluated for optimal exposure setting. Excellent for shooting front-lit scenes, as well as backlit, high-contrast and other special situations, 8-segment evaluative metering helps to reproduce brightness to a photographer's liking.

■ Center area metering



In this mode, the camera meters only an area of about 5mm in diameter in the center of the screen. This minimizes the influence of perimeter light sources, so you can establish a highly specific area for determining the level of exposure that suits your purpose.

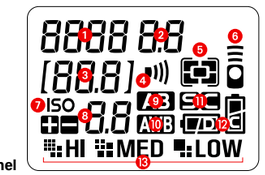
■ Center-weighted average metering

In this most common metering mode, the camera primarily meters the subject in the center of the screen, while giving some weight to perimeter brightness. Exposure can be effectively controlled by using this mode in conjunction with the Exposure Compensation function.

Exposure compensation and auto bracketing

Before you shoot, exposure compensation lets you adjust exposure in 0.5EV steps within a ±3EV range of deviation from the autoexposure level set for the scene. In situations where it is difficult to determine proper exposure, such as when there are subtle differences of subject brightness, it's a good idea to use auto bracketing to take three consecutive photographs at slightly different exposures, so you can later choose the best-exposed shot.

Names of Parts



[Names of Display Panel Parts]

1. Shutter Speed
2. Aperture Value
3. Counter / ISO Sensitivity
4. Sound Setting
5. Metering Mode
6. Remote Control Mode
7. ISO Sensitivity Setting
8. Exposure Meter
9. Auto Bracketing
10. Auto White Balance
11. AF Mode
12. Battery Indicator
13. Resolution

4 exposure modes to suit any situation

■ [P] Program AE

This mode covers most shooting circumstances, automatically setting a combination of shutter speed and aperture appropriate to the subject's brightness, so you can shoot spontaneously without missing a moment or adjusting exposure.

■ [A] Aperture Priority AE

Set a desired aperture value, and the camera determines the appropriate shutter speed. Stop down to increase depth of field. Open up to blur the background and emphasize the subject. Aperture Priority AE is useful for achieving these and various other effects.

■ [S] Shutter Speed Priority AE

Set a desired shutter speed, and the SD9 selects the appropriate aperture value for subject brightness. Freeze action by selecting a fast shutter speed; capture a blur of motion with a slow shutter speed; or achieve various other effects using Shutter Speed Priority AE.

■ [M] Manual Exposure

This mode lets you set the shutter speed and aperture value as you choose, as when you want to fix the exposure by referring to the TTL exposure meter, external light meter, etc. This is particularly convenient for maintaining an exposure setting for several shots.

[Data]
- Lens : SIGMA MACRO 50mm F2.8 EX
- Aperture : f 22
- Shutter : 1/60
- ISO Speed : 100
- Exposure Mode : Manual
- Focus Mode : Manual
- Raw File Format : Hi 1,512 X 2,268

MORE LENSES TO EXPRESS MORE OF YOUR VISION

Sigma lenses — fully compatible with the SD9 digital SLR and 35mm SLRs.

Great lenses, of course, unleash the creative potential of single-lens reflex cameras. By making the SD9 compatible with the entire lineup of lenses originally created for 35mm SLRs, SIGMA extends its heritage of superior optical technology to digital SLR photographers who are determined to take their visions farther. The SIGMA family of interchangeable lenses is comprehensive, including fixed focal length, macro, zoom, fisheye, and mirror models, covering a range from 8mm fisheye to 800mm super zoom. In every measure, every lens we make exemplifies state-of-the-art performance and user-friendly operation for digital and 35mm film SLR photography alike. Naturally, SD9 photographers stand to benefit from SIGMA's far-reaching dedication to capturing the essence of every moment.

[WIDE ZOOM LENS]
Wide zoom lenses offer freedom for controlling angle and perspective for shooting big buildings, expansive scenery, snap shots, and group photographs.

[STANDARD ZOOM LENS]
Standard zoom lenses provide wide coverage that suits a broad range of spontaneous photo opportunities.

[TELEPHOTO ZOOM LENS]
Providing mobility and closeup detail, telephoto zoom lenses can capture from afar impressive photographs of wild animals in the field or faces of athletes playing in stadiums.

[HIGH PERFORMANCE ZOOM LENS]
High performance zoom lenses can quickly, clearly focus on various subjects within a range from close to distant.

[WIDE LENS]
Wide zoom lenses display their capabilities on expansive scenes. SIGMA makes an 8mm fisheye lens covering 180 degrees, and other wide lenses up to 28mm.

[TELEPHOTO LENS]
Telephoto lenses offer a closer-up view of distant or inaccessible subject detail, or enhance an image's feeling of airiness by compressing perspective within a shallow depth of field and softly blurring the background.

[MACRO LENS]
Macro lenses widen the creative pallette by offering a clear perspective on small flowers, insects, and more — great for closeups of nature in dramatic detail.

Image sensor dust protector

Other digital SLR cameras are typically vulnerable to dust entering the body when the lens is dismounted for changing. But the SIGMA SD9 features a special dust protector that at all times keeps dust from entering and adhering to the image sensor. This ensures extra durability and reliable imaging integrity, even after long, rugged use.

Optional Equipment

Electronic Flash [EF-500 DG SUPER]

The high-intensity EF-500 DG SUPER flash enables automatic light control S-TTL shooting. For extra versatility, the unit's high-speed synchronization function can be used even with high shutter speeds.

Electronic Flash [EF-500 DG ST]

This high-intensity automatic zoom flash enables automatic light control S-TTL shooting for easy and beautiful flash photographs. It includes an automatic zoom function and a bounce-head function.

Battery Grip [Power Pack SD]

This easy-to-carry battery pack with vertical grip is dedicated for SD9 use, and can hold four CR-V3 batteries or eight AA batteries — more than enough power for most shoots.

Remote Controller [RS21]

Remote control allows the photographer to take self-portraits or get into group shots. Used in conjunction with Mirror Lock-Up function, it can reduce the possibility of image-blurring camera shake, so it's particularly useful for macro or telephoto zoom shooting.