

SONY

Inside Guide
to the DSC-F828





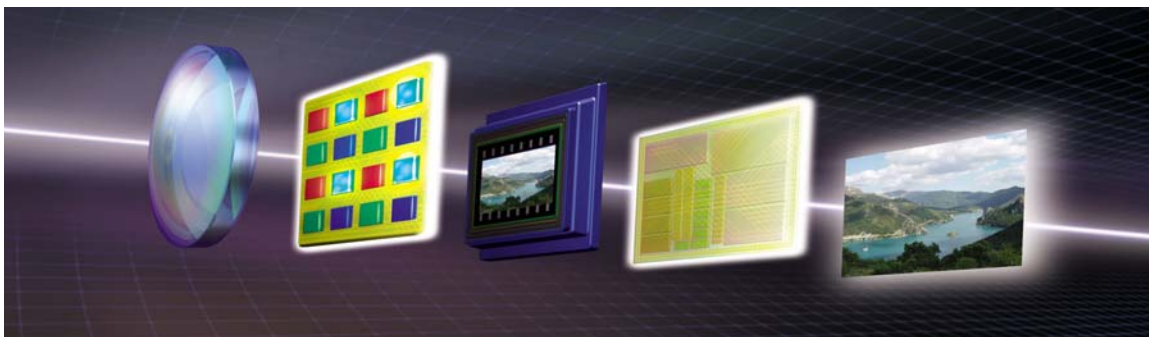
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Introduction

Capture the color of real life. Extend your creativity. Realize your vision. Because now there's a creative tool that overturns preconceived notions of what a digital camera can be. Introducing the Sony® DSC-F828 Cyber-shot® Pro digital camera.

- The first stage of any photographic system is the lens. That's why the DSC-F828 integrates a Carl Zeiss® Vario-Sonnar® T* 7x optical zoom lens of incredible performance.
- The overwhelming majority of digital cameras use a color filter array to divide the incoming light into Red, Green and Blue (RGB). The DSC-F828 uses remarkable Red, Green, Blue and Emerald (RGB+E) color filter array for reproduction much closer to what the eye actually sees.
- While Sony's highly-regarded DSC-F717 had a 5 Megapixel CCD, the F828 increases resolution to an eye-opening 8 Megapixels.
- The imaging processor may not be the star of a digital camera, but it is a crucial subsystem. This is the world's first digital camera with Sony's Real Imaging Processor, which achieves Sony's best performance ever in both picture quality and usability.



From left to right, this conceptual diagram of the DSC-F828 features the Carl Zeiss lens, RGB+E filter, 8 Megapixel effective CCD, and Real Imaging Processor. (Sample photo for illustration purposes only.)

The camera also stands apart in exposure control, focus accuracy, low-light performance, recording modes, ergonomics, media versatility and more.

As embodied by the DSC-F828, Sony leadership in digital camera technology is no accident. Nor is it recent. We've been pursuing electronic imaging for decades. Today Sony is a world leader in digital cinematography, digital broadcast camcorders, and consumer digital camcorders as well as digital cameras. Behind this success stands proprietary Sony technology in CCD image sensors; Application Specific Integrated Circuits (ASICs); tape, optical and flash

memory recording media; as well as proprietary algorithms for focus, exposure and Digital Signal Processing. In short, Sony is a leader because Sony can develop new technology that redefines the state of the art.

The DSC-F828 is the latest in a line of acclaimed Cyber-shot® Pro cameras that extends back to the F505 (1999), F505V (2000), F707 (2001) and most recently, the F717 (2002). Clearly, the DSC-F828 is destined to be carefully appraised by competitors, applauded by reviewers and prized by owners. Like no other.™

Great pictures begin with a great lens.

Unusual in this class of camera, the DSC-F828 was designed from the outset as an "integrated" camera, featuring a built-in lens. This single decision leads to a host of advantages.



The most prominent feature of the DSC-F828 is the magnificent Carl Zeiss® Vario-Sonnar® 7x zoom lens.

- Because there's no mirror or pentaprism, incoming light is always striking the image sensor. This enables features like electronic preview of the image as you compose your shot, as well as a real-time histogram of light levels as you set your exposure. There's no better way to get those once-in-a-lifetime shots.
- An integrated lens also helps deliver moving pictures with continuous live monitoring. In fact, Sony gives you a choice of MPEG Movie modes.

- By matching the lens to the specific size of the CCD image sensor, Sony delivers a more compact design with brighter optics and greater zoom range than typically is available when you attach a separate lens designed for a different image format.
- Finally and most obvious, an integrated lens means that everything you need to shoot is always with you. There's no need to search your camera bag for a missing lens.

Carl Zeiss® T* 7x optical zoom lens

Imaging professionals care passionately about their choice of "glass," or lenses. Great lenses provoke intense loyalty because lenses can make or break the picture quality. Lenses are responsible for maintaining resolution, contrast, even illumination and consistent color from the center of the picture all the way out to the corners. With so much at stake, many professionals choose Carl Zeiss lenses. And that's why Sony endowed the DSC-F828 with a Carl Zeiss T* 7x optical zoom lens that's incredibly fast, incredibly wide and superbly accurate.

Extraordinary resolution, ideally suited to Sony's 8 Megapixel image sensor. A super-resolution image sensor requires a super-resolution lens. This Carl Zeiss lens responds with twelve lens elements in nine groups. Three of these elements are aspherical, important for corner-to-corner focus in the tight confines of a digital camera. For the ultimate quality assurance, each lens is individually inspected for Modulation Transfer Function (MTF), a rigorous test that simultaneously measures contrast and resolution.



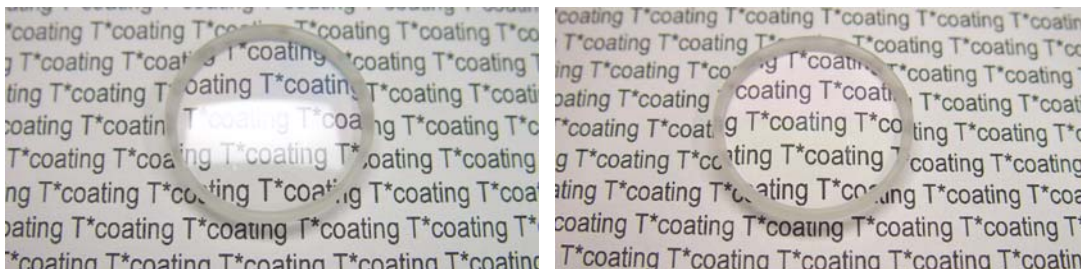
From this illustration, you can appreciate the twelve elements in nine groups of the Carl Zeiss lens.

Vario-Sonnar® 7X optical zoom design. Sony's choice of Carl Zeiss® lens achieves a 35mm equivalent zoom range from an extraordinarily wide 28 mm to 200 mm telephoto. This single lens combines incredible optical quality with uncommon freedom in shot composition. The full-wide setting is excellent for real estate photography, group portraits indoors and scenic landscapes. The medium range is great for portraiture because it enables you to fill the frame with your subject, for a flattering perspective that makes faces look their best. The full-tele setting is excellent for getting in tight on a distant subject for nature, sports and travel photography.



You can appreciate the power of 7x zoom when you consider a full wide 28 mm shot side by side with a full tele 200 mm shot. (Sample photos for illustration purposes only.)

T* (T-star) coatings reduce internal reflections at the glass-to-air surfaces of the lens elements. This suppresses lens "flare" or "ghosting" that can sap an image of its contrast and punch. The T* coating means 52% less reflection than a standard Carl Zeiss® lens—and a whopping 82% less reflection than a conventional lens. You get notably more natural, more vibrant images.



The T coating (right) dramatically cuts down on reflections.*

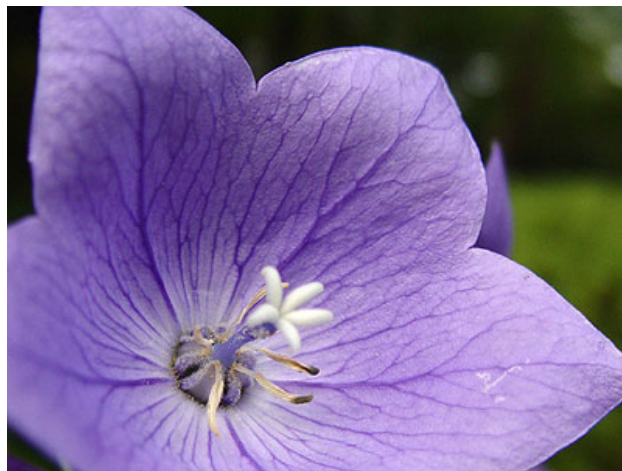
Extremely bright optics. Far beyond the typical digital camera, the DSC-F828 has a maximum aperture of F2.0 at the full wide setting and F2.8 at full tele. Compared to the typical lens, you get an added measure of light gathering for low-light shooting, plus the ability to selectively focus. Wide apertures let you blur the background, a big advantage in portrait photography.

The 7-leaf iris is closer to a perfect circle than the conventional six-leaf iris. This means more graceful gradients in the out-of-focus areas of your picture, which is especially important when you want to blur the background. You'll get more beautiful, more atmospheric pictures.



Compared to six-leaf irises, the seven-leaf iris is more nearly circular when stopped down.

Macro photography. You can also fill the frame with flowers, coins or stamps. Macro mode captures subjects as close as 2 cm (3/4 inch) with all the drama of the lens at full wide angle. Or shoot subjects as close as 60 cm (2 feet), with the beautifully blurred background characteristic of the lens at full telephoto Macro mode.

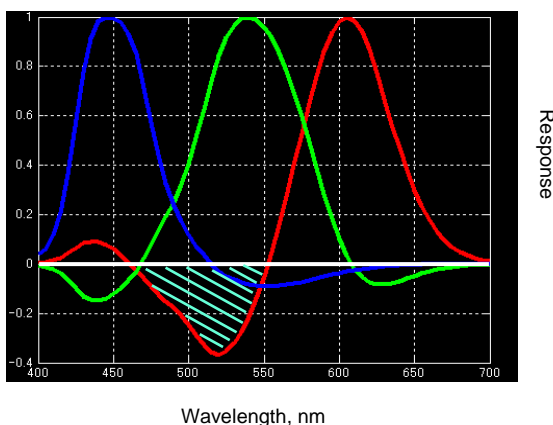


With the lens at full telephoto, Macro mode blurs the background to focus attention on your subject. (Sample photo for illustration purposes only.)

Smooth, positive zoom and focus. Many digital cameras have pushbutton "zoom by wire." Trying to get exact framing with such a system can be hit-or-miss. The DSC-F828 offers a manually coupled zoom ring, for quick, direct framing. In addition, a manual focus ring supplements the Auto Focus systems for greater creative control.

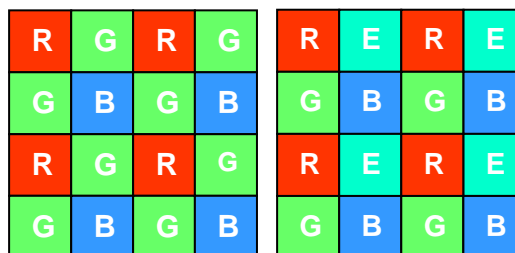
RGB+E four primary color filter array

While digital cameras take color pictures, the CCD image sensor at the heart of a digital camera is "monochromatic." This means all pixels are sensitive to all incoming light. To separate the image into Red, Green and Blue signals, most cameras place a Red, Green or Blue color filter in front of each pixel. Using this type of RGB filter array to create an RGB signal certainly seems logical. And it generally works well. But the system has a defect. It cannot compensate for an anomaly in human vision called the "negative red" effect.

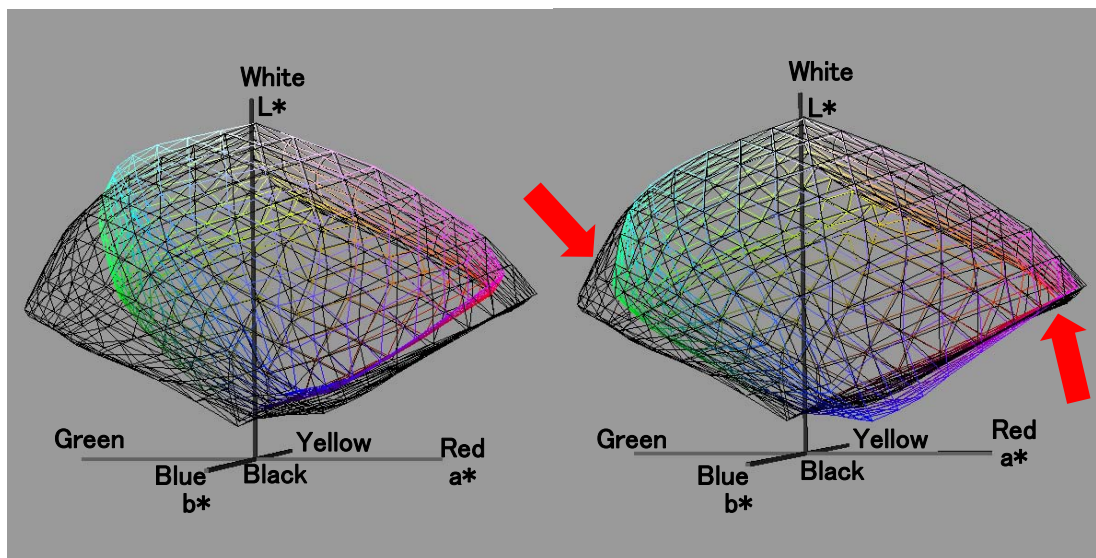


The "negative red" effect in human vision, illustrated in the shaded area, cannot be duplicated by conventional RGB color filter arrays.

For this reason, Sony has gone beyond conventional three-color filter arrays to a four-color RGB+E array. Using the fourth color, Emerald, enables far more sophisticated "linear matrix" calculations in the camera's Real Imaging Processor. The difference between Green and Emerald enables these calculations to carefully compensate for the negative red effect.



Conventional digital cameras create an RGB color signal by placing a Red, Green or Blue filter in front of each pixel (left). Sony's RGB+E filter array (right) dedicates an equal number of pixels to Red, Green, Blue and Emerald.



*L*a*b** charts of color range. The black wireframe represents human vision while the color wireframes indicate an RGB filter array (left) and Sony's RGB+E filter array (right). The arrows indicate superior performance not only in the greens, where you might expect it, but also in the reds and blues.

In purely physical terms, the result is a larger range or "gamut" of colors, especially in the greens, but also in extreme reds and blues. Perhaps even more important, the RGB+E filter also creates more natural, more subtle color. Conventional RGB filters tend to produce "video-like" color. Skin tones can become artificial. Flowers tend to be unnaturally bright. Fruit and flowers take on a slightly "plastic-looking" appearance. And skies become artificially blue.



The conventional RGB filter loses detail in the black yarn (1), renders the red yarn an unnatural color (2) and fails to capture the pale violet color (3). The RGB+E filter does a consistently better job of reproducing what the eye sees. (Sample photos for illustration purposes only.)

In comparison, the RGB+E filter array and linear matrix processing reveal better blue skies, more natural blue-green ocean, greater delicacy in the reproduction of bright flowers, better rendition of subtle violet tones, and more faithful reproduction of trees, grass and other green subjects. The result is much closer to what the human eye actually sees.

8 Megapixel CCD

If you've read this far, you realize that there's more to a digital camera than the Megapixels of its Charge Coupled Device (CCD). But you probably also realize that the CCD image sensor is a crucial to picture quality. After all, it is the CCD that transforms incoming light into electrical charges. So the CCD image sensor is roughly analogous to the emulsion of photo film or the retina of the eye. The CCD is largely—but not solely—responsible for high resolution, high sensitivity, low noise and low artifacts like "smear" and "blooming."

As the world leader in CCDs for digital cameras, Sony is in a good position to know. Sony has mastered the solid-state physics, the chemistry and the demands of micron-level engineering that go into creating advanced CCDs. Of course, we also have our own "fab" or fabrication plant for manufacturing CCDs.

In this way, the DSC-F828 becomes the world's first digital camera to feature Sony's 8 Megapixel effective CCD.



Sony developed this 8 Megapixel CCD image sensor; and the DSC-F828 is the world's first camera to have it.

The image sensor is designated a 2/3-inch device, with an image area of 8.8 x 6.6 mm. The sensor features 8,314,000 pixels total and 8,068,000 pixels effective, for a maximum image size of 3,264 x 2,440. While the entire world appears to understand that more Megapixels are better, here's a reminder of why that is true.

Bigger prints. The 8 Megapixel picture size supports prints up to 11 x 17 inches at 200 dots per inch (dpi) and 8-1/2 x 11 inches at 300 dpi. At these sizes, the native pixel count of the image sensor is a very close match to the pixel count of the printed page. You'll see big enlargements with beautiful, continuous tones, and vivid, satisfying detail.

More applications. The high-resolution pictures are well suited to professional graphics applications and the demands of the four-color separations used in lithographic printing. This makes the DSC-F828 a good choice if you're

shooting for magazines, posters, newspapers, brochures and catalogs. The camera is also a smart choice for event photography, portrait photography and photojournalism.

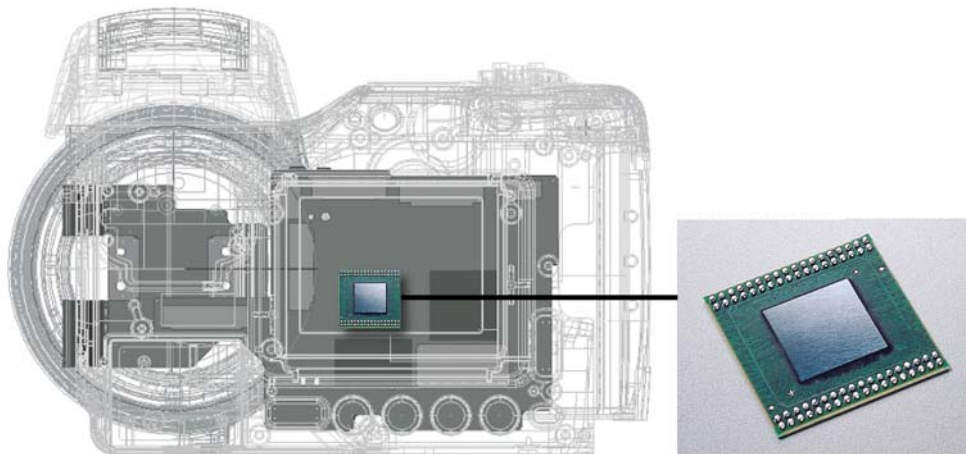
Digital zoom. The 7x optical zoom is great for getting you close to distant subjects. Resolution is maintained as the zoom lens continues to use the full CCD image area. But for even greater distances, you'll want to use digital zoom, which typically places the image on a progressively smaller area of the CCD. Starting with a CCD that has fewer Megapixels, you quickly degrade the quality and run out of digital zoom range. Starting with 8 Megapixels, you sustain picture quality longer and get greater zoom range.

Cropping. Just as digital zoom gives you greater freedom when you compose the shot, "cropping" or cutting out unwanted parts of the image gives you freedom of composition after the shot has already been taken. Here again, starting with more Megapixels means higher picture quality and greater freedom when the time comes to crop.

There's more to the DSC-F828 image sensor than just resolution. The image sensor also incorporates Sony's patented frame interline transfer technology, pixel-level micro lenses that increase sensitivity, and Sony's Super HAD™ (Hole Accumulated Diode) CCD design, which improves signal-to-noise ratio.

Real Imaging Processor

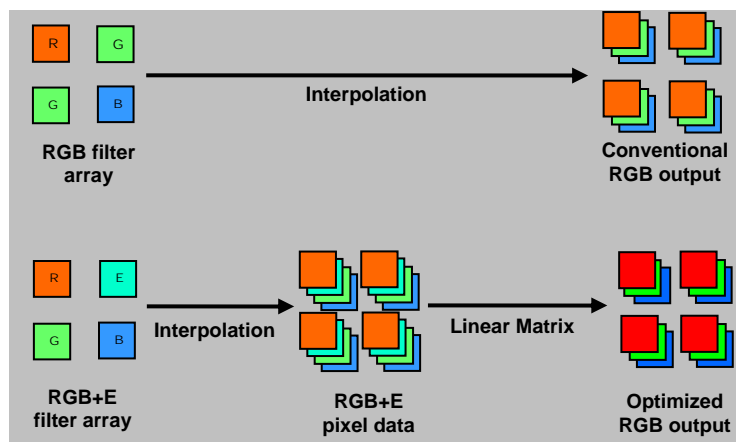
Of all the critical components of a digital camera, perhaps the most overlooked is the imaging processor. Like the microprocessor that runs your PC, the imaging processor is the "brains" of the digital camera. Here is the circuit that transforms the analog output of the image sensor into digital image files that you can store in the camera's memory, output to a computer and display on the camera's LCD monitor. The imaging processor also evaluates scene brightness, contrast and detail, playing a vital part in the exposure and focus of your shots. In performing these functions, the imaging processor is critical to color fidelity and low "noise." The processor even plays a large part in the usability of your camera. Processing is the major factor in battery life and shutter lag, the cycle time between shots.



The DSC-F828 owes much of its performance to the Real Imaging Processor, shown here.

Ironically, as the number of Megapixels in the image sensor increases, so does the burden on the imaging processor. So it's no wonder that, for the 8 Megapixel CCD of the DSC-F828, Sony is introducing the Real Imaging Processor. The benefits are dramatic.

Color fidelity. Working together with the RGB+E color filter array, the Real Imaging Processor delivers more subtle, more accurate colors, closer to what the human eye actually sees. Conventional systems simply "interpolate" the RGB information from the image sensor, for example evaluating neighboring pixels to create Red and Green data for a pixel that was originally filtered for Blue. Sony's Real Imaging Processor performs two steps, first interpolating RGB+E data, then applying a linear matrix to transform RGB+E to optimized RGB. The result is color rendition that's much closer to what the human eye sees and the human brain remembers.



Sony's Real Imaging Processor applies a Linear Matrix to the RGB+E data to achieve an RGB output that's truer to life.

Low noise. "Noise" is unwanted grain, flecks or specks on the image. Downstream processing is often the source, because it performs millions of additions, subtractions, divisions and multiplications on the picture data. As the calculations pile up, so do the rounding errors, which we see as noise. Sony's Real Imaging Processor fights the noise by calculating the image with two extra bits of precision—for four times the quantization levels. Fewer arithmetic errors accumulate, for cleaner, more accurate images. In addition, Sony's Triple Noise Reduction (NR) goes further still. Slow shutter NR improves the picture quality in low-light shooting, while Clear Luminance and Clear Color NR maintain the detail and color of your images.

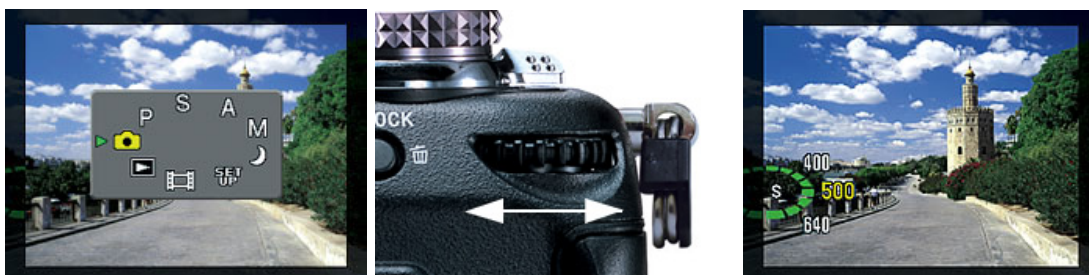
Speed. First-time digital camera users are often surprised at the lags and delays. These can make for practical problems. For example, delays in taking the picture can make it much harder to capture a baby's smile. In a group photo, it's harder to capture the moment when everyone is ready. In sports, it's harder to capture the desired moment: when the bat hits the ball, the soccer player kicks or the wide receiver makes the catch. Comparable issues exist in multi-shot burst mode and exposure bracketing. And speed becomes even more difficult to achieve as the pixel count climbs. Fortunately, Sony's Real Imaging Processor is uncommonly powerful and uncommonly fast. As a result, the DSC-F828 has already amazed independent reviewers with its speed and responsiveness.

Reduced power consumption. Imaging processors are partly to blame for the perception that digital cameras "eat" batteries. Sony's Real Imaging Processor fights the problem with large-scale integration (13 million transistors on a single chip), smaller parts and smarter clock control. The result is a 70% reduction in power consumed for a given pixel count, versus current models.

Shooting: Ergonomics

Every aspect of the DSC-F828 Cyber-shot® digital camera was designed around you. Sony considered the shape of your hand, the reach of your fingers, and the comfort of your vision. You can see the results in everything from the on-screen icons to the curve of the handgrip, from the LCD monitor to the eye-level electronic viewfinder.

User Interface. Large on-screen fonts and function icons make it easy to navigate the camera's menus and controls. When you set the Mode dial or use the Command dial to adjust shutter speed, aperture or ISO, a "virtual dial" appears on the screen to display your choices. You never need to take your eyes off your subject. Even the Command dial itself is carefully considered. Ergonomic ridges and detented click-stops make for quick, confident adjustments.



When you turn the Mode dial, all your choices appear on a "virtual dial" in the camera's LCD monitor (left). The Command dial (center) controls parameters like Shutter speed in conjunction with its own "virtual dial" display (right). Virtual dials mean you never need to take your eyes off the subject. (On-screen images simulated.)

Handling. The DSC-F828 is designed to be held. Your right hand instinctively holds the generous grip, with your index finger on the shutter and your thumb on the Command dial. Your left hand falls naturally around the zoom ring of the Carl Zeiss® lens, with your left thumb ready to operate the lens-mounted functions.



It's not by accident that the F828 "feels right." It's by design.

Rotary Lens. For maximum ease of shooting, the entire lens assembly rotates through a generous 100 degrees. So you can point the lens at your subject while tilting the camera body (with its LCD monitor) back toward you. When you're shooting portraits, you can hold the camera at waist level, make eye contact with your subject, and tilt the camera body up toward you. When you're taking pictures in a crowd, you can hold the camera above your head and tilt the camera body down. The lens itself has a dual tripod receptacle, for use with consumer and professional tripods. So you can set the lens on a tripod and tilt the body toward you.



The lens rotates in relation to the camera body.



Magnesium Alloy Body.

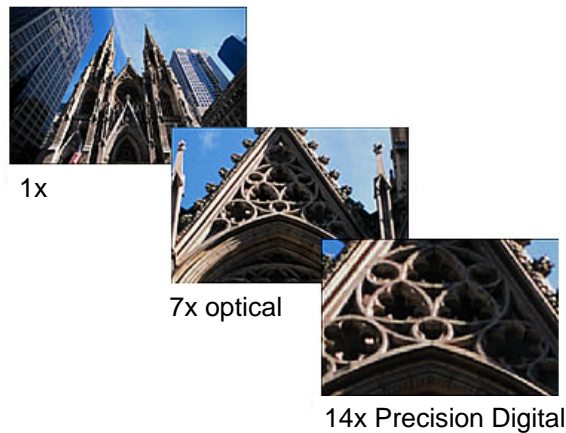
The DSC-F828 chassis uses magnesium alloy, chosen for its superb combination of durability and light weight. And Sony gave the camera a crinkle-finish black surface for a secure grip.

Shooting: Composition

Compared to the typical digital camera, the DSC-F828 endows its users with incredible freedom in shot composition, thanks to powerful zoom features, viewfinder flexibility and even the ability to compose shots in total darkness!

7x Optical zoom. The 7x Vario-Sonnar® zoom lens gives you a sensational range of framing options, from an unusually wide 28 mm to 200 mm telephoto (35mm equivalents). This also equates to creative freedom. Even a typical head-and-shoulders shot carries a different geometry and different emotional impact when taken with the lens full wide, versus full telephoto. The mechanically-coupled zoom ring makes for quick, positive framing.

Digital zoom. Sony's Precision Digital Zoom doubles the total effective zoom range to 14x. Sony's Smart Zoom™ system uses a progressively smaller area of the CCD, to a limit of 640 x 480 (VGA) resolution. Smart Zoom, which is not available for 8 Megapixel images, achieves up to 8.9x zoom with 5 Megapixel images, up to 11x zoom at 3 Megapixels, up to 18x with 1.3 Megapixels and up to 35x with VGA images.



Powerful optical zoom gets you close to your subject (center), while Precision Digital Zoom gets you closer still. (Sample photos for illustration purposes only.)

LCD Monitor. The DSC-F828 makes it easy to frame your shots, with a constant electronic preview of the image you're about to take. The 1.8-inch monitor is a low-temperature polysilicon Thin Film Transistor (TFT) liquid crystal display. User-controlled backlight makes the display visible in all conditions. 134K pixels of resolution deliver a bright, clear image.

Eye level viewfinder. You can compose shots on the LCD monitor while holding the camera away from your face. As an alternative, you can use the classic film-camera grip and frame your subject with the eye-level electronic viewfinder, a high-resolution LCD with 235 K pixels. The eye-level finder even has a dioptic adjustment so you can use it comfortably without eyeglasses. With either the finder or the LCD monitor, you'll see bright, clear images and you'll enjoy the same beautiful status and control displays.

NightFraming. At night, Sony digital cameras enable you to frame and take shots that simply wouldn't be possible with film. NightFraming deactivates the camera's infrared filter, letting you frame images in total darkness, using the camera's own infrared light.

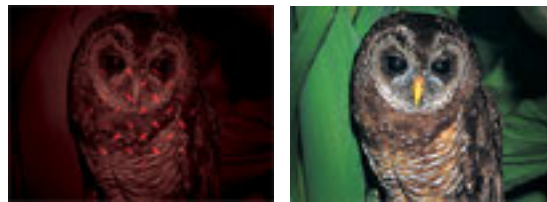
Shooting: Focus

Seven Auto Focus (AF) modes complement the way you think and the way you shoot.

- **Multi-Point AF** automatically focuses on the most appropriate of five spots near the center of the frame.
- **Center AF** uses only the center spot.
- **Focus Lock** enables you to first point directly at the subject, press the shutter half-way to lock the focus, and then frame your shot as you please.
- **Flexible Spot AF** lets you frame your shot first, then move the focus spot to your subject.
- **Monitor AF** maximizes your photo opportunities by pre-focusing as you compose your shot.
- **Continuous AF** is perfect for pictures of unpredictable sports, children and pets, because it continues to focus even after you've pressed the shutter half-way.
- **Hologram AF** even focuses in total darkness. A laser diode and a diffraction grating project a red crosshatch pattern onto your subject. The camera automatically uses the pattern to focus!



Flexible Spot AF shifts the focus point to your subject. (Sample photo for illustration purposes only.)



The Hologram AF illuminator projects a red crosshatch pattern onto your subject so you can focus even in total darkness! (Sample photos for illustration purposes only.)



Continuous AF helps you follow fast action. (Sample photo for illustration purposes only.)

Shooting: Exposure

From full-automatic to full-manual and everything in between, the DSC-F828 gives you as much or as little control over exposure as you want. Choose the exact aperture, shutter, sensitivity, metering and flash that meet your creative needs. Or simply point and shoot!

- **Auto** mode automatically selects the aperture, shutter speed, flash level and ISO sensitivity to match the scene brightness. In Auto and Program modes, maximum shutter speed is 1/3200 second.
- **Program Auto** performs the same functions, with the option of Program Shift, which lets you vary the shutter and aperture together by turning the control dial.
- **Aperture Priority (F2.0—F8.0)** lets you blur the background by opening up the aperture, while the camera selects the right shutter speed.
- **Shutter Priority (30 sec. to 1/2000 sec.)** lets you freeze or blur the action, while the camera selects the right aperture. At shutter speeds of 2.5 to 30 seconds, the camera automatically uses Slow Shutter Noise Reduction.
- **Scene Modes.** Twilight, Twilight Portrait, Landscape and Portrait modes automatically adjust the auto exposure program to specific shooting situations.
- **Exposure Correction** can compensate for backlight, unusually bright subjects and other creative challenges, from -2.0 to +2.0 EV in 1/3 EV steps.
- **Manual Exposure** enables you to set everything yourself, with aperture from F2.0 to F8.0 and shutter from 30 sec. to 1/2000 sec.
- **AE Lock** uses a dedicated button, apart from Focus Lock. This enables you to point directly at the subject, lock in the right exposure, and then frame your shot as you please.
- **Auto Bracketing** is great for difficult exposures. With a single press of the shutter, you can take three shots at different exposure levels.

- **Histogram** is a viewfinder display for critical analysis of exposure. Like an audio spectrum analyzer, the histogram reveals the prevalence of each brightness level in your image.

Light metering. To match your shooting situation and your style, the camera can meter light three different ways.

- **Multi-Pattern Metering** divides the image into a 7 x 7 grid. The camera calculates proper exposure through a unique Sony algorithm that uses 49 separate points. The algorithm automatically identifies your subject and compensates for backlight and other tricky conditions.
- **Center-Weighted Metering** uses the center 15% of the image and gives it a 2:1 weighting over the rest.
- **Spot Metering** looks at just the center 3%—ideal when you want to expose for just a single subject.

Flash with genuine TTL metering. The precision of genuine Through-the-Lens (TTL) flash metering is rare in digital cameras. But the DSC-F828 delivers with a pop-up flash and the superlative exposure of TTL metering.

- **Automatic Flash** sheds additional light on your subject whenever you need it.
- **Forced Flash** helps put light on your subject's face, when backlighting is a problem.
- **No Flash** mode is ideal for distant subjects in low light.
- **Slow-Sync Flash** comes to the rescue in night-time portraits, when you want to expose for both a foreground subject and dimly-lit background.
- **Red Eye Reduction** can control the annoying reflection of flash in the eyes of your subjects.

Accessory flash with TTL metering. The DSC-F828 also offers TTL flash metering with the Sony HVL-F32X accessory flash unit, which can help you capture even poorly-lit subjects and hard-to-shoot background night scenery. The F32X features a wide panel for wide-angle pictures and soft lighting, test flash and bounce flash capability and a range of up to 50 feet (16 m).

NightShot® mode. NightFraming deactivates the camera's infrared filter, letting you frame images in total darkness, using the camera's own infrared light. And Sony's NightShot™ function lets you shoot subjects in total darkness. It's great for capturing nocturnal animals and sleeping babies. (Does not result in true color. Using NightFraming and NightShot functions in bright outdoor light could cause camera malfunction.)

Color refinements. Shoot pictures of incredible nuance and subtlety when you control the parameters of sharpness, saturation and contrast. It's like having a digital darkroom when you take your shot.

White Balance. Capture true colors with Auto or Manual White Balance, or choose white balance presets for Daylight, Cloudy, Fluorescent, Incandescent and Flash.

ISO Sensitivity. Set ISO to Auto, or choose manual sensitivity settings for 100, 200, 400 or 800. High-speed settings are especially useful in eliminating the blur of camera movement in low-light conditions.

Shooting: Recording Modes

Image formats. The DSC-F828 can save your pictures as compressed JPEG files, or both JPEG and uncompressed RGB-TIFF images at the same time. Professionals and dedicated amateurs may also choose to store images as RAW files. RAW files give you greater artistic control by capturing unprocessed RGB+E data directly from the CCD. This bypasses such signal processes as White Balance. In this way, the RGB+E RAW files are the "digital negatives" that preserve the maximum in image quality and the maximum in flexibility for the "digital darkroom" of your personal computer.

On your PC, you can correct the color, highlight exposure and shadow detail with advantages nearly impossible to duplicate when you're shooting. These include powerful software tools; a relaxed environment; a known, high-resolution monitor and controlled ambient lighting. What's more, PC-based color correction enables you to second-guess all your decisions, changing your mind or starting over from scratch. As with other digital cameras, the DSC-F828 generates RAW files in a unique, camera-specific format. These files can only be manipulated and output with the supplied Sony image software or with software packages specifically compatible with the Sony DSC-F828, such as Adobe Photoshop® CS with the DSC-F828 Camera Raw plug-in.

Burst Modes. Sony's Burst modes help you capture very fast motion in sports and athletic coaching as well as professional, industrial and scientific applications. You can shoot a seven-shot burst either with picture on the monitor screen (Framing Burst at 0.42-second intervals) or without a picture (Speed Burst at 0.38-second intervals). A Multi-Burst function even saves a succession of 16 images as a single JPEG file (1,280 x 960). Select Multi-Burst intervals of 1/30, 1/15 or 1/7.5 second. During playback, you can show the Multi-Burst images in sequence and freeze any individual frame.

MPEG Movies. While some high-end digital cameras can't capture moving pictures, the DSC-F828 emphatically can. You can enjoy three MPEG Movie modes, depending on your recording media. If you're shooting onto Memory Stick PRO™ Media or Microdrive media, you can enjoy MPEG VX Fine mode at a smooth 30 frames per second!

Mode	Resolution	Frame Rate (approx.)
MPEG Movie Video Mail	160 x 112	8 frames/sec.
MPEG Movie VX	640 x 480	16 frames/sec.
MPEG Movie VX Fine (requires compatible media)	640 x 480	30 frames/sec.

With a 1 Gigabyte Memory Stick PRO™ Media card (MSX-1G), maximum recording time is over 44 minutes (VX mode) or 12 minutes, 30 seconds (VX Fine mode).



Screen grabs of actual DSC-F828 MPEG Movies. Sony's MPEG Movie VX Standard mode (left) can't equal the detail of VX Fine mode (right). Notice the difference in the way the Ferris wheel is captured.

Dual media slots. The DSC-F828 gives you maximum flexibility in storage media. Many owners will use the Memory Stick® Media they already have. Some will enjoy the higher capacity and higher writing speed of Sony Memory Stick PRO™ Media cards, which offer capacity up to 1 Gigabyte. People who already own CompactFlash® cards will appreciate the slot for CompactFlash Type I and Type II media. The slot also accepts Microdrive™ plug-in hard disk storage (Hitachi Global Storage Technologies DSCM-11000 1 GB drive). Because so many purchasers will be upgrading from previous digital cameras, storage media is required, not supplied with the DSC-F828. (CompactFlash storage performance not guaranteed. File system is FAT 16/32 compatible.)

Print options. The DSC-F828 also takes advantage of the latest digital photo printing standards. PictBridge™ printing enables you to print directly from the camera to a compatible printer, without first connecting a computer. Use Digital Print Order Format (DPOF) printing, batch printing, and date stamp your images from the camera's LCD monitor, all without a PC.

Optional accessories

Stabilize your camera with a tripod for telephoto, macro and low-light shooting. Protect your camera with a carrying case. Extend your shooting time with a second battery pack. Sony accessories make it happen.

VCL-M3358 close-up lens
VF-58CPK S polarized filter kit
VF-58M ND filter kit
VF-58SC special effect filter kit
HVL-F32X Flash
VCT-D680RM remote control tripod
VCT-D580RM remote control tripod
VCT-D480RM remote control tripod
RM-DR1 remote control
RM-VD1 remote control
NP-FM50 rechargeable battery pack

BC-VM50 battery charger
AC-VQ50 AC adapter/quick charger
AC-SQ950A AC adapter/charger
DCC-VQ1 car battery cord
DCC-L50B car battery adapter
LCH-FHB hard carrying case
LCJ-FHB soft leather carrying case
STP-SA shoulder strap
VCT-MTK travel kit
VCT-TK1 travel kit
KK-LC1 LCD cleaning kit



The DSC-F828 is your point of entry into a complete system of digital photography.

DSC-F828 Specifications

Imaging Device: 2/3" Super HAD™ Charge Coupled Device with 4-color RGB+E filter array

Total pixels: Approx. 8,314,000 pixels

Effective pixels: Approx. 8,068,000 pixels

Lens: Carl Zeiss® Vario-Sonnar® T* lens;
7.1x zoom;
Focal length: 7.1 – 51 mm;
35mm Equivalent: 28 – 200 mm;
Maximum Aperture: F2.0 – 2.8;
Filter Diameter: 58 mm

Zoom: 7X Optical
5X Smart Zoom (at VGA resolution)
35X Total Smart Zoom™ system
2X Precision Digital Zoom
14X Total Precision Digital Zoom

Exposure Control: Automatic, Program Auto, Program Shift, Shutter speed priority, Aperture priority, Manual Exposure, Scene Selection (Twilight, Twilight Portrait, Landscape, Portrait)

ISO: Auto, 100, 200, 400, 800

Focus: 5 Area Multi-Point AF with Manual Select

Minimum Focus Distance: 20 inches (50 cm)

Macro Focus Distance: 3/4 inches (2 cm)

Shutter Speed: Auto (1–1/3200 sec)
Shutter Priority (30–1/2000)
Manual (30–1/2000)

Manual Exposure: ±2.0 EV, 1/3 EV Step

White Balance: Auto, Daylight, Cloudy, Fluorescent, Incandescent, Flash, One-Push Manual

Flash Modes: Auto/Forced On/Forced Off/Slow Syncro; Red Eye Reduction On/Off

Flash Effective Range: Recommended distance with ISO sensitivity set to Auto:
WIDE: 20" to 15' (0.5 m to 4.5 m); TELE: 24" to 11' (0.6 m to 3.3 m)

Picture Effects: Solarize, Sepia, Negative Art

MPEG Movie Mode: MPEG VX Fine (640 x 480, 30 fps)
MPEG VX Standard (640 x 480, 16 fps)
Video Mail (160 x 120, 8fps)
All modes include audio

Clip Motion: Normal (160 x 120), Mobile (80 x 72)

File Format: Still images, Exif Ver. 2.2, JPEG compliant, RAW, TIFF, DPOF compatible
Audio with still image: MPEG1 compliant (monaural)
Movies: MPEG1 compliant (monaural audio)

Recording Media: Memory Stick® Media, Memory Stick PRO™ Media, CompactFlash™ Types I and II media, Microdrive™ hard disk drive (Tested to support Memory Stick PRO™ media capacity up to 1 GB. Does not support Access Control security function.)

LCD Monitor: 1.8" 134K Pixels Low Temperature Polysilicon TFT

Electronic Viewfinder: 0.44" 235K Pixels Low Temperature Polysilicon TFT

Self-Timer: 10 Seconds

Video Output: NTSC/PAL Selectable

Microphone/Speaker: Yes/Yes

USB Terminal: Supports USB 2.0

Battery Type/Capacity: InfoLithium® NP-FM50
1180mAh Rated

Supplied Software: Pixela ImageMixer™
Software for Sony v1.5, USB Driver

OS Compatibility: Microsoft® Windows® 98, 98SE, 2000, XP Home and Pro, Me, Macintosh® 9.1/ 9.2/ X (10.0, 10.1, 10.2)

Supplied Accessories: NP-FM50 InfoLithium® Rechargeable Battery
AC-L15 AC Adaptor/In-Camera Charger
A/V and USB Cables
USB Cradle
Shoulder Strap
Flower Hood
Software CD-ROM

Dimensions: 5-5/16 x 3-9/16 x 6-3/16 inches
(134.4 x 91.1 x 156.7 mm)

Weight: 2.12 lbs. with accessories (1.82 lbs. without)



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