

# SIGMA SD1

THE SIGMA SD1  
DIGITAL SINGLE LENS  
REFLEX CAMERA  
WITH FULL COLOR  
IMAGE SENSOR



**The SIGMA SD1**  
**For ultimate image quality**  
**The real revolution starts here**

Paradigm breaking. Epoch making. Liberating.

*Unwavering in the quest for photographic truth.  
For a camera that mirrors the landscape of  
the heart in images of impeccable quality.*

*Know that your restless yearning for the ideal camera  
is far from a futile chase after an impossible dream.  
We have entered the final stretch ....  
More innovations and refinements lie ahead,  
but the finish line is before our eyes.*

*Entranced by the photograph's endless possibilities.  
Inspired by the camera's untapped potential.*

*In humble allegiance to the path of pure photography.  
To all seekers after artistic truth, everywhere.  
Let the revolution begin.*

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## A masterpiece in the making. A flagship is born

### Have digital cameras become boring?

Has digital camera technology reached maturity? Or is it just that no real innovations have appeared in so long. Certainly, the digital camera front has offered little to get excited about in recent years.

This observation, shared by most photography enthusiasts, is a fair, if harsh, judgment on the current state of the digital camera industry. At Sigma, we have taken this criticism to heart.

During the burst of digital camera market growth in the second half of the 1990s, innovations appeared at a rapid pace in the areas of pixel count and image processing technology, including white balance and noise reduction, not to mention auxiliary functions like face recognition. Real progress was being made and there was plenty to talk about.

More recently, digital cameras have gained still higher pixel counts, video capability, and other functions that provide practical benefits and convenience. These advances were offered with the best of intentions — people desired them. But if this same progress is also behind the feeling that cameras have gotten boring, perhaps it is time to rethink what a digital camera should be.

### Technology in turmoil

The first electronic still camera appeared about 30 years ago, and mass-market digital cameras have been around for about 15 years. Looking back on the many stages of photographic innovation since the 19th century, you can see just how young the digital camera really is.

Considering the digital camera's

rapid popularization and the accompanying innovations in performance and convenience, you would be excused for getting the impression that nothing remains to be accomplished.

Appearances to the contrary, digital cameras and imaging are in a period of turmoil. Measured against the long span of photographic history, digital photography is still in its formative years. In Sigma's view, there is still considerable room for development.

The idea that digital imaging technology is already mature is, in Sigma's opinion, open to debate.

### Radical technology for real quality

With the huge popularity of digital cameras, people are using them in new ways. Digital images are playing ever more important roles in our daily lives.

As in the past, photography is an ideal medium for preserving memories and expressing creative visions. What is new is the use of photos as communication, particularly through photo sharing sites and social media. In this new domain, photos are part of a person's online presence, a way to share interests and a catalyst for relationships.

Technology and functionality continue to evolve to support these new applications. Today's digital cameras are designed to make it easy to perform many tasks, thereby encouraging more people to enjoy photography without hesitation. This is a good thing.

But when it comes to the critical core of digital photography — the image capture system that

determines image quality — the overwhelming majority of digital cameras are still on the same well-worn road. Their fundamental technology has not changed since the digital camera's babyhood.

It is precisely here — in this key area of the capture system and image generation process — that Sigma is charting a new course.

With a single-minded focus on generating true, high quality images, Sigma is the only digital camera maker dedicated to developing direct image sensor technology and cameras that incorporate it.

### Irreplaceable moments, immortalized

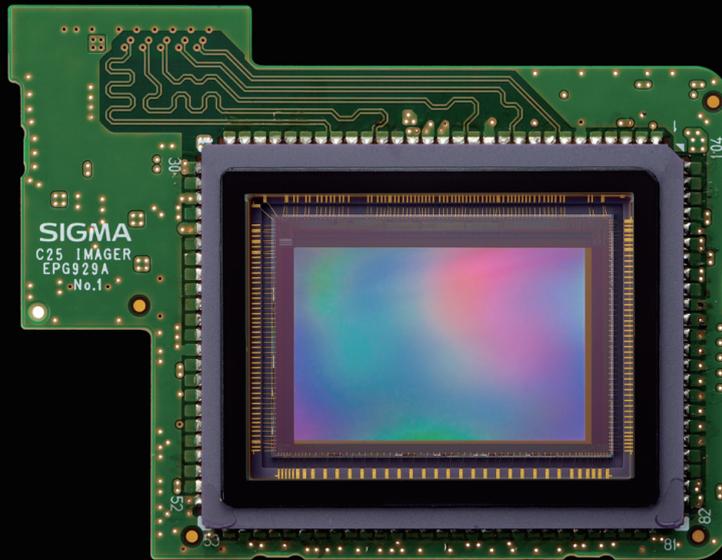
Moving scenes, candid shots, breathtaking scenery .... To preserve these moments truthfully with all their evocative power, the image capture system is of overarching importance. As the bedrock of photographic veracity, the capture system should be the primary target of research, development and innovation efforts. After all, photography exists to reflect truth, and cameras exist to take photographs.

We are not denying the success of developments aimed at making cameras easier to use. We simply believe in going to the heart of the matter by focusing on innovation that actually improves the quality of photographs.

Just as film followed an evolutionary path of incremental improvement, so the digital camera's image capture system must steadily and resolutely evolve to realize its full potential. There is much to be done and we are set on doing it.

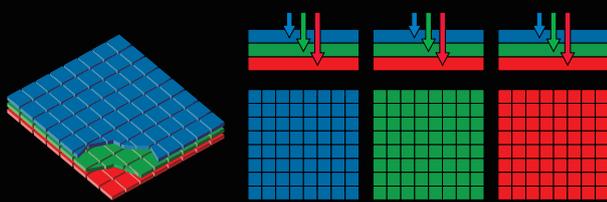






An image capture system you can believe in.  
Now, more than ever

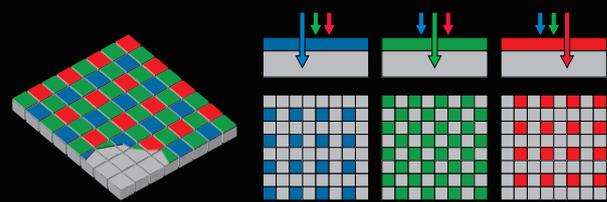
**Direct image sensor**



R: 100% G: 100% B: 100%

Full color capture system has three layers of photo detectors, enabling it to capture 100% of RGB color information directly.

**Color filter array (CFA) sensor**



R: 25% G: 50% B: 25%

With a conventional digital camera's sensor, 50% of the photosites are dedicated to green, and 25% each gather red and blue color information via a color filter array.

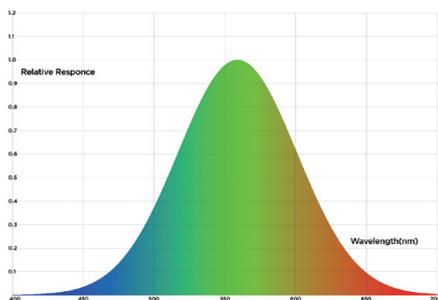
## Not another monochrome sensor with color filters

The image sensor in almost all digital cameras, with the exception of Sigma's, is a color filter array (CFA) sensor. The image sensor itself is monochrome; it detects light intensity, but not color. The CFA overlaying the sensor's light-sensitive photodiodes is a mosaic of red, green and blue (RGB) filters in a checkerboard-like grid. Therefore, each photosite, corresponding to a single pixel, receives just one of the three primary colors.

In this kind of system, a 15MP CFA sensor allots 7,500,000 pixels to green light and 3,750,000 each to red and blue light, respectively. Left as is, this checkerboard pattern would create a strange image, so a process called color interpolation is used to blend in neighboring pixel color information. For example, a green pixel gets color information from adjacent blue and red pixels, and so on.

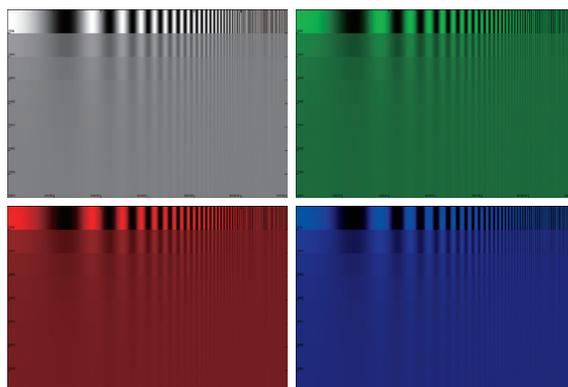
## CFA sensor relies on eye's sensitivity to green

Why does a CFA sensor assign twice as many pixels to green as to red or blue? Because the eye is most sensitive to green light (figure 1). Human vision depends mostly on wavelengths in the green range to perceive fine detail and luminance resolution.



The three charts in figure 2 all have the same contrast. Notice how the green background lets you detect fine detail more easily. Most digital cameras take advantage of this fact of human vision. By capturing relatively more green information, they can get by with much less blue and red information. Thanks to this clever solution, a mere monochrome image sensor can be used to deliver color images of high quality.

So, what's the problem? Though it is true that our eyes are most sensitive to green luminance (sharpness and contrast) information, we



also see blue and red chrominance (color) information. But the unequal treatment afforded these colors by a CFA sensor causes a disparity between the luminance resolution and chrominance resolution of the photographic images it generates.

## Unique, innovative direct image sensor

Unlike CFA sensors, the image sensor in Sigma digital cameras uses three layers of photodiodes to gather the entire red, green and blue color information of light, forming the world's one and only full color capture system. Since introducing its first-generation digital camera in 2002, Sigma has maintained an unwavering commitment to this unique technology.

The image sensor is made of silicon. When struck by light, silicon absorbs shorter wavelengths (blue) near its surface and longer wavelengths (green, then red) at deeper levels. The direct image sensor takes advantage of this fact, using three layers of photodiodes to capture all colors of light at each pixel location. Like color film in essence, this vertical structure bypasses the need to gather different colors at different horizontal locations.

## All pixels capture full RGB color

This means that a direct image sensor having 15,000,000 pixel locations is able to capture full red, green and blue color information, as is, at each pixel location. In other words, all 15,000,000 pixel locations can respond to all three primary RGB colors transmitted by the lens. There is no need to assign red, green and blue to separate pixel locations, nor is it necessary to fabricate or eliminate color information during image processing. This full color capture system is, in principle, capable of providing equally high luminance resolution and chrominance resolution.

Since typical photographic subjects do contain an enormous amount of color information, Sigma is convinced that removing any discrepancy between luminance resolution and chrominance

resolution is an important key to photographic naturalism.

## Unencumbered by a low-pass filter

Another thing: color filter arrays are prone to false color patterns (moiré). This problem is caused by interference between repeating patterns of fine lines in the subject and the mosaic pattern of the color filter array itself. Moiré is typically prevented by installing a low-pass filter in front of the image sensor.

A low-pass filter works by removing the higher frequencies of light that carry fine detail. This does prevent interference and, therefore moiré. But it also adversely affects resolution and image sharpness. Facing this tradeoff, some cameras use CFA sensors without a low-pass filter, accepting the inevitable color moiré patterns as the price to pay for a sharper image.

Sigma's direct image sensor design doesn't use color filters, so it doesn't need a low-pass filter to prevent the false colors of moiré. The direct image sensor captures the sharp image formed by the lens without losing any information. As a leading lens maker with uncompromising standards of photographic image quality, Sigma believes the ideal capture system is one that receives full color information at each and every pixel location.

## Pure color and light: nothing added, nothing lost

In CFA sensor-equipped digital cameras, only one color is captured per pixel location. Color interpolation is required to generate a full color image from these single-color pixels. Over the past decades, color interpolation algorithms have greatly improved, so that interpolation errors are rarely a cause for concern in today's digital cameras.

Nevertheless, light information lost in the capture process can never be perfectly reconstructed. This standard approach cannot fulfill the promise of truly natural images. In sharp contrast, Sigma's direct image sensor has no use for color interpolation and doesn't suffer from its associated problems.

Sigma's technology generates naturally faithful color images without needing to add information. This is why the ambience of the scene is so vividly captured in photos taken with a Sigma digital camera. This reflects Sigma's policy of protecting the integrity of image information — keeping the image pure.

## Image quality at its bona fide best. Astonishing 46MP resolution

### Do mega pixels matter?

Today's digital cameras have already reached impressive pixel counts. The figures seem sufficient to generate high-resolution images, and even to withstand scrutiny in enlarged prints. A plausible case is often made that the mega-pixel wars are meaningless because digital cameras already have enough pixels.

The claim gains further support from an understanding that resolution is not determined by pixel count alone. In a photograph, resolution also depends on interactions among many other factors, including lens characteristics, low-pass filter response, noise reduction, and processing of contrast and sharpness parameters. By itself, elevating the pixel count doesn't necessarily lead to an appreciable improvement in picture quality.

Consider the 14MP direct image sensor used in the Sigma SD15 and Sigma DP1/DP2. Despite having a nominal 4.6 million figure for the number of pixel locations, this sensor produces images that are widely recognized as having excellent resolution.

### Where resolution and realism meet

Still, Sigma thinks raising the pixel count is desirable and necessary to achieve the most natural image rendition. In digital cameras, the limit of resolution is determined by pixel

pitch. When a certain level of detail (spatial frequency) is exceeded in a target object, the camera suddenly loses all ability to resolve it. This phenomenon is one reason why photos that include fine detail can end up looking unnatural.

As an example, say you are shooting a landscape with grass in the foreground and mountains in the background. The thin, closely spaced blades of grass are resolved correctly by the sensor in some areas, but exceed the limit of resolution in others. On the other hand, the ridges and surfaces of the mountains in the distance have a low enough spatial frequency to be resolved correctly throughout. In other words, the foreground would appear partially blurred against a consistently sharp distant background. A human observer would register the opposite: sharply defined blades of grass nearby, and hazy mountains in the distance.

This limit of resolution, which can be at odds with the human visual system, may be an unavoidable fact of physics. But Sigma believes innovation can make the problem so imperceptible that we can realistically pursue and achieve more natural image depiction. If so, we can look forward to being able to shoot images that are minimally affected by enlargement, and that retain a three-dimensional ambience even when viewed in small formats.

Further pursuit of high resolution is

worthwhile not to win the pixel wars, and not even to make large-format prints. Rather, Sigma believes it is needed to achieve more natural photographic results.

### 30MP equivalent 'emotional image quality'

The 46MP direct image sensor of the SD1 is a breakthrough that triples the 14MP resolution of the sensor used in Sigma cameras up to now, while retaining the "emotional image quality" that is unique to a full-color capture system.

We enlarged the sensor to APS-C size (1.5x focal length equivalent), while narrowing pixel pitch, thereby dramatically raising the pixel count to 46MP (4,800 x 3,200 x 3).

The luminance resolution of this sensor is, in fact, equivalent to that of a 30MP CFA sensor as measured on the standard B&W resolution chart used in conventional digital camera resolution testing. With outstanding chrominance resolution that is free of low-pass filtering and color interpolation, Sigma takes a bold leap closer to the ideal, further enhancing the advantages of a direct image sensor. In terms of technology and image quality, this represents a significant advance.

Here at last is an image sensor for all who have ever dreamed of a digital camera breakthrough that can deliver the ultimate in image quality.













## Masterpiece in the making. Image quality that inspires creativity

### Dedicated Dual TRUE II image processing engine

A dual configuration of Sigma's renowned TRUE\* II image processing engine powers the SD1, bringing out the full potential of information captured by the full color sensor. Using Sigma's proprietary algorithm, the Dual TRUE II processes vast volumes of data at blazing speed, generating crisp, high-definition images, scrupulously rendered with immersive spatial realism and profuse color detail.

\* TRUE: Three-layer Responsive Ultimate Engine

### JPEG convenience with the Sigma touch

When you want the convenience of JPEG, the SD1 delivers print-ready images finished to Sigma's own high standards. For purposes of connectivity, photo sharing, social media, and other casual applications, you may find that JPEG meets your needs.

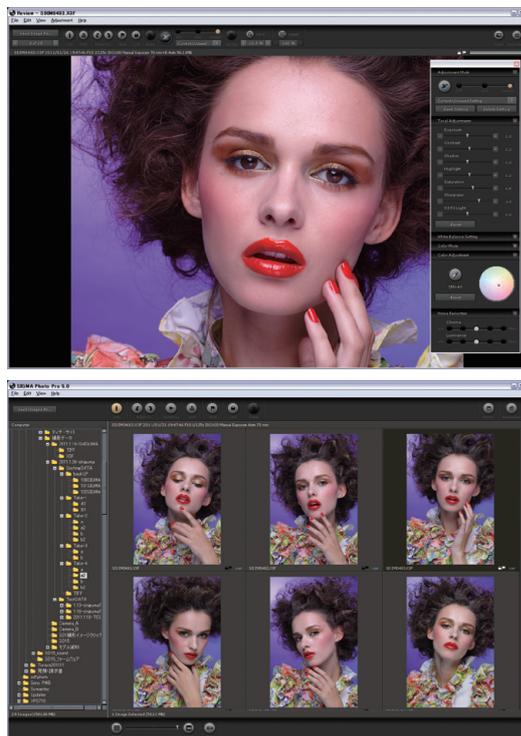
On the other hand, the compact file size of JPEG depends on irreversible "lossy" compression that leaves little room for post-processing creativity. When you want to explore the full artistic potential of the SD1, simply choose the RAW image format. This preserves 100% of captured information in all its 46-million-pixel glory, ready for you to give free rein to your creativity.

### RAW mode reveals creative realms

Sigma believes that shooting photos is just one stage of creating photographs. The creative process depends on carefully drawing out

the latent power of the raw image to faithfully realize your vision in a work of photographic art.

Sigma's .x3f RAW image format files are your creative canvas. They let you work with the full dynamic range, broad color spectrum and delicate gradations of shadow



and light that are gathered by the full color capture system. All the information recorded by the amazing X3 sensor is at your command.

Inspired by the virtually boundless potential of SD1 RAW format data, you embark on a voyage of artistic discovery with the exhilarating freedom to follow your creative muse in any direction.

### From image to masterpiece with SIGMA Photo Pro 5.0

In SIGMA Photo Pro 5.0 you will find precisely the functions you really need — no more, no less — to finish your photos with professionalism and artistry. With its intuitive and uncluttered interface, this digital darkroom application is unexcelled in RAW data processing performance. Even if you are new to RAW file formats, you will find it easy to use.

The redesigned interface offers greater functionality and convenience to give full expression to your creative ideas and bring out the awesome potential of 46MP images generated by the SD1's X3 technology. It also handles SD1 color mode setting data which optimizes color tone, contrast and other adjustments for various shooting conditions. These settings can be saved in RAW data files.

For image correction, the Adjustment Controls Palette offers seven parameters: exposure, contrast, shadows, highlights, color saturation, sharpness, and the X3 Fill Light feature. Together with the two noise reduction parameters and a color wheel, these controls give you the artistic latitude and precision to create the masterpieces that express your artistic vision.



## Rugged new body. Unbending policy. Built like a true flagship

Redesigned for enhanced performance

At Sigma, camera design has always been guided by one principle: a camera is a precision instrument that should respond faithfully and directly to the photographer's intention. The SD1 takes this to new heights of perfection, offering even greater possibilities of sophisticated, nuanced expression, while serving the artist as a career partner.

The SD1 is the first Sigma camera to have a magnesium alloy body for rugged durability and resistance to water and dust. This represents a comprehensive approach to maximizing camera performance, just as the internal circuitry is optimized for processing high-resolution data.

The redesigned user interface is ergonomically engineered to provide intuitive control with extended operational convenience to help the photographer concentrate on the photographic task at hand.

More than any words or specifications, it is only by taking the SD1 in your hands that you can understand how this camera represents the latest evolution of Sigma's dedication to pushing digital camera design into new dimensions of practical performance.



## BODY

### Magnesium body

The SD1 is the first in the SD series to adopt a magnesium alloy body. This rigid, tough yet lightweight body securely protects the interior from shock and electromagnetic interference, while adding strength and durability to withstand challenging conditions.

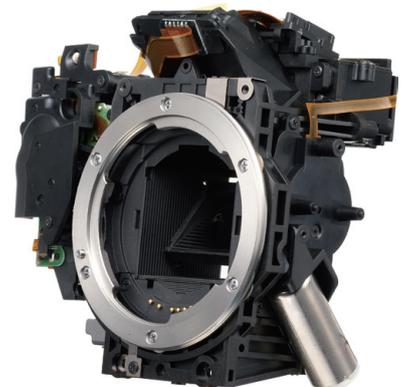
### Weather and dust resistance

Controls and joints are sealed to block dust and moisture from entering the card slot, battery room and other parts of the camera interior. This enhances reliability in harsh professional usage situations.

## DRIVE MODE

### Two-motor system prevents vibration

Using a two-motor system with dedicated motors for mirror-drive and shutter charge reduces the vibration of mirror movement, thereby preventing camera shake. A mirror lock-up mechanism prevents further vibration when the shutter is released. Preventing camera shake is especially important for macro photography and when using ultra-telephoto lenses.



## VIEWFINDER

### Bright, wide-coverage viewfinder with integral pentaprism

The SD1 features a pentaprism viewfinder with 98% (vertical and horizontal)



coverage, 0.95x magnification and an 18mm eye point. Diopter adjustment is provided over a range of -3 to +1.5 dpt.



## AUTOFOCUS

### Precise focus with 11-point twin cross sensor

The autofocus system features an 11-point twin cross sensor. This shifted twin cross type sensor improves AF accuracy. Selecting the AF point can be done manually or automatically.

### 77-segment AE sensor for accurate exposure

The SD1 features a new 77-segment AE sensor using advanced AE algorithms to improve exposure accuracy. Exact control coordinated with the 11 AF points achieves accurate exposure even in difficult lightning conditions.

## MEMORY

### Uses fast, high-capacity CF cards

The SD1 accepts TYPE I CF cards. UDMA mode6 compatibility enables fast processing of large amounts of data. \*It is not possible to use TYPE II CF cards or microdrives.



## ISO

### ISO100 - 6400;

### Noiseless image processing

The SD1 captures light effectively and ensures noiseless image processing. The image sensor provides high definition with rich, graduated tones.

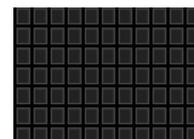
## EXPOSURE

### Exposure management with manual control and auto bracketing

Exposure can be manually adjusted to suit your needs. When difficult lighting conditions make appropriate exposure unclear, auto bracketing lets you take a sequence of shots of the same subject at three or five different exposure levels. Bracketing can be set in 1/3EV increments up to +-3EV(3levels) or +-1.7EV(5 levels).

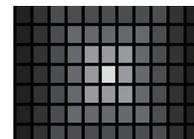
## METERING

### Flexible control over metering, The SD1 features four metering modes



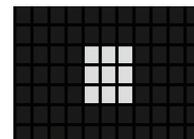
### 77-SEGMENT EVALUATIVE METERING

Evaluative metering is suitable for general photography. Even in strong back lighting situations, the camera will give you the correct exposure.



### CENTER WEIGHTED AVERAGE METERING

The camera will measure the average luminance of the entire picture area with additional emphasis on the center area. This is ideal when using optional exposure compensation.



### CENTER AREA METERING

The camera will measure the luminance of 10% of the entire picture area. This is ideal for metering backlit subjects.



### SPOT METERING

The camera will measure the luminance of 1% of the entire picture area. This mode is suitable when you wish to set the exposure for a small portion of the scene and ignore the influence of the rest of the area.



## SHUTTER

### Focal Plane shutter

The durable focal plane shutter mechanism has a life cycle of over 100,000 exposures and dramatically reduces generation of dust. The photographer can enjoy taking pictures with confidence that the image sensor is clean and protected from dust or dirt originating inside or outside the camera.



## DISPLAY

### 3.0" TFT Color LCD Monitor

The SD1 camera features a 3.0 inch TFT color monitor. This 460,000 pixel resolution LCD monitor benefits from a wide viewing angle, making it easy to check focusing and composition.

## ENGINE

### Dual TRUE II image processing engine

The SD1 incorporates a dual TRUE (Three-layer Responsive Ultimate Engine) II image processing engine which improves processing speed and overall image quality. The unique image-processing algorithm provides high resolving power and reproduces high definition images with richly graduated tones. In addition, the SD1 can record both RAW and JPEG files simultaneously.

### Advanced DDR III buffer for high-speed, high-volume data processing

To handle large volumes of color data at high speed, the SD1 uses DDR III buffer memory technology, which delivers class-leading performance. The SD1 features a continuous shooting speed of 5 frames per second and can capture up to 7 RAW images per sequence in continuous shooting mode.

## DUST PROTECTOR

### Image sensor protected from dust

Most digital SLR cameras are vulnerable to dust entering the body. If dust and dirt adhere to the image sensor, it may appear in the photos. The lens mount of the SD1 is equipped with a dust protector and the area around it is sealed to prevent dust from entering the body. Even in the unlikely event of dust adhering to the image sensor, the dust protector can be removed easily for sensor cleaning.



## USER INTERFACE

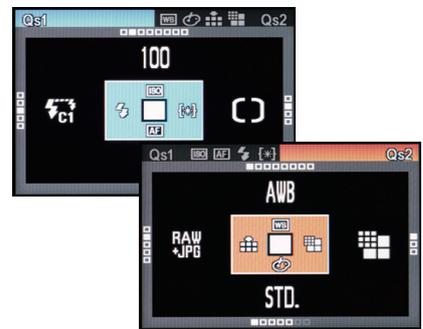
### New, intuitive user interface

The improved user interface provides faster and more convenient operation. Aperture and shutter speed can be set by their own dials. The exposure compensation button and exposure mode button are on top of the body for quick access. A Quick Set (QS) menu lets you easily change commonly used functions. To display the QS menu, simply press the QS button. QS menu 1 is for ISO setting, flash mode, metering mode

and AF mode; QS menu 2 offers white balance, image quality, image size and color mode.

### OK Button setting

You can allocate certain functions to the OK button for added convenience. These functions include Review Image, Rotate Image and Mark Image.



## BUILT-IN FLASH

### Built-in flash with 17mm angle of coverage

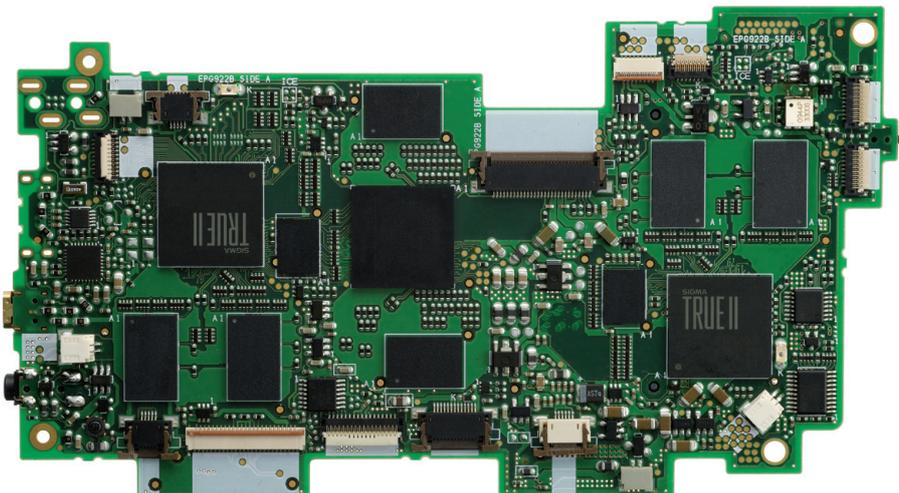
The Sigma SD1 camera's built-in flash has a guide number of 11 to cover a 17mm lens angle (equivalent to 25.5mm with a 35mm camera). The built-in flash can be synchronized to a shutter speed of up to 1/180 sec. The S-TTL automatic exposure system enables control of advanced flash photography.



## BATTERY

### Dedicated BP-21 lithium-ion battery

The dedicated BP-21 lithium-ion battery is supplied as standard with the SD1. It takes about 150 minutes to fully charge with the supplied BC-21 battery charger. The optional SAC-4 AC adapter lets the Sigma SD1 run on AC power from a wall socket.



# VERSATILE ACCESSORY OPTIONS

Sigma's precision accessories expand your creative horizons while giving you more control and convenience to achieve the results you desire in a wide range of shooting situations.



## ELECTRONIC FLASH EF-610 DG SUPER

The high power EF-610 DG Super flash enables S-TTL automatic flash metering. It has wireless flash connectivity and a high-speed synchronization function which can be used at high shutter speeds.



## ELECTRONIC FLASH EF-610 DG ST

This is a high-powered auto zoom flash featuring automatic flash metering using S-TTL operation. The flashgun effortlessly allows perfect flash shots and includes an automatic zoom and bounce-head function.

## Remote Controller RS-31

The remote control allows the photographer to take self-portraits or get into group shots. Used with the mirror lock-up function, it can reduce the possibility of image-blurring caused by camera shake, making it particularly useful for macro or telephoto shooting.



## Cable Release Switch CR-21

The CR-21 cable release switch helps prevent camera shake, making it ideal when shooting long exposures. It is also possible to lock the release button.



## AC Adapter SAC-4

This provides a constant electricity supply when shooting in the studio or taking pictures indoors. It is also recommended when connecting the camera to your computer to transfer data.



## Sublime and sophisticated. A lens system that turns light into art

### The lens makes the image

Your choice of lens depends on your subject and how you want to depict it. One of the attractions of a DSLR with interchangeable lenses is the ability to adapt flexibly to every situation and style of expression.

When you have a variety of lenses to choose from, you can make the most of the DSLR as a creative instrument for transforming a photo opportunity into a work of art.

### Full lens line of uncompromising quality

For state-of-the-art performance, Sigma's SA mount lenses feature a flare and ghost reducing Super Multi-Layer Coating; HSM (Hyper Sonic Motor); OS (Optical Stabilizer)

anti-shake function; FLD ('F' Low Dispersion), ELD (Extraordinary Low Dispersion) and SLD (Special Low Dispersion) glass; aspheric elements; and other cutting-edge technology.

All Sigma standard focal length, wide-angle, telephoto, macro, fisheye, and other lenses are designed to work in synergy with the SD1 to maximize the full color capture system's exceptional image quality.

Sigma lenses are designed with one aim: to help you take better photos. Sigma offers more than 40 different lens types, distinguished by their exacting optics, smooth focusing and durable stability.

Developed and manufactured to meet the highest standards in the industry, Sigma's SA mount lenses have the

variety, reliability, and performance that creative photography requires.

### Crafted by masters of lens technology

Sigma has a strict policy of developing essential core technology in-house. For its interchangeable lenses, this encompasses optical design, mechanism design, firmware development, electronic circuit and system design, and mold design.

By making almost all parts in its own integrated manufacturing system, Sigma can assure peerless quality at an accessible price. Every lens that proudly bears the Sigma name is a valuable piece of craftsmanship that brings the spark of life to the photographic images you create.

# SIGMA SD1 | DIGITAL SINGLE LENS REFLEX CAMERA | PRINCIPAL SPECIFICATIONS

## FORMAT

Format	Interchangeable lens SLR camera
Compatible Lenses	SIGMA SA mount interchangeable lenses
Lens Mount	SIGMA SA bayonet mount
Angle of View	Equivalent to approx. 1.5 times the focal length of the lens (for 35mm cameras)

## IMAGE SENSOR

Image Sensor	Foveon X3® direct image sensor (CMOS)		
Image Size	23.5 x 15.7mm (0.9inch x 0.6inch)		
Number of Pixels	Total Pixel	48 MP	
	Effective Pixel	46 MP	(4,800 x 3,200 x 3 layers)
Aspect Ratio	3:2		

## RECORDING SYSTEM

Storage Media	CompactFlash (Type I,UDMA compatible)		
Still Image Format	Exif 2.3, DCF 2.0		
Recording Mode	Lossless compression RAW data(12-bit, High, Medium, Low), JPEG(High, Medium, Low)		
Color Mode	7 types (Standard, Vivid, Neutral, Portrait, Landscape, B&W, Sepia)		

File Size	RAW	High	: Approx.	45 MB	4,704 x 3,136 x 3
		Medium	: Approx.	24 MB	3,264 x 2,176 x 3
		Low	: Approx.	12 MB	2,336 x 1,568 x 3
JPEG	High	Fine	Approx.	10 MB	4,704 x 3,136
		Normal	Approx.	5.6 MB	4,704 x 3,136
		Basic	Approx.	4.2 MB	4,704 x 3,136
	Medium	Fine	Approx.	5 MB	3,264 x 2,176
		Normal	Approx.	2.7 MB	3,264 x 2,176
		Basic	Approx.	2 MB	3,264 x 2,176
Low	Fine	Approx.	2.5 MB	2,336 x 1,568	
	Normal	Approx.	1.4 MB	2,336 x 1,568	
	Basic	Approx.	1 MB	2,336 x 1,568	

## WHITE BALANCE

Settings	8 types (Auto, Daylight, Shade, Overcast, Incandescent, Fluorescent, Flash and Custom)
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## VIEWFINDER

Type	Pentaprism SLR viewfinder
Viewfinder Frame Coverage	98% vertical, 98% horizontal
Viewfinder Magnification	0.95x (50mmF1.4 - ∞)
Eye point	18mm
Diopter Adjustment Range	-3.0 dpt ~ +1.5 dpt
Focusing Screen	Fixed, all matt screen
Mirror	Quick return
Depth of Field Preview	Depth of field preview button

## AUTO FOCUS

Auto Focus Type	TTL phase difference detection system
AF Point	11 points twin cross sensor
AF Operating Range	EV -1 to +18 (ISO100)
Focus Mode	Single AF, Continuous AF (with AF motion prediction function), Manual
AF Point Selection	Automatic Selection, Manual Selection
Active AF point indicator	Superimposed in viewfinder
AF Assist Light	Orange Color AF Assist Light
Focus Lock	AF button is pressed or shutter release button is pressed halfway.

## EXPOSURE CONTROL

Metering Systems	77 segment Evaluative Metering, Spot Metering, Center Area Metering, Center-Weighted Average Metering
Metering Range	EV 1 to 20 (50mm F1.4 : ISO100)
Exposure Control System	[P] Program AE (Program Shift is possible), [S] Shutter Speed Priority AE, [A] Aperture Priority AE, [M] Manual
ISO Sensitivity	ISO 100-6400
Exposure Compensation	± 3 EV (in 1/3 stop increments)
AE Lock	AE lock button is pressed or shutter release button is pressed halfway
Auto Bracketing	Three or Five frames (in 1/3 steps, Appropriate Exposure-Under Exposure-Over Exposure)

## SHUTTER

Shutter Type	Electronically Controlled Focal Plane Shutter
Shutter Speed	1/8000 - 30 sec., Bulb (up to 30 sec. With Extended Mode: 2 min.) X-Sync (1/180)
External Flash Sync.	

## DRIVE SYSTEM

Drive Modes	[1] Single, [2] Continuous, [3] Self-Timer (2sec./10sec.), [4] Mirror Lock-up
Continuous shooting speed	High : 5 frames/sec. Medium : 6 frames/sec. Low : 6 frames/sec.
Continuous buffer	High : Max. 7 frames Medium : Max. 14 frames Low : Max. 14 frames

## FLASH

Type	Manual Pop-up Built-in flash
Built-in Flash Guide No.	GN11
Built-in Flash Coverage	17mm lens angle covered
Flash Metering System	S-TTL Auto Flash
Flash Compensation	± 3EV (1/3 stop increments)
Compatible Flashguns	EF-610DG SUPER, EF-610DG ST, EM-140 DG
Sync Terminal	Available
Connectivity	Hot shoe (contact X synchronization at 1/180 sec. or less, with dedicated flash linking contact)

## LCD MONITOR

Type	TFT color LCD monitor
Monitor Size	3.0"
LCD Pixels	Approx. 460,000
Coverage	100%

## PLAYBACK

Reviewing Images	Single frame display, Multi display [9 frames], Zoom, Slide Show
Highlight Display	Available
Histogram	Available

## MENU

LCD Monitor Language	English / Japanese / German / French / Spanish / Italian / Chinese (Simplified) / Korean / Russian
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## INTERFACE

PC/IF	USB(USB2.0)
AUDIO/VIDEO	Video Out (NTSC/PAL)

## POWER SOURCE

Power	Li-ion Battery Pack BP-21, Battery Chager BC-21, AC Adapter SAC-4 (optional)
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## DIMENSIONS AND WEIGHT

Dimensions	145.5mm/5.7"(W) x 113.5mm/4.4"(H) x 80.0mm/3.1"(D)
Weight	700g/24.7oz. (without battery and card)

## OPERATING ENVIRONMENT

Operating Temperature	0 - +40 °C
Operating Humidity Range	85% or lower

## ACCESSORIES

- Li-ion Battery BP-21, • Battery Charger BC-21, • USB Cable, • Video Cable,
- Neck Strap • Eye Cap, • Body Cap, • Eyepiece Cap,
- SIGMA Photo Pro Disc, • SD1 Instruction Manual

## OPTIONAL ACCESSORIES

- AC Adapter : SAC-4, • Remote Controller : RS-31, • Cable Release Switch : CR-21,
- Electronic Flash : EF-610 DG SUPER, EF-610 DG ST, EM-140 DG

The appearance and specifications are subject to change without notice.

[www.SIGMA-SD.com/SD1](http://www.SIGMA-SD.com/SD1)

**SIGMA**

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Notice: To avoid damage or injury, please read the instruction manual carefully before using the camera.

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