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# POPULAR PHOTOGRAPHY



HOW TO MAKE GREAT PICTURES

## POP AWARDS

# 30

**BEST CAMERAS,  
LENSES,  
LIGHTS & MORE**

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**NEW!**  
**SONY**  
**ALPHA 850**  
24.6MP STEAL

**FULL  
TEST  
INSIDE!**  
P.71



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▲ Conventional digital camera

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VOLUME 73, NO. 12



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*By the Editors*



LEFT: IAN S. FRAZIER (FOG). RIGHT: SHETHE NOLKE (BOY)



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Photograph by: Brett Kennedy



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## Taking it to the street

When we test cameras, we don't just shoot and analyze targets in the Pop Photo Lab. We also take them out and see how they perform under real-world conditions. Technical Editor Philip Ryan does almost all of this shooting—after all, he writes our DSLR reports. Senior Editor Dan Richards does the same with compacts. But the rest of us usually have to wait until they have finished testing before we get to try a new camera.

So when Phil had two cameras to test simultaneously in early October (the Sony Alpha 850, page 71, and Leica M9, page 79), I jumped in and “volunteered” to use the Leica and two Leica lenses, a 28mm f/2.8 Elmarit-M and 50mm f/0.95 Noctilux-M, over the weekend.

Whether it was the gear itself or my recent visit to the exhibit *Looking In: Robert Frank's The Americans* that rekindled my love affair with street photography, I'm not sure. But in two days and three nights, the Leica almost never left my hands. I shot all over Manhattan, and a small corner of Brooklyn, at all times of day and night—on the streets, in the parks, in bars and restaurants, in the subway, a taxi, and a ferry.

I came back with some good photos (the best one is in Showcase, page 10), and a handful of tips for shooting on the street:

**Use a wide-angle lens.** To capture a full sense of your surroundings, you will need at least 28mm (or the equivalent), with as little distortion as possible. You'll also get more depth of field with a wide-angle—which is essential to this kind of work.

**Shoot at ISO 400.** To keep your aperture no wider than f/8 (I prefer f/11) and your shutter speed fast enough to stop action, you'll need a reasonably high ISO, especially to capture detail in shadowy city streets.

**Prefocus.** This lets you shoot with just a brief glance at the viewfinder—or without looking through it at all. Using manual focus, pick an object 3 or 4 feet away. When you're that close to your subject, frame quickly and shoot. Prefer autofocus? You'll need to lock focus or have a good sense of where your (uncentered) AF point is in the frame. (AF tracking might work, too, but the longer your camera is at your eye, the more conspicuous you become—and the less likely anyone is to pass in front of you.)

**Shoot a lot.** Candid shots are prone to disaster, so keep shooting and discard the bad photos later. And return again and again to the same places—over the years, you'll build an amazing record of the passage of time.

Miriam Leuchter

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SHOWCASE



MIRIAM LEUCHTER

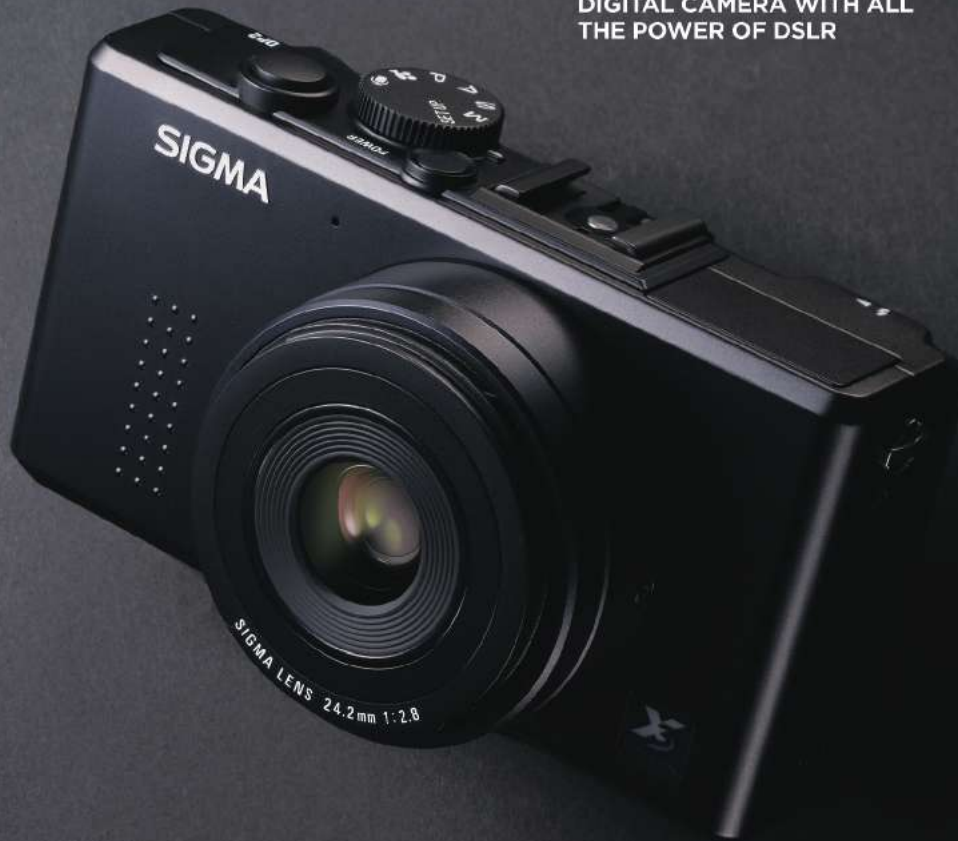




**ON THE STREET** Editor Miriam Leuchter took the Leica M9 out to New York's trendy Meatpacking District, but the Ed Hardy mannequins were more colorful than the people. Shot handheld with 28mm f/2.8 Leica Elmarit-M lens, f/11 at 1/60 sec, ISO 400. See our test of the Leica M9 [on page 79](#).

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# SIGMA



## OUR WORLD

Nathan Welton / Born in 1977 in the United States. Has travelled the world photographing athletes engaged in adventure sports and horseback riding. Featured in advertisements, newspapers, magazines, and other media, his photos have been recognized with a variety of awards. His wedding photography company "Dreamtime Images" is an internationally known studio.

*Photo data: SIGMA 10-20mm F3.5 EX DC HSM, 1/640 second exposure at F6.3*

### NATHAN WELTON SHOOTS THE WORLD WITH A SIGMA LENS.

In a Colorado national park, the snow-covered dunes stand out against the deep blue sky. A few days earlier, a storm had blanketed the sand dunes with snow. The strikingly beautiful contrast between the expansive sky, the pristine dunes, and the people passing through this landscape was captured by the Sigma 10-20mm F3.5 EX DC HSM, a super-wide angle zoom lens for digital SLR cameras. With a maximum aperture of F3.5 throughout the entire zoom range, its super-wide angle perspective enables breathtaking, one-of-a-kind shots. ELD (Extraordinary Low Dispersion) and SLD (Special Low Dispersion) glass elements and aspherical lenses provide excellent correction of all types of aberrations. The Super Multi-Layer coating reduces flare and ghosting, and the incorporation of HSM (Hyper-Sonic Motor) ensures a quiet and high-speed auto focus.

**A super-wide angle zoom lens for digital SLR cameras that achieves a maximum aperture of F3.5 throughout the entire zoom range**

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# NEXT

THE HOTTEST NEW STUFF AND THE TECHNOLOGY TRENDS BEHIND IT

WE WANT THIS

## WHITE IS THE NEW BLACK

And with Pentax's new starter DSLR, so are red and blue

**WHO SAYS YOUR** DSLR has to be black? Pentax's new \$650 (street) K-x also comes in red, white, and blue—with kit lenses to match each of them but blue.

Replacing the K2000, this entry-level camera has a 12.4MP CMOS sensor, 24-frames-per-second HD (720p) video capture, and sensitivity all the way up

### PENTAX K-X

12.4 MP  
APS-C format  
4.7-fps burst  
720p HD video  
\$650, with  
18-55mm  
f/3.5-5.6 lens

to ISO 12,800. Its zippy 4.7-fps burst shooting and 1/6000-sec top shutter speed stand out from the rest of the bargain bunch. (Sony's Alpha 380, for example, shoots bursts at 2.5 fps and its shutter speed maxes out at 1/4000 sec.)

What else caught our eye? In-camera HDR and super energy efficiency: Pentax says it gets 1,900 shots from a set of four disposable lithium AA batteries, more than three times what comparable DSLRs get from proprietary rechargeables.

Freeze action and shoot in low light without spending a bundle.



OLD-STYLE PRIME LENSES FROM ZEISS



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OUR TAKE ON NIKON'S FULL-FRAME D3S



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WHAT'S INSIDE PANASONIC'S SLIM GF1



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# OLD-STYLE PRIMES

Manual focus, fixed focal length, and new from Zeiss

**CANON EOS** shooters now have more optical options, thanks to a new lineup of eight manual-focus, full-frame, Canon EF-mount prime lenses from Carl Zeiss. Derived from the acclaimed, sharp, and built-to-last Zeiss lenses made for Contax 35mm SLRs, the full line is slated to land in stores by early 2010—and this Distagon T\* 21mm f/2.8 has already hit shelves.

Why invest in such old-school prime lenses in an era of high-tech zooms? According to Zeiss, their extra-fine, extra-smooth manual-focus action suits them perfectly to DSLR video.

Carl Zeiss Distagon T\* 21mm f/2.8

\$1,490, street

[www.zeiss.com/photo](http://www.zeiss.com/photo)



▲ If this new full-frame 21mm f/2.8 is like Zeiss lenses past, you can expect great *bokeh* and decades of use.

## ADD A DIMENSION

The first 3-D digital compact camera has arrived

**WITH TWO** lenses and two CCD sensors, Fujifilm's FinePix REAL 3D W1 can shoot two images (or videos) simultaneously—and combine them to form what we perceive as a three-dimensional experience. That would be cool enough on its own, but the best

part is that viewing requires no special glasses. Both the camera's LCD and Fujifilm's newly released REAL 3D V1 display (\$500, direct) let you see 3-D with your naked eye. And soon, you'll be able to order 3-D lenticular prints from SeeHere.com.

▶ The twin lenses can also shoot two different 2-D photos (the normal kind) at the same time.

Fujifilm FinePix

REAL 3D W1

\$600, direct

[www.fujifilmusa.com](http://www.fujifilmusa.com)



## NEWS FEED

> The world's most sensitive astronomical camera, marketed by Photon, uses a CCD controller to count photons—and it produces 25 gigabytes of data per second. NASA and the Mont-Mégantic Observatory will use the new camera to make images of far-away stars.

## INSIDE TECH

### 3-D Display

How does Fujifilm's V1 viewer let you see 3-D images without glasses? **Very skinny vertical bars of black pixels.** On a normal display, a 3-D file would look blurred because you'd see images meant for both your left and right eyes. But the V1's layer of bars—the parallax barrier—directs the correct image to the correct eye for real 3-D sans specs.





# MAIN FRAME

HP's Wi-Fi screen shows your photos—plus the weather

**DIGITAL FRAMES** can be great, but we always want them to do more. Enter the DreamScreen from HP. Thin and shiny, it shows photos and videos—and runs web-based applications, too. It lets you visit Facebook, listen to Pandora radio through



built-in speakers, or check the weather. But while you can view photos on Snapfish, forget about Flickr, at least for now—you're limited to the apps HP offers. If this frame had a web browser and a touchscreen (it has a remote), we'd be in love instead of merely in like.

HP DreamScreen \$250 or \$300, direct, depending on size [www.hp.com](http://www.hp.com)

# HUE CONTROL

These mini targets make color correction a snap

**SHOOTING RAW** gives you maximum control over white balance, but that doesn't make it easier to get it right. X-Rite's ColorChecker Passport does. The slim case contains targets for white balances ranging from warm to cool, and a grayscale to prevent clipping shadows or highlights. In consistent lighting, shoot the target once. When you process your files, use that shot to give you the right white-balance setting



for all the rest of your images. There's also a classic 24-patch color target and special software for profiling your camera.

X-Rite ColorChecker Passport \$100, street [www.xrite.com](http://www.xrite.com)

## NEWS FEED

> Samsung's new Korea-only SCH-W880 camera boasts 12MP of resolution, 3X optical zoom, and touch-sensitive autofocus. Oh, and it makes phone calls.

> Need a place to keep extra panels in Photoshop, but don't want another huge monitor on your desk? Consider DoubleSight's \$140 7-incher. It connects via USB and is made to go easily from landscape to portrait mode.

> Miss instant prints? Fujifilm's Instax Mini 7S (\$85, street) prints photos on the spot. Just get them right—film is \$15 for two packs of ten.

> For high-def video of this winter's ski trip or sledding outing in the park, try DXG's 125-VR 720p HD video cam (\$140, street). It's splashproof and has a rubber grip to help you hang on tight.



## New Software Google Picasa 3.5

Want to tag your photos using face recognition, geotag by dragging and dropping them directly onto a map, and share them the moment you offload? Picasa 3.5 does all those things—for free. This simple program is good for snapshots, and especially useful for shooters who use Google's Gmail. With your contacts already in place, you can send notices to your friends that you've posted to Picasa Web albums, and easily control who sees what. (Free for Mac or Windows; [picasa.google.com](http://picasa.google.com).)

### THE LOWDOWN

**DSLR FORECAST** As the year wraps, we're dreaming of 2010. Our predictions? You won't find many new DSLRs without video. We'll see more extensive video editing in the camera. Offset AF sensor pairs will yield ever-better autofocus. And we bet we'll get a full-frame DSLR for under \$1,500—about 25% less than today's least-expensive model, the Sony Alpha 850, tested on page 71.

# SHOOT IN THE DARK

Ridiculously high ISOs for still photos—and video, too



Nikon D3S \$5,200, street

12.1MP, full-frame CMOS sensor

[www.nikonusa.com](http://www.nikonusa.com)

which it then saves as a new file. But the image will measure only 1280x720 pixels (less than 1 MP)—just enough for a decent 4x6-inch print but plenty for the web.

Replacing the D3, this camera keeps its predecessor's tough magnesium-alloy body, 100%-accurate viewfinder (according to the spec), 3-inch and 921,000-dot LCD, and selectable 14- or 12-bit-per-color channel RAW capture. It also has the same excellent 51-point AF system and 1,005-pixel metering system, which work together to track subjects by shape and color.

Nikon added dust reduction to the newly designed 12.1MP CMOS sensor. With bigger pixels than that of the 24.5MP D3X, it trades resolution for higher ISOs and faster image processing.

Burst shooting still flies along at 9 fps for up to 82 Fine-quality, large JPEGs—and speeds up to 11 fps in DX crop mode (with Nikon's 1.5X lens factor), which decreases the frame size to the central 5MP area. Nikon also added a 1.2X crop mode, with 8.4MP bursts at 9 fps.

In all, the D3S is a nice refresh, and pro sports and action shooters will be the first in line.

But they'll face a hard choice: As we went to press, Canon announced the EOS-1D Mark IV, which also has a top ISO of 102,400. But it claims a 16.1MP sensor, 1920x1080p video recording at 30 fps, and 10-fps bursts. For more info, go to PopPhoto.com and look for our report in next month's issue. —**Philip Ryan**

**IF YOU'RE ANNOYED** that you can't use a fast shutter speed when shooting with available light—in a cave—Nikon's new D3S, due to arrive in stores in November, is the camera for you.

Its standard ISO range of 200–12,800 gets you most of the way there, and its expanded range, which goes all the way up to 102,400—three stops faster than ISO 12,800—will have you shooting in the dark.

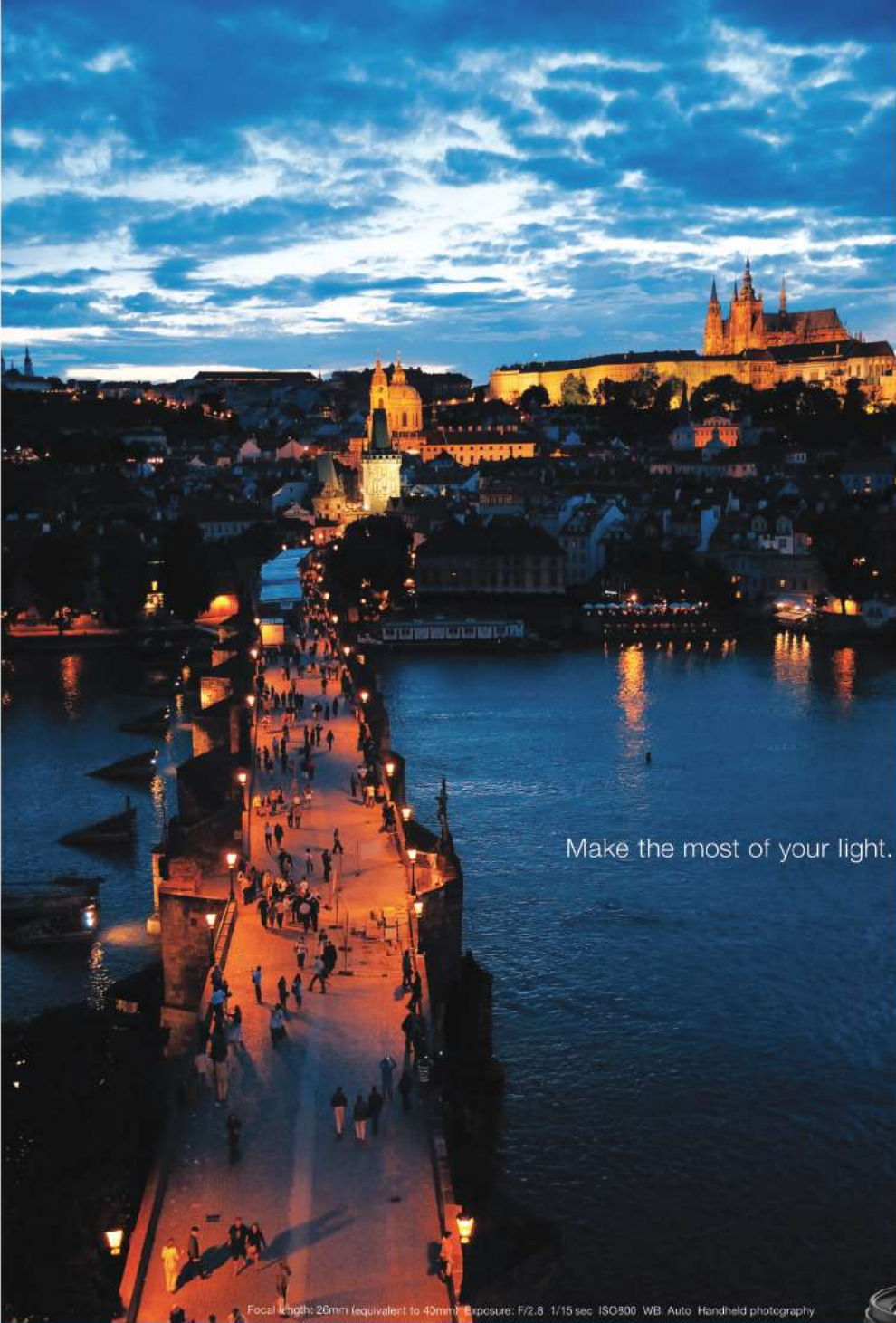
While we would have preferred full 1920x1080-pixel video recording, or at least a 30 fps frame rate (the Canon EOS 5D

**Nikon's newest full-frame DSLR, the D3S shoots 14- or 12-bit RAW files at ISOs up to 102,400. Look for our test soon.**

Mark II, for example, does both), Nikon opted for the same 720p 24 fps as the rest of its DSLRs. We like that the D3S records stereo audio and allows you to change the aperture and shutter speed while recording, although you can't stop down past f/16. You can also trim the beginning and end of the video in the camera—basic editing that's not common in DSLRs.

Since Nikon uses the Motion JPEG codec (which, unlike the AVCHD format, keeps a full image for every frame), the D3S lets you extract a single frame as a still,





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# GRAIN BUSTER

Sony's innovation reduces noise without dropping ISOs

**COMPACT CAMERAS** aren't great in low light—their smaller pixels make for more noise at high ISOs. But these (and some other) Sonys employ a noise-zapping method called Hand Held Twilight mode. This quickly snaps six frames and combines them to extract one lower-noise image, using positional interpolation to line them up.

"Picture noise is random," says Mark Weir, Sony's senior techni-

cal manager for digital imaging. "The exposures can be compared, and the noise will be that portion which varies."

Our test of the mode on Sony's POP Award-winning DSC-HX1 (page 62) was impressive. Noise at ISO 400 fell to Low (1.7) from Unacceptable (4.4). The downside: Pictures take 10 seconds to process.

—Dan Richards



Sony Cyber-shot DSC-TX1 \$380, street [www.sonymstyle.com](http://www.sonymstyle.com)



Sony Cyber-shot DSC-WX1 \$350, street [www.sonymstyle.com](http://www.sonymstyle.com)

## NEWS FEED

> If you're paranoid, ThinkGeek has the gadget for you: a hidden camera detector that can find wireless spy cams. It's about the size of a thumb drive, so you can be sneaky while you seek them out.

> Fifty million—that's a lot of glass. And it's how many lenses Nikon has made as of Sept. 2009.

> Sony recently demonstrated a 3-D video camera with a single lens (most require two). It also shoots at 240 fps (10 times the rate of classic film). This means it will now be possible to shoot fast motion in 3-D. Think sports.

> Adobe Lightroom photogs who rely on Kubota's pre-sets should check out the new RPG SpeedKeys. A mini wireless keyboard, it makes workflows faster.



## TOOLBOX

### LIGHT UP

This posable, magnetic flashlight goes anywhere

**WE LOVED** Joby's Gorillapod from the moment we saw it—it's posable legs make your camera mountable to any surface the legs wrap around. So when we heard about the Gorillatorch (\$30, direct from [www.joby.com](http://www.joby.com)), we were excited. This magnetic-footed, dimmable light is great for hooking onto all kinds of surfaces to help you, say, set up and focus when you're shooting at night. And it could double as a spotlight for macro work, too.



41%

Percentage of American households that owned a digital camera in 2004

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Those that own one now

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# SLIM DOWN

The Panasonic Lumix DMC-GF1's shallow lensmount

## LIVE MOS SENSOR

This Micro Four Thirds sensor can read four channels of data simultaneously, helping the GF1 deliver 60 frames per second with its full-time live view. You can see it clearly in this photo because the GF1 isn't an SLR, which requires a mirror box between the mount and the sensor.

## SENSOR CIRCUITS

These flexible printed circuits (FPCs) transfer data from the sensor to the analog image processor.

## SHUTTER CIRCUIT

This flexible printed circuit handles communications between the shutter button and the shutter itself.

## LENSMOUNT

The diameter of this lensmount is about 0.24 inch smaller than a standard Four Thirds mount, but allows the same amount of light to hit the sensor. It's manufactured from a block made of sintered stainless-steel powder, ground down to the mount shape. The process balances ease of manufacturing, good looks, and the strength needed to hold a lens. This is not a new material, though—it's been used since the film days.

## SIGNAL CONTACTS

The Micro Four Thirds system has two extra signal contacts for smoother live-view shooting and faster communication between lens and body. They will also be used in the high-speed processing needed for continuous AF when shooting video.

**THE DISTANCE** from the front of lensmount in Panasonic's Lumix DMC-GF1 (\$900, street; [www.panasonic.com](http://www.panasonic.com)) to its sensor is, according to our estimates, about 0.76 inch. It's quite slim. How? This live-view-only camera isn't a DSLR, so there's no mirror box up front to bulk it up.

**Shown larger than actual size, this lensmount (as part of the GF1) will run the gauntlet of our lab tests soon.**

**SHUTTER CHARGE MOTOR** This motor charges the winder that cocks the shutter. To keep the GF1 compact but still incorporate a built-in flash, the engineers moved it closer to the camera's front and designed it to be lighter and smaller.



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## PHOTO CHALLENGE

# SPIDER FAN

Inspired by our Great Outdoors special, an eBay shooter takes his macro lens outside

CHRISTOPHER WELLS



**CHRISTOPHER WELLS** of Detroit has long been inspired by Popular Photography. In fact, he even had his Canon PowerShot S3 IS superzoom converted to shoot infrared images because of one of our articles.

After reading “Through Fresh Eyes” (October 2009), he put his

**Thomas Shahan's close-up of a spider's face (Oct. 2009) inspired Christopher Wells to explore nature.**

65mm f/2.8 Canon MP-E macro lens to new use. “I’d bought it to capture detail on the small items I sell in online auctions,” he says. “But you made me think about the possible uses it could be put to in the smaller world of nature.”

The result was this “wee jumper in an abandoned wasp

nest,” shot with a Canon EOS Rebel XT and macro ring flash—not the easiest shot, since the spiders kept jumping on his camera. But it paid off. “Nature at its most beautiful and creepy,” he says.

See more of his photos at [www.flickr.com/photos/7896037@N07](http://www.flickr.com/photos/7896037@N07).

—Lori Fredrickson

## NEXT PHOTO CHALLENGE

**John Loomis** snapped **Marines in training** (page 39), and both **David Baures** (page 34) and **Donald Miralle** (page 48) attached their cameras to moving vehicles. Can you capture the emotion of motion? Send your take to [PhotoChallenge@bonniercorp.com](mailto:PhotoChallenge@bonniercorp.com) by **December 31**. If we publish yours, we'll pay you \$100.

# Modern Antiques

Telling camera history in tintypes



The 19th-century wet-plate collodion process Bill Westheimer used brought a sense of timelessness to these old cameras. Left, from top: Alfa 6C, Cambo 8x10, Contax II, Leica IIIa, Zeiss Hologon, Polaroid Spectra Onyx. Right: beer cam and Rolleiflex 3.5F.



BILL WESTHEIMER (8)

**THE PROJECT STARTED** by chance, after I photographed someone in my studio for a different assignment. He saw my collection of old cameras and told me a wonderful story about his old camera and his father—I realized that everyone who owns an old camera has such stories. I do, too.

I started photographing my old Polaroid, my old Nikon. But the stories are what interest me, and I wanted to hear them from other people. So I contacted friends and other photographers, and put up an ad on Facebook, asking to borrow their old cameras.

Some people were so enthusiastic, they would send me three or four cameras. I got all different kinds. A bunch of people are in love with their Rolleiflexes. I photographed some digital cameras, too—straddling the eras.

I made tintype and glass-plate images using a wet-plate collodion process, with a Cambo 8x10 monorail camera and Fujinon 210W lens. I'd position 5000 Ws Comet strobes and one or two heads about 18 inches from the camera—it needs to be this bright for the collodion process. I left the lens open at f/16 for two or three

**Westheimer is a studio and fine-art photographer living in Llewellyn Park, NJ. See more of his work at [www.billwest.com](http://www.billwest.com).**



ELLICHENSTEIN

pops of the strobes. Then I'd scan the glass plate and clean up the images in software.

The tintypes I'd send back with the cameras to the owners, and then I'd ask them to write up their recollections of each camera.

I love the old cameras, but I really love the stories about people and their memories. One of my favorites was of one woman's Seagull: When she looked through it for the first time, everything was upside down and backwards, and she thought that was perfect.

—Bill Westheimer, as told to Lori Fredrickson



# Zoomed. Not Shaken.



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## SHARE \* LETTERS

### DIGITAL TOOLBOX



### Beyond the Fringe

#### HOW TO GET RID OF UGLY EDGES

**EVER SHOOT A** landscape or nature photo, or even a portrait, where the subject is in the foreground and the background is out of focus? If so, you've probably noticed the blue fringe around the edges of the subject. This is the result of the camera's lens flare, and it's a common problem. The good news is that there are several ways to remove it, and we'll show you how to do it in this article.



**SUBTLE CHANGES:** This technique started out as a way to remove the blue fringe from the edges of the subject, but it's now being used to remove the fringe from the entire image.



**1** If you shoot RAW, get rid of the blue fringe by using the "Remove Blue Fringe" tool in the Photoshop menu. This tool is located under the "Image" menu, and it's a great way to remove the fringe from the entire image. However, it's not always perfect, and you may need to use other tools to get the best results.

**2** When you're working on a JPEG or TIFF, the "Remove Blue Fringe" tool in the Photoshop menu is a good way to remove the fringe from the entire image. However, it's not always perfect, and you may need to use other tools to get the best results.

**3** Another way to remove the blue fringe is by using the "Healing Brush" tool in the Photoshop menu. This tool is located under the "Edit" menu, and it's a great way to remove the fringe from the entire image. However, it's not always perfect, and you may need to use other tools to get the best results.

**4** The "Healing Brush" tool in the Photoshop menu is a great way to remove the blue fringe from the entire image. However, it's not always perfect, and you may need to use other tools to get the best results.

# Clean Green

**THANK YOU** for the article on combating blue fringe (Digital Toolbox, October 2009). Your workflow was a much better way to deal with it than the ol' clone brush. As a test, I processed a sample image with some major blue fringe around the green leaves in the trees. Each step improved the fringe, but when I finished desaturating the branches, I still had horrible blue-fringed leaves.

So, I tried to see what would change the color from blue to a green typical of the leaves in the image. The first tool I tried, the Healing Brush, worked very well. I suggest the following addition to your workflow to fix the blue fringe in green leaves quickly and easily:

1. Select the Healing Brush.
2. For Mode, select Color.
3. For Source, select Sampled.
4. Alt + click (or Opt + click on a Mac) on the leaves, or on any color you want to use to replace the fringing.
5. Choose the appropriate brush size.
6. Use the cursor to paint over the fringe.

**Jon Clarke**  
Reston, VA

**I ALWAYS ENJOY** reading lens tests of all types from all manufacturers, and the Leica 50mm f/0.95 was no exception in your September 2009 issue.

However, there seems to be a trend where Pop Photo sometimes tests full-frame optics (such as the Leica 50mm f/0.95) on smaller sensors, such as the

M8, and reports their findings in the SQF charts as if they were tested on the likes of the full-frame M7. Your article on the 50/0.95 doesn't specifically say that, but reading between the lines draws no other conclusion.

This procedure just seems, to me at least, a tad bit dishonest. Of course, testing any full-frame



## WRITE TO US: POPPHOTO@BONNIERCORP.COM

lens on a sensor smaller than full-frame will make it "better." I would recommend testing full-frame optics on a full-frame sensor. Always. **Steven Grueber**  
Denver, CO

*Our optical bench tests for sharpness (SQF tests) are done without a camera body, but always using the correct size of image circle. And we always test for distortion and light falloff on cameras with the correct sensor. Yes, we tested the full-frame Leica 50mm f/0.95 on an APS-H-sized M8, but we stated so in the test. We also said the lens should show significant falloff with the M7—hardly dishonest. And now that the full-frame M9 has arrived (see page 79), we've rerun the test: The lens showed Slight (0.2%) barrel distortion, and light falloff was gone by f/1.4 (just a little over 1 stop). NOTE: In October 2009, we inadvertently referred to Tamron's 60mm f/2 Macro as full-frame—it is APS-C-sized, and we tested it as such.*

**I HAVE BEEN** researching sub-\$1,000 DSLRs to move up from my advanced digital point-and-shoot. I have noticed that several of the newer cameras, including those by Olympus (E-620) and Nikon (D90), have a lowest ISO of 200. I like to shoot a lot of soft background photos and slow exposures, and it seems to me this is a step backwards in these areas. Is the ISO a significant factor in creating soft background pictures and getting slow shutter speeds in digital, as it would be with a film? If so, why are camera manufacturers moving in this direction? **Nick Sullivan**  
Hermitage, TN

*Just as with film, shooting at a lower ISO lets you use a wider aperture for softer backgrounds and slower shutter speed to blur motion. On DSLRs,*

*you'll need to look in the "expanded range"—the Olympus E-620 lets you set ISO 100 manually, and the Nikon D90's range also extends down to ISO 100. Indeed, there's been a trend toward lower ISOs on DSLRs, even as their sensitivity keeps climbing.*

**JUST WANTED** to say congratulations on the new look! The fresh content and clean look is really inspiring. It reminds me of the great photography magazines I used to read in the UK. Keep up the good work! **Jonathan Wylie**  
Via e-mail

**WHOEVER** determined there was something wrong with the overall content, layout, and design of your venerable publication needs to get the sack. I just received the latest issue in the mail, and if I knew it would be this bad, I would not have renewed my subscription. . . . I could go into more detail, but it appears none of the editors are capable of paying closer attention to depth and detail. **Martin Malacara**  
Via e-mail

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# Better Color

**Q** I want to buy the Sony Alpha 900, but I'm worried about its color accuracy. If I shoot with it in RAW, can I tweak

the white balance in Adobe Camera Raw to improve its color accuracy?

J. Reynolds  
Spokane Valley, WA

**A** The color accuracy in our Pop Photo Lab test of the Sony A900 wasn't bad at all—just shy of Excellent—and we doubt you will be displeased with it, unless you do a shoot for a fashion catalog and need to have critically exact color matching. To answer your question, though: No, you can't improve color accuracy by tweaking white balance. Because it's a global change, all color will shift as you attempt to find the whitest white. While you may bring, say, a red T-shirt closer to the red you saw, the other colors will shift unnaturally in sync.

## **Q** APS ORPHAN

I'm scanning the contents of about 200 APS film cartridges to CD-R, and one of the cartridges, an important one, seems defective. It couldn't be scanned in two different machines at two different photo labs. One dealer suggested that he take the film out, mount it in APS slide mounts and scan the frames individually. This sounds clumsy and expensive. Is there anyone who repairs these cartridges?

Morton Linder  
Mount Kisco, NY

**A** Unfortunately, no. Not even Kodak supports this orphaned format. If your cartridge is truly important, you may want to take up your dealer's offer. Another suggestion: Several online scanning houses specialize in APS—Pixmonix, FotoBridge, and DigMyPics are a few. Unlike mini-lab scanners, which are built into printers and can scan only from cartridges, scanning houses often have stand-alone machines with APS gates that accept naked film. These guys deal with APS cartridges all day long, so they may have a quick fix for your problem.

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## Q ZOOM RANGER

I'm wondering about the comparative zoom ranges of my digital compact and DSLR zooms. Is there a formula for determining the zoom range of, say, my Tamron 200–500mm super tele?

Paul B. Bolton  
Via e-mail

**A** You bet. Divide the long focal length by the short one for the zoom range. Accordingly, your 200–500mm has a 2.5X range. As for the “comparative” part of your question, a 10X zoom is a 10Xer no matter what format body it's on. The full-frame equivalent focal lengths in that range matter more.

## Q TECH PAN ALLEY

I have several rolls of Kodak Technical Pan 6415 film. Where can I get it processed?

Khalid Ikram  
Via e-mail

**A** Modernage, a custom lab in New York City, can handle it via mail-order at \$32 per roll, plus shipping. This price includes processing and a contact sheet. Visit its website, modernage.com, or phone 800-997-2510 toll-free.

## TIP FROM A READER

**BETTER PET PIX** Want to get better portraits of your family's dog? Here are two ways to get his attention and some eye contact. The first is obvious: A dog whistle. It will work, but only for about 15 seconds, so be ready with focus, exposure, and composition. The other gets you eye contact for hours: Rubberband a strip of well-blotted, cooked bacon around your lens. Most dogs won't be able to look away!

Alicia Thomasville  
Yardley, PA

## GOT A QUESTION?

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# What Should I Buy?

Panasonic Lumix DMC-G1 shooter Austin Firth asks if he should buy Panasonic's DMW-MA1 Four Thirds lens adapter (\$150, street) for his Micro Four Thirds body, and which Four Thirds telezooms he should consider. We vote Yes for the adapter, and suggest Sigma's fast, sharp, distortion-tamping 70–200mm f/2.8 II (\$800, street), Panasonic's 45–200mm f/4–5.6 (a tempting \$284, street), and any Olympus glass.

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# Glamour Shots

This month's winners made stunning images from ordinary scenes



## 3rd Place \$100 Prize

**ERIC EVANS, 16, STUDENT, MENLO PARK, CA**

"I like the way lightbulbs look on the inside, and I thought light sparkling off the glass would look neat. I shot this on a table against a black blotter—the hard part was laying out shards with tweezers. I set a tripod-mounted Sony HVL-F42AM flash above and to the right, and triggered it optically."

**TECH SPECS:** Tripod-mounted Sony Alpha 100 with Minolta 50mm f/1.7 lens. Exposure, 1/800 sec at f/8, ISO 100. Minor fixes in Photoshop CS3.

## 2nd Place \$200 Prize

**ELMER TICAS, 37, COMPUTER ENGINEER, SAN SALVADOR, EL SALVADOR**

"One morning, I arrived early at my office and stepped out to the terrace with my camera. The sun was rising behind a building under construction, and the workers had just started. When I saw the silhouette, I took three shots. I liked this one best."

**TECH SPECS:** Canon EOS Rebel XSi with Sigma 70–300mm f/4–5.6 lens; 1/125 sec at f/11, ISO 100.

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## 1st Place \$300 Prize

**DAVID BAURES, 41, POLICE OFFICER, ARLINGTON, VA**

"I wanted to show my Dodge Charger in motion, but watching my equipment dangling from a rig makes me nervous. So one night I drove to the parking lot of a local shopping center—blurred into streaks, illuminated signs imply speed. I mounted my camera to a Manfrotto Magic Arm, connected by heavy-duty suction cup to the car hood. Then I repeatedly opened the shutter while driving slowly in a circle."

**TECH SPECS:** Sony Alpha 300 with Sigma 10–20mm f/4.5–5.6 lens and Hoya polarizer. Exposure, 4 sec at f/6.3, ISO 100.

—Lori Fredrickson

# Redefining Photography

## Panasonic Lumix G Series digital cameras are a fresh alternative to traditional DSLRs.

Panasonic continues to redefine the standards for digital photography with a versatile line of advanced digital cameras designed for photographers who demand exceptional quality—whether for video or still photos—ultimate flexibility with small, lightweight camera bodies and lenses, and a broader selection of creativity options. With Panasonic's award-winning LUMIX G Series, the company makes all this, and a more, a reality.

Panasonic revolutionized the digital photography industry in September, 2008, with the introduction of the world's first Micro Four Thirds digital camera—the Panasonic LUMIX DMC-G1. At the time, the G1 took claim as the world's lightest and smallest digital interchangeable lens camera and proved to the photo industry that a non-DSLR camera could still produce DSLR-like quality results—with a

smaller and lighter camera system. Taking the bold move of removing the very same mirror box that traditionally defined a "single-lens reflex" camera led *Popular Photography* to recognize Panasonic's ambitious vision and name the G1 as the magazine's "Camera of the Year" in 2008. *Pop Photo* noted that the G1 camera best refined or redefined photography, and was a forward-thinking product that represented the next "big thing" for the industry. And this was just the beginning.

Setting the stage for a platform that could truly shrink the size of digital cameras, Panasonic then went one step further by adding full high definition 1080p video to its LUMIX G Series with its announcement of the LUMIX DMC-GH1. The GH1 not only produced exceptional still images, just like the G1, but it could also record 1080p high definition video comparable to footage produced by more expensive, top-level professional video

equipment. The GH1 comes with the LUMIX G VARIO HD 14-140mm/F4.0-5.8 ASPH./MEGA O.I. lens, which is the world's first digital interchangeable lens to enable continuous auto focus, so video quality is unparalleled when compared to other video-enabled DSLRs. To further this uncompromised video experience, the GH1 records video in high-quality stereo sound via Dolby Digital Stereo Creator, the global standard of audio recording. An optional stereo microphone is also available to achieve a more intensive sound recording experience.

The GH1 was recognized by *American Photo* with their Editor's Choice 2009 award. More specifically, they noted, "Perhaps the first successful hybrid camera, the LUMIX GH1 is just as adept at capturing high-definition video (at broadcast-quality 24fps 1080p or ultra-smooth 60fps 720p) with Dolby stereo sound. And unlike all other video-capable DSLRs, it can focus continuously and silently while you're shooting, just like a regular camcorder—a huge advantage that gives you or your subject the freedom to move in and out without the worry of manual refocusing."





The GH1 also speaks to the photographer looking for creative controls while shooting still photos and video. Using the Creative mode, the user can manually set the shutter speed and aperture, making their videos more creative and representative of their own personal video style preferences. Changing the shutter speed gives the videos a special look, particularly suitable for shooting fast-moving subjects. Controlling the aperture is convenient when there are several subjects at varying distances, so the user can focus on the foreground and blur the background—or vice versa.

Most recently, Panasonic introduced the LUMIX DMC-GF1—its most compact LUMIX G Series digital camera to date, whose design is reminiscent of a classic rangefinder. The GF1's small and attractive design was anxiously welcomed by photo enthusiasts eager for a high-quality, yet compact camera that would be an ideal companion model to their larger DSLRs. Again, Panasonic offers HD video on the GF1, takes claim as the world's lightest and smallest digital interchangeable lens

camera with a built-in flash—a practical feature that is a must in a go-anywhere digital camera.

The GF1 includes the new My Color mode, which includes seven preset effects – Expressive, Retro, Pure, Elegant, Monochrome, Dynamic Art,

---

The LUMIX GF1...takes claim as the world's lightest and smallest digital interchangeable lens camera with a built-in flash.

---

Silhouette and Custom – all of which let users manually set the color, brightness and saturation levels. With the Live View function, users can see how these settings will effect the photo before they shoot, making it easier to capture the

exact mood or atmosphere desired. For even more elaborate effects, users can choose from a total of nine Film modes, and set the contrast, sharpness and saturation levels for each. A custom function lets users store their favorite settings in memory. Furthermore, the exposure meter can be displayed in other shooting modes and the correlation between shutter speed and aperture is shown, with a color-coded warning that alerts users when the settings are not in the proper range.

The Panasonic LUMIX G Series digital cameras—the G1, GH1 and GF1—offer people who are serious about photography a fresh alternative to traditional DSLRs. For more information on the Panasonic LUMIX G Series, visit [www.panasonic.com/lumix](http://www.panasonic.com/lumix).

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# HOW

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## CREATIVE THINKING

# ACTION PACKED

Get right in the middle of the story

**ACCORDING TO** editorial photographer John Loomis, getting access to shoot the military may be difficult, but once you're in, you're golden. Then the real work begins.

Tasked with capturing Marine Corps drills for a story in *Men's Health* magazine, Loomis

**John Loomis got low and tilted his camera to showcase these hard-working marines.**

wanted to convey the extreme physical effort of these recruits. But creating a feeling of movement and narrative in a still picture is one of photography's biggest challenges.

Having started shooting news at age 15, Loomis (johnloomis.com) credits his ability to meet

this challenge by working dynamically to his background in newspapers.

"I react to and choose from what I'm seeing in front of me," he says. "I try to follow the ways my subjects move."

He sees his job as using his camera to bring order to the

JOHN LOOMIS

action, making a jumble of activity intelligible to the viewer.

He photographed these marines doing training exercises that mimic skills they need in battle. This shot depicts three making themselves dead-weight, pretending to be wounded, as others drag them across the field. Since this was an actual training session, Loomis started work at 5:30 a.m. Luckily, he loves shooting that early for the beautiful light.

Loomis works by starting out at a distance to capture the whole scene, then moving in closer. In this case, most of the early, wider shots included the drill sergeant. Then Loomis worked the scene, getting closer to find more dynamic perspectives. He got down on the ground, crouched low, and shot at an upward angle.

To show the extreme effort the exercises required, he chose an angle of light that revealed the marines' tensed muscles. Then he tilted the horizon—this can be cheesy, but here it exaggerated their exertion.

Using a Canon EOS-1Ds Mark II and 28mm f/1.8 Canon lens, he set a 1/500-sec shutter speed to freeze motion and still keep noise at bay with ISO 200. He prefers prime lenses because they keep him moving. "When you use a zoom to change perspective, you end up getting lazy," he says.

For him, the trick to shooting action is being active yourself. Don't expect to grab a great shot of motion while remaining stock-still. Get in there and move with your subject. As Loomis puts it: "I got my pants pretty dirty on this assignment. If I'm not getting dirty, I'm probably not doing a good job."

—Debbie Grossman

# Sun Block

FIX IT FAST

## A little tweak of reality helps a composition



**The big sun, captured using a lens racked out to 500mm, is now closer to a Rule of Thirds placement.**

**THE FIX-IT TEAM** rarely engages in this sort of hanky-panky, but when we saw Manjeet Jadeja's charming photo of wild asses, we knew that sun had to move. The Gujarat, India, resident captured a neat moment, with the nuzzling duo near center, but the glowing orb fights it for attention.

So, in Adobe Photoshop CS4, we made a duplicate background layer and slid it upwards for more sky. We cut-and-pasted to move the sun, then used the Clone Stamp and Patch Healing brush to smooth over its original



location. Time spent: 30 minutes.

Shot using a Nikon D40 and 50–500mm f/4–6.3 Sigma DG lens. Exposure, 1/60 sec at f/8; ISO 800. Minor adjustments made in Adobe Camera Raw and Photoshop CS2. —Dan Richards and Debbie Grossman

1/40 SEC



1/80 SEC



### DEBUNKER SHARPEST MINIMUM SPEED

**MYTH:** You must set a shutter speed no slower than the reciprocal of the focal length of your lens (such as 1/250 sec with a 250mm lens) to get sharp handheld pictures.

**TRUTH:** While true during the film era—and still true for full-frame DSLRs—the strategy doesn't work for most digital cameras.

**WHY:** Their smaller sensors magnify camera shake.

**WHAT TO DO:** Multiply the focal length by the camera's lens factor for the reciprocal. In the photos here, shot with a 2X-lens-factor Olympus E-P1 at 42mm, 1/40 sec produced blur, while 1/80 sec was sharp.



## QUICK TIP

# Tele Power

For more interesting close-ups, move back

**WHEN WE** first saw Rüdiger Schütz's floral study of three cosmos flowers, the relative sizes threw us. Surely this was a digital composite. How could the one blossom be so large relative to the other two?

In fact, there was no Photo-shopping here. What gives the image its visual impact is the extreme spacial compression

that resulted from shooting a 1:4 close-up at 480mm (equivalent). This had the effect of evening out the very different sizes of small fore- and background flowers, and the much larger middle-ground cosmos.

The tip? For fun experimenting with relative scale, try extreme close-ups at super-long focal lengths. —Peter Kolonia

Schütz used a Canon EOS 50D with 70–300mm f/4–5.6 IS zoom (at 300mm). Exposure, 1/160 sec at f/5.6, ISO 200.

## 30-SECOND PHOTOSHOP

**QUICK PREVIEWS** Want to preview the effects that a given PS blending mode will have on an image? You could open a file, make a duplicate layer, and go through the various blending modes. A quicker way, however, is the Apply Image tool. Located in the Image drop-down menu, the tool is usually used to blend layers and channels from separate images. If, however, you select only one image, "Apply" is a super quick way to preview the special effects that are possible by blending an image with itself.



To quickly find a blending mode that will produce the right special effect, try the "Apply Image" tool. Here, we instantly previewed the Vivid Light blending effect.

## What's This?

### Bounce Kicker Card

A tiny reflector built into select shoe-mount flashes, it can accent on-the-fly portraits nicely.

**Where it is:** Tucked in beside the flash lens, it hides inside the body of the flash when not in use.

**How it works:** When you tilt the flash head up for bounce-lit portraits, the card kicks a fraction of its output forward to fill shadows and put catchlights in a subject's eyes.

**How to use it:** Because it's hidden inside the head, the bounce kicker card is easy to forget. Simply pull it out to add a subtle hit of fill light.



## FACE FACT

**ALMOST NO ONE** wants a wrinkly portrait, right? Often, lighting is your best tool for minimizing, even eliminating, crows' feet, laugh lines, and other hallmarks of age. First, light older subjects directly from the front, with your lights not much higher than eye level. Next, add plenty of fill light to keep shadows open and bright—no contrastier than a 1:2 lighting ratio (highlight to shadow). And overexpose a little—or a lot—to experiment with a high-key, white-out approach.





DAN TENTLER/LIGHTBENDING PHOTOGRAPHY

# Dazzling Ring

Prized by fashion pros, now ring lights are for everyone

**FOR A SHARPLY** etched subject with an electrifying catchlight in the eye, no light source you can find beats a ring flash.

These camera accessories mount around the lens and come in two sizes. Macro units have small flash tubes like those

in shoe-mount flashes, with a diameter not much larger than the lens. They're used almost exclusively for extreme close-ups. Larger ring lights have interchangeable flash tubes—typical of studio strobes—and are much brighter, allowing you to shoot

**Tentler shot at ISO 800 and 1/50 sec at f/36—this close, he needed all the depth of field he could get.**

at a distance of feet instead of inches. They're typically used for portrait and fashion photography.

But you can also use a large ring flash for close-ups, as Dan Tentler did for this arresting photo of his cat Aurora's eye. The 29-year-old freelance internet security consultant and avid photographer ([www.lightbending.net](http://www.lightbending.net) and [flickr.com/vissago](http://flickr.com/vissago)) has taken advantage of new products that make ring flash more affordable.

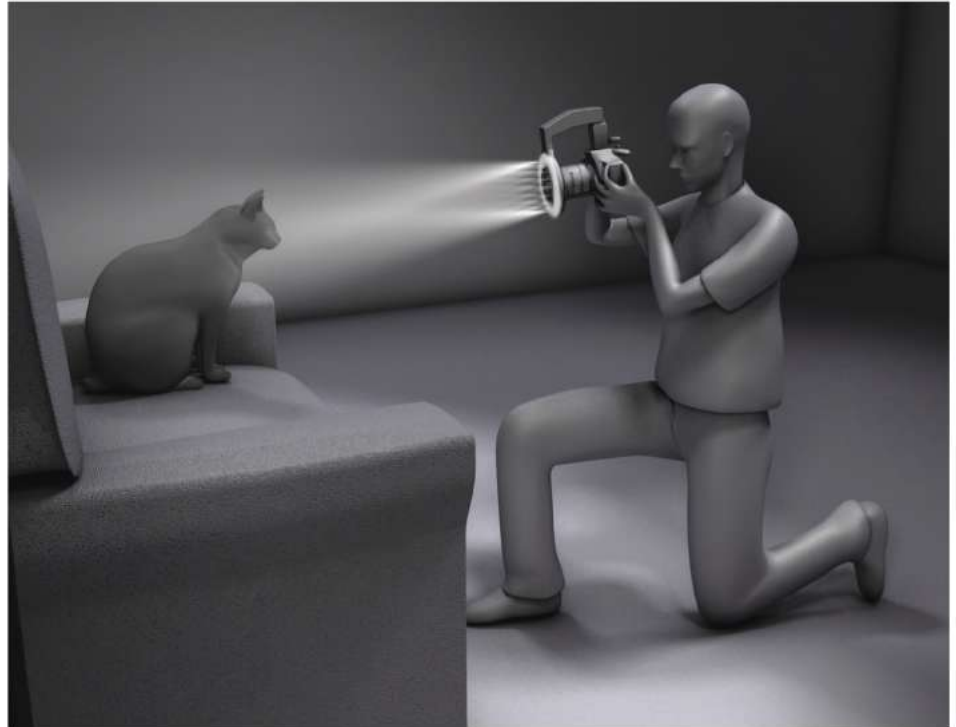
Until recently, larger ring lights could cost thousands of dollars,



# HOW TO USE A RING LIGHT ADAPTER

SIMPLE  COMPLEX

**The Ray Flash comes in different versions for specific DSLR bodies and flash units—only the Canon 580EX and Nikon SB-800 or 900. (Some Canon-body versions also mounts on select Olympus and Sony flashes.) Check before you buy. Its angled arm slips over the flash head, and the ring circles the lens for an even, bright, and entirely TTL-controllable light. To get a catchlight as big as the one here, you must work very close in or crop the eye very tightly.**



KRIS HOLLAND/MAFC STUDIOS

## THE GEAR



**Expolmaging's Ray Flash ring light adapter (\$200, street)**

**Tentler used a Nikon SB-800 Speedlight (now SB-900: \$470)**



but that's changing. Products such as the Bowens Ringlite Converter (\$350, street) and Orbis ring flash attachment (\$200, street) let you transform a studio strobe or hot-shoe flash into a ring light for much less. The Ray Flash adapter from Expolmaging, which Tentler used for the photo here, also costs \$200 (street).

Why a ring flash? It throws virtually no shadows on your subject (which helps eliminate wrinkles), and can cast a distinctive, aura-like shadow on a wall

immediately behind your subject. It also throws a very cool circular catchlight in the eye, which appears quite large if the light is near enough to the subject.

But a ring flash can be less than flattering. Because its light is direct and harsh, it's unforgiving of imperfect complexions—tricky for portraits, but not really a problem for a cat.

Want to take a similar shot? Here's the rest of Tentler's setup.

**The model:** With a black or white cat, the correct exposure for the eye would almost certainly over- or underexpose the surrounding fur. Stick with midtone toroiseshells, calicos, and breeds such as Russian blues and Siamese. Also, you may only have one chance to get

the shot, so set up everything perfectly before you fire. "My cat hates the ring light," says Tentler. "When she sees it, she runs!" (Don't worry, we checked with an ophthalmologist: A flash used occasionally at these distances won't harm your pet's retina.)

**The lens:** A macro lens that focuses as close as possible so that the eye's circular catchlight appears large. Tentler focused his 105mm f/2.8 VR Micro-Nikkor (on a Nikon D300) to 12 inches—perfect for reproducing that supersized catchlight.

**The light:** A macro ring light would have worked here, but its reflection (at a 12-inch working distance) would have been tiny, not dramatic. —Peter Kolonia



JESSE ESTES

# Balance Your Light

Combine exposures with two RAW conversions from one file

**MOST OF THE TIME**, one RAW conversion is enough—you shoot a photo, use software to perfect the exposure and white balance for the overall image, and you're done. But when your scene contains two very different types and amounts of light, the best thing to do is process

your RAW image twice, then use software to put them together.

A prime example: shooting through a window. Photographer Jesse Estes ([www.jesse-estes.com](http://www.jesse-estes.com)) used a flash to capture the details of the window frame in this picture and balance the bright sunlight outside. But the

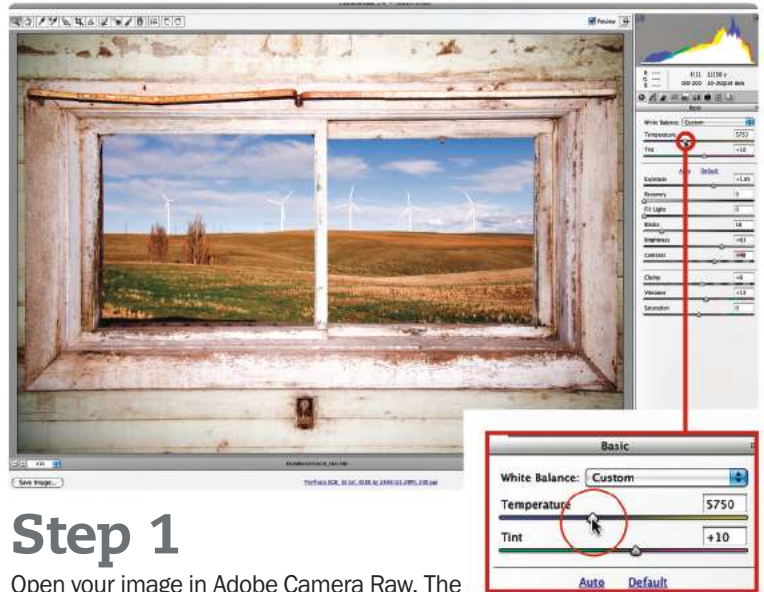
photo still needed two conversions from RAW to look its best.

Luckily, most windows are rectangular, so they're simple to cut out. Here's the easiest method—and, while these steps use Adobe Photoshop CS4, the process in Elements is nearly identical. —**Debbie Grossman**



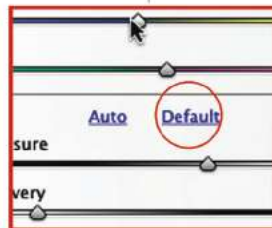


While your first instinct might be to balance the field and the window frame so they're similarly exposed, too much balance will make the picture seem both unnatural and boring. Instead, go darker on the frame to make the view the star.



## Step 1

Open your image in Adobe Camera Raw. The default is fairly blah, but you'll fix it. First, **convert for the view through the window**. As you adjust white balance and contrast, try not to pay attention to the garish things that are happening to the window frame. A daylight white balance setting is a bit too cool for this outdoor scene, so **move the temperature slider to the right to warm it up**. As for exposure, the histogram appears to be clipping blacks, but only the darkest tones in the window frame are affected—the outdoor scene is fine. Adjust the outdoor exposure if you like, then click Open Image to bring your first conversion into Photoshop.



When processing the file for the window frame, you want to reveal some good detail, but keep the exposure dim enough that the viewer's eye goes straight to the windmills beyond.



## Step 2

Now open your original file again to **make a second RAW conversion**. ACR will remember your last settings, so click Default to start with a clean slate. This time, keep the contrast down. **Start with the Flash white balance setting, and warm it up as necessary**. If you have two monitors, do your second conversion while looking at the first image, which is open in Photoshop. If not, move the ACR window aside to peek. When it looks right, click Open Image to go back to Photoshop.

### QUICK TIP

WHEN THE SHAPE of your selection is more complicated than the nice, clean rectangles in the photo above, forget about using the polygonal Lasso tool to cut a hole in the image (Step 4, page 46). If you use Photoshop and want to try combining images, use Masks instead.

On the top layer, go ahead and use the Lasso to make a rough selection. But rather than hitting the Delete key, click on your mask and fill your selection with black. This will let the layer below it shine through, while still enabling you to use the Brush tool to make changes to your selection without losing any image data.

## Step 3

Now it's time to combine. To do so, **make sure you can see both versions.** Go to Window > Arrange > Tile. (The images won't need to be at the same zoom level for this to work.) Now type V on your keyboard to get the Move tool. **Holding down the Shift key, click on the darker of the two images and drag it on top of the lighter.** Shift will make sure it lines up exactly with the layer below.

## Step 4

Choose your now-layered image, and go to View > Fit On Screen to see it large. Then select the Polygonal Lasso tool in the toolbar. In the Options Bar at the top of the screen, set the feathering to 1. **Zoom in on the windowpane, and click on a corner. Then draw the line out and click on the next corner.** Keep going until you've gone around the entire rectangle. When it's time to close your selection, a little O will appear next to the tool. With the view selected, just **hit the Delete key** on your keyboard. Since the layers are perfectly aligned, this will cut a hole in your top layer, revealing the bright layer below.

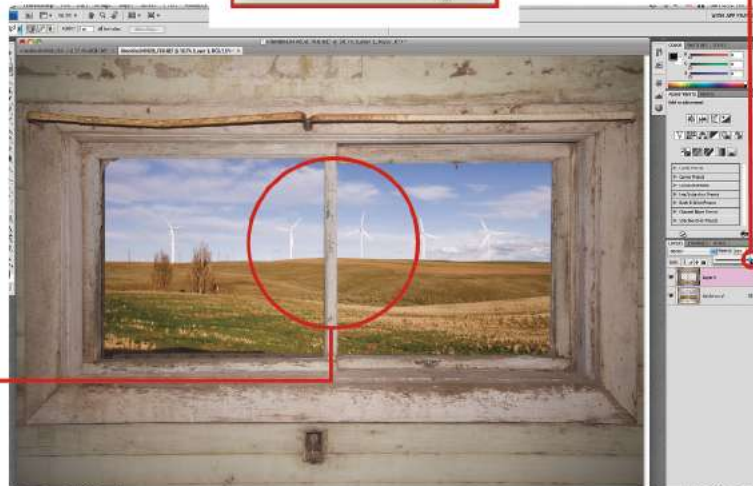
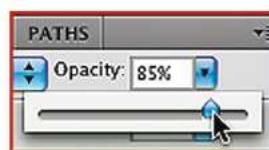
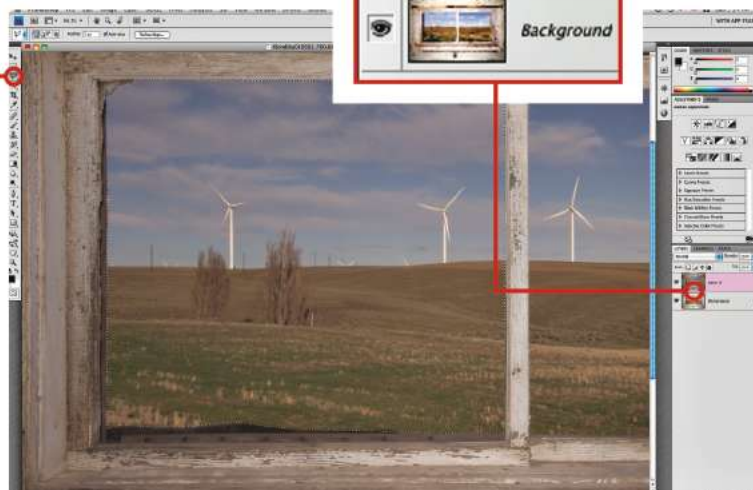
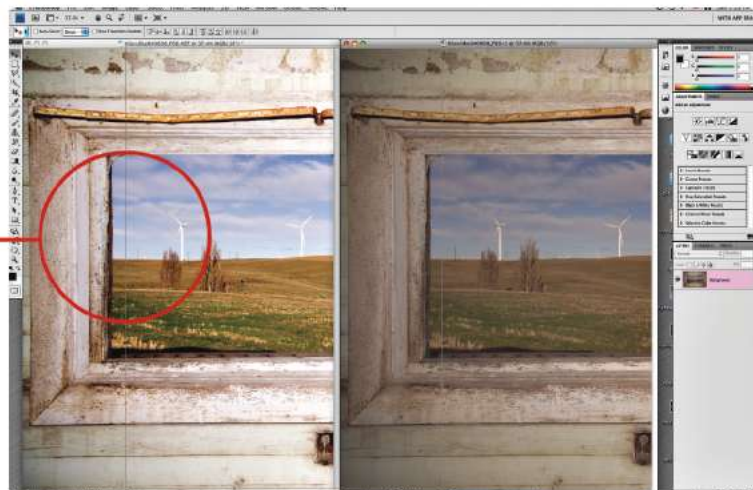
## Final Step

Now that you've cleared one windowpane, move to the other: **Use the Lasso to select, then hit Delete to clear it.** Zoom out to check your whole image. Are the two layers too different? If so, lower the opacity of the top layer to blend it with the one below—you'll find the control in the top-right corner of the Layers panel. This image looks its best with the top layer at about 85% opacity.

You'll see a ghost of a gray box as you drag one image on top of the other.

Find the polygonal Lasso tool in your toolbar, beneath the usual freehand Lasso.

You can't always predict how the two conversions will look next to each other, so you may have to adjust the top layer's opacity to blend them better.



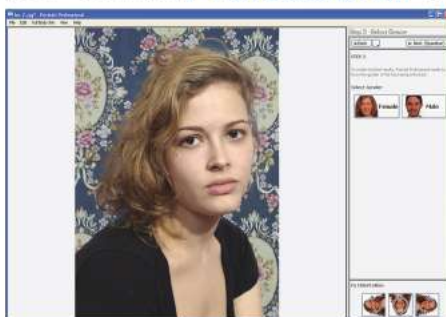


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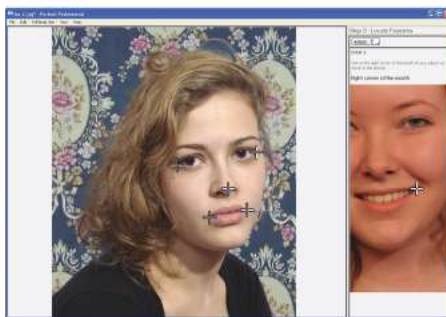
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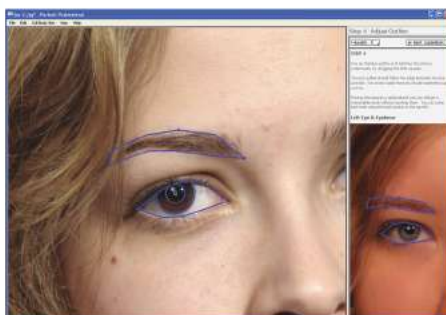
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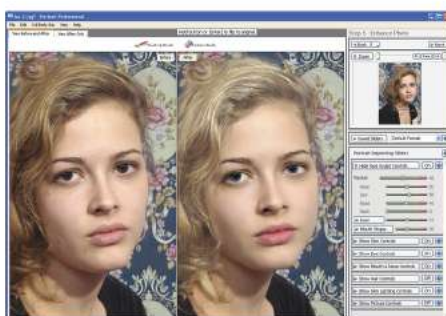
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[HOW \* YOU CAN DO IT]

# Along for the Ride

For a wheel's-eye view, clamp your camera to a fender and go

**WHEN THE** German magazine *Stern* approached Donald Miralle ([www.donaldmiralle.com](http://www.donaldmiralle.com)) to shoot a new line of Harley-Davidson motorcycles, the Carlsbad, CA-based commercial and editorial photographer was thrilled. Then it hit him: "I'd had

very little experience shooting moving vehicles!"

It helped, though, that Miralle had a particular image in mind—the one shown here. "My aim was to find an angle on this subject that no one had yet documented," he says. "While I

may not have entirely succeeded, I feel I did place my own perspective and spin on it."

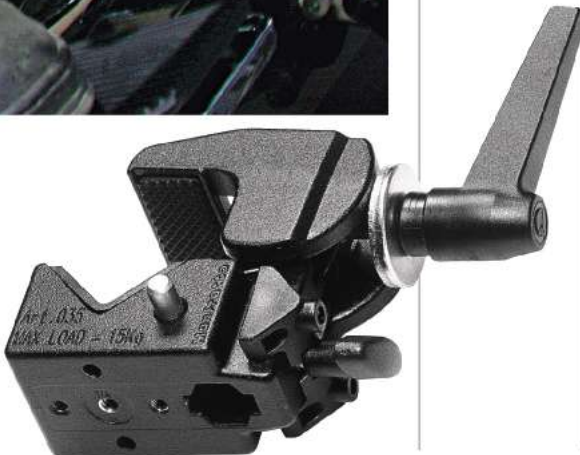
Capturing that image required some very specialized gear. Miralle attached his camera to the Harley using a redundantly secured set of clamps and brack-





▶ To find the right amount of motion blur, Miralle played with exposures. He started at 1/60 sec, and worked his way down to 1/10 sec before settling on 1/15 sec at f/13 (ISO 50). He also bracketed each frame by 0.67 EV. A neat trick: He chose a bike with a shiny gas tank to bounce fill light up onto the rider's face.

▼ Two Manfrotto Magic Arms (\$110, street) and three Super Clamps (\$27, street, shown here) held his Canon EOS-1Ds and 15mm fisheye lens on the bike.



ets from Manfrotto. Riding just ahead, in the back of a flatbed pickup, he tripped the shutter using a pair of PocketWizard Plus II Transceivers (\$170, street).

If you try this, start slow. Even motorcycle speeds of 5–10 mph can produce thrilling motion blur. And they're safer.

—Peter Kolonia

## Step 1

**Get the right gear.** A full-frame camera (Miralle used a Canon EOS-1Ds Mark II) captures a wider view than APS-C-sized sensors. To get full views of both the bike and the background, Miralle chose a 15mm f/2.8 Canon EF fisheye lens.

## Step 2

**Scout locations.** Shady sites will allow the slower shutter speeds you need to record motion blur. "Here, I liked the way the trees and blips of sky created a visual texture," says Miralle. "A plain blue sky wouldn't have conveyed speed or motion." For sharpness, seek out smooth roads.

## Step 3

**Secure and stabilize the camera.** Miralle attached two Manfrotto Super Clamps to the bike's front fender rail. Then he used two Manfrotto Magic Arms extended from the Super Clamps, attaching one to the base of the camera and the other, with another Super Clamp, to a metal stud in the hot-shoe. Finally, he secured everything possible using safety cables that he'd attached to the bike.

## Step 4

**Play with shutter speeds.** You need a long shutter speed for beautiful motion blur. But set it too long and you risk a blurry biker. Best: 1/10 to 1/30 sec.

## Final Step

**Shoot like crazy.** The cool part about this assignment? Miralle only needed one good shot. The uncool part? It took hundreds of pictures and two days to get it.



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Our photo trek begins with a safari at the San Diego Wild Animal Park. From the vantage point of open-top vehicles, alongside professional photographers offering individualized coaching on color contrast, focal length, and light usage, we'll get almost within reach of lions, giraffes, elephants, zebras, rhinos, and more from animal enclosures that mirror Asian plains and East African game reserves.

Next, we'll visit Balboa Park, named after the eponymous Spanish explorer of this region, and home to 15 major museums, world-class performing arts venues, and stunning architecture. Our mentors will share techniques for attaining that perfect close-up at the Moorish gardens of Casa del Rey Moro and Alcazar Garden.

We'll span one of the world's most distinctive bridges to reach Coronado Island. This sun-drenched beach community is home to the legendary Hotel del Coronado, where such films as *Some Like It Hot* and *The Stunt Man* were shot. We'll capture candid images of surfers, as well as sweeping views of the San Diego skyline.

For a fresh perspective on "flash" photography, we'll visit the Point Loma Lighthouse during the evening light. Built in 1855 and tucked away on a hilltop, this preserved structure radiates beauty and charm from the base of its 40-foot spiral staircase to the height of its oil lamp and fresnel lens.

Next we'll drop by what is perhaps the most photographed spot in La Jolla: Ellen Browning Scripps Park. With practical tips on landscape



© Paul Erickson

composition and depth of field, our mentors will guide you through capturing postcard-quality images of the sandstone cliffs, pounding waves, and Torrey pine trees at this awesome coastal location.

Not losing sight of this region's rich history, we'll pay a visit to Mission San Diego. Founded in 1769, it's the oldest mission in California. We'll focus our attention on the stark white facade of the mission and its dramatic bell tower. Framed by the deep greens of swaying trees and a perpetually clear blue sky, this restored structure provides an unparalleled exercise in contrast.

To pick up the pace and perfect the all-important action shot, we'll capture paragliders in flight at the Torrey Pines glider port. Our mentors will lead us through techniques for panning, reducing lag time and latency, and getting the most from burst mode at this world-famous flight destination.

If you find gorgeous weather, abundant wildlife, rich culture, and the rugged beauty of California's coast inspiring, let the Mentor Series take you on a journey that's sure to be picture perfect.

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# INTO THE Fog

*Text and photos by Ian S. Frazier*

**At Big Sur in California, Frazier used a tele lens to compress the scene, and he under-exposed to capture more highlight detail. Tripod-mounted Canon EOS 5D with 70-200mm f/2.8L Canon EF IS lens; exposure, 1/200 sec at f/16, ISO 100.**

## HOW TO EXPLOIT NATURE'S SOFTBOX

**WEATHER CAN** be an outdoor photographer's best friend or worst enemy. Never is this more true than when fog rolls in, fleeting as a spring shower or stubbornly blanketing the coast for a week. The key lies in knowing where and when fog forms, and how to translate its moody feel into an image.

Essentially a low-lying cloud that can vary in density from a playful mist to an almost palpable wall of white, fog occurs when humid air cools and approaches the dew point. This causes water vapor to form into tiny water droplets on particles in the air, called condensation nuclei.

Salt particles from breaking waves are very effective nuclei, and the reason cold-water coastal areas are often so foggy. As in the photo of Big Sur California's Big Sur on this spread, hot summer air mixed with a cold ocean current creates a thick fog that obscures miles of coastline.





Nighttime valleys, and almost any place with a chilly morning after a rain, are also good spots for potential fog. (Want to travel? For a list of the foggiest national parks in America, see the sidebar in the far right-hand column.)

### Embrace Your Limitations

Learning to change your visual expectations is probably the hardest part of fog photography. Forget about broad landscapes and glowing sunsets—instead look for more abstract, simple images.

**Mt. Diablo oak shot with Canon EOS 5D with 17–40mm f/4L Canon EF IS lens; 1.3 sec at f/16, ISO 100.**

Fog smothers distant detail and contrast, so concentrate on lines, patterns, and shapes that are closer to the camera.

Take, for instance, my photo of Big Sur on the previous spread. Using a telephoto lens to com-





press the scene slightly, I framed the image to emphasize the repeating diagonal lines.

Stick to subjects that enhance the mysterious nature of fog—a twisted tree, like the one I photographed at Mt. Diablo near San

Francisco (above) looks more dramatic engulfed in mist.

Then heighten the mood by changing your vantage point and angle of view. For this picture I got low and close to the gnarled oak tree, using a wide-angle lens to

# America's Foggiest National Parks

## WHERE TO FIND THE MOOD IN THE MIST

**Acadia National Park (Maine)** Its rocky coast, forested mountains, and lighthouse all make great subjects in the fog. Look for nautical elements—docks, boats, lobster traps.

**Everglades National Park (Florida)** You'll find fog very early in the morning after an unusually cold night. Mangrove and cypress trees make twisting, moody subjects.

**Glacier National Park (Montana)** A huge range of elevations creates many unique microclimates. Look for valley fog after heavy rain or rising off streams and rivers.

**Mt. Rainier National Park (Washington)** Often cool and rainy, it's full of subjects that work well with fog: fields of wildflowers, calm lakes, forested valleys, and, of course, the mountain—an active volcano.

**Muir Woods National Monument (California)** Just 12 miles north of the Golden Gate Bridge. Frequent fog provides the coastal redwoods much-needed moisture during the dry season.

**Redwood National Park (California)** Iconic foggy redwood forest images often seen in books. Look for lifting fog that lets the sun's rays burst behind the redwoods.

**Shenandoah National Park (Virginia)** Haze and isoprene (from trees) contribute to the characteristic blue of the Blue Ridge Mountains. Take Skyline Drive for beautiful views.

**Yellowstone National Park (Wyoming, Montana, Idaho)** Not as much fog as other areas, but when you find it, it makes a dramatic backdrop to the large mammals—bears, bison, elk, moose—the park offers.

**Yosemite National Park (California)** The floor of Yosemite Valley is often covered in fog as the air cools the valley at night, most commonly in late fall after some rain.





stretch the perspective and make the tree loom more ominously.

Photos taken in the fog often look better in black-and-white. For the best results, always shoot in color, then convert your image later in software. (I converted my tree portrait to b&w using Adobe Photoshop CS3.)

### Timing is Everything

Sometimes you have to be patient and wait for the right moment. For the photo on the top of this page of the famous El Capitan in Yosemite National Park, I used a wide-angle lens and got down low in a field across from the jutting cliff face,

▲ **At El Capitan, 2 stops of over-exposure recorded detail in the trees. Tripod-mounted Canon EOS 5D with 17-40mm f/4L Canon EF lens; 1/4 sec at f/16, ISO 100.**

◀ **In Julia Pfeiffer Burns State Park, CA, moments counted. Tripod-mounted Canon EOS 5D with 24-70mm f/2.8L Canon EF IS lens; 1/4 sec at f/16, ISO 100.**

making the massive rock seem to loom into the heavens. The foreground trees anchored the composition. The sun was behind the mountain, so I waited until the clouds and fog began to lift before shooting.

Then there are the times when you have to act before the light shifts and the fog disappears.

In California's Julia Pfeiffer Burns State Park, where I shot the photo at left, the sun had just crested the hills behind me, shining through the morning mist and lighting the path in front of me for a few brief minutes.

I had to shoot fast, but framing was difficult. I knew that the backlit fog and trees would be my main subject, but it would lack context as a vertical. So I instead opted for a horizontal, using a wide 24mm focal length that brought both the glowing light and the lit path into the frame.

**CONTINUES ON PAGE 128**



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# Family Ties

BRING YOUR  
LOVED ONES  
TOGETHER  
IN PICTURES

By Peter Kolonia

**AUNTS, UNCLES,** cousins, off-spring, spouses, parents . . . *Help!* How will you catch up with family this holiday season and find time to photograph it all?

No worries. We asked a dozen successful amateur and pro portraitists for tips on better family photos. Our interviews turned up a surprising number of common strategies for succeeding with

this classic subject. Here's how they suggest you capture your family's personality in pictures.

**Keep it real.** Small reminders of daily life are more precious than posed images. The family pictures that will mean the most to you (and others) will be the most candid. Try to capture family members interacting with

▲ **Pro Sue Barr chose a Coney Island location for this family portrait. It lent color to the background and coaxed lively expressions from the kids.**

each other and the world around them. Keep from directing or posing people—it may vex your subjects and reduce your chances for good photos.

**Don't make it a big deal.**

"I shoot my children not just during the holidays, but almost daily," says Bing Liem, who lives in Ridgefield, CT. "It lets me





SUE BARR

document their lives and physical development, plus gets them comfortable with having a camera around." At the same time, Liem learns more about photography in a risk-free environment with willing models.

**Tell a story.** Shetha Nolke of Portland, OR shot a boy encircled in holiday lights (top right) and it's more than just cute. The lights were strung by an older brother, and you can see in the child's eyes the years of teasing he's taken from that sibling.

Likewise, L  rus Sigurdarson's begoggled portrait of his daughter Monika (right): She wanted to be like her older brother

► **Dressing her subject to resemble a Christmas tree for his family's holiday card, pro Shetha Nolke shot from above to accentuate his soulful eyes.**



SHETHA NOLKE

► **For this after-dark shot of his child, Teddy Madison mimicked daylight by placing his strobe out on the lawn.**



TEDDY MADISON/EXODUS PHOTOGRAPHY

► **Interaction is the key to great family portraits, says Charlotte Geary.**



CHARLOTTE GEARY

► **"Relax and don't rush your family photos," advises Travis Parsons. "Hang back and let the pictures happen."**



TRAVIS PARSONS

► **Shallow focus helps hold viewers' attention exactly where you want it.**



L  RUS SIGURDARSON



BING LIEM





JEREMY RULE

ANDREW MATUSIK

Alexander (in the background), so she put on goggles like his. The resulting picture is humorous, but also very rich in storytelling. Sigurdarson, a pro living in Reykjavik, Iceland ([www.larus.is](http://www.larus.is)), sees in her expression how proud she is to be “just like Alex.”

Says New York-based pro Andrew Matusik ([www.andrewmatusik.com](http://www.andrewmatusik.com)), who took the black-and-white group photo on this page, “I shoot my family like I’m doing a photo essay. I want the photos to tell a greater story and show the bigger picture. To do that, I look for narrative elements that can tie the images

together, like the grandchildren in my shot here.”

**Staging is okay.** While it’s not good to pose people, it can help to stage a shot. Know, for example, where the best light in your home is, and coax your subjects into it. If possible, declutter those spots beforehand.

Sue Barr, a pro based just outside of New York City ([www.suebarr.com](http://www.suebarr.com)), recommends semi-staging a shot using wardrobe. “Try to dress everyone in similar tones—it will visually unify the group and makes exposure easier, too. Not too matchy, though.”

◀ **Natural light is best for family portraits. To employ it without a tripod, buy the fastest lenses you can afford. Eleonora Chornaya used an 80–200mm f/2.8 Nikkor.**

▲ **For family groupings, squeeze in as much descriptive background as you can (top). And, when possible, keep the groupings loose and not too posed (bottom).**

## Make the location count.

If you’re not shooting at home, look for colorful locations that your subjects will find stimulating and distracting. Zoos, carousels, circuses, and amusement parks will banish lifeless expressions and drab backgrounds.

“Make sure your subjects are having fun,” says Teddy Madison, a pro from central Georgia who specializes in families ([www.exodusphoto.com](http://www.exodusphoto.com)).

## Look for a full range of emotions.

Grab your camera, even when family members are bored, tired or cranky. The tendency is to shoot only when a scene seems funny or “sweet,” but sweet just tells part of a family’s story. Every emotion your parents, siblings, or children display is worth capturing—fascination, tears, passion, even boredom.

**CONTINUES ON PAGE 130**



# Tokina

## SEE IT, CAPTURE IT



Photograph by: Brett Kennedy



### **AT-X M35 PRO DX** **AF 35mm f/2.8 Macro**

When used on digital SLR cameras the AT-X M35 PRO DX lens gives the same angle of view as a 52mm lens. The close focusing distance of the M35 is an amazingly close 5.5 in. (14cm) yielding a macro ratio of 1:1 or life-sized reproduction with excellent sharpness. Its compact size makes it easy to carry almost everywhere and the wide f/2.8 aperture allows for easier viewing in low light situations.

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# 30 TOP



## ◀ ADOBE PHOTOSHOP CS4

To harness the power of Photoshop, you have to learn to use Adjustment Layers and Masks—often major stumbling blocks for new users. CS4 solves this with panels that make these tools accessible to everyone. And any upgrade that makes Photoshop easier is a winner in our book. **\$585 for Windows or \$640 for Mac, street; [www.adobe.com](http://www.adobe.com)**

## CANON EF 100MM F/2.8L MACRO IS USM ▶

The first-ever L-series Canon lens in the 100mm macro focal length, this is also Canon's first mid-tele macro with image stabilization (and a new IS mechanism, to boot). Fast, silent, and full-frame, it provides revelatory 1:1 lifesize magnification, along with a nonrotating front barrel that readily accepts a macro ringlight for insect, floral, and other close-up favorites. **\$1,050, street; [www.usa.canon.com](http://www.usa.canon.com)**

## CANON POWERSHOT S90 ▼

The S90 hits the magic number— $f/2$ —at the wide end of its 28–105mm equivalent lens. Combined with ISOs up to 12,800 and image stabilization, that makes this the available-light champ among compacts. (Apertures slow down to  $f/4.9$  at tele, though.) It uses the 10MP CCD from the PowerShot G11, which combines larger sensor size and bigger pixels than typical compacts, for better noise performance at those high ISOs. We like the RAW capture and manual-exposure mode, too. **\$430, street; [www.usa.canon.com](http://www.usa.canon.com)**





# PICKS

WE TRIED THEM, WE LOVED THEM, AND NOW WE LAUD THEM. HERE'S A ROUND OF APPLAUSE FOR THE PHOTO PRODUCTS THAT WOWED OUR EDITORS THE MOST THIS YEAR.



## ◀ CANON EOS REBEL T1i

We won't call the Rebel T1i an EOS 50D Lite, because there's nothing lite about this most advanced Reb—except the weight. It uses the 15.1MP CMOS sensor, 14-bit A/D converter, and 920,000-dot, 3-inch screen from the 50D, and it offers HD video recording, which the 50D lacks. You do have to size video down to 1280x720 to get a 30-fps frame rate (it's a choppy 20 fps at 1920x1080), but that still beats the competition.

**\$795, street, with 18-55mm f/3.5-5.6 Canon EF-S IS lens; [www.usa.canon.com](http://www.usa.canon.com)**

## CASIO EXILIM EX-FC100 ▼

Casio is still the only game in town for super-slow-motion video and absurdly fast burst rates. With the 9.1MP EX-FC100, all that power fits in your pocket. While it won't refocus or meter between shots, it can shoot bursts at up to 30 fps. Cineastes can capture video at up to 1000 fps for nature-documentary hovering hummingbird shots—though, of course, not at high-def resolution.

**\$253, street; [www.casio.com](http://www.casio.com)**



## COREL DIGITAL STUDIO 2010 ▶

Made for the technophobic crowd, this easy-to-use software can also find a place in the workflow of a seasoned shooter. The Windows-only program has a pleasant, streamlined interface, and it will help you get your pictures to Facebook and your videos to YouTube without much effort on your part.

**\$90, direct; [www.corel.com](http://www.corel.com)**



## EYE-FI PRO WIRELESS SD 4GB MEMORY CARD ▶

Shooting is easy—it's getting the pictures off the card that's a pain in the neck. Eye-Fi steps in to upload your images automatically without requiring a connection to the computer. But the newer Pro card won us over because it can finally upload RAW files—not just JPEGs, as was the case with the original Eye-Fi card.

**\$150, street; [www.eye-fi](http://www.eye-fi)**





## ◀ GITZO OCEAN TRAVELER TRIPOD

Surf photographers know the horrible *crunch* of sand grinding away the inner threading of a tripod leg lock. Not so with Gitzo's new Ocean Traveler. A light, travel-ready, carbon-fiber tripod with an 8.8-pound capacity, it has specially sealed leg locks to keep most surf-side corrosives safely away from the inner workings. Pricey? Yes, but this is a specialist's tool.

**\$1,125, street; [www.gitzo.com](http://www.gitzo.com)**



## ▼ LASTOLITE KICKERLITE SOFTBOX

Tired of stand-mounted fill lights creeping into the edges of your studio portraits? Lastolite has an answer: the KickerLite softbox. A 3x4-foot fill light, it accepts most studio strobe heads and virtually any shoe-mount flash. Best thing? It requires no lightstand—it sits on the floor, well out of your frame.

**\$207, street; [www.lastolite.com](http://www.lastolite.com)**



## ▲ LEICA M9

Finally, the digital Leica goes full-frame, courtesy of a Kodak-made 18MP CCD sensor whose design overcomes the problem of light falloff at the outer edges of the sensor (read our test on page 79). The first full-frame digital rangefinder, and the smallest digital full-framer of any type, the M9 also uses a menu and control interface whose elegant simplicity better befits a Leica than that of the M8 series.

**\$6,995, street, body only; [us.leica-camera.com](http://us.leica-camera.com)**

## LOWEPRO PRO ROLLER X-SERIES BAGS ▶

In three sizes, these have hard-walled exteriors that harbor a removeable backpack with adjustable, padded gear compartments. Wear the backpack, double the capacity. The handle is a camera platform, and there's a built-in TSA-approved cable lock.

**\$270–360, street; [www.lowepro.com](http://www.lowepro.com)**



## ◀ LEICA 50MM F/0.95 NOCTILUX

Ten grand is a lot—make that an awful lot—to spend on a lens, but for the deep-pocketed who want to shoot in abysmal light sans flash or tripod, this superbly built beauty beckons. The world's fastest lens, it's also among the sharpest we've ever tested, with only slight barrel distortion and vignetting gone by  $f/1.4$ . **\$9,995, street; [us.leica-camera.com](http://us.leica-camera.com)**



# CAMERA OF THE YEAR

THREE POP AWARD WINNERS FACE OFF.  
WHO WILL TAKE TOP HONORS FOR 2009?

Which camera best refined or redefined photography in the past year? Our editors will evaluate these finalists and tell you in our January 2010 issue and on [PopPhoto.com](http://PopPhoto.com)

## CANON EOS 7D ▶

By finally providing a truly rugged, pro-oriented APS-C format DSLR, Canon redefines the way people should think about sensor size. Pros now can choose what size sensor best fits their assignment, and enthusiasts have a full range of options based on their shooting style. This solid piece of engineering wowed us with its 18MP CMOS sensor resolution, its fast 8-fps burst rate, and its tough weathersealed body. It also marks a refinement of Canon's metering and autofocus systems, which now work together to track subjects by shape and color. **\$1,700, street, body only; [www.usa.canon.com](http://www.usa.canon.com)**



## NIKON D3X ▶

When we speak of refinement, we think of this 24.6MP full-framer. It delivers more resolution than any other DSLR with a 35mm or smaller sensor. It captures usable images all the way to ISO 6400, has a 5-fps burst rate for action shots, and is built to withstand both Death Valley and Denali. Ample customization and other high-end features expand the capabilities of pro shooters. With Nikon's WT-4a wireless transmitter and Camera Control 2 software, for instance, you can trigger up to 10 D3X bodies from your computer. **\$7,600, street, body only; [www.nikonusa.com](http://www.nikonusa.com)**



## OLYMPUS E-P1 ▶

Talk about redefinition: Micro Four Thirds is the first really new concept in interchangeable-lens cameras since the modular 35mm SLR took hold a half-century ago, and Olympus was first to exploit the small size the format permits. The E-P1 evokes the bygone heyday of rangefinders with its beautiful metal body—you can even get a collapsible lens. While not without flaws, it beats some DSLRs in image quality.

**\$750, street, body only; [www.olympusamerica.com](http://www.olympusamerica.com)**







### ▲ **NIKON AF-S DX 10-24MM F/3.5-4.5G ED**

The widest DX Nikkor zoom, this 15–35mm equivalent offers near flawless handling, with light weight, compact proportions, perfectly damped zoom and focusing actions, and extremely rapid and quiet autofocus. Its true forte, though, is its close-focusing and magnifying power: 1:4.1—the closest we’ve seen to an ultrawide macro. (See test, page 86.) **\$820, street; [www.nikonusa.com](http://www.nikonusa.com)**

### **NIKON D3S** ▶

Continuing the legacy of its predecessor, the D3, Nikon’s new D3s (see Closer Look, page 18) offers a top ISO of 102,400. That makes it the first DSLR to reach above 100,000 (although, as we went to press, Canon announced the equally sensitive EOS-1Ds Mark IV). It’s also one of the fastest in terms of burst speed, capturing 9 frames per second for up to 82 highest-quality JPEGs in a single press of the shutter release. **\$5,200, street, body only; [www.nikonusa.com](http://www.nikonusa.com)**

### **NOVOFLEX MICRO FOUR THIRDS LENS ADAPTERS** ▶

The German adapter specialist Novoflex has given a potential boost to the fledgling Micro Four Thirds system with not one or two, but a dozen new lens adapters. Now, Micro Four Thirds owners have the option of Nikon (G or non-G) lenses, as well as glass from Leica, Olympus OM-mount, Pentax, Sony, and more. **\$160–290, street; [www.hpmarketingcorp.com](http://www.hpmarketingcorp.com)**







### ◀ OLYMPUS ZUIKO DIGITAL 14-54MM F/2.8-3.5 II AF

The fastest and probably most expensive kit lens anywhere, this versatile step-up lens boasts weather-resistant sealing, fast and quiet AF, superior sharpness and contrast as well as shockingly strong distortion control (0.01 and 0.02% barrel at 35 and 54mm, respectively). Why not a constant f/2.8? Olympus wanted big-league optics, but also user-friendly dimensions and weight. **\$550, street; [www.olympusamerica.com](http://www.olympusamerica.com)**



### ▲ PANASONIC LUMIX DMC-GF1

Though first to the Micro Four Thirds scene, Panasonic let Olympus beat it to the punch with the extremely compact design of the E-P1. The GF1 is equally compact, with a more subdued black finish, but it brings with it the remarkable image quality and contrast-based AF speed we enjoyed in its older Lumix siblings, the G1 and GH1—as well as 720p video at up to 60 fps. **\$900, street, with 14-45mm f/3.5-5.6 Lumix G Vario lens; [www.panasonic.com](http://www.panasonic.com)**



### ▲ ORBIS RING-FLASH ADAPTER

Similar adapters mount around specific hot-shoe flashes (see Lighting, page 42), but the Orbis brings something new to the party: It will mount on almost any hot-shoe flash, instantly giving your lighting the edgy ring-light look that can otherwise cost thousands to acquire. **\$199, street; [www.orbisflash.com](http://www.orbisflash.com)**

### PENTAX SMCP-DA\* 35MM F/2.8 MACRO LIMITED ▶

From its matte-black anodized aluminum barrel and etched markings to the buttery draw of its manual focus ring, this 52mm equivalent reflects the high standards of Pentax's Limited line. Optics are even better: Flawless sharpness, imperceptible distortion, minimal falloff. Best of all? Larger-than-life 1:0.92 magnification. **\$540, street; [www.pentaximaging.com](http://www.pentaximaging.com)**



### SANDISK 64GB CF MEMORY CARD ▼

SanDisk clocks its Extreme Pro cards at up to 90MB per second and, as if that weren't enough, the cards also come in sizes up to 64GB. Sure, even top DSLRs can't yet write fast enough to take full advantage of that speed, but the time it takes to offload shrinks when you use a FireWire 800 card reader. **\$700 for 64GB, street; [www.sandisk.com](http://www.sandisk.com)**







### ▲ SIGMA 24-70MM F/2.8 EX DG HSM

This high-speed pro-grade (EX) full-frame lens represents a gauntlet thrown down before the Canons and Nikons of the world. With its excellent sharpness, superior build, compact proportions, very well controlled distortion, no edge falloff to speak of, high speed, and quick, quiet autofocus, Sigma is giving the big guys a run for their money. **\$900, street; [www.sigmaphoto.com](http://www.sigmaphoto.com)**

### ▼ SINGH-RAY VARI-N-DUO FILTER

A revolution in multitasking, this all-in-one does the work of multiple neutral-density filters, a warming filter, and polarizer. Two rotating rings offer continuously adjustable neutral density from -2.7 to -8 stops. Expensive, but could single-handedly replace almost every filter now jammed into your camera bag. **From \$390, direct; [www.singh-ray.com](http://www.singh-ray.com)**



### ▲ SONY ALPHA 550

The 14.2MP Alpha 550 steps up the competition in the step-up category with a class-leading burst rate (7 frames per second), the biggest articulating LCD screen yet (3 inches), and two methods of live view—the delay-free system using a separate sensor, plus a direct feed from the imaging sensor for perfectly accurate framing. Most intriguing new feature: the high-dynamic range (HDR) mode that can align and combine two images in the camera into one with greater tonal range.

**\$950, street, body only; [www.sonystyle.com](http://www.sonystyle.com)**





### ▲ SONY ALPHA 850

Bringing full-frame luxury to the masses, Sony's A850 offers 24.6MP shooting for hundreds less than its Alpha 900 and all its competitors, but makes you give up only some burst speed (3 fps instead of the Alpha 900's 5), a little viewfinder accuracy (98% instead of 100%), and a wireless remote control. Not much, considering that most DSLRs don't come with remotes anyway. And, if you don't shoot sports, you probably won't miss the burst speed. (See our test, page 71.)

**\$2,000, street, body only; [www.sonystyle.com](http://www.sonystyle.com)**



### ▲ SONY CYBER-SHOT DSC-HX1

The HX1's cool technology includes Sweep Panorama, which lets you just sweep the camera in an arc to capture an extrawide image; Dynamic Range Optimizer for taming excessive contrast; and Hand Held Twilight mode, a unique—so far—noise-reduction system described in this issue's State of the Art (page 20). But the fundamentals also impress: tested resolution near 2000 lines with Excellent color accuracy, plus effective image stabilization that lets you stay at lower ISOs for better image quality. **\$420, street; [www.sonystyle.com](http://www.sonystyle.com)**

### TAMRON 18–270MM ▼ F/3.5–6.3 DIII VC AF

This Tamron lens, a 29–405mm equivalent, has the longest zoom range (15X) currently available for DSLRs. It also includes a Vibration Compensation system that should gain users between 1.5 and 3 stops of handheld shooting. Other impressive results: no discernible vignetting at three of the four focal lengths we tested, and a maximum magnification ratio of 1:2.89.

**\$600, street; [www.tamron.com](http://www.tamron.com)**



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# LAB

AUTHORITATIVE TESTS, REVIEWS, AND BUYING ADVICE

TESTS: LEICA M9, PLUS ULTRAWIDE ZOOMS FROM NIKON AND SIGMA



79



86

THE LATEST ADOBE ELEMENTS, REVIEWED



90



## DSLR TEST

# BIG SENSOR, SMALLER PRICE

Sony's new Alpha 850 brings down the cost of high-megapixel, full-frame photography

**JUST A FEW** years ago, a full-frame DSLR would have set you back as much as a late-model used car. Now, Sony is offering its new 24.6MP Alpha 850 for a cool two grand (body only).

And our lab tests revealed image quality close to that of its more expensive sibling, the A900 (\$2,700, street, body only). In fact, the A850 scored better on two out of three image-quality factors, although not by a big margin.

### SONY A850

**24.6MP CMOS**  
**Full-frame**  
**Excellent image quality**  
**No video**  
**\$2,000, street, body only**

### Where Costs Were Cut

The biggest real differences between these two cameras come in three areas where Sony compromised to keep the costs down. The most significant of these? Burst speed—3 frames per second for the A850, versus 5 fps for the A900. If you shoot fast-moving

subjects, such as sports or wildlife, this could mean the difference between capturing the moment and capturing the moment after.

If you're a landscape artist or architectural shooter, burst rate might not matter to you, but the next big change, in viewfinder accuracy, probably will. While

**The Alpha 850 takes advantage of the ultrawide 16-35mm f/2.8 Zeiss zoom we used on it in the field. On an APS-C sensor, the lens is a 24-52.5mm equivalent.**



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## LAB \* DSLR TEST SONY ALPHA 850



AF mode switch



Exposure mode switch

LCD IMAGE: PHILIP RYAN (SHOT WITH FISHEYE LENS/BABY)

the downgrading of the A850's finder to 98% accuracy from 100% on the A900 may seem like a minor change, it can be irksome for those who like to frame

### SONY ALPHA 850

#### WHAT'S HOT

Full-frame, highest-res for \$2,000

#### WHAT'S NOT

No true live-view shooting mode

#### WHO IT'S FOR

Ultrawide fans and resolution junkies

Still shooters who won't miss video

their images very precisely—particularly since the A850 lacks live view. Of course, you can always crop later to the composition you wanted, so, given the price difference, we think most shooters could live with this compromise.

And while the A900 comes with a wireless remote trigger, the A850 does not. This may again seem insignificant, but it, too, depends on how you shoot. Macro photographers, for whom any touch of



“Sony ...  
found just  
the right  
tradeoffs.”

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button

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buttons  
behind the  
shutter  
release  
make  
on-the-fly  
setting  
changes  
easier.

the camera can make a difference in composition and focus, know the value of a remote trigger.

A remote would've come in handy in other situations, too. For instance, during field testing, I was trying to make a 5-sec exposure of a train pulling into a station, with about half the exposure elapsing before the train passed into the frame to capture the signs on the opposite platform. Without a remote, I relied on the 2-sec self-timer. In the end, the exposure was a little over a second before the train pulled in, so I didn't get nearly as much detail in the platform as I'd wanted.

### The Shooting Experience

Outside of those differences, the two cameras are nearly identical. The A850's body, like that of the A900, is extremely comfort-

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## LAB \* DSLR TEST SONY ALPHA 850

able to hold, with a carefully sculpted grip that feels secure when angling the camera in any direction. There are plenty of buttons dedicated to essential functions on the camera back and top.

Strangely, though, while the A850 has a switch for changing metering modes, you have to jump into the function menu to change the autofocus area. This did slow me down when I went to change the AF between its wide (auto), selectable-point, and single-center-point settings. Not a horrible oversight, but having recently shot with the Nikon D300s, I would have preferred a switch.

Sony did sensibly include an external switch for its sensor-shift image stabilization, which did a nice job of allowing 2 to 2.5 stops of leeway in our tests. Again, this is essentially the same result as the A900—as was the AF test performance.

### Alpha vs. Alpha

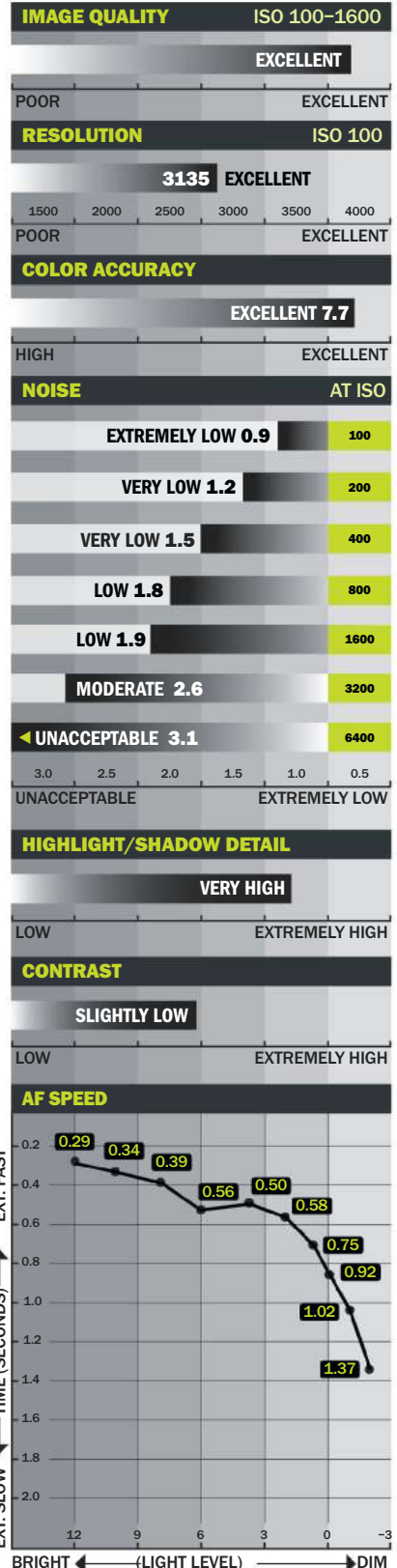
The Alpha 850, which uses the same 24.6MP Exmor CMOS sensor as the one in the Alpha 900, provided some surprises in our lab test results, notably in noise suppression.

From ISO 100 through 400, it showed about a 1-stop improvement—that is, the A850's noise level at ISO 400 (Very Low) was about the same as the A900's noise level at ISO 200.

The A850 also bested the older camera's color accuracy, with an average Delta E of 7.7 (Excellent) versus 9.0 (Extremely High).

Conversely, we got slightly lower resolution out of this new camera—although, with a difference of about 100

## TEST RESULTS





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## LAB \* DSLR TEST SONY ALPHA 850

lines per picture height in a resolution of more than 3,000 lines, it's not enough to make us complain.

Overall, it's unlikely that an average viewer would see much of a difference, if any, between equivalent images served up by these two cameras.

### Facing the Competition

How does it do against its more-expensive rivals? The A850 certainly has the edge in resolving power over Nikon's 12.1MP D700 (\$2,700 street, body only), as well as the 21.1MP Canon EOS 5D Mark II (\$2,700, street, body only).

But both of those top out at ISO 25,600, and serve up less noise at ISO 6400 than the A850 does at ISO 3200. In the D700's case, it showed less noise at ISO 12,800 than the A850 did at ISO 6400. So committed low-light shooters would probably be happier with the Canon or Nikon.

All three scored Excellent in color accuracy, with Canon coming out best. In AF speed, the Sony outperformed the Nikon in all but the dimmest light levels, with the Canon trailing both.

The 5D Mark II, however, has full 1920x1080p video recording, while neither the Sony nor Nikon record video at all. The Sony doesn't even offer live view, instead providing a still preview that displays changes to settings such as exposure compensation and white balance.

Sony seems to have found just the right tradeoffs to create a compelling DSLR. While any of the compromises might make a difference in some situations, together they seem like only minor quirks in the face of the A850's significant

## SPECIFICATIONS

**IMAGING:** 24.6MP, effective, full-frame CMOS sensor captures images at 6048x4032 pixels with 14 bits/color in RAW mode.

**STORAGE:** Dual slots: CompactFlash Type I/II, including UDMA and microdrives; MemoryStick PRO Duo. Stores JPEG, RAW, RAW + JPEG.

**BURST RATE:** Full-sized JPEGs (Extra-fine mode), up to 34 shots at 3 fps; RAW, up to 16 shots at 3 fps.

**AF SYSTEM:** TTL phase detection with 9 illuminated selectable focus points and 10 nonselectable assist points. Single-shot and continuous AF. Tested sensitivity down to EV -2 (at ISO 100, f/1.4).

**SHUTTER SPEEDS:** 1/8000 to 30 sec plus B (1/3-EV increments). 100,000-cycle rating.

**METERING:** TTL metering with 40-zone evaluative, centerweighted, and spotmetering (percentage of viewfinder not disclosed). EV 0-20 (at ISO 100).

**ISO RANGE:** ISO 100-6400 (in 1/3-EV increments).

**FLASH:** Supports ADI and TTL autofocus with Alpha flashes; X-sync at 1/250 sec, at 1/200 sec with Super SteadyShot Inside engaged.

**VIEWFINDER:** Fixed eye-level pentaprism.

**LCD:** 3-inch TFT with 921,600-dot resolution.

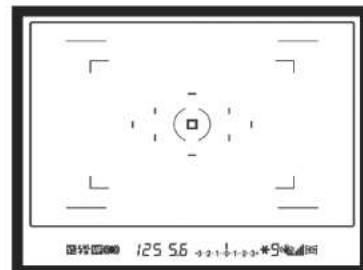
**OUTPUT:** Hi-Speed USB 2.0, HDMI (mini-type) video, 3-pin remote.

**BATTERY:** Rechargeable NP-FM500H Li-ion, CIPA rating, 880 shots.

**SIZE/WEIGHT:** 6.3x3.3x4.6 in., 2.14 lb with card and battery.

**STREET PRICE:** \$2,000, body only.

**FOR INFO:** [www.sonystyle.com](http://www.sonystyle.com).



**VIEWFINDER TEST:** Accuracy, 98% (Excellent); magnification, 0.74X (Very Good)

price reduction, big wide-angle views, and huge pixel count—in short, a thrilling full-frame experience. —Philip Ryan





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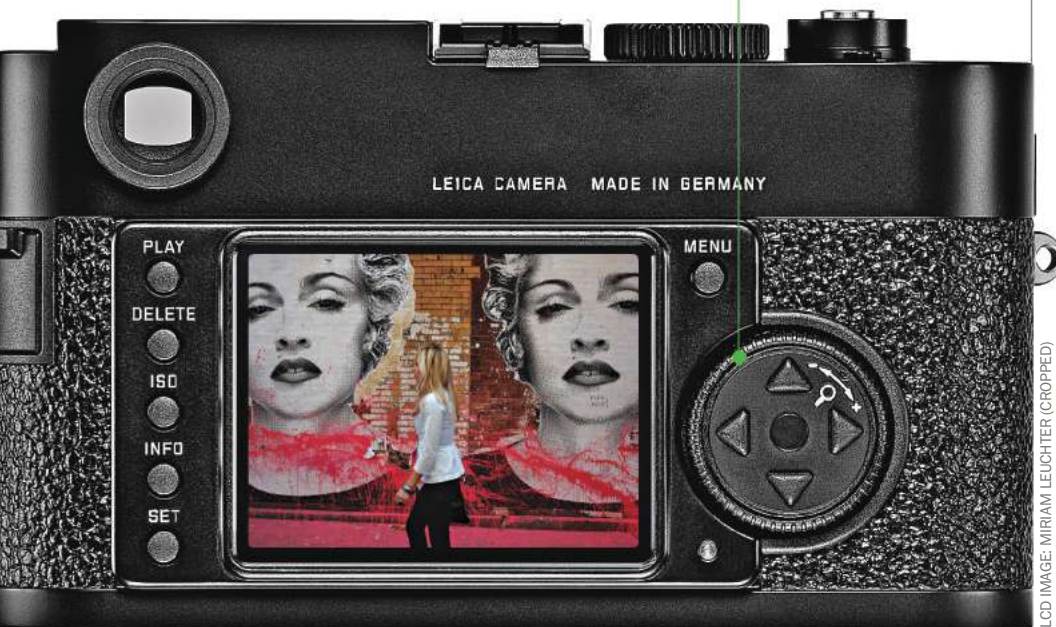
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Now the wait is over. With its new M9 (\$6,995, street, body only), Leica has delivered its first digital rangefinder truly worthy of the legendary brand. Its 18MP CCD sensor provides resolving power that should satisfy film lovers.

And our other tests in the Pop Photo Lab produced admirable results for color accuracy, noise, and overall image quality.

But if you haven't used a Leica M before, there are a few things you should know. The M9 is not a DSLR, so framing works quite differently. And you will forego nearly all of the familiar automatic features, from autofocus to program autoexposure, in favor of manual control.

Going on safari? Bring another camera, because the longest tele you can use on the M9 is 135mm. Want to shoot in low light? Buy a fast lens (such as Leica's extraordinary 50mm f/0.95 Noctilux—\$9,995, street), since ISO is capped at 2500. Evaluative metering? Forget it. Video? Dream on. The watchword is simplicity.

## Focus and Framing

While the M9 uses a through-the-lens (TTL) metering system, you don't actually look through the lens when framing

### LEICA M9

#### WHAT'S HOT

High res, low noise, color-accurate

#### WHAT'S NOT

The price

#### WHO IT'S FOR

Leica fans ready to go digital

Well-heeled traditionalists

LCD IMAGE: MIRIAM LEUCHTER (CROPPED)





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The only way to change your aperture when using the M9 is with the aperture ring on the lens.

Aperture ring



as you do (albeit indirectly, using mirrors) with a DSLR. Instead, you look through the rangefinder.

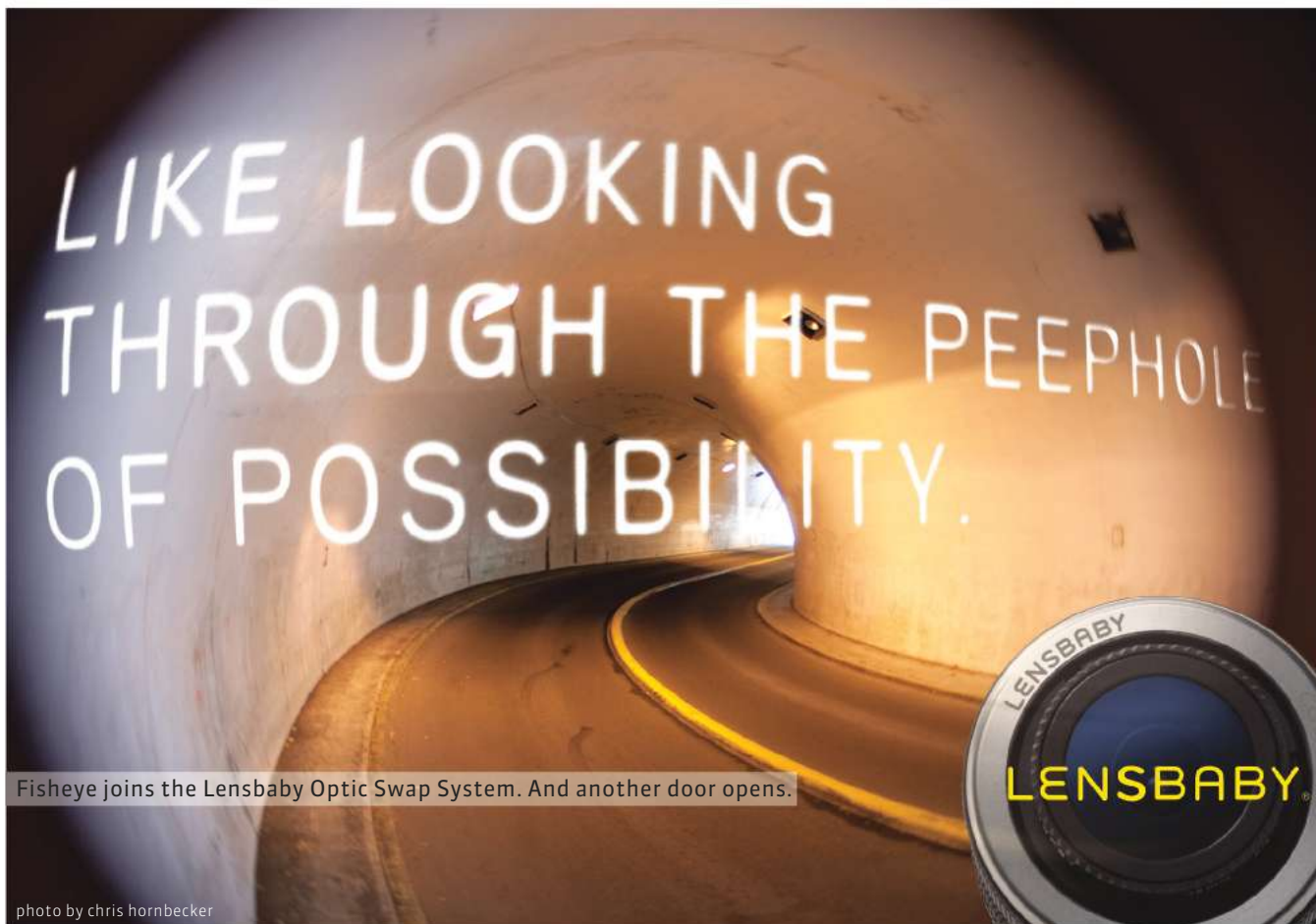
The Leica gathers two images through small windows next to the lens. One image is overlaid atop the other in the center of the finder. Then, as you focus the

camera (manually), the overlaid portion in the center moves from side to side—align the images, and you’re focused. It’s an ingenious solution that can make focusing in dim light easier than with many DSLRs.

But it’s not without drawbacks. Manual focusing doesn’t come close to the speed of today’s AF systems. And you have to pay attention to the framing lines in the finder, which change automatically based on a 6-bit code on the lens, which tells the camera the focal length. (With older optics, you can input the focal length in a menu or send the lens to Leica to add the code.)

The M9 has framing lines for 28 and 90mm, 35 and 135mm, or 50 and 75mm. Showing them in pairs doesn’t get confusing, though, because it’s easy enough

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photo by chris hornbecker

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to discern the differences. But since your view through the finder doesn't zoom in, you use only a small portion of it when framing a shot at 135mm.

Also, since you can visually confirm focus only in the center of the finder, it can be tricky to focus on an off-center subject while trying to frame a scene quickly.

All Leica rangefinder lenses, however, have clearly marked distance and depth-of-field scales printed on them. That means that if you know how far away you are from your subject, you can set the distance and worry only about framing the scene. With a little careful practice, you'd be surprised at how good a judge of distance you can become.

Focusing in advance this way can be quite useful, especially for street photography. The depth-of-

**Because there's less distance between the back of the lens and the sensor than in a DSLR, light rays strike the edges of the Kodak-made sensor at an extreme angle. So the microlenses above the pixels on the sensor had to be progressively offset to capture these rays.**

field scales are near-indispensable for this kind of shooting, as they give you a sense of how much is in focus. And with a wide-angle lens, which also tends to give you more depth of field, you can grab amazingly candid images by shooting without looking through the finder at all.

### Very Simple Control

In fact, Leica's rangefinders are made for discreet shooting. The all-metal body, though quite heavy for its size, is tough and extremely well damped against noise and vibration. The metal-bladed shutter, designed to be quiet, becomes nothing more than a subtle click. And if you have the Quiet Shutter feature enabled, the M9 won't recock the shutter until you release the button—since that's the noisiest

part of the process, you can shoot surreptitiously.

Furthermore, the rest of the camera's operation is as simple as it can be. There's only one metering option: heavily centerweighted. You must change the aperture manually by using the aperture ring on the lens—and you'll already have a hand there for focusing.

You can set the shutter speed using a dial atop the camera, next to the shutter release, or let the camera do it, in aperture-priority autoexposure mode.

The info button on the camera back displays remaining battery power as percentages and remaining memory card capacity as a horizontal bar and in number of pictures remaining.

The Set button lets you change white balance, image size and



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## LAB \* CAMERA TEST LEICA M9

quality, and exposure compensation and bracketing. ISO has a dedicated button that must be held down while you turn the rear scroll wheel to set it.

Likewise, you have to press the Set button to enter the basic-settings menu, then again to access the setting you want to change, and then a third time to lock in your change—slightly cumbersome, but not too bad once you get used to it. We had no trouble changing our settings quickly after an hour of familiarizing ourselves with the camera.

### Winning Numbers

Field testing is one thing, but the real proof of the pudding is in our test results in the Pop Photo Lab. And there the M9 fully outstripped its 2006 predecessor, the M8. Resolution, color accuracy, overall image quality—all Excellent.

Testing for noise levels proved tricky because Leica doesn't have a proprietary RAW format. Instead, it uses Adobe's DNG format and ships a copy of Lightroom with each M9, so you can use Adobe Camera RAW (ACR) to convert your images if you shoot RAW instead of, or in addition to, JPEGs.

That means there's no default level of noise reduction—as with the Pentax K-7 (November 2009), you choose your own. In our lab test, the M9 reached Unacceptable noise levels at its top sensitivity of ISO 2500 because we left ACR's noise reduction at its default of 0 luminance and 25 chrominance reduction. But when we set it to 50 for luminance and 75 for chrominance, noise dropped to 2.3 at ISO 2500, a Moderate rating on our scale.

With that noise reduction applied, the M9's resolution score dropped to 2560 lines per

## TEST RESULTS

IMAGE QUALITY		ISO 100-800			
EXCELLENT					
POOR		EXCELLENT			
RESOLUTION		ISO 100			
2675		EXCELLENT			
1500	2000	2500	3000	3500	4000
POOR		EXCELLENT			
COLOR ACCURACY					
EXCELLENT 6.2					
HIGH		EXCELLENT			
NOISE		AT ISO			
VERY LOW 1.5				100	
VERY LOW 1.6				200	
VERY LOW 1.6				400	
LOW 1.9				800	
MODERATE 2.5				1600	
◀ UNACCEPTABLE 4.0				2500	
3.0	2.5	2.0	1.5	1.0	0.5
UNACCEPTABLE		EXTREMELY LOW			
HIGHLIGHT/SHADOW DETAIL					
VERY HIGH					
LOW		EXTREMELY HIGH			
CONTRAST					
HIGH					
LOW		EXTREMELY HIGH			

picture height from 2590 lines with ACR's default settings. Even measured against the M9's best resolution score of 2675 at ISO 80 with ACR's default settings, that's not a whole lot of resolution lost, though Leica owners are just the people to notice even the slightest decline in sharpness.

### Out There on Its Own

How does the M9 compare with its competitors? It doesn't really have any. Epson hasn't expressed any interest in continuing to

CONTINUES ON PAGE 120



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# A Wider View

## TWO NEW ULTRAWIDE ZOOMS FOR DSLRS WITH APS-C-SIZE SENSORS

**HOW MUCH RANGE** do you want in an ultrawide-angle zoom lens? How close do you want to get to your subjects? And how much do you want to spend? These are a few of the questions you need to ask yourself when comparing these two new digital-only ultrawide zooms from Nikon (\$800, street) and Sigma (\$650, street).

What complicates the issue, especially for Nikon D90 and D300 shooters, is yet another very attractive, and surprisingly inexpensive, digital ultrawide—the Tamron SP 10-24mm f/3.5-4.5 Di II LD (\$480, street).

Our February 2009 test of this lens—which comes in versions for Canon, Nikon, Pentax, and Sony—found near-unsurpassed optical excellence. (For capsule reviews of every current ultrawide zoom that we've tested, see The Guide, page 93.)

### Nikon Brings You Closer

The internal-focusing Nikkor is the company's widest DX zoom, with a 2.4X range that scales up to the full-frame equivalent of 15-36mm on Nikon DX bod-

ies. Extra-low Dispersion (ED) elements combat chromatic aberration, and aspheric elements fight linear distortion.

Solid feeling at slightly over 1 pound, the lens is large enough to cast a shadow when used with a built-in flash at most focal lengths and focusing distances. Its handling is nearly flawless, with perfectly damped zoom and manual-focusing actions, and extremely rapid and quiet autofocus.

It delivers satisfyingly sharp and contrasty images—and Excellent-range SQF numbers at 11x14 inches.

Though control of distortion and edge falloff (tested with DxO Analyzer 3.0.2) is strong by historic standards, its performance is average for today's digital ultrawides. Its Visible barrel distortion at 10mm (0.43%), for example, is similar to the Sigma we also tested this month, but significantly below the outstanding performance of the Tamron, which showed Slight (0.26%) barreling. (The Tamron also produced no measurable vignetting at two of three tested focal lengths.)

It wasn't until we tested its close-up capabilities that we found this Nikkor's true forte. With an amazing 1:4.1 subject magnification power, it's nearly in macro range—significant, since one of the traditional uses of the ultrawide lens is playing large, close-in foreground



#### NIKON 10-24MM F/3.5-4.5G DX AF-S

##### WHAT'S HOT

Great subject magnification

##### WHAT'S NOT

Pricey for average optical results

#### SIGMA 10-20MM F/3.5 EX DC HSM AF

##### WHAT'S HOT

Constant aperture

##### WHAT'S NOT

Skippy 2X zoom range



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# FLASHPOINT

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Tripod F-1328	63-3/4"	21.65"	24.2 lbs	3.96 lbs	<b>\$269.95</b>
Tripod F-1428	72"	24"	26.4 lbs	5.72 lbs	<b>\$324.95</b>
Monopod	55.11"	18.75"	11 lbs	10 oz.	<b>\$84.95</b>
Ball Head F-1	3.46	-	8.8 lbs	11.6 oz.	<b>\$49.95</b>
Ball Head F-2	3.66	-	11 lbs	14.4 oz.	<b>\$56.95</b>
Ball Head F-3	3.86	-	17.6 lbs	16.1 oz.	<b>\$69.95</b>
Ball Head F-4	4.92	-	40 lbs	30 oz.	<b>\$124.95</b>
Ball Head F-9	3.0	-	33 lbs	5 oz.	<b>\$69.95</b>
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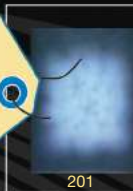
265



522



251



201



204



718



915



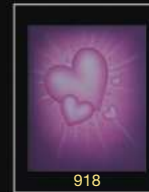
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## SPECIFICATIONS

**10-24MM** (10.3-23.5mm tested) f/3.5-4.5 (3.38-4.76 tested), 14 elements in 9 groups. Focus ring turns 90°. Zoom ring turns 70°. Focal lengths marked at 10-, 12-, 15-, 18-, 20-, and 24mm.

**DIAGONAL VIEW ANGLE:** 109-61 degrees

**WEIGHT:** 1.1 pound **FILTER SIZE:** 77mm

**MOUNTS:** Nikon AF

**INCLUDED:** Hood, case

**STREET PRICE:** \$800

## TEST RESULTS

**DISTORTION:** At 10mm, 0.43% (Visible) barrel; at 18mm, 0.11% (Slight) pincushion;

at 24mm, 0.12% (Slight) pincushion

**LIGHT FALLOFF:** At 10mm, gone by f/4;

at 18mm, by f/8; at 24mm, by f/8

**CLOSE-FOCUSING DISTANCE:** 8.83 inches

**MAXIMUM MAGNIFICATION RATIO:**

At 10mm, 1:9.5; at 18mm, 1:5.4;

at 24mm, 1:4.1

## SUBJECTIVE QUALITY FACTOR

Our standard lens test, SQF rates sharpness by print size

Size	5x7	8x10	11x14	16x20	20x24
3.5	96.0	94.8	91.9	86.4	79.8
4.0	96.1	94.9	92.0	86.6	80.2
5.6	96.1	94.9	92.0	86.5	80.0
8.0	96.1	95.0	92.2	86.8	80.3
11.0	96.0	94.8	91.9	86.3	79.7
16.0	95.8	94.6	91.6	85.8	78.9
22.0	95.8	94.5	91.4	85.2	77.7

Size	5x7	8x10	11x14	16x20	20x24
4.2	95.9	94.8	91.7	86.2	79.7
5.6	96.0	94.8	91.9	86.5	80.1
8.0	96.2	95.0	92.3	87.2	81.4
11.0	96.3	95.1	92.5	87.8	82.3
16.0	96.0	94.8	91.9	86.8	80.8
22.0	95.1	93.6	90.1	83.3	75.1
29.0	95.0	93.5	89.8	82.6	73.9

Size	5x7	8x10	11x14	16x20	20x24
4.5	95.8	94.5	91.5	85.7	78.9
5.6	95.8	94.5	91.4	85.7	78.9
8.0	95.9	94.6	91.7	86.2	79.8
11.0	95.9	94.6	91.6	86.1	79.6
16.0	95.0	94.8	92.0	86.9	80.9
22.0	95.4	94.0	90.7	84.5	77.2
29.0	94.0	93.3	89.6	82.4	73.6

KEY A B C D E F



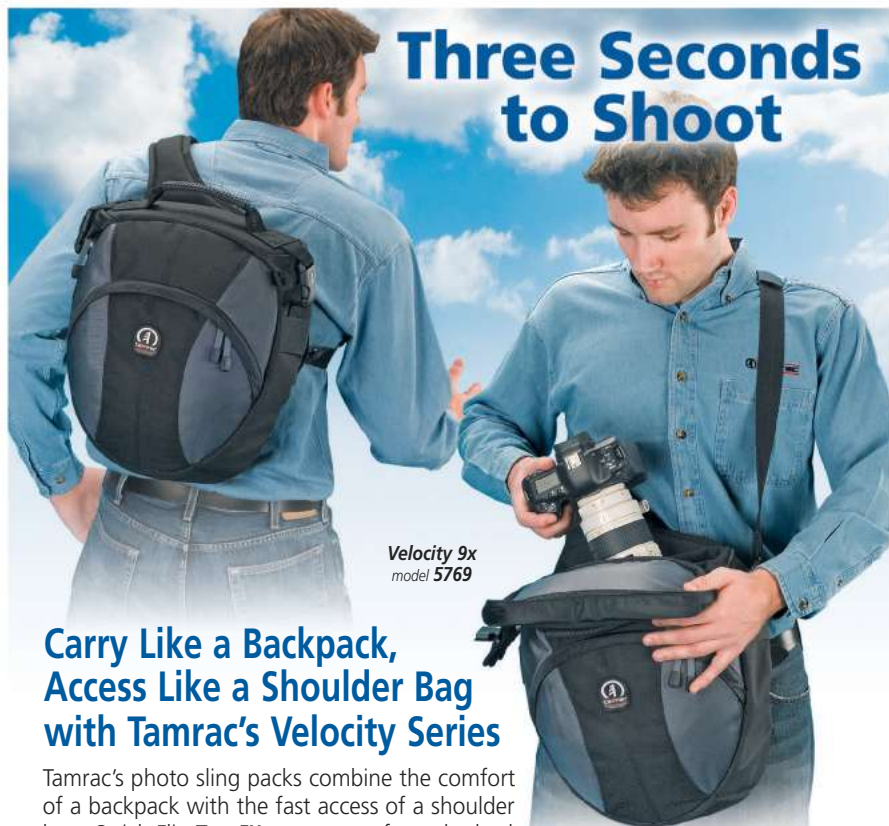
subjects against distant backgrounds. This zoom lets such subjects loom even larger, and for such visually exciting perspective studies, it has few competitors. (That's why we gave it a POP Award this year—see page 62.)

### Sigma: Speed for Less

Sigma's widest nonfisheye and fastest ultrawide zoom, the constant-aperture 10-20mm f/3.5 belongs to the EX family of sturdily built, optically gifted Sigmas. To control multiple forms of aberration, it uses three low-dispersion glass elements and four aspheric elements—the most of any Sigma.

A 15-30mm equivalent on most DSLRs, it joins Sigma's slower and less expensive 10-20mm f/4-5.6 EX (\$480, street), which stays in the lineup.

A pleasure in the hands, it's slightly large and heavy by digital-only ultrawide standards: About two ounces heavier than the Nikon, it's the rare digital ultrawide that takes 82mm filters instead of 77mm. It's also



Velocity 9x model 5769

Velocity 9x model 5769

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# SUBJECTIVE QUALITY FACTOR

10  
MM

Size	5x7	8x10	11x14	16x20	20x24
3.5	95.3	94.8	91.7	86.0	79.1
4.0	95.0	94.6	92.0	86.5	79.9
5.6	96.0	94.8	91.9	86.2	79.5
8.0	96.1	94.9	92.1	86.8	80.5
11.0	96.0	94.8	91.9	86.6	80.2
16.0	95.6	94.5	91.1	85.1	77.8
22.0	95.1	94.1	91.0	85.0	77.6

14  
MM

Size	5x7	8x10	11x14	16x20	20x24
3.5	96.0	94.3	91.9	86.2	79.4
4.0	96.2	95.0	92.2	86.8	80.4
5.6	96.2	95.0	92.3	86.9	80.5
8.0	96.3	95.2	92.5	87.5	81.5
11.0	96.1	94.9	92.1	86.9	80.6
16.0	95.0	94.3	91.1	84.9	77.4
22.0	95.0	94.3	91.9	86.0	79.0

20  
MM

Size	5x7	8x10	11x14	16x20	20x24
3.5	96.0	94.3	91.8	86.0	79.1
4.0	96.0	94.3	91.9	86.1	79.1
5.6	95.0	94.5	91.6	85.6	78.3
8.0	95.8	94.5	91.5	85.4	77.9
11.0	96.0	94.3	91.9	86.2	79.4
16.0	95.7	94.3	91.2	85.0	77.5
22.0	95.1	93.5	90.0	82.8	73.8

KEY A+ A A- B+ B B- C+ C D F



large enough to block pop-up flash output at most focal lengths and focusing distances.

This internal-focusing lens uses an HSM motor for extremely quiet, very fast, and accurate autofocus. Both zoom and focusing rings turn smoothly, though the latter is noticeably overdamped.

Sharp, with high contrast, it produced Excellent-range SQF numbers at every tested focal length, with distortion control that matched or beat that of the more expensive Nikon. And its control of vignetting was even better.

One of the few disappointments, though, was close-up performance: Its 1:6 magnifying power is stronger than the advertised 1:6.6, but no match for either the Nikon or Tamron.

## The Choice You Face

Nikonians who want to get close have an easy decision to make. For everyone else, it may come down to price (Tamron) versus speed (Sigma). —*Julia Silber*

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SIGMA 10-20MM F/3.5 EX DC HSM AF

## SPECIFICATIONS

**10-20MM** (10.4–19.4mm tested), f/3.5 (3.33–3.58 tested), 13 elements in 10 groups. Focus ring turns 150°. Zoom ring turns 60°. Focal lengths marked at 10-, 12-, 14-, 17-, and 20mm.

**DIAGONAL VIEW ANGLE:** 102–63 degrees

**WEIGHT:** 1.2 pound

**FILTER SIZE:** 82mm

**MOUNTS:** Canon AF, Nikon AF, Pentax AF,

Sigma AF, Sony AF

**INCLUDED:** Hood

**STREET PRICE:** \$650

## TEST RESULTS

**DISTORTION:** At 10mm, 0.42% (Visible) barrel; at 14mm, 0.06% (Imperceptible) barrel; at 20mm, 0.08% (Imperceptible) pincushion

**LIGHT FALLOFF:** At 10mm, none; at 14mm, gone by f/5.6; at 20mm, by f/5.6

**CLOSE-FOCUSING DISTANCE:** 9.33 inches

**MAXIMUM MAGNIFICATION RATIO:**

At 10mm, 1:11.4;

at 14mm, 1:8.1;

at 20mm, 1:6



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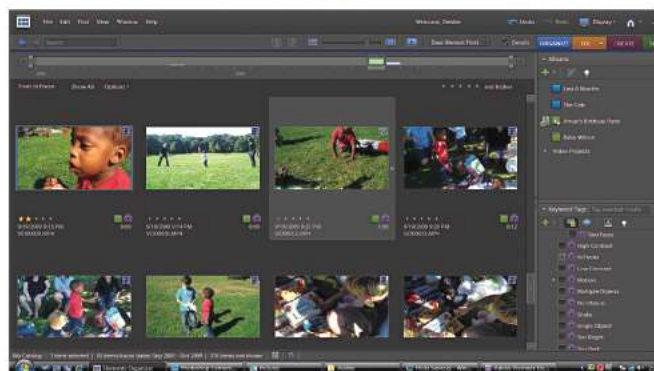
## THE LATEST ELEMENTS PROGRAMS ARE OVERSTUFFED WITH FEATURES

**NOT EVERYONE** who's getting serious about image editing wants to spend \$700 on software, at least not right away. That's where Adobe's \$100 Photoshop Elements steps in. Still the best place for beginners to start, it will help you learn Photoshop basics such as Layers, Adjustment Layers, and Selections.

But the latest upgrade of Elements (version 8) is much more than just an introduction to Photoshop. It's a whole package of tools aimed at nonprofessional photographers who want

to do more than just fix and print their pictures.

Photoshop Elements and Premiere Elements, a video editor, also come as a \$150 bundle for Windows users. If you use your DSLR (or compact) to shoot HD video, consider buying them as a package—you'll also save \$50 over the cost of buying them separately. (There's a new version of Elements for Mac, too, but no Premiere or Organizer. It does come with Bridge—convenient for Elements users who shoot a lot of RAW files.)

SIMPLE  COMPLEX

**The Elements Organizer for Windows now manages both photos and videos.**

The Organizer is now the hub of both Elements and Premiere Elements, and this update introduces new ways of organizing.

For instance, face recognition helps you find and tag the people who appear in your pictures most frequently. It works decently, but like most face-recognition software, isn't always perfect. One of the coolest new capabilities is Smart Tags' ability to sort your photos. The program can now recognize images and videos of lesser quality, helping you weed out the ones that have crazy color casts or nothing in focus.

Using the Organizer, you might suspect that Adobe wants you to sign up for its online service. It can't hurt to take advantage of the free 2GB of storage, but the encouragement to upgrade your account can get

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## SPECIFICATIONS

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### ADOBE PHOTOSHOP ELEMENTS 8

#### WHAT'S HOT

Sophisticated but affordable technology

#### WHAT'S NOT

The feature set is a bit overwhelming

#### WHO IT'S FOR

Beginners learning how to edit

Frugal enthusiasts



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## LAB \* SOFTWARE REVIEW ADOBE PHOTOSHOP ELEMENTS & PREMIERE ELEMENTS 8

tiresome if you're not interested. Also, the software makes it easy to upload to Photoshop.com—and, under a More Options menu, to Kodak EasyShare Gallery, Flickr, and SmugMug—but sharing to Facebook works only via Photoshop.com.

In the Full Editor, the upgrade includes versions of tools borrowed from Photoshop CS4: Photomerge Exposure combines two nearly aligned images of different exposures to create a single one, sort of like HDR imaging. And the Recompose tool is similar to CS4's Content-Aware Scaling, which lets you crop without losing critical information.

For video, Premiere Elements can automatically trim out or fix overly blurry or shaky footage. It can also trim clips to keep the moments with the most action. A new motion tracker lets you add

cartoons such as birds or thought bubbles that follow your subjects as they move through the frame. And the company has added flashy new transitions.

Such extras are a strength or a weakness, depending on your viewpoint. They're great if you want to make a collage of baby pictures against a backdrop of teddy bears or to create an instant movie of a kid's birthday party, complete with animated cupcakes. But photographers who want to get to the most powerful tools as quickly as possible must plan accordingly.

So despite the addition of some great features, the thought occurred: The program could be divided into two versions. It would be great if serious photographers could opt for the Full Editor, the streamlined Adobe Camera RAW (currently in-



**Premiere Elements makes it simple to make cute, quick instant movies.**

cluded), and a simple organizer/browser—without all the bells and whistles of the guided edits and cute greeting cards that can get distracting. In fact, that's more or less what Mac users get when they choose Elements.

Still, the program for Windows is one of the best consumer-level photo and video editors out there. You just might also get a lot of stuff you don't want along with it.

—Debbie Grossman



# 4 in 1



**Table-Top Stand**



**Stable Verticals**



**Mini Macro Stand**



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# THE GUIDE

## GUIDE TO THE GUIDE

In these three pages, we rate all of the current DSLRs, plus all of the current lenses within a given focal length range, that we've tested. The star ratings reflect:

### CAMERAS

- **Image quality:** Includes resolution, noise, and color accuracy
- **Performance/capabilities:** Includes autofocus, metering, and burst rate
- **Usability:** Includes ergonomics, controls, and customization

### LENSES

- **Optics:** Such as sharpness, distortion, light falloff
- **Barrel design:** Includes focus and zoom rings, markings, and AF motor

To match cameras and lenses, look for the labels.

APS-C BEST IN CLASS Is it worth the  
FOUR THIRDS GETTING OLD dough? Look for:  
FULL-FRAME NEW MODEL STEAL PRICEY

## OUR OPINIONATED TAKE ON THE DSLRS AND LENSES WE'VE TESTED

### CANON EOS-1D MARK III

★★★★★ APS-H  
AMATEUR PRO

**\$3,700, street, body only** The emphasis is on speed over megapixels in the 1D Mark III, whose dual processors make it an ideal tool for shooters of fast action. Soon to be replaced by the 1D Mark IV.  
**STANDOUT SPEC** Demonic speed in auto-focusing, subject tracking, and, notably, burst rate: 10 fps for full-res JPEGs.



GETTING OLD

**SENSOR** 10.1MP CMOS, 14-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO** None  
**LCD** 3-in., 230,000-dot

### CANON EOS-1Ds MARK III

★★★★★ 1/2 FULL-FRAME  
AMATEUR PRO

**\$6,100, street, body only** Once Canon's megapixel king, it now shares that throne with the newer EOS 5D Mark II. Awesome image quality in a bulletproof body—at a high cost in both weight and dollars. A favorite of nature and studio shooters both.  
**STANDOUT SPEC** Medium-format imaging from a (sort of) 35mm body.



**SENSOR** 21.1MP CMOS, 14-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO** None  
**LCD** 3-in., 230,000-dot

### CANON EOS 5D MARK II

★★★★★ 1/2 FULL-FRAME  
AMATEUR PRO

**\$2,700, street, body only** Long-awaited update of the original full-frame workhorse, the Mark II impressed us with stellar image quality, HD video, rugged construction—but not the older AF system recycled from the Mark I. Film students have taken to its video big time.  
**STANDOUT SPEC** Excellent image quality to ISO 3200—nuff said.



**SENSOR** 21.1MP CMOS, 14-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO RES/FRAME RATE** 1080p/30 fps, 720p/30 fps  
**LCD** 3-in., 920,000-dot

### CANON EOS 50D

★★★★★ APS-C  
AMATEUR PRO

**\$1,000, street, body only** Current flagship of Canon APS-C models offers class-leading image quality, a great build, and very speedy shooting—but no video. For that, you'll need an EOS 7D—see the Pop Awards.  
**STANDOUT SPEC** 6.3-fps burst rate beats all the competition in this class—but others are catching up fast.



**SENSOR** 15.1MP CMOS, 14-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO** None  
**LCD** 3-in., 230,000-dot

### CANON EOS REBEL T1i

★★★★★ APS-C  
AMATEUR PRO

**\$785, street, with 18-55mm f/3.5-5.6 EF-S IS lens** As far from a "starter" camera as any Rebel has ever come, the T1i has the same sensor and nearly the same processing power as pricier big brother EOS 50D.  
**STANDOUT SPEC** Sheer imaging power—both still and video—ranks best for this price.  
**SENSOR** 15.1MP CMOS, 14-bit



BEST IN CLASS

RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO RES/FRAME RATE** 1080i/20 fps, 720p/30 fps  
**LCD** 3-in., 920,000-dot

### CANON EOS REBEL XS

★★★ 1/2 APS-C  
AMATEUR PRO

**\$500, street, with 18-55mm f/3.5-5.6 EF-S IS lens** Inheriting the sensor of the former "top Rebel" XTi, the XS adds live view to round out Canon's most economical DSLR. And it comes with an IS kit lens, standard.  
**STANDOUT SPEC** The XS, for an "entry-level" model, autofocuses faster than many a pricier camera.



**SENSOR** 10MP CMOS, 12-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO** None  
**LCD** 2.5-in., 230,000-dot

### CANON EOS REBEL XSi

★★★★★ 1/2 APS-C  
AMATEUR PRO

**\$625, street, with 18-55mm f/3.5-5.6 EF-S IS lens** While it lacks video, the XSi's well-designed package of fine imaging, fast-for-any-class AF, and excellent viewfinder make it a hit in its class. If you don't need video, this may be your Reb.  
**STANDOUT SPEC** Relentless consistency of image quality throughout the ISO range.



**SENSOR** 10MP CMOS, 14-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO** None  
**LCD** 3-in., 230,000-dot

### LEICA M9

★★★★★ 1/2 FULL-FRAME  
AMATEUR PRO

**\$6,995, street, body only** Leica finally serves up a full-frame M body, and it produced Excellent image quality through ISO 800. Outside the lab, we loved the classic Leica style and good old-fashioned simplicity of operation. But what's with the max ISO of 2500?  
**STANDOUT SPEC** A sensor that delivers all the quality



NEW MODEL

Leica lenses can deliver.  
**SENSOR** 18MP CCD, 14-bit RAW capture  
**IMAGE STABILIZATION** None  
**VIDEO** None  
**LCD** 2.5-in., 230,000-dot

### NIKON D3

★★★★★ 1/2 FULL-FRAME  
AMATEUR PRO

**\$5,000, street, body only** Large pixels for soaking up low light, tanklike body for absorbing punishment, state-of-the-art AF and metering—plus a pricetag and weight to match. Soon to be replaced by the D3S.  
**STANDOUT SPEC** Everything, but usable image quality at ISO 25,600 is still a wow.  
**SENSOR** 12.1MP CMOS,



14-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO** None  
**LCD** 3-in., 920,000-dot

### NIKON D3X

★★★★★ FULL-FRAME  
AMATEUR PRO

**\$7,600, street, body only** Without question, the overall image quality champ of current DSLRs—and should be for a while. Built like a tank, it's heavy and expensive, but those who love it don't care. Has the fastest AF in low light.  
**STANDOUT SPEC** The absolute, breathtaking state-of-the-artness of it.  
**SENSOR** 24.5MP CMOS,



BEST IN CLASS

14-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO** None  
**LCD** 3-in., 920,000-dot

### NIKON D90

★★★★★ 1/2 APS-C  
AMATEUR PRO

**\$810, street, body only** The first DSLR with video, it remains Nikon's main midlevel model, with great resolution, HD movie-making, and near-perfect layout. Unlike lesser Nikons, it accepts lenses without AF motors.  
**STANDOUT SPEC** The pop-up flash that supports wireless flash control. You won't find that on the D5000.



STEAL

**SENSOR** 12.3MP CMOS, 12-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO RES/FRAME RATE** 720p/24 fps  
**LCD** 3-in., 920,000-dot

### NIKON D300S

★★★★★ APS-C  
AMATEUR PRO

**\$1,760, street, body only** Thoughtful major tweak of the well-regarded D300 adds video (though we wish it did 1080p at 30 fps) and increases native burst rate to 7 fps. Very competitive with the current state of the midrange art, but that battle is really heating up.  
**STANDOUT SPEC** Color-and-shape-sensing AF tracking still a standout shooting tool.



**SENSOR** 12.3MP CMOS, 14-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO RES/FRAME RATE** 720p/24 fps  
**LCD** 3-in., 920,000-dot

## GUIDE TO THE GUIDE

In these three pages, we rate all of the current DSLRs, plus all of the current lenses within a given focal length range, that we've tested. The star ratings reflect:

### CAMERAS

- **Image quality:** Includes resolution, noise, and color accuracy
- **Performance/capabilities:** Includes autofocus, metering, and burst rate
- **Usability:** Includes ergonomics, controls, and customization

### LENSES

- **Optics:** Includes sharpness, distortion, and light falloff
  - **Barrel design:** Includes focus and zoom rings, markings, and AF motor
- To match cameras and lenses, look for the labels below.

APS-C FOUR THIRDS FULL-FRAME BEST IN CLASS GETTING OLD NEW MODEL STEAL PRICEY

### NIKON D700

★★★★★ **FULL-FRAME**  
AMATEUR PRO

**\$2,700, street, body only**  
For the enthusiast craving pro-grade features, the D700 offers a full-frame sensor borrowed from the D3 supercamera, sensitivity to ISO 25,600, 51-zone AF, and a pop-up flash with wireless flash control.  
**STANDOUT SPEC** That big, juicy full-frame sensor in an enthusiast's \$2,700 body, for great low-noise shooting from



ISO 100 through 6400.  
**SENSOR** 12.3MP CMOS, 14-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO** None  
**LCD** 3-in., 920,000-dot

### NIKON D5000

★★★★★ **APS-C**  
AMATEUR PRO

**\$730, street, with 18-55mm f/3.5-5.6 DX Nikkor VR lens**  
For Nikonians who want a hinged and tilting LCD, the D5000 is the only option. Plus you get video, 4-fps burst shooting, speedy AF, and sensitivity out to ISO 6400.  
**STANDOUT SPEC** The price—it offers (almost) everything the D90 has but costs \$80 less.



**SENSOR** 12.3MP CMOS, 12-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO** RES/FRAME RATE 720p/24fps  
**LCD** 2.7-in., 230,000-dot

### OLYMPUS E-3

★★★★ 1/2 **FOUR THIRDS**  
AMATEUR PRO

**\$1,120, street, body only**  
Pros cotton to Olympus' flagship for its super-rugged construction and its superior lens line. Also nice: Fast AF, a small but swiveling LCD, and built-in image stabilization.  
**STANDOUT SPEC** Alloy chassis fully encases the innards—including the back, a weak area on many DSLRs—and allows you to fold the LCD inward to protect it



from scratches—or worse.  
**SENSOR** 10.1MP LiveMOS, 12-bit RAW capture  
**IMAGE STABILIZATION** 2.5-3 stops  
**VIDEO** None  
**LCD** 2.5-in., 230,000-dot

### OLYMPUS E-30

★★★★ **FOUR THIRDS**  
AMATEUR PRO

**\$900, street, body only**  
Olympus' less-expensive companion to the pro-grade E-3 boasts more megapixels, an impressive for its class 5-fps burst rate, comparable handling, and an assortment of fun filters—pop art, anyone?  
**STANDOUT SPEC** The fully-articulating LCD screen makes live view much more useful while also protecting



the screen from harm if you turn it inward.  
**SENSOR** 12.3MP LiveMOS, 12-bit RAW capture  
**IMAGE STABILIZATION** 2.5-3 stops  
**VIDEO** None  
**LCD** 2.7-in., 230,000-dot

### OLYMPUS E-520

★★★★ **FOUR THIRDS**  
AMATEUR PRO

**\$450, street, with 14-42mm f/3.5-5.6 Zuiko Digital lens**  
Its live view previews exposure settings (albeit on a non-swiveling LCD), and overall ergonomics are very user-friendly—all for \$450, with a lens. Paired with its housing, you'll have a diving rig for under \$1,200.  
**STANDOUT SPEC** The built-in image stabilization fared



extremely well in our field tests and can be used with any lens you put on the camera.  
**SENSOR** 10MP LiveMOS, 12-bit RAW capture  
**IMAGE STABILIZATION** 2-3 stops  
**VIDEO** None  
**LCD** 2.7-in., 230,000-dot

### OLYMPUS E-620

★★★★ **FOUR THIRDS**  
AMATEUR PRO

**\$700, street, with 14-42mm f/3.5-5.6 Zuiko Digital lens**  
For arty amateurs, the E-620 offers the still-new seeming Art Filters, special effects that invite experimentation. Plus: small, light build, and body-based, sensor-shift IS.  
**STANDOUT SPEC** The super-articulated swiveling/tilting LCD that



the E-520 lacks.  
**SENSOR** 12.3MP LiveMOS, 12-bit RAW capture  
**IMAGE STABILIZATION** 2 stops  
**VIDEO** None  
**LCD** 2.7-in., 230,000-dot

### PENTAX K-7

★★★★★ **APS-C**  
AMATEUR PRO

**\$1,160, street, body only**  
Built like a tank, Pentax's flagship DSLR has a well-designed body and records pleasing video, but its image quality and AF speed fall short of similarly-priced competitors.  
**STANDOUT SPEC** 77 weather seals let you shoot in 14°F temperatures.  
**SENSOR** 14.6MP CMOS, 12-bit RAW capture



**IMAGE STABILIZATION** 2.5-3 stops  
**VIDEO** RES/FRAME RATE 1536x1024/30fps, 720p/30fps  
**LCD** 3-in., 921,000-dot

### PENTAX K2000

★★★★ 1/2 **APS-C**  
AMATEUR PRO

**\$430, street, with 18-55mm f/3.5-5.6 Pentax DA lens**  
Nice-handling beginner's DSLR, with image quality and AF speed that can't keep up with more expensive cameras. Still way ahead of any compact, though.  
**STANDOUT SPEC** With adapters, this camera can use any lens Pentax has ever made.



**SENSOR** 10.2MP CCD, 12-bit RAW capture  
**IMAGE STABILIZATION** 2.5 stops  
**VIDEO** None  
**LCD** 2.7-in., 230,000-dot

### SIGMA SD14

★★★★★ **APS-C**  
AMATEUR PRO

**\$725, street, body only**  
Unique 3-layer RGB sensor distinguishes the cultish SD14, an aging design that has fallen well behind the current state of the art in imaging, AF, and shooting speed.  
**STANDOUT SPEC** Imaging with a creamy, subtle, almost filmlike quality.  
**SENSOR** 4.7MPx3-layer



Foveon X3 sensor, 12-bit RAW capture  
**IMAGE STABILIZATION** Lens-based  
**VIDEO** None  
**LCD** 2.5-in., 230,000-dot

### SONY ALPHA 330

★★★★ 1/2 **APS-C**  
AMATEUR PRO

**\$600, street, with 18-55mm f/3.5-5.6 Sony DT SAM lens**  
An entry-level DSLR with a flexible LCD, the Alpha 330 has speedy autofocus, the best live view in town, and a price fit for the thriftest photographers.  
**STANDOUT SPEC** The live view uses the conventional (and fast) AF system, fires with no delay.



**SENSOR** 10.2MP CCD, 12-bit RAW capture  
**IMAGE STABILIZATION** 2.5 stops  
**VIDEO** None  
**LCD** 2.7-in., 230,400-dot

### SONY ALPHA 380

★★★★★ **APS-C**  
AMATEUR PRO

**\$800, street, with 18-55mm f/3.5-5.6 Sony DT SAM lens**  
With its made-for-beginners display interface and great live view, the Alpha 380 would be perfect for those new to DSLRs.  
**STANDOUT SPEC** One of the best live-view systems yet, works without delay in AF or firing. But we do wish it



showed 100% of the scene.  
**SENSOR** 14.2MP CCD, 12-bit RAW capture  
**IMAGE STABILIZATION** 2-3 stops  
**VIDEO** None  
**LCD** 2.7-in., 230,400-dot

### SONY ALPHA 700

★★★★ 1/2 **APS-C**  
AMATEUR PRO

**\$850, street, body only**  
The camera that put Sony on the map as a maker of enthusiast DSLRs may be an oldie, but it's still a goodie for its rugged build, fine imaging, and thoughtful design. We still haven't heard of a replacement, but we're sure it will happen soon.  
**STANDOUT SPEC** One of the most intuitive control



and menu interfaces yet.  
**SENSOR** 12.2MP CMOS, 14-bit RAW capture  
**IMAGE STABILIZATION** 2.5-3 stops  
**VIDEO** None  
**LCD** 3-in., 920,000-dot

### SONY ALPHA 850

★★★★★ **FULL-FRAME**  
AMATEUR PRO

**\$2,000, street, body only**  
Minor change to the A900 drops viewfinder accuracy to 98%, slows burst rate to 3 fps, and forgoes a wireless remote control. It kept the impressive image quality, top ergonomics, and superfast AF, though—so much so that it achieved an equal rating to the A900.  
**STANDOUT SPEC** The most full-frame bang for the buck



you can get today.  
**SENSOR** 24.6MP CMOS, 14-bit RAW capture  
**IMAGE STABILIZATION** 2-2.5 stops  
**VIDEO** None  
**LCD** 3-in., 920,000-dot

### SONY ALPHA 900

★★★★★ **FULL-FRAME**  
AMATEUR PRO

**\$2,700, street, body only**  
Sony's blockbuster full-framer puts up top resolution numbers at ISO 100 but has some catchup to do in noise and color accuracy. Speedy AF and great ergonomics almost make us forget that it doesn't have live view or pop-up flash.  
**STANDOUT SPEC** That big, bright viewfinder makes you



realize why you prefer SLRs.  
**SENSOR** 24.6MP CMOS, 14-bit RAW capture  
**IMAGE STABILIZATION** 2-2.5 stops  
**VIDEO** None  
**LCD** 3-in., 921,600-dot

## OUR STAR RATINGS

- ★★★★★ ATTENDANCE MEDAL
- ★★★★★ GENTLEMAN'S C
- ★★★★★ DEAN'S LIST
- ★★★★★ PHI BETA KAPPA
- ★★★★★ SUMMA CUM LAUDE

**CAMERAS AND LENSES—TESTED AND RATED FOR FULL TEST REPORTS AND INFO ON HOW WE TEST AND RATE CAMERAS AND LENSES, VISIT [POPPHOTO.COM/REVIEWS](http://POPPHOTO.COM/REVIEWS).**



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# THE GUIDE \* ULTRAWIDE-ANGLE ZOOM LENSES

## CANON EF-S 10-22MM F/3.5-4.5 USM **APS-C**

★ ★ ★  
AMATEUR PRO

**\$789, street** Still the lightest of the ultrawide zooms, though not lightweight in price. It boasts rugged construction, with sharpness, distortion and light falloff all above average, and a close-focusing distance of 9.4 inches. Tight!  
**STANDOUT SPEC** The insanely



light (less than a pound) weight.  
**MOUNTS** Canon EF  
**WEIGHT** 0.9 pound  
**LENGTH** 3.6 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** No

## CANON EF 16-35MM F/2.8 II USM **FULL-FRAME**

★ ★ ★ ★  
AMATEUR PRO

**\$1,549, street, with hood and case** This L-series superstar has dust- and moisture-sealed build, and fast and quiet autofocus. The low distortion numbers at the longer focal lengths (0.12%, 0.19% pincushion) promise straight subject lines. Close-focus? An amazing 10.6 inches.



**BEST IN CLASS**  
**STANDOUT SPEC** Three aspheric elements to lower linear distortion.  
**MOUNTS** Canon EF  
**WEIGHT** 1.5 pounds  
**LENGTH** 4.4 inches  
**FILTER SIZE** 82mm  
**STABILIZATION** No

## CANON EF 17-40MM F/4L USM **FULL-FRAME**

★ ★ ★ ★ 1/2  
AMATEUR PRO

**\$765, street, with hood and case** Slower by one stop, lighter in weight, much lighter in price than Canon's 16-35mm f/2.8L, but comparably sharp, this lens is a favorite of landscape shooters. Distortion goes to Very Visible barrel at 17mm, though.  
**STANDOUT SPEC** "L" of a good



price for an L lens.  
**MOUNTS** Canon EF  
**WEIGHT** 1 pound  
**LENGTH** 3.8 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** No

## NIKON AF-S DX ZOOM-NIKKOR 10-24MM F/3.5-4.5G ED **APS-C**

★ ★ ★  
AMATEUR PRO

**\$800, street, with hood and case** Handling is the key here: focus and zoom rings are perfectly damped, and the AF is very fast and quiet. The lens' 1:4.1 magnification power is the best in this group. Distortion and vignetting are average.



**PRICEY**  
**STANDOUT SPEC** That 1:4.1 subject magnification.  
**MOUNTS** Nikon  
**WEIGHT** 1.1 pounds  
**LENGTH** 3.5-3.8 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** No

## NIKON AF-S DX ZOOM-NIKKOR 12-24MM F/4G **APS-C**

★ ★ ★ 1/2  
AMATEUR PRO

**\$1,030, street, with hood** A popular focal-length equivalent in full-frame (18-36mm), this lens offers excellent sharpness, but high distortion numbers at the widest setting: 1.31% barreling. Average close-focus (11.7 inches) and magnification (1:8) numbers.  
**STANDOUT SPEC** Convenient



**GETTING OLD**  
operation and a constant aperture.  
**MOUNTS** Nikon AF-S  
**WEIGHT** 1 pound  
**LENGTH** 3.5 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** No

## NIKON AF-S ZOOM-NIKKOR 14-24MM F/2.8G ED **FULL-FRAME**

★ ★ ★ ★  
AMATEUR PRO

**\$1,830, street, with hood and case** A pro's full-framer, it justifies its price with a fast constant aperture, ultra-wide angle of view, and incredible distortion control. Only its weight and lack of filter drawer dampen our enthusiasm.  
**STANDOUT SPEC** Virtually no distortion (0.02% pincushion)



**PRICEY**  
at the 24mm setting.  
**MOUNTS** Nikon AF-S  
**WEIGHT** 2.2 pounds  
**LENGTH** 5.2 inches  
**FILTER SIZE** None  
**STABILIZATION** No

## NIKON AF-S ZOOM-NIKKOR 17-35MM F/2.8D ED-IF **FULL-FRAME**

★ ★ ★ ★ 1/2  
AMATEUR PRO

**\$1,770, street, with hood and hard case** Top-grade construction and sweet handling in a pro-level lens, sharp throughout the aperture and focal length ranges. Distortion, though, at 17mm and 35mm is high by current standards.  
**STANDOUT SPEC** Sharpness



**GETTING OLD**  
with f/2.8 speed.  
**MOUNTS** Nikon AF-S  
**WEIGHT** 1.7 pounds  
**LENGTH** 4.2 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** No

## NIKON AF ZOOM-NIKKOR 18-35MM F/3.5-4.5D ED IF **FULL-FRAME**

★ ★ ★ 1/2  
AMATEUR PRO

**\$600, street, with hood** Variable aperture makes this lens a lower-cost alternative to Nikon's 17-35mm f/2.8, with near-comparable sharpness. Like many older wide-angle zooms, though, it produces distortion—Visible at all tested focal lengths.  
**STANDOUT SPEC** Almost no



**GETTING OLD**  
light falloff throughout the focal-length range.  
**MOUNTS** Nikon AF  
**WEIGHT** 0.9 pound  
**LENGTH** 3.3-3.6 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** No

## OLYMPUS ZUIKO DIGITAL ED 7-14MM F/4 **FOUR THIRDS**

★ ★ ★ ★  
AMATEUR PRO

**\$1,500, street, with hood and case** A true ultrawide utility lens for Four Thirds shooters, this zoom delivers dust and moisture proof construction and light falloff that is among the best in this category.  
**STANDOUT SPEC** No detectable vignetting at 10 and



**PRICEY**  
14mm focal lengths.  
**MOUNTS** Four Thirds  
**WEIGHT** 1.8 pounds  
**LENGTH** 4.2 inches  
**FILTER SIZE** None  
**STABILIZATION** In the camera

## PENTAX DA\*ED 12-24MM F/4 PENTAX DA\*ED **APS-C**

★ ★ ★ ★  
AMATEUR PRO

**\$730, street, with hood** Another 12-24mm, this is top dog in a hot category. All-metal lensmount and constant aperture contribute to Best in Class designation. Minor bummer: no weathersealing.  
**STANDOUT SPEC** Imperceptible distortion at 18mm and



**BEST IN CLASS**  
24mm—and no vignetting at these focal lengths.  
**MOUNTS** Pentax KAF2  
**WEIGHT** 1 pound  
**LENGTH** 3.5-3.6 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** In the camera

## SIGMA 10-20MM F/3.5 EX DC HSM **APS-C**

★ ★ ★ ★  
AMATEUR PRO

**\$650, street, with hood and case** Sigma's fastest ultrawide zoom also offers an HSM motor for extremely quiet AF. Distortion control at longer focal lengths, and vignetting at the widest, were spectacular.  
**STANDOUT SPEC** Almost no distortion at 14mm and 20mm.



**NEW MODEL**  
**MOUNTS** Canon, Nikon, Pentax, Sigma, Sony.  
**WEIGHT** 1.2 pounds  
**LENGTH** 3.5-3.6 inches  
**FILTER SIZE** 82mm  
**STABILIZATION** No

## SIGMA 10-20MM F/4-5.6 EX DC HSM **APS-C**

★ ★ ★ ★  
AMATEUR PRO

**\$480, street, with hood and case** A bargain hunter's dream, with pro-grade build, superior sharpness, and fast, quiet HSM autofocus. One flaw: Very Visible barrel distortion (1.26%) at 10mm.  
**STANDOUT SPEC** A price well below comparable camera makers' lenses.



**GETTING OLD**  
**MOUNTS** Canon, Four Thirds, Nikon, Pentax, Sigma, Sony  
**WEIGHT** 1.1 pounds  
**LENGTH** 3.2 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** No

## SIGMA 12-24MM F/4.5-5.6 EX DG HSM **FULL-FRAME**

★ ★ ★ ★  
AMATEUR PRO

**\$860, street, with hood and case** The EX for Sigma indicates pro quality, and this lens is indeed sturdy. At 1.4 pounds, though, for a variable aperture, it's got a weight problem.  
**STANDOUT SPEC** Only slight barrel distortion (0.22%) at 12mm.  
**MOUNTS** Canon, Nikon, Pentax,



**GETTING OLD**  
Sigma, Sony  
**WEIGHT** 1.4 pounds  
**LENGTH** 4 inches  
**FILTER SIZE** Rear gelatin type  
**STABILIZATION** No

## SONY DT 11-18MM F/4.5-5.6 **APS-C**

★ ★ ★ ★  
AMATEUR PRO

**\$700, street, with hood** Among the best distortion control for APS-C ultrawide zooms, and useful close-focusing distance, make this lens a good choice for architectural photography. Lightweight, but AF is loud.  
**STANDOUT SPEC** Slight distortion—0.27% at 14mm, and



0.13% at 18mm.  
**MOUNTS** Sony/Minolta  
**WEIGHT** 0.8 pound  
**LENGTH** 3.2-3 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** In the camera

## SONY ZEISS VARIO-SONNAR T\* 16-35MM F/2.8 ZA SSM **FULL-FRAME**

★ ★ ★ ★  
AMATEUR PRO

**\$1,900, street, with hood and case** This lens will last a lifetime. Unusual in an ultrawide: a midbarrel focus-lock button that prevents AF hunting. The same button can also trigger an image preview in the LCD. Surprising magnifying power: 1:3.6 at 35mm.



**PRICEY**  
**STANDOUT SPEC** Tanklike construction.  
**MOUNTS** Konica Minolta, Sony  
**WEIGHT** 1.9 pounds  
**LENGTH** 4.5 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** In the camera

## TAMRON SP 10-24MM F/3.5-4.5 DI II LD **APS-C**

★ ★ ★ ★ 1/2  
AMATEUR PRO

**\$480, street, with hood** Among the hottest new ultrawide-angle zooms, this Tamron produces only Slight barrel distortion, great close-up performance, and almost no vignetting.  
**STANDOUT SPEC** A very tight 9.4-inch close-focus distance, plus no falloff at 18 and 24mm.



**STEAL**  
**MOUNTS** Canon, Nikon, Pentax, Sony  
**WEIGHT** 1 pound  
**LENGTH** 3.3-3.7 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** No

## TOKINA AT-X 11-16MM F/2.8 PRO DX **APS-C**

★ ★ ★ ★  
AMATEUR PRO

**\$600, street, with hood** Fast glass with constant aperture are the catch phrases used to describe this favorite. Its most direct competitor has a variable aperture and weak distortion control for about the same price. Pounce!  
**STANDOUT SPEC** Distortion at 16mm, only .06%—rated



**STEAL**  
Imperceptible.  
**MOUNTS** Canon, Nikon  
**WEIGHT** 1.3 pounds  
**LENGTH** 3.6 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** No

## TOKINA AT-X 12-24MM F/4 PRO DX **APS-C**

★ ★ ★ ★  
AMATEUR PRO

**\$400, street, with hood** The least expensive of the 12-24mm category, with sharpness often better than most. The newer PRO DX II (\$500, not tested) has a built-in motor allowing its use all Nikon bodies; this version does not.  
**STANDOUT SPEC** Optical



**STEAL**  
quality for the price.  
**MOUNTS** Canon, Nikon  
**WEIGHT** 1.3 pounds  
**LENGTH** 3.6 inches  
**FILTER SIZE** 77mm  
**STABILIZATION** No



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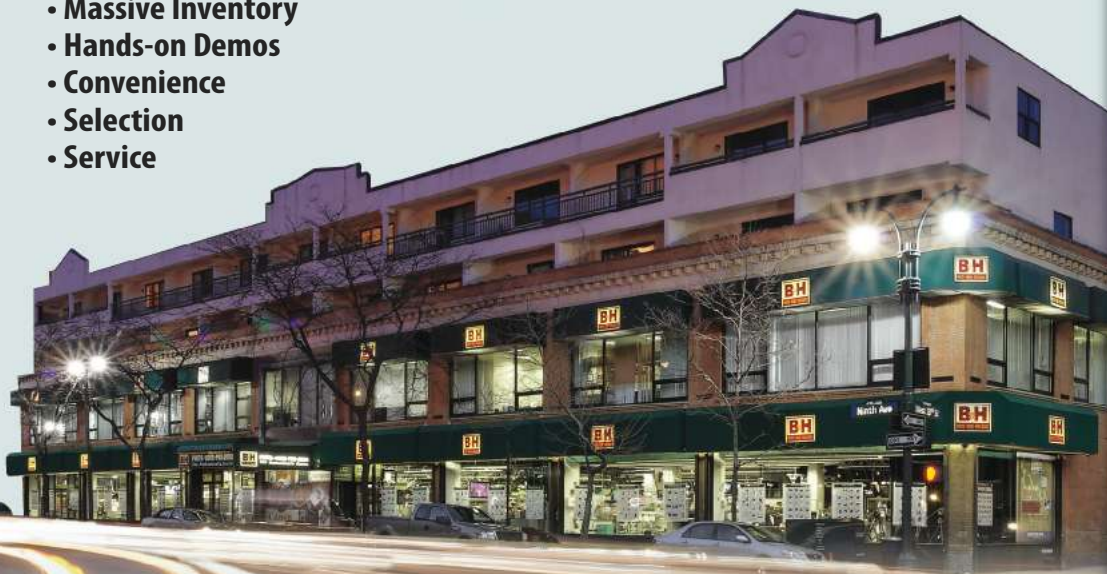


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Page 2

Quick Dial  
61



**Canon Powershot A1100 IS**

- Optical Image Stabilizer System
- 12.1 MegaPixels • 2.5" LCD Monitor
- 4x Optical Zoom • 4x Digital Zoom
- 6.2-24.8mm f/2.7-5.6 (35mm equiv. 35-140mm) • SD/SDHC Card Slot
- Dimensions 3.76 x 2.46 x 1.22"
- Weight 5.47 oz

Blue, Green, Grey, Pink #CAPSA1100\*



**Canon Powershot S90 IS**

- Optical Image Stabilization • RAW File Capture • Compact and Pocket-friendly
- 10 MegaPixels • 3.0" LCD Monitor
- 3.8x Optical Zoom • 4x Digital Zoom
- 6-22.5mm f/2.0-4.9 (35mm equiv. 28-105mm) • SD/SDHC Card Slot • Face Detection
- Dim. 3.94 x 2.30 x 1.22"
- Weight 6.17 oz

#CAPSS90



**Canon Powershot SD1200 IS**

- Optical Image Stabilizer System
- 10.3 MegaPixels • 2.5" LCD Monitor
- 3x Optical Zoom • 4x Digital Zoom
- 6.2-18.6mm f/2.8-4.9 (35mm equiv. 35-105mm) • SD/SDHC Card Slot
- Dim. 3.48 x 2.16 x 0.86" • Weight 4.23 oz

Blue, Dark Grey, Light Grey, Green, Orange, Pink #CAPSSD1200\*



**Canon Powershot G11**

- Optical Image Stabilizer System
- 10 MegaPixels • 2.8" Vari-Angle LCD
- RAW File Mode • E-TTL Flash Hot Shoe
- 5x Optical Zoom • 5x Digital Zoom
- 6.1-30.5mm f/2.8-4.5 (35 equiv. 28-140mm) • SD/SDHC (High Capacity) Card Slot
- Dimensions 4.41 x 3 x 1.9"
- Weight 12.5 oz

#CAPSG11\*



**FUJIFILM FinePix F200EXR**

- Super CCD EXR Sensor
- 12 MegaPixels • 3" LCD Monitor
- 5x Optical Zoom • Dual Image Stabilization
- 6.4-32mm f/3.3-5.1 (35 Equiv. 28-140mm) • xD & SD/SDHC Card Slot • HD Video Out
- 48MB Built-in Memory • ISO 100-12800
- Dimensions 3.88 x 2.3 x 0.9"
- Weight 6.2 oz

#FUFPF200EXR



**Nikon Coolpix S70**

- 5-Way VR Image Stabilization
- 12.1 MegaPixels • HD movies with sound
- 3.5" HR Touch Panel OLED Screen
- 5x Optical Zoom • Auto Scene Selector
- 5-25mm f/3.9-5.8 (35 Equiv. 28-140mm) • SD/SDHC Card Slot • 20MB Built-in Memory
- Dim. 3.8 x 0.8 x 2.4" • Weight 4.9 oz

Black, Beige, Brown, Red #NICPS70\*



**Nikon Coolpix P90**

- 4-Way VR Image Stabilization
- 12.1 MegaPixels • 3" Vari-Angle LCD
- 24x Optical Zoom
- 4.6-110.4mm f/2.8-5 (35mm Equiv. 24-624mm) • SD/SDHC Card Slot • 47MB Built-in Memory
- Dimensions 3.3 x 4.53 x 3.9"
- Weight 16.2 oz

#NICPP90\*



**OLYMPUS Stylus Tough-8000**

- Shockproof, Waterproof, Freeze proof
- Image Stabilization
- 12 MegaPixels • 2.7" LCD Monitor
- 3.6x Optical Zoom • 5x Digital Zoom
- 5-18.2mm f/3.5-5.1 (35 Equiv. 28-102mm) • xD card slot • 45MB Internal Memory
- Dim. 3.7 x 2.4 x 0.85" • Weight 6.4 oz

Black, Silver #OLST8000\*



**OLYMPUS Stylus 7010**

- Dual Image Stabilization • Magic Filters
- 12 MegaPixels • In-Camera Panorama Mode
- 2.7" LCD with Backlight Boost
- 7x Optical Zoom • 5x Digital Zoom
- 5-35mm f/3.5-5.9 (35mm Equiv. 28-196mm) • xD card slot • 36MB Internal Memory
- Dimensions 3.8 x 2.2 x 1" • Weight 4.4 oz

Grey, Pink, Silver #OLS7010\*



**Panasonic Lumix DMC-ZR1**

- POWER Optical Image Stabilization
- 12.1 MegaPixels • 2.7" LCD Monitor
- 8x Optical Zoom • 4x Digital Zoom
- 4.5-36mm f/3.3-5.9 (35 equiv. 25-200mm) • Leica DC Vario-Elmarit lens
- SD/SDHC Card Slot • 40MB built-in Memory
- Dim. 2.14 x 3.85 x 1.02" • Weight 4.8 oz

Blue, Red, Silver #PADMCZR1\*



**PENTAX Optio W80**

- Waterproof • Shockproof • Coldproof
- HD Movie HD Video Recording
- 12.1 MegaPixels • 2.5" LCD Monitor
- 5x Optical Zoom • 6.25x Digital Zoom
- 5-25mm f/3.5-5.5 (35 Equiv. 28-140mm) Lens
- Shake Reduction Technology • SD/SDHC Card Slot • Dim. 3.9 x 2.2 x 1.0" • Wt. 4.4 oz

Blue, Grey, Red #PEOW80\*



**SONY CyberShot DSC-W180**

- 10.1 MegaPixels • 2.7" LCD Monitor
- 3x Optical Zoom • 2x Digital Zoom
- 6.2-18.6mm f/2.5-5.1 (35 Equiv. 35-105mm) Lens • MS Duo/Pro Duo Card Slot
- Smile Shutter Technology • SteadyShot Image Stabilization • In-camera Retouching
- Dimensions 3.62 x 2.25 x 0.75" • Weight 3.8 oz

#SODSCW180



**SONY CyberShot DSC-TX1**

- Anti-Shake/Anti-Blur • HD Movies
- 10.1 MegaPixels • Sweep Panorama • 3" Touch LCD • 4x Optical Zoom • 4x Digital Zoom
- 6.18-24.7mm f/3.5-4.6 (35 Equiv. 35-140mm) Carl Zeiss Vario-Tessar Lens • High Speed Shooting 10fps • MS Pro Duo/Pro HG Card Slot
- Dim. 3.69 x 2.29 x 0.64" • Weight 3.88 oz

Blue, Grey, Pink, Silver #SODSCTX1\*



**SONY CyberShot DSC-HX1**

- 9.1 MegaPixels • 3" LCD Monitor
- 2x Optical Zoom • 26x Digital Zoom
- 5-100mm f/2.5-5.6 (35 Equiv. 28-260mm) G-Lens • MS Duo/Pro Duo Card Slot
- HD Video Recording • Sweep Panorama Mode • Handheld Twilight Mode
- Dimensions 4.63 x 3.38 x 3.63" • Weight 18 oz

#SODSCHX1

**Memory Cards**

**CF Compact Flash**

	Delkin			Kingston			Lexar		Sandisk		
	Std	Pro		Std	Elite Pro 133x	Ultimate 266x	Platinum II 80x	233x	300x	Ultra II	Extreme III
1GB	17.95	19.95	—	—	—	—	—	—	—	12.95	—
2GB	14.50	28.95	—	—	—	—	—	—	—	—	—
4GB	19.95	46.95	18.95	—	49.95	29.95	34.95	58.95	24.95	33.95	59.95
8GB	29.50	77.95	24.50	22.95	73.50	46.95	54.95	109.95	36.95	54.39	108.00
16GB	47.95	149.00	—	38.95	106.50	67.95	—	189.95	92.50	99.95	203.95
32GB	94.95	—	—	74.50	—	—	—	—	—	179.00	—

**MSDUO Memory Stick Pro Duo**

	Lexar		Sandisk		Sony	
	Platinum II	Standard	Ultra II	Ultra II Mobile	Gaming	Mark II
1GB	—	—	—	—	16.95	—
2GB	17.95	18.50	24.50	—	—	14.95
4GB	24.95	29.95	29.95	129.95	29.95	22.95
8GB	42.95	42.95	49.95	—	43.95	34.99
16GB	—	76.50	98.95	—	—	74.95

**SD Secure Digital**

	Delkin			Kingston		Sandisk			Panasonic	
	Std	Pro	Micro	Std	Micro	Std	Micro	Micro Ultra	20MBs Class 4	22MBs Class 6
1GB	9.50	—	8.50	—	—	—	—	14.95	19.95	—
2GB	9.95	14.50	9.50	8.50	8.95	7.95	12.50	—	7.95	13.50

**XD xD Memory**

	Type M	1GB	2GB
Fuji	—	17.95	—
Olympus M+	—	14.99	19.95

**SD HC Secure Digital High Capacity**

	Delkin			Kingston				Lexar				Panasonic		Sandisk			
	Class 2	Pro Class 4	Class 6	Micro	Class 2	Class 4	Class 6	Class 4	Class 2	60x Class 4	133x Class 6	20MBs Class 4	22MBs Class 10	Standard Class 2	Ultra Class 4	Extreme III - Class 6	Micro
4GB	17.50	—	16.95	14.95	12.95	12.95	14.50	12.50	—	24.95	34.95	12.95	22.50	9.95	19.95	34.95	44.00
8GB	24.95	—	22.50	23.95	19.95	19.95	23.50	19.95	—	38.95	61.95	23.95	44.50	14.95	34.95	54.95	74.00
16GB	44.95	—	44.95	65.95	—	33.95	—	—	62.50	59.95	—	47.95	84.95	—	59.95	122.00	74.95
32GB	—	117.50	148.95	—	—	79.50	—	—	—	—	—	298.95	—	124.95	114.50	—	—



### OLYMPUS Evolt EP1 "D-SLR" Digital SLR Camera



- Capture in JPEG or RAW
- HD Stills and Video with Live View
- 12.3 MP Live MOS Imaging Sensor
- 3" HyperCrystal LCD
- In-Camera Image Stabilization
- 4/3 Full Frame Zuiko Specific Lenses
- Advanced Shooting and Post-Capture Editing Modes
- SD/SDHC Card Slot
- ISO 100-6400
- Advanced Dust Reduction
- Advanced Shooting & Editing Tools
- Aluminum & Stainless-Steel Construction

12 MegaPixels

EP1 Body Only.....#OLEP1\*

### OLYMPUS Evolt E30 "D-SLR" Digital SLR Camera



- Capture in JPEG or RAW
- In-Body Image Stabilization
- 12.3 MegaPixels • 2.7" Live View LCD
- 4/3 Full Frame Zuiko Specific Lenses
- CF & XD Dual Card Slots
- ISO 200-3200 • USB 2.0
- Shadow Adjustment
- 5 fps Burst • Face Detection
- Supersonic Wave Filter Anti-dust System
- Scene Select Modes
- Art Filters & Multiple Exposure

12 MegaPixels

E30 Body Only.....#OLEE30  
Kit with 14-42mm.....#OLEE301442

### Panasonic Lumix DMC-GH1 "D-SLR" Digital SLR Camera



- Capture in JPEG or RAW
- HD Video Recording
- 12.1 MegaPixels
- Electronic viewfinder
- 3" Free-angle LCD Monitor
- Mega O.I.S. Image Stabilization
- Uses 4/3 Full Frame Leica-Panasonic-Olympus Lenses (1.5x factor)
- iA (Intelligent Auto) Mode
- High Sensitivity (ISO 3200)
- SD/SDHC Card Slot
- Self Cleaning Sensor

12 MegaPixels

Kit with 14-140mm.....#PADMCGH1\*

### PENTAX K7 "D-SLR" Digital SLR Camera



- HD Video Recording
- 14.6 Megapixels
- 3" High Resolution LCD
- 100% Viewfinder Coverage
- Uses Pentax AF Lenses (1.5x factor)
- SD/SDHC Card Slot
- Advanced Shake Reduction System
- Dust Reduction System
- 3.5mm Stereo Input
- 11-point AF System • ISO 100-6400
- Electronic Level Indicator
- Lightweight and highly durable, weather resistant, dust-proof

14 MegaPixels

K7 Body Only.....#PEK7

### SONY Alpha A500 "D-SLR" Digital SLR Camera



- RAW & JPEG File Formats
- 12.3 MegaPixels
- 3" TFT Photo Clear LCD Display
- Quick Auto Focus Live View
- Uses Sony Alpha (compatible with Minolta A-type bay mount) Lenses (1.5x factor)
- SteadyShot INSIDE Image Stabilization
- MS PRO Duo and SDHC Dual Card Slots
- 6 Scene Selection & 6 Style Modes
- Reduced Noise at ISO Up To 12,800
- 1000 Shots With InfoLITHIUM Battery

12 MegaPixels

A500 Body Only.....#SODSLRA500  
Kit with 18-55mm.....#SODSLRA500L

### SONY Alpha A850 "D-SLR" Digital SLR Camera



- Dual BIONZ processing engines
- SteadShot Inside Image Stabilization
- 24.6 MegaPixels 35mm full-frame sensor
- 3" Xtra Fine LCD • SLR viewfinder
- Uses Sony Alpha (compatible with Minolta A-type bay mount) Lenses
- CF and Memory Stick Duo Card Slots
- Creative Styles • 3 fps Burst
- HDMI output
- 3:2 and 16:9 Shooting
- High Sensitivity (ISO 6400)
- Anti-Dust Technology

24 MegaPixels

A850 Body Only.....#SODSLRA850

## SLR Lenses & Flashes

### OLYMPUS 50mm f/2 Macro ED Zuiko Digital Lens



- Exclusively designed for use with Digital SLRs
- ED glass element
- Ideal for not only macro photography but also as a portrait lens
- Minimum focus 9.45"
- 14-42/3.5-5.6 ED (77ø)
- 52mm filter diameter
- Weight 10.6 oz

### PENTAX 50-200mm f/4-5.6 SMCP-DA ED AF Zoom Lens



- Exclusively designed for use with Digital SLRs
- 35mm equiv. 76.5-306mm
- Ideal for portraiture, sports and scenery
- Quick-Shift Focus System
- Minimum focus 3.6'
- 52mm filter diameter
- Weight 9 oz

### SONY HVL-F58AM Shoe Mount Digital Flash



- Guide No. 190'
- TTL Dedication
- Bounce & Swivel Head
- Zoom Head (24-105mm)
- Vari-Power
- Auto WB Adjustment
- High-Speed Sync
- Wireless Ratio Control
- Weight 15.6 oz

### SONY 16-80mm f/3.5-4.5 Carl Zeiss Vario-Sonnar T\* DT Lens



- Exclusively designed for use with Digital SLRs
- 35mm equiv. 24-120mm
- Ideal for snapshots, portraits, interiors or outdoor scenery
- Minimum focus 13.8"
- 62mm filter diameter
- Weight 15.5 oz

## OLYMPUS

### Flash System

FL-20 Flash.....	\$149.95
FL-36R Flash.....	\$229.95
FL-50R Flash.....	\$499.95
RF-11 Ring Flash.....	\$249.95
SFR-11 Ring Flash Set.....	\$559.95
TF-22 Twin Flash.....	\$449.95
STF-22 Twin Flash Set.....	\$739.95
<b>Zuiko 4/3 System Digital Lenses for E-1 &amp; Evolt Cameras</b>	
8/3.5 Fish-eye ED.....	\$799.99
35/3.5 Macro ED (52ø).....	\$229.95
50/2.0 Macro ED (77ø).....	\$499.95
150/2.0 ED (82ø).....	\$2,499.95
300/2.8 ED.....	\$6,999.95
7-14/4.0 ED (72ø).....	\$1,799.95
11-22/2.8-3.5 ED (72ø).....	\$799.95
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35-100/2.0 ED (77ø).....	\$2,499.99
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50-200/2.8-3.2 ED SWD (67ø).....	\$1,199.95
90-250/2.8 ED (105ø).....	\$5,999.95
EC-14 1.4x Teleconverter.....	\$439.95
EC-20 2x Teleconverter.....	\$479.95
MF-1 OM Lens Adapter.....	\$99.95

## PENTAX

### AF Flash System

AF-360FGZ.....	
AF-540FGZ.....	
<b>SMCP-DA Digital AF Lenses</b>	
14/2.8 ED IF (77ø).....	
15/4.0 ED AL (49ø).....	
21/3.2 AL Limited "Pancake" (49ø).....	
35/2.8 Macro Limited (49ø).....	
40/2.8 Limited "Pancake" (49ø).....	
55/1.4 Limited (58ø).....	
70/2.4 Limited "Pancake" (49ø).....	
200/2.8 ED IF.....	
300/4.0 ED IF SDM (77ø).....	
10-17/3.5-4.5 ED IF (77ø).....	
12-24/4 ED AL IF (77ø).....	
16-45/4 ED AL (67ø).....	
16-50/2.8 ED AL IF SDM (77ø).....	
17-70/4.0 AL IF SDM (67ø).....	
18-55/3.5-5.6 AL II (52ø).....	
18-250/3.5-6.3 ED IF AL (62ø).....	
50-135/2.8 ED IF SDM (67ø).....	
50-200/4-5.6 ED (52ø).....	
55-300/4-5.8 ED (58ø).....	
60-250/4.0 ED IF SDM (67ø).....	
<b>AF Lenses for 35mm &amp; Digital SLRs</b>	
31/1.8 Limited (58ø).....	
43/1.9 Limited "Pancake" (49ø).....	
50/1.4 (49ø).....	
50/2.8 Macro (52ø) with Case.....	
77/1.8 Limited (49ø).....	
100/2.8 D FA Macro (49ø).....	
28-80/3.5-5.6 J FA AL (58ø).....	

## SONY

### Compatible with Maxxum D-SLRs

<b>Flash System</b>	
HVL-F42AM.....	\$299.99
HVL-F58AM.....	\$499.99
<b>Digital Lenses</b>	
16/2.8 Fish-eye.....	\$849.99
20/2.8 (72ø).....	\$599.99
28/2.8 (49ø).....	\$269.99
35/1.4 (55ø).....	\$1,369.99
50/1.4 (55ø).....	\$369.99
50/2.8 Macro (55ø).....	\$479.99
85/1.4 Carl Zeiss (72ø).....	\$1,369.99
100/2.8 Macro (55ø).....	\$679.99
135/1.8 Carl Zeiss (77ø).....	\$1,479.99
135/2.8 STF (72ø).....	\$1,249.99
300/2.8 G APO.....	\$6,299.99
500/8 Reflex.....	\$749.99
11-18/4.5-5.6 DT (77ø).....	\$699.99
16-35/2.8 ZA SSM Carl Zeiss (77ø).....	\$1,899.99
16-80/3.5-4.5 DT Carl Zeiss (62ø).....	\$749.99
16-105/3.5-5.6 DT (62ø).....	\$599.99
18-200/3.5-6.3 DT (62ø).....	\$529.99
18-250/3.5-6.3 DT (62ø).....	\$579.99
24-70/2.8 Carl Zeiss (77ø).....	\$1,599.99
70-200/2.8 G APO.....	\$1,799.99
70-300/4.5-5.6 G (62ø).....	\$849.99
75-300/4.5-5.6 (55ø).....	\$249.99
1.4x Teleconverter.....	\$479.99
2x Teleconverter.....	\$479.99

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Page 4

### Canon Digital Rebel XS

"D-SLR" Digital SLR Camera

Quick Dial  
64



- 10 MegaPixels CMOS Sensor
- 2.5" LCD Monitor
- Live View Function
- SLR viewfinder
- Uses Canon EF Lenses (1.6x factor)
- SD/SDHC (High Capacity) Card Slot
- Auto Lighting Optimizer
- 3.0 fps Continuous Shooting
- ISO 100-1600 • USB 2.0
- Picture Style Settings
- Integrated Cleaning System

Digital Rebel XS Kits  
 Black Kit with 18-55mm IS #CAEDRXSKB

### Canon Digital Rebel T1i

"D-SLR" Digital SLR Camera



- **HD 1080p, 720p, and VGA Video Capture**
- 15.1 MegaPixels CMOS Sensor
- 3" Clear View LCD with Live View
- Uses Canon EF Lenses (1.6x factor)
- SD/SDHC Card Slot
- Auto or Manual Focus
- 3.4 fps Continuous Shooting
- ISO Expandable to 12,800
- RAW and/or JPEG

Body Only.....#CAEDRT1I  
 Kit with 18-55mm IS.....#CAEDRT1IK

### Canon EOS-50D

"D-SLR" Digital SLR Camera



- **RAW and sRAW Image Capture**
- 15.1 MegaPixels
- 3.0" Clear View VGA LCD
- Live View Function • SLR viewfinder
- Uses Canon EF Lenses (1.6x factor)
- CF Card Slot • USB 2.0
- "Picture Style" Settings
- Versatile Exposure Metering System
- HDMI output that enables the display of your photographs on any HDTV with HDMI ports

Body Only.....#CAE50D  
 Kit with 28-135mm IS USM Lens.....#CAE50D28135

### Canon EOS-5D Mark II

"D-SLR" Digital SLR Camera



- **Record HD Video**
- **1080p Movie Mode**
- 21.1 Megapixel Full-Frame Sensor
- 3.0" High Resolution LCD Display
- SLR viewfinder • Live View Mode
- Uses Canon EF Lenses
- CF, MD Card Slot • USB 2.0
- Dust & Weather-Resistant
- Self Cleaning Sensor
- 3.9 fps Burst Mode
- 9-point AF Sensor Array
- ISO Range 50-25600

Body Only.....#CAE5D2  
 Kit with 24-105mm IS....#CAE5D224105

### Canon EOS-7D

"D-SLR" Digital SLR Camera



- **Record HD Video**
- 18 Megapixel Sensor
- 3.0" LCD • 100% Viewfinder
- Uses Canon EF Lenses
- CF, MD Card Slot
- Dust & Weather-Resistant
- Selectable Video Exposure and Frame Rates
- 8 fps Burst Mode
- New 19-Point, All Cross-Type AF System
- ISO 100-6400 (expandable to 12800)

Body Only.....#CAE7D  
 Kit with 28-135mm IS....#CAE7D28135

### Canon EOS-1D Mark III

"D-SLR" Digital SLR Camera



- **Weather Resistant Body**
- **Self-Cleaning Sensor**
- 10.1 MegaPixels
- SLR viewfinder
- 3" LCD Monitor with Live View
- Uses Canon EF Lenses
- SD/SDHC & CF card slots
- 10 fps up to 110 shots in JPEG mode
- Picture Style Settings
- Fast AF system • USB 2.0
- Powerful Bundled Software
- ISO 100-3200 (expandable to 50 and 6400)

Body Only.....#CAE1D3

Quick Dial  
64

## SLR Lenses & Flashes

### Canon

50mm f/1.2 "L" Lens



- Fast, Quiet AF
- Super Spectra Coatings
- Passes Distance
- Information to E-TTL II
- Angle of View 46°
- 1.2-16 f/Stop Range
- Focus 1.5" to Infinity
- 72mm filter diameter
- Weight 19.2 oz

### Canon

10-22/3.5-4.5 EF-S USM Digital Lens



- **Exclusively designed for Digital SLRs**
- 35mm equivalent 16-35mm
- 3 aspherical lens elements
- 3.5-27 f/Stop Range
- Focus 9.5" to Infinity
- 77mm filter diameter
- Weight 13.6 oz

### Canon

17-55/2.8 EF-S USM Digital Lens



- **Exclusively designed for Digital SLRs**
- (IS Image Stabilizing) technology
- 2.8-22 f/Stop Range
- Focus 13.8" to Infinity
- Angle of View 78.3°-27.5°
- 77mm filter diameter
- Weight 22.4 oz

### Canon

24-70/2.8 EF "L" USM Lens



- sealed and gasketed against dust & moisture
- Internal Focusing
- UD Element
- Two Aspherical Elements
- 2.8-22 f/Stop Range
- Focus 1.25" to Infinity
- 77mm filter diameter
- Weight 33.6 oz

### Canon

580 EX II Shoe Mount Flash



- Guide No. 190'
- Dust- and water-resistance
- Metal Hot Shoe
- Superior build quality, including a metal foot for higher rigidity
- E-TTL II, E-TTL, TTL & Manual
- Bounce & Swivel Head
- Zoom Head (24-105mm)
- Weight 13.2 oz

### Canon

MR-14EX Ringlight Flash



- Guide No. 46' • Incandescent focusing lamps • 2 circular flash tubes
- Recycling Time 7 Secs • 7 Custom Functions • Supports E-TTL wireless
- Weight: Control unit 10 oz; Flash ring: 4.2 oz

## Canon

Canon EOS Flash System (USA)

220EX .....	\$99.95	270EX .....	CALL
430EX II .....	CALL	580EX II .....	CALL
MR-14EX Ringlight .....	\$495.00	MT-24EX Twin Flash.....	\$729.95
<b>EF-S Lenses For Digital Only</b>			
	IMP	USA	USA
Compatible with the 20D, 30D, 40D, 50D & Digital Rebel only			
60/2.8 USM Macro (52ø) .....	\$419.95	\$434.95	
10-22/3.5-4.5 USM (77ø) .....	\$759.00	\$789.00	
15-85/3.5-5.6 IS USM (72ø) .....	—	\$799.95	
17-55/2.8 IS USM (67ø) .....	\$1,030.00	\$1,060.00	
17-85/4.5-6.6 IS USM (67ø) .....	CALL	CALL	
18-55/3.5-5.6 IS (58ø) .....	\$159.95	\$170.00	
18-135/3.5-5.6 IS (67ø) .....	—	\$499.95	
18-200/3.5-5.6 IS (72ø) .....	\$574.95	\$595.00	
55-250/4.0-5.6 IS USM (58ø) .....	CALL	\$255.00	
<b>EF Lenses</b>			
	IMP	USA	USA
15/2.8 .....	\$674.95	\$699.00	
20/2.8 USM (72ø) .....	\$474.95	\$499.95	
24/2.8 (58ø) .....	\$319.95	\$324.95	
28/2.8 (52ø) .....	\$259.95	\$269.95	
28/1.8 USM (58ø) .....	\$474.95	\$499.95	
35/2 (52ø) .....	\$299.95	\$319.95	
50/1.8 (52ø) .....	\$99.95	\$109.95	
50/2.5 Macro (52ø) .....	\$279.95	\$299.95	
50/1.4 USM (58ø) .....	\$384.95	\$399.00	
MP-E 65/2.8 1x-5x Macro (58ø) .....	\$959.95	\$999.95	
85/1.8 USM (58ø) .....	\$419.95	\$439.95	
100/2 USM (58ø) .....	\$434.95	\$449.95	
100/2.8 USM Macro (58ø) .....	\$599.95	\$639.95	
28-105/3.5-4.5 II USM (58ø) .....	\$194.95	\$199.95	
28-135/3.5-5.6 IS USM (72ø) .....	\$399.95	\$409.95	
70-300/4.5-5.6 IS USM (58ø) .....	\$529.95	\$549.95	
70-300/4.5-5.6 DO IS USM (58ø) .....	\$1,249.95	\$1,339.00	
75-300/4.0-5.6 III (58ø) .....	\$154.95	\$159.95	
75-300/4.0-5.6 III USM (58ø) .....	\$189.95	\$200.00	
100-300/4.5-5.6 USM (58ø) .....	\$284.95	\$295.00	
<b>TS-E MF Lenses</b>			
	IMP	USA	USA
24/3.5 "L" II .....	CALL	\$2,199.00	
45/2.8 .....	\$1,249.95	\$1,299.95	
90/2.8 .....	\$1,249.95	\$1,299.95	
<b>EF "L" Lenses</b>			
	IMP	USA	USA
14/2.8 USM II .....	\$2,149.95	\$2,199.00	
24/1.4 II (77ø) .....	\$1,679.95	\$1,699.00	
35/1.4 USM (72ø) .....	\$1,369.95	\$1,399.95	
50/1.2 USM (72ø) .....	\$1,549.95	\$1,599.00	
85/1.2 USM II (72ø) .....	\$1,969.95	\$1,999.95	
100/2.8 IS USM Macro (67ø) .....	—	\$1,049.00	
135/2.0 USM II (72ø) .....	\$1,049.95	\$1,069.95	
180/3.5 USM Macro (72ø) .....	\$1,429.95	\$1,449.95	
200/2.8 USM (72ø) .....	\$819.95	\$839.95	
200/2.0 IS USM (52ø) .....	\$5,199.00	\$5,300.00	
300/4.0 IS USM (77ø) .....	\$1,269.95	\$1,299.95	
300/2.8 IS USM (52ø rear) .....	\$4,300.00	\$4,599.00	
400/5.6 USM (77ø) .....	\$1,299.95	\$1,329.95	
400/2.8 IS (52ø rear) .....	\$7,200.00	\$7,449.00	
500/4.0 IS USM (52ø rear) .....	\$6,200.00	\$6,400.00	
600/4.0 IS (52ø rear) .....	\$8,100.00	\$8,300.00	
16-35/2.8 USM II (82ø) .....	\$1,519.00	\$1,549.00	
17-40/4.0 USM (77ø) .....	\$764.95	\$764.95	
24-70/2.8 USM (77ø) .....	\$1,339.95	\$1,379.95	
24-105/4 IS USM (77ø) .....	\$1,149.00	\$1,199.00	
28-300/3.5-5.6 IS USM (77ø) .....	\$2,439.95	\$2,500.00	
70-200/4.0 IS USM (67ø) .....	\$639.95	\$659.95	
70-200/4.0 IS USM (77ø) .....	\$1,209.95	\$1,234.95	
70-200/2.8 USM (77ø) .....	\$1,309.95	\$1,329.95	
70-200/2.8 IS USM (77ø) .....	CALL	CALL	
100-400/4.5-5.6 IS USM (77ø) .....	\$1,639.95	\$1,679.95	
1.4x II Teleconverter .....	\$309.95	\$324.95	
2x II Teleconverter .....	\$309.95	\$324.95	

USA = Imported & Warranted by Canon USA IMP = Imported & Warranted by B&H (not qualified for Canon USA Rebates & Warranties)



## Nikon D3000

"D-SLR" Digital SLR Camera Kit



- Compact Design
- 10.2 MegaPixels
- 3" LCD Monitor
- SD, SDHC (High Capacity) Card Slot
- Accepts Nikon AF Lenses (1.5x factor)
- Self Cleaning Sensor • ISO 100-1600
- Fast Shutter Response • USB 2.0
- In-camera Editing • 3 fps Burst Mode
- 8 11-point Autofocus System
- Auto or Manual Focus
- Nikon Inc. limited warranty included



10 MegaPixels

Kit with 18-55mm VR DX #NID30001855

## Nikon D300s

"D-SLR" Digital SLR Camera



- Dust and Weather Resistant
- Self-Cleaning Sensor
- HD Video Recording
- 12.3 Megapixel DX-format CMOS sensor • 6 fps Burst • USB 2.0
- 3" LCD Monitor • Live View
- Accepts Nikon AF Lenses (1.5x factor)
- CF and SD/SDHC Card Slots
- 51-point AFs with 3D focus tracking
- ISO Sensitivity from 200 to 3200
- Stereo Audio Input
- Nikon Inc. limited warranty included



12 MegaPixels

Body Only.....#NID3005  
Kit w/18-200mm VR II.....#NID300518200

## Nikon D5000

"D-SLR" Digital SLR Camera



- HD 720p Video Capture with Exposure Control
- 12.3 MegaPixels
- 2.7" Vari-angle LCD • Live View Mode
- Uses Nikon AF Lenses (1.5x factor)
- SD/SDHC Card Slot
- In-Camera Image Editing
- GPS Geotagging (optional)
- Personal Picture Control Settings
- 4 fps Burst Mode
- Nikon Inc. limited warranty included



12 MegaPixels

Body Only.....#NID5000  
Kit with 18-55mm VR.....#NID50001855

## Nikon D700

"D-SLR" Digital SLR Camera



- Self Cleaning Sensor
- FX-format CMOS (full frame)
- 12.1 MegaPixels • Live View
- 3" VGA LCD Monitor • USB 2.0
- SLR viewfinder • 5 fps Burst
- 51-point AF System
- Uses Nikon AF Lenses
- CompactFlash Card Slot
- Dust and Water Resistant
- Active D-Lighting Mode
- HDMI Video Out • ISO 6400
- Nikon Inc. limited warranty included



12 MegaPixels

Body Only.....#NID700  
Kit with 24-120mm VR.....#NID70024120

## Nikon D90

"D-SLR" Digital SLR Camera



- D-Movie mode record 720p HD movie clips
- 12.3 MegaPixels
- 3.0" LCD Monitor • SLR viewfinder
- Uses Nikon AF Lenses (1.5x factor)
- SD/SDHC (High Capacity) Card Slot
- In-Camera Image Editing
- Scene Recognition System
- Active D-Lighting • ISO 100-3200
- GPS geo-tagging • USB 2.0
- Self Cleaning Sensor • 4.5 fps Burst
- Nikon Inc. limited warranty included



12 MegaPixels

Body Only.....#NID90  
Kit with 18-105mm VR.....#NID9018105

## Nikon D3X

"D-SLR" Digital SLR Camera



- NEF (RAW) Files at 12- or 14-bit Color
- 24.5 Megapixel Resolution
- Nikon EXPPEED Image Processor
- 3" Super-density LCD Monitor
- Accepts Nikon AF Lenses
- FX-format (full frame) CMOS Sensor
- Live View Shooting Modes
- 5 fps Continuous at Full Resolution
- Scene Recognition System
- Virtual Horizon Indicator
- Dual CF Card Slots
- Nikon Inc. limited warranty included



24 MegaPixels

Body Only.....#NID3X

## SLR Lenses & Flashes

### Nikon 10-24mm f/3.5-4.5 DX AF-S Wide Zoom AF Lens



- Exclusively designed for use with Digital SLRs
- Silent Wave Motor
- ED (Extra-low Dispersion)
- Super Integrated Coating
- 35mm equiv. 15-36mm
- Minimum focus 0.8'
- 77mm filter diameter
- Weight 16.2 oz

### Nikon 24-70mm f/2.8 G AF-S ED-IF Wide Zoom AF Lens



- Optimized for edge-to-edge sharpness on both the Nikon FX (full-frame) & DX-format image sensors
- Rugged construction, dust and moisture resistance
- Minimum focus 1.2'
- 77mm filter diameter
- Weight 32 oz

### Nikon 18-200mm f/3.5-5.6 DX G VR AF-S II ED-IF Digital Lens



- Exclusively designed for use with Digital SLRs
- 35mm equiv. 27-300mm
- VR II Vibration Reduction
- SWM (Silent Wave Motor)
- 3.5-22 f/Stop Range
- Focus 1.6' to Infinity
- 72mm filter diameter
- Weight 19.8 oz

### Nikon 50mm f/1.4 G AF-S Portrait AF Lens



- Optimized for edge-to-edge sharpness on both the Nikon FX (full-frame) & DX-format image sensors
- Silent Wave Motor
- Super Integrated Coating
- Minimum focus 1.5'
- 58mm filter diameter
- Weight 9.9 oz

## Nikon

### Nikon AF Flashes

	IMP	USA
SB-400.....	CALL	CALL
SB-600.....	CALL	CALL
SB-900.....	CALL	CALL
R1 Wireless Twin Flash.....	CALL	CALL
R1C1 Wireless Twin Flash System.....	CALL	CALL
<b>DX ED-IF Lenses for Digital Only</b>		
105/2.8 Fish-Eye.....	\$684.95	\$699.95
35/1.8 G AF-S (52o).....	CALL	\$199.95
10-24/3.5-4.5 G AF-S (77o).....	CALL	\$799.95
12-24/4 G AF-S (77o).....	CALL	CALL
16-85/3.5-5.6 G AF-S VR (67o).....	\$609.95	\$629.95
17-55/2.8 G AF-S (77o).....	CALL	CALL
18-55/3.5-5.6 G AF-S II (52o).....	\$109.95	\$114.95
18-55/3.5-5.6 G AF-S VR (52o).....	\$164.95	\$184.95
18-70/3.5-4.5 G AF-S (67o).....	CALL	CALL
18-105/3.5-5.6 G AF-S VR (67o).....	CALL	\$359.95
18-200/3.5-5.6 G AF-S II VR (72o).....	CALL	CALL
55-200/4.5-6 G AF-S (67o).....	\$174.95	\$179.95
55-200/4.5-6 G AF-S VR (67o).....	\$219.95	\$229.95
<b>Nikon D-Type AF Lenses</b>		
14/2.8 D ED.....	CALL	\$1,719.95
16/2.8 D (39o) with Hood.....	\$879.95	\$919.95
20/2.8 D (62o).....	\$549.95	\$569.95
24/2.8 D (52o).....	\$349.95	\$359.95
24/3.5 D ED PC-E (77o).....	\$1,999.95	\$1,999.95
28/2.8 D (52o).....	\$249.95	\$269.95
35/2.0 D (52o).....	\$339.95	\$359.95
45/2.8 D ED PC-E Micro (77o).....	\$1,849.95	\$1,899.95
50/1.8 D (52o).....	\$124.95	\$134.95
50/1.4 D (52o).....	\$319.95	\$334.95
50/1.4 G AF-S (58o).....	CALL	CALL

### Nikon D-Type AF Lenses

60/2.8 D Micro (62o) (1:1).....	\$459.95	\$479.95
60/2.8 G AF-S ED Micro (62o).....	\$529.95	\$539.95
85/1.8 D (62o) with Hood.....	\$434.95	\$449.95
85/1.4 D IF (77o).....	\$1,164.95	\$1,229.95
85/2.8 PC-E Micro (77o).....	\$1,729.95	\$1,779.95
105/2.8 G AF-S ED-IF VR Micro (62o).....	CALL	\$899.95
105/2.0 DC D with Hood (72o).....	\$1,019.95	\$1,079.95
135/2.0 DC D (72o).....	\$1,269.95	\$1,299.95
180/2.8 D ED-IF (72o).....	\$879.95	\$914.95
200/4 D ED-IF Micro w/Case (62o).....	\$1,629.95	\$1,649.95
200/2 G AF-S ED-IF VR (52o).....	CALL	\$5,099.95
300/4.0 D AF-S ED-IF (77o).....	\$1,399.95	\$1,494.95
300/2.8 G AF-S VR (52o-R).....	CALL	CALL
400/2.8 G AF-S VR (52o).....	CALL	CALL
500/4.0 G AF-S VR ED (52o).....	CALL	CALL
600/4.0 G AF-S VR ED (52o).....	CALL	CALL
14-24/2.8 G AF-S ED-IF.....	\$1,789.95	\$1,829.95
17-35/2.8 (77o).....	CALL	\$1,769.95
18-35/3.5-4.5 ED-IF (77o).....	\$579.95	\$599.95
24-70/2.8 G AF-S ED-IF (77o).....	CALL	\$1,799.95
24-85/2.8-4.0 D (72o).....	\$679.95	\$699.95
24-120/3.5-5.6 G AF-S VR (72o).....	CALL	\$599.95
70-200/2.8 G AF-S ED-IF VR (77o).....	CALL	CALL
70-300/4.0-5.6 G (62o).....	\$139.95	\$154.95
70-300/4.5-5.6 G-AFS VR (67o).....	\$524.95	\$539.95
80-200/2.8 D with Collar (77o).....	\$1,049.95	\$1,099.95
80-400/4.5-5.6 D VR (77o).....	CALL	CALL
200-400/4 G AF-S ED-IF VR (52o).....	CALL	\$6,299.95
TC-14E II (1.4x) Teleconverter.....	CALL	CALL
TC-17E II (1.7x) Teleconverter.....	CALL	CALL
TC-20E II (2x) Teleconverter.....	CALL	CALL

USA = Imported & Warrantied by Nikon USA (AF lenses include 1 year warranty plus 4 years extended service coverage)  
IMP = Imported & Warrantied by B&H (not qualified for Nikon USA Rebates & Warranties)

### Nikon SB-600 Speedlight i-TTL Shoe Mount Flash



- Guide No. 98'
- Recycling Time 3.5 Seconds
- Bounce & Swivel Head
- Zoom Head (24-85mm)
- Multiple Flash Exposure Modes
- Safety lock on flash shoe
- Weight 10.6 oz

### Nikon SB-900 Speedlight i-TTL Shoe Mount Flash



- Guide No. 131'
- Recycling Time 4.5 Seconds
- Bounce & Swivel Head
- Zoom Head (17-200mm)
- Stroboscopic Effect
- AF-Assist Illuminator
- Safety lock on flash shoe
- Weight 14.6 oz



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Equipment leasing  
available

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## SLR Lenses & Flashes

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### LENSBABY™ MUSE™



**Fast and Loose  
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Ideal for tabletop and  
macro photography.  
Squeeze the Muse to focus,  
and bend your Sweet Spot  
around the photo.

for Canon, Leica, Nikon,  
Olympus, Pentax, Sony  
#LEML\* **\$149.95**

OPTIC SWAP SYSTEM

### SUNPAK

#### PZ-42 II AF TTL Shoe Mount Flash



- Guide No. 138'
- AF Assist Light
- Automatic Shutdown Mode
- Large Illuminated LCD panel
- Bounce and Swivel Head
- Weight 9.1 oz

for Canon or Nikon  
#SUNP42\* **\$149.95**

### Vivitar

#### 285HV Professional Auto Shoe Mount Flash



- Guide No. 120'
- Automatic exposure range to 70'
- 4 auto f/stop settings
- Removable sensor
- Bounce Head
- Zoom Head (28-105)
- Weight 14.9 oz

#V1285HV **\$89.95**

### Metz

#### 58 AF-1 TTL Shoe Mount Digital Flash



- Guide No. 138'
- High-speed flash sync
- Bounce Head
- Swivel Head
- Zoom Head (28-105)

for Canon  
#MES8AFC **\$399.95**  
for Nikon  
#MES8AFIN **\$399.95**

### Tokina

#### 11-16mm f/2.8 Pro DX AT-X Fisheye AF Lens



- Exclusively designed for Digital SLRs
- WR (Water Repellent) coating
- Minimum Focus 1'
- Magnification ratio 1:11.6
- Weight 1.2 lb

for Canon or Nikon  
#T0111628PDX\* **\$599.95**

### Tokina

DX Models - Designed for Digital SLR cameras only

	SKU #	Canon EOS	Nikon AF
DX 35/2.8 Pro Macro (52ø)	#T03528PDX*	\$399.95	\$399.95
DX 10-17/3.5-4.5 ATX Fisheye	#T0101735*	\$579.95	\$579.95
DX 11-16/2.8 Pro (77ø)	#T0111628PDX*	\$599.95	\$599.95
DX 12-24/4.0 Pro (77ø)	#T0122440*	—	\$399.95
DX 12-24/4.0 Pro II (77ø)	#T0122440DX*	\$499.95	\$499.95
DX 16-50/2.8 Pro (77ø)	#T0165028DX*	\$599.95	\$599.95
DX 16.5-135/3.5-5.6 (77ø)	#T0165135DX*	\$569.95	\$569.95
DX 50-135/2.8 (67ø)	#T05013528*	—	\$529.95

### TAMRON

#### 6-Year Warranty

\* Price After Rebate

	Rebate	SKU #	Canon EOS	Nikon AF	Sony/Minolta	Pentax AF
Di 90/2.8 Macro (55ø)	\$60	#TA9028M*	\$439.00*	\$439.00*	\$439.00*	\$439.00*
Di 180/3.5 LD IF Macro (72ø)	\$50	#TA18035*	\$689.00*	\$689.00*	\$689.00*	—
Di-II 10-24/3.5-4.5 (ø)	—	#TA102435*	\$499.00	\$499.00	\$499.00	\$499.00
Di-II 17-50/2.8 XR LD IF Aspherical (67ø)	—	#TA175028*	\$499.00	\$499.00	\$499.00	\$499.00
Di-II 18-200/3.5-6.3 (62ø)	\$60	#TA1820035*	\$239.00*	\$239.00*	\$239.00*	\$239.00*
Di-II 18-250/3.5-6.3 (62ø)	—	#TA1825035*	\$499.00	\$499.00	\$499.00	\$499.00
Di-II 18-270/3.5-6.3 VC	\$70	#TA1827035*	\$559.00*	\$559.00*	—	—
Di 28-75/2.8 XR (67ø)	\$10	#TA287528*	\$489.00*	\$489.00*	\$489.00*	\$489.00*
28-80/3.5-5.6 (58ø)	—	#TA288035*	\$89.00	\$89.00	\$89.00	\$89.00
Di 28-200/3.8-5.6 Asp XR IF Macro (62ø)	\$50	#TA2820038*	\$249.00*	\$249.00*	\$249.00*	\$249.00*
Di 28-300/3.5-6.3 XR (62ø)	\$50	#TA2830035X0*	\$369.00*	\$369.00*	\$369.00*	\$369.00*
Di 28-300/3.5-6.3 XR VC (62ø)	—	#TA283003563*	\$629.00	\$629.00	—	—
Di-II 55-200/4.0-5.6 LD Macro (52ø)	\$40	#TA55200456*	\$159.00*	\$159.00*	\$159.00*	—
Di 70-200/2.8 LD IF Macro (77ø)	—	#TA7020028M*	\$769.00	\$769.00	\$769.00	\$769.00
75-300/4.0-5.6 LD (62ø)	—	#TA753004*	\$164.00	\$164.00	\$164.00	\$164.00
Di 200-500/5.6-3 LD IF (86Cø)	\$30	#TA20050056*	\$919.00*	\$919.00*	\$919.00*	—
SP 1.4x AF Pro Converter	—	#TA140P*	\$224.00	\$224.00	—	—
SP 2x AF Pro Converter	—	#TA2XP*	\$254.00	\$254.00	—	—

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DC 10mm f/2.8 EX Fisheye HSM <sup>R</sup>	#S1028FHS*	\$699.00	\$699.00	\$699.00	—	\$699.00	\$699.00
DG 15/2.8 EX Diagonal Fish-Eye <sup>R</sup>	#S1528DG*	\$749.00	\$749.00	\$749.00	—	\$749.00	\$749.00
DG 20/1.8 EX DF RF Aspherical (82ø)	#S2018*	\$569.00	\$569.00	\$569.00	—	\$569.00	\$569.00
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DG 28/1.8 EX DF Aspherical Macro (77ø)	#S2818M*	\$379.00	\$379.00	\$379.00	—	\$379.00	\$379.00
DC 30mm f/1.4 EX HSM (62ø)	#S30140DC*	\$439.00	\$439.00	\$439.00	\$439.00	\$439.00	\$439.00
DG 50mm f/1.4 EX (77ø)	#S5014*	\$499.00*	\$499.00*	\$499.00	\$499.00	\$499.00	\$499.00 <sup>0</sup>
DG 50/2.8 EX Macro (55ø)	#S5028MDG*	\$299.00	\$299.00	\$299.00	—	\$299.00	\$299.00
DG 70/2.8 EX Macro (62ø)	#S7028MDG*	\$499.00	\$499.00	\$499.00	—	\$499.00	\$499.00
DG 105/2.8 EX Macro (58ø)	#S10528MDG*	\$479.00	\$479.00	\$479.00	\$479.00	\$479.00	\$479.00
DG 150/2.8 EX APO Macro HSM (72ø)	#S15028MDG*	\$729.00	\$729.00	—	\$729.00	—	\$729.00
DG 300/2.8 APO EX HSM	#S30028DG*	\$3,299.00	\$3,299.00	\$3,299.00	—	\$3,299.00	\$3,299.00
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DG 28-70/2.8-4.0 EX (58ø)	#S287028*	\$139.00	—	\$139.00	—	—	\$139.00
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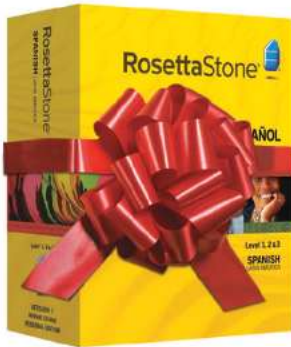
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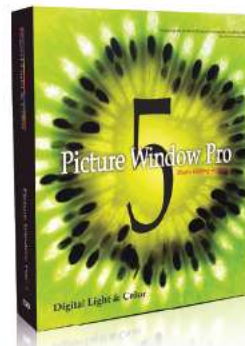


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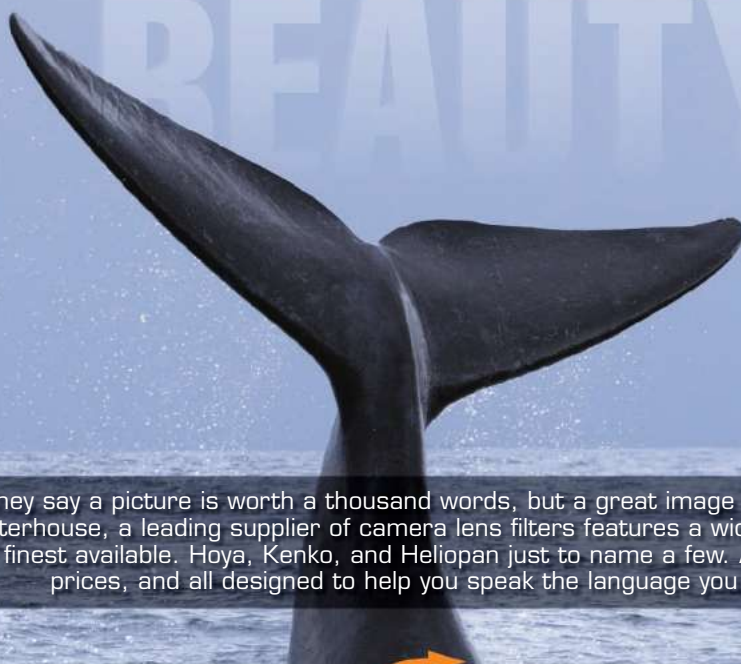
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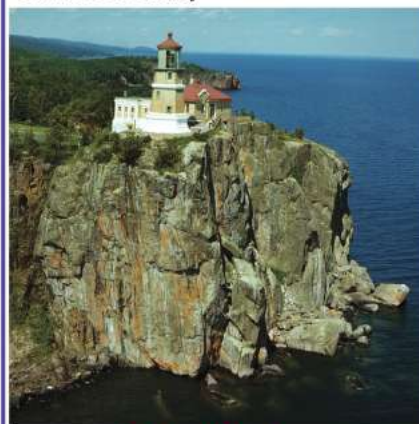
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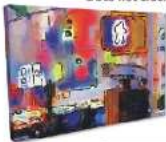
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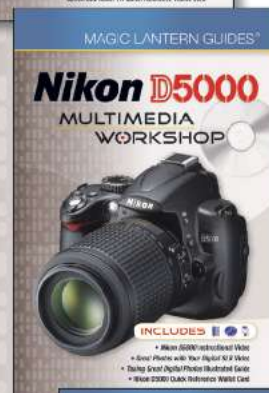
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Six creative in-camera art filters, Multiple Exposure shooting and a swivel Live View 2.7" HyperCrystal III LCD offer artistic freedom and endless creative possibilities. The 12.3-MP Live MOS sensor & TruePic III+ processor provide exceptional picture quality. With in-body Image Stabilization, the E-620 is a camera that truly lets you shoot outside the frame.

#### PENTAX



### K-7 Kit

Explore. Capture. Captivate.

The new K-7 has arrived. Faster and more durable than ever before, the compact, 14.6 megapixel K-7 truly is the most powerful PENTAX ever. The Pentax K-7 features a 14.6 megapixel CMOS sensor rebuilt from the ground up, and advanced features such as HD Movie Capture and new, unique-to-Pentax camera controls. It is also compatible with every Pentax lens ever made.

#### TAMRON



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### AF18-270mm F/3.5-6.3 Di II VC (Vibration Compensation) LD Aspherical (IF) Macro

The Longest Steadiest Lens on Earth

The AF 18-270 covers an angle of view equivalent to that of a 28mm wide-angle to a 419mm ultra telephoto with just one lens, letting the user capture once-in-a-lifetime images of panoramic landscape images or close-up pictures of children smiling, without having to get too close to the subject and without having to change lenses.

### Camcorders

**Canon** image*ANYWARE*

### DC420

Affordable, sleek and easy-to-operate

The Canon DC420 gives you the convenience of DVD technology, along with exclusive Canon 48x Advanced Zoom, a 1.07 Megapixel CCD, SD card image storage capability, Quick Start, now linked with the LCD panel, and Joystick Control. It is also compatible with lens-mounted Canon optical accessories to further enhance your creative choices.



### FS200

Fast, Flexible, Flash Memory

Canon's FS200 Flash Memory camcorder offers one of the most affordable ways to get stunning video in a light, compact and user-friendly package. Adding to the usefulness of this camcorder is Canon's Quick Charge - which reduces the recharge time for the FS200's battery and Pre-Record gives you a head start on capturing the action. The FS200 is a Flash Memory camcorder that's hard to beat and still unmistakably Canon.



### Vixia HG21

High Def Video on Hard Disk Drive

Canon VIXIA HG21 combines the ease of recording video directly onto an internal Hard Disk Drive with the advanced AVCHD format. Its 120GB Hard Disk Drive allows you to record up to 45 hours of crisp, high definition video (LP Mode). It also is a dual system camcorder boasting 1920 x 1080 Full HD, with the capability of also recording video and still images to an SDHC card as well.

**FULL HD**  
1080



### Vixia HV40

Shoot. Capture. See. Be HD.

The Canon VIXIA HV40 HDV Camcorder shares the core components found within the VIXIA line, but also offers a Genuine Canon 10x HD Video Lens and 2.96 Megapixel Full HD CMOS Image Sensor. It also allows consumers to record in native 24p Mode, a feature previously found only on Canon's professional camcorders. Native 24p allows consumer to capture and record 24 progressive frames per second to a HDV tape, a big advantage for the serious filmmaker.

**FULL HD**  
1080



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HD VIDEO

- 24 fps, 720p HD movie clips
- One-button Live View

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**D90** 12.3 MEGA PIXEL

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**RECORD CINEMATIC-QUALITY MOVIE CLIPS AT UP TO 720P HD**

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**D-MOVIE MODE WITH SOUND**

- Vari-angle color LCD monitor
- One-button Live View
- Continuous shooting as fast as 4 fps

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- Nikon's exclusive EXPEED digital image processing
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**PROFESSIONAL IMAGE QUALITY WITH LOW-NOISE, HIGH-ISO PERFORMANCE**

**Canon**

**EOS REBEL T1i** 15.1 MEGA PIXEL

- DIGIC 4 Image Processor
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**SONY**

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**SONY**

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**Panasonic**

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**HD MOVIE SHOOTING**

- 28mm Wide-Angle Lens
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**24X OPTICAL WIDE-ANGLE**

- Bright 3.0-inch Vari-Angle High-Resolution LCD and Electronic Viewfinder
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**COOLPIX S640** 12.2 MEGA PIXEL 5X ZOOM

**ULTRA-FAST START-UP**

- 4-way VR Image Stabilization
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**PENTAX Optio W80** 12.1 MEGA PIXEL 5X ZOOM

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- Wide angle 28mm lens
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**Panasonic**

**GF1** 12.1 MEGA PIXEL

**GH1 with 14-45mm lens \$899.95**

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**27MM WIDE-ANGLE LENS**

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**24MM WIDE-ANGLE LEICA LENS**

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- Native 24p Mode, 24p Cinema Mode & 30p Progressive Mode

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- 5-way VR Image Stabilization System

**S1000pj**

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- 12MP
- 5x Wide angle zoom lens
- 4-way VR image stabilization system
- Smart Portrait system
- Bright 2.7" High Res LCD

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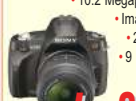
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### CANON HG21

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- 1920x1080 Full HD Recording
- 12X Optical Zoom
- 2.7" Widescreen LCD



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### CANON XH-A1S

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- Professional 20X L-Series Lens
- Optical Image Stabilization
- Digic DVII Processor



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- 3.3 Megapixel Still Images
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### CANON CAMCORDERS

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### JVC CAMCORDERS

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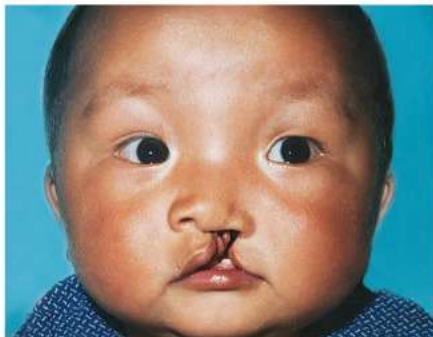
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Ming, 6 months, China



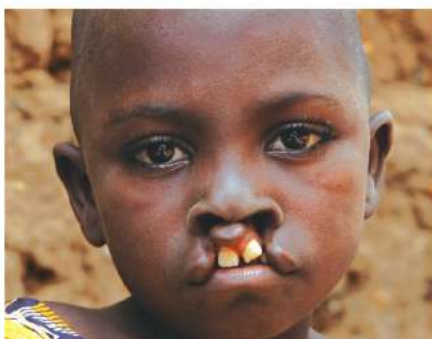
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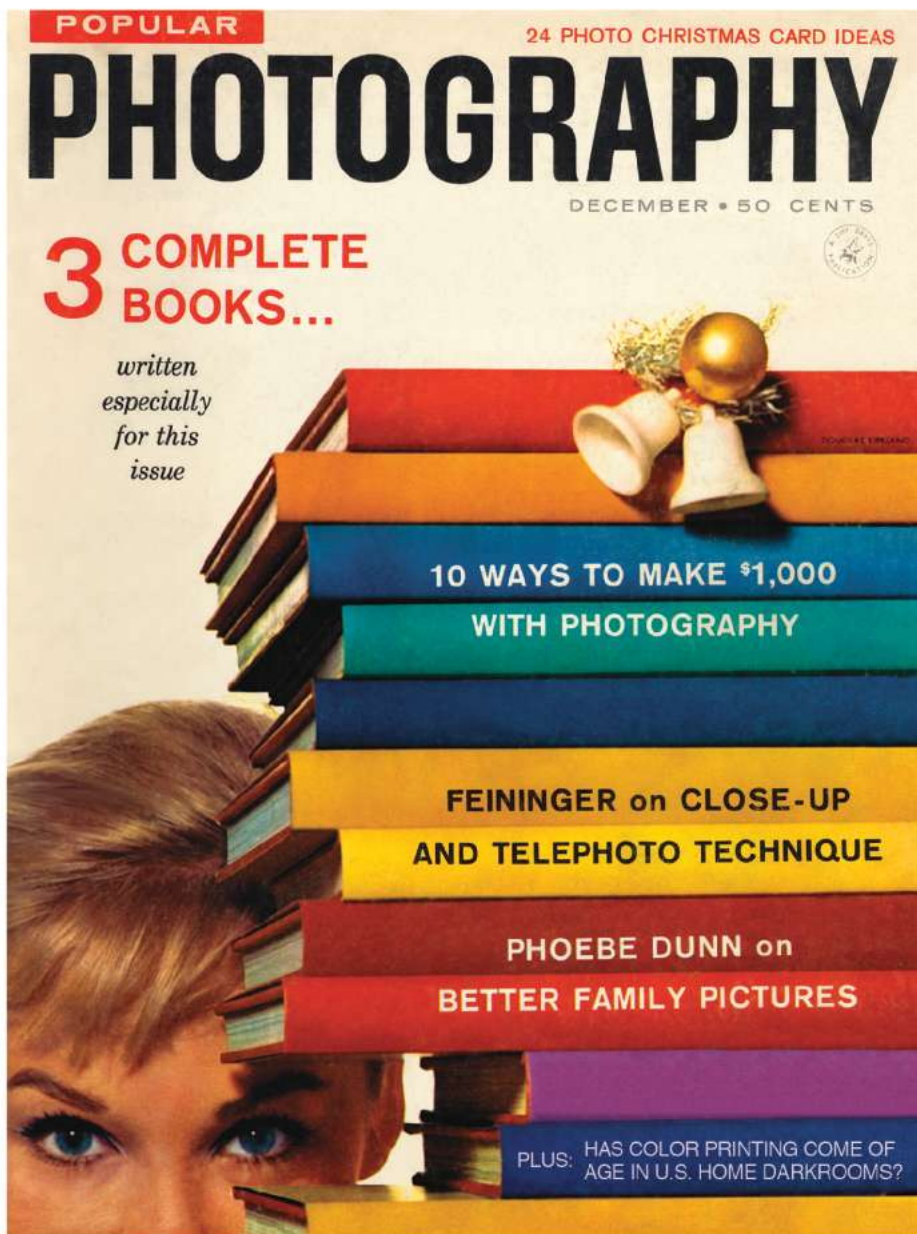
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### ▲ Alluring Librarian

How do you make a pile of books draw attention? Have a model peek from behind the stack. Photographer Douglas Kirkland posed Astrid Lance in front of his 8x10 Deardorff view camera and 8½-inch f/6.3 Kodak Ektar lens. Lighting was supplied by Ascor speedlights totaling 12,000 watt-seconds. Exposure was 1/25 sec at f/22 on Ektacolor film with an 85 warming filter.

**50 YEARS AGO**  
We counted down to Christmas with 24 ideas for making photo cards.

### ▼ Amazing Beauty

One of the loveliest portraits ever in Popular Photography was this shot by Phoebe Dunn from *Better Family Pictures*, one of the three original books in this issue. Superbly backlit, it was made with a 2¼-inch twin-lens reflex, plus a deep appreciation of children



and their singular personalities.

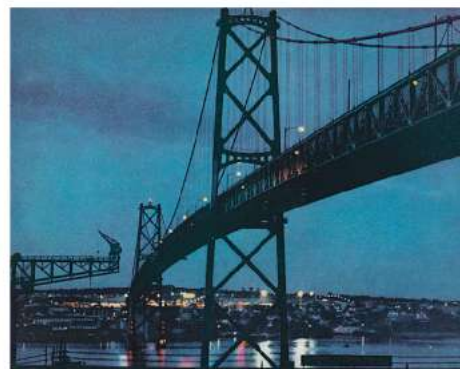


### ▲ Speed to Spare

This 1/1000-sec between-the-lens shutter for the new 4x5 Super Speed Graphic was truly an achievement. Until its debut, the fastest large-format between-the-lens shutter speed was 1/400 sec. The Graflex 1000 shutter opened and closed from the center, with the blades pivoted to overlap and begin moving before uncovering the aperture. At the end of the exposure, the blades were thrown back into position, ready for the next cycle. This unique design was faster and more efficient than that of conventional lens shutters. Alas, it couldn't save the 4x5 Speed Graphic from extinction.

### ▼ Expert Amateur

Reader Paul C. Clough, a chemical engineer who described himself as "strictly an amateur," made and printed this outstanding photo of a bridge in Nova Scotia. He used a Rolleiflex camera and printed on Ektacolor paper in his 5x10-foot closet darkroom. Active in camera-club circles, Clough was president of the Maryland Council of Camera Clubs at the time of publication. —Harold Martin





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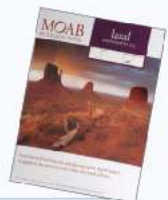
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CONTINUED FROM PAGE 84

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develop its RD line of digital rangefinders, and we've yet to see a digital Voigtlander.

If you're debating between the M9 and a full-frame DSLR, such as the Sony Alpha 850 (page 71) or a pro model closer to the Leica's price range, such as the new Nikon D3S (page 18), there's really no comparison. They're completely different tools for completely different styles of photographer. We don't categorize the M9 as a pro model—think of it as the ultimate (deep-pocketed) enthusiast's camera.

Suffice it to say, Leica finally has a digital rangefinder that should please most of its loyalists. And finally offers them a painless alternative to film. —Philip Ryan

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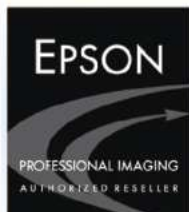
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Broadcast Series 3-Element Zoom-Through Converter Lenses, Matte boxes & Filters



### PROOPTIC

- Complete Line of:
- Fish eye,
- Wide angle
- Telephoto lenses



### 16X9

- Add on lenses
- Lens controllers
- Noga arms
- Chrosziel Pro Matte Boxes



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### Petrol

Petrol Compact Camcorder Bag for Mini-DV/HD removable dividers fits official carry on regulations.



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Tough nylon oxford material waterproof coating, quick to deploy



### porta brace

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DP1412-1G 14" Digital  
Photo  
Frame

with MP3  
Player,  
1GB Built-in Memory and  
Classic Wooden Frame



with 1 GB  
Internal Memory and Wall  
Mount Kit



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8" 16:9 Widescreen  
Digital Picture Frame with  
SD Slot,  
Built in  
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& 512MB  
Memory



### SONY

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Memory



8" Wi-Fi Photo Frame  
with  
Internal  
802.11  
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MB Flash  
Memory



## Photo Accessories

### FLASHPOINT

#### Film And Slide Image Scanner

turns negatives  
and slides into five  
megapixel digital  
images at the press of  
a button!



\$69<sup>00</sup>

### FLASHPOINT

Quick Flip Flash Bracket offers high  
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Macro Focusing  
Rail Set,  
4 Way, Fine Control,  
Camera Focusing  
Rail To Aid In Tripod  
Mounted Macro  
Photography



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Budget Macro Focusing Rail Set  
with 4 Way, Fine Control

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Photo Basics  
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Stands,  
Bulbs,  
Digital  
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Pro Set  
A Heads



NEW

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Cocoon 130 - Light  
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21.5"),

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### Honlphoto

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Strap for Shoe Mount  
Flashes



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Unlocked Cellular Phone with GSM/  
WCDMA Technology,  
32GB of on board memory,  
a 5 megapixel camera  
with Carl Zeiss optics  
and a dual LED flash,  
a slide out QWERTY  
keyboard, touch screen,  
3G and WiFi are only a  
few of the key features  
packed into the N97



### NOKIA Connecting People

#### 5800 XPRESSMUSIC Unlocked Cellular Phone

- 3.2 megapixel AF camera  
with dual LED flash ensures
- Nokia's astonishing, intuitive,  
"human" and improved touch screen
- Best-in-class music player on the go
- Music playback time up to 35 hours
- Upload your pictures and videos  
with seamless and integrated  
online sharing,
- High-definition imaging and video



### NOKIA Connecting People

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- Access your songs, pictures  
from almost anywhere  
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Professor Kobré's  
Light-scoop™  
"produces nuanced,  
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before-after difference  
is incredible."  
David Pagno, *New York Times*



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Photo by Light-scoop™ User John Burges



Simply instead the pop-up  
flash with Professor Kobré's  
Light-scoop to produce  
pro-like lighting  
with these cameras:

Canon 110D, 200D, 300D, 400D,  
Canon Rebel XT, 400, XT,  
350; Nikon D40, D40x, D50,  
D60, D70, D70s, D80, D100,  
D200, D300, Pentax K1000,  
K200, K1000, K2000,  
Sigma SD14; Fuji FinePix  
F10 S series.

Standard Light-scoop shown.  
Warning Light-scoop also  
available.

Patent Pending.

## Filters

cokin®

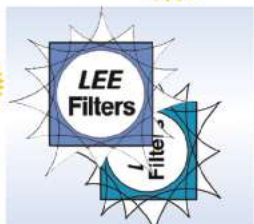
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largest Cokin Stocking  
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TIFFEN

Digital HT™



Take a virtual reality tour of Digital HT  
filter effects at tiffen.com

## Digital HT™ A Major Breakthrough in Multi-Coated Filter Technology

Tiffen's Digital HT filters are available as:

- Digital Ultra Clear™
- Haze 86
- (with 86% UV absorption)
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- ND 0.6
- ND 1.2
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In sizes 52mm-82mm with  
distinctive soft pouch for storage.

- Superior Transmission
- Easy-to-Clean Surface
- Low-Profile Filter Ring
- Distinctive Titanium Finish
- Anti-Reflective Lock Ring
- Water-White Glass
- Scratch Resistant
- Tough and Durable
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- Made in USA

TIFFEN  
Dfx  
digital filter suite



Unlike other  
digital software,  
Tiffen Dfx offers  
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Available as a Stand-alone application  
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### Digital Enhancing Kit

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17" Colorburst Inkjet Printer,  
2880 x 1440 DPI Resolution,  
16-bit Printer Drivers with USB 2.0  
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#### 7250 Pro3

35mm Film  
Scanner  
7200dpi  
USB 2.0  
& Firewire



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Interface.



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4/8/16/80/120 GB

Available in: Black, Green, Pink, Red

Colors Vary By Model

### SanDisk

#### Sansa View

8, 16, 32 GB MP3 Video Player  
with 2.4" Widescreen,



#### Sansa Clip Series

1, 2, 4 GB MP3 Player,  
(Red, Black, Silver, Pink, Blue)



#### Sansa Fuze Series

2, 4, 8 GB MP3 Player with  
1.9" Color LCD Screen  
& 40 Preset Station FM  
Radio (Red, Black, Silver,  
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### COBY

#### MP-705

4, 8, GB Super Slim MP3 & Video Player  
with 2" TFT LCD & Touchpad Control



#### MP-836

4, 8, 16, GB MP3 & Video Player with 3" LCD  
High-Resolution Touchscreen TFT LCD Display,

## DIGITAL STORAGE

### EPSON

Multimedia Storage  
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4" LCD



P3000 40 GB...  
IESP3000  
P6000 80 GB.....IESP6000  
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### DIGITAL FOCI

Photo Safe II,  
Portable Picture  
Storage Hard  
Drive with Card  
Reader, USB  
Interface.



### HYPERDRIVE

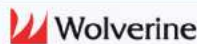
Memory Card Backup Device

### SPACE

- Fastest  
Memory Card  
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Speed
- Most Powerful Battery
- Directly accept  
18 different card  
types
- Unlimited capacity



Space	Color	Color "O"	UDMA
40GB	40GB	40GB	-
80GB	80GB	80GB	120GB
120GB	120GB	120GB	160GB
160GB	160GB	160GB	250GB
-	250GB	250GB	320GB
-	-	500GB	500GB



ESP  
Multi-  
Media  
Player  
with built-  
in 7 in 1  
Memory Card Reader 3.6" wide view  
angle TFT LCD with adjustable Back  
Light multiple features



80 GB .....WVESP80  
120 GB .....WVESP120  
160 GB .....WVESP160



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Vu Pro  
Evolution  
Multimedia  
Photo Storage System and  
Viewer for Professionals



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# FLASHPOINT

## Budget Studio Flash 100/160

- This economically priced AC strobe will allow you to create professional lighting results.
- The 110 volt unit plugs into any standard household socket.
- It has a circular flash tube that is daylight balanced at 5600 K, a guide number of 90 at ISO 100 and a recycling time of 4 seconds. It also comes with a 60 watt modeling lamp.
- The Budget Studio Flash can be triggered through the camera with its 12' sync cord (included), by another flash being fired and activating the built-in photo slave or through its open-flash test button.
- Specs: 6-1/2" long, 3-1/2" diameter. Weighs only 15 ounces.

- All the features of the Adorama Budget Studio Flash (on the Left) and has:
- More power GN 150 at iso 100
- User replaceable flash tube

Replacement  
Flash Tube (FPBFT) \$19.95



(LTBF) **\$49<sup>95</sup>**



(FPBF160) **\$59<sup>95</sup>**

## SSB 20"x27" Softbox with fluorescent Bulb



20" x 27" softbox is easy to assemble, just snap the hardware into place. No rods to struggle with; no speed rings to align with the rods. The unit comes with an 85 watt flicker-free fluorescent, spiral bulb. An energy saver bulb; it is rated at 5500 degrees Kelvin; daylight balanced. 85 watts in fluorescents translates into 350 watts of light output. This long lasting "cool" light emits very little heat and can stay on all day long without a problem. The Flashpoint SSB can be used with Digital Cameras or Camcorders and is great for shooting portraits, or still life. And, when you're done (after removing the bulb) the unit folds together easily like an umbrella.

**\$39<sup>95</sup>**

### BARNDOORS

Four leaf barndoors designed to direct light and prevent light spill or camera lens flare

(LTBBD) **\$9<sup>95</sup>**



### SNOOT

Restricts light output to a narrow beam. It can be used as a hair light or for creative highlights,

(LTBSH) **\$11<sup>95</sup>**



### FILTER SET

Yellow, Green, Red & Blue

(LTBFS) **\$9<sup>95</sup>**



### SOFT BOXES

For the Budget Monolights.

12"x12" (LTBSB12) **\$19<sup>95</sup>**  
18"x18" (LTBSB18) **\$29<sup>95</sup>**  
20"x28" (LTBSB2028) **\$29<sup>95</sup>**  
24"x36" (LTBSB2436) **\$39<sup>95</sup>**



## BUY A BUDGET KIT & SAVE

### Budget Studio Flash Kit #1

- 2 - Budget Studio Flashes
- 2 - 7" Light stands
- 1 - 33" White Umbrellas with Black Cover
- 1 - Deluxe carrying case

With 100 Flash **\$199<sup>95</sup>**

With 160 Flash **\$219<sup>95</sup>**

### Budget Studio Flash Kit #4

- 3 - Budget Studio Flashes
- 3 - 7" Light stands
- 2 - 33" White Umbrella with Black Cover
- 1 -- Barndoors
- 1 - Snoot
- 1 - Set of 4 Color Filters
- 1 - Deluxe carrying case

With 100 Flash **\$299<sup>95</sup>**

With 100 Flash **\$319<sup>95</sup>**



### Universal Swivel Holder

Tilts 180° horizontally and swivels a complete 360° left and right. Holds an umbrella and comes with a removable shoe for mounting a small flash or using 1/4 x 20 screw threaded accessories. Fits onto 1/4x20 or 3/8" threaded tops or onto studs up to 5/8". Precision metal casting.

**\$16<sup>95</sup>**



### Budget Lighting Outfit Case

29"L x 8.5H x 8"W  
Made of Softex™ material, with movable padded dividers the perfect carry case for smaller lighting outfits

**\$69<sup>95</sup>**



### AC Master Slave

with PC Connection, Guide Number of 90 at ISO 100.

(LTACS) **\$19<sup>95</sup>**



### AC Slave Flash

Guide number 90 at ISO 100.

(LTACMS) **\$18<sup>95</sup>**



### Pro Clamp with Reversible Mounting Stud. 1/4 x 20 and 3/8 Screw Threads.

Can be securely mounted on any tube from .5" to 2.1"

**\$16<sup>95</sup>**

### 3" Spring Clamp with 2" opening

Good for holding backgrounds, wires.

(LTCA2) **\$3<sup>45</sup>**



Compares to Bogen 2900 Series



### Multi Clip, Double Clips for Gels and Bounce Cards.

Clips onto a Stand or the Rim of a Reflector.

(FPCM) **\$7<sup>95</sup>**



Compares to Bogen Multi Clips

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## MONOLIGHTS

**Where Pro Power and Quality Meet At An Incredible Price.**

Great lighting: Adorama Flashpoint II Monolights deliver-at an astonishingly high level of sophistication and quality and at remarkably low cost. Flashpoint Monolights deliver all the power you need--more blitz for the buck than any competitive units on the market Flashpoint II Monolights are the real deal-pro-caliber units you can rely on the give your images a competitive edge.



MONOLIGHTS					
Model	GN	Recycle	Weight	Sync	Price
320	118	1.2 Sec	3.00 lbs.	6v	<b>\$99<sup>95</sup></b>
620	192	1.2 Sec	4.6 lbs.	6v	<b>\$189<sup>95</sup></b>
1220	252	2.6 Sec	5.25 lbs.	6v	<b>\$279<sup>95</sup></b>
1820	282	3 Sec	5.75 lbs.	6v	<b>\$289<sup>95</sup></b>
2420	320	4.5 Sec	6.20 lbs.	6v	<b>\$349<sup>95</sup></b>

**Buy a Kit & Save**

**Umbrella Kit**

Includes: 1 Monolight, 10' Air Cushion Stand & a 40" Umbrella (White w/Black Cover)

320 Kit .....	<b>\$129.95</b>	620 Kit .....	<b>\$229.95</b>
1220 Kit .....	<b>\$299.95</b>	1820 Kit .....	<b>\$319.95</b>
2420 Kit .....	<b>\$379.95</b>		

**Portrait Wedding kit**

Includes: 2 Flashpoint II Monolights, 2-10' Air Cushion Stands, 2-40" Umbrellas, Snoot, & Carrying Case.

320 Kit .....	<b>\$299.95</b>	620 Kit .....	<b>\$489.95</b>
1220 Kit .....	<b>\$679.95</b>	1820 Kit .....	<b>\$699.95</b>



### ACCESSORIES



4 Leaf Barndoor  
FP2BD **\$29.95**



Snoot  
FP2SN **\$44.50**



10' Sync Cord  
FP5C **\$12.95**



16" Soft Flood Reflector (Beauty Dish)  
FP2RSF **\$44.95**



SOFTBOXES  
9"x36" **\$49.** 32"x48" **\$64.**  
16"x70" **\$59.** 30"x60" **\$69.**  
24"x24" **\$39.** 36"x36" **\$79.**  
24"x36" **\$59.**



Modeling Lamp  
320/620/1220/1820/2420  
**\$8.95**



FLASHTUBES  
320 **\$29.95**  
620A **\$34.95**  
1220A/1820A **\$39.95**  
2420 **\$49.95**



FLASHTUBES  
320 **\$29.95**  
620A **\$34.95**  
1220A/1820A **\$39.95**  
2420 **\$49.95**



### Boom Arm with Weight Bag & Light Stand for Studio Lights

- Stronger design stand 6' high.
- Boom extends from 48" to 80".
- Wight shipped empty, holds 10 lb of sand or lead shot.

(LTBAK)  
**\$79<sup>95</sup>**



### Fluorescent Bulbs

	Buy One	Buy 4+
24w	7.49	6.99ea.
30w	7.69	6.95ea.
45w	7.99	6.95ea.
70w	19.95	18.95ea.
85w	19.95	18.95ea.



### Cool Light 1,

#### 11" Reflector with One 30W Fluorescent Bulb, 150 Watt Equivalent.

- 11" reflector with hardware to plug in AC.and to mount an umbrella. Flicker-free noiseless operation.

#### Cool Light 1 Kit

- 1- 11" Reflector
- 1- 30W Fluorescent Bulb
- 1- 10' Air Cushined light stand

(FPCL1K)

**\$69<sup>95</sup>**



(FPCL1)

**\$39<sup>95</sup>**

### Cool Light 4,

#### 16" Reflector with Four 24W Fluorescent Bulbs, 480 Watt Equivalent.

- 16" reflector with hardware to plug in AC. and to mount an umbrella. Flicker-free noiseless operation. There Are Two Switches That Each Control Two Lights so You Can Use Two Or Four Lights.
- Seperate switch for 2 bulbs for half power

#### Cool Light 4 Kit

- 1- 16" Reflector
- 4- 24W Fluorescent Bulb
- 1- 10' Air Cushined light stand

(FPCL4K)

FREE DIFFUSER

**\$99<sup>95</sup>**

**\$129<sup>95</sup>**



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## INTO THE FOG

**Frazier over-  
exposed by  
about 1 stop  
to keep the  
Yosemite fog  
from tricking  
his meter.  
Tripod-  
mounted  
Canon EOS  
5D with  
17-40mm  
f/4L Canon  
EF lens; 1/13  
sec at f/16,  
ISO 100.**

CONTINUED FROM PAGE 56

### Exposure and Focus

Your camera's meter is designed to render a scene a middle tone, and in fog this can lead to errors. Typically, you'll get underexposure, turning fog into dingy gray smoke that lacks its soft glow.

One strategy is to spotmeter off a patch of the fog, then add 2/3 to 1 stop exposure (+0.7 to +1.0 EV exposure compensation). Or spotmeter a midtone on the ground (rocks often work well).

But I get better results using evaluative metering and opening up 1/3 to 1 stop (+0.3 to +1.0 EV)—more if the fog is thin and backlit. Check your histogram to make sure the exposure curve is over to the right but not past the edge (indicating clipped highlights).

I used this method for all of the photos here, some of which were

very hard to meter and expose correctly. For instance, in Big Sur, I was above the fog bank, shooting into the sun—especially tricky, since the dark cliffs and white fog created a huge tonal range. In this case, I underexposed slightly (−0.3 EV) from the meter reading to keep some detail in the fog bank.

But more often than not, you have to open up. For my Mt. Diablo oak, I wanted the thin, softly glowing fog to highlight and isolate the form and lines of the tree, so I overexposed 2 stops from the meter reading.

Similarly, to avoid underexposure in the photo of El Capitan, I bumped the exposure up 2 stops to keep detail in the trees, and later brought down the clouds slightly in Photoshop.

Fog works its magic in part by reducing contrast, but this can







create problems for the camera's autofocus system. Get around this by switching to manual focus or using just the center AF point, always the most sensitive one.

### What You'll Need

Moisture-sealed cameras and lenses are a must. In really thick fog, condensation and drizzle can be a problem, so I bring a plastic bag to cover the camera and a dry rag to wipe everything down.

And as with most nature photography, especially in limited sunlight, you'll need a tripod. I like to use a carbon-fiber model with twist-lock legs so I can set up quickly and accurately frame the image. But fog frees you from the filters, including polarizers, that you usually need for nature.

More than anything, you need get out and explore. For instance,

I didn't set out to make the photo above. I was driving through Yosemite in the kind of fog that makes landscapes disappear, when the living forest was cut through by the charred remains of a wildfire. I yanked the car to the side of the road, and walked along until I found the right balance of trees and fog.

The blackened forest disappearing into the distance makes it feel like an alien landscape, and the muted colors and soft light adds a sense of ominous silence. And isn't that what photographing fog is really about? 🌀

*A marine biologist by training, Ian S. Frazier's love for nature began while fishing the local trout streams of Pennsylvania. Now based in southern California, he has a new website at [www.iansfrazier.com](http://www.iansfrazier.com).*

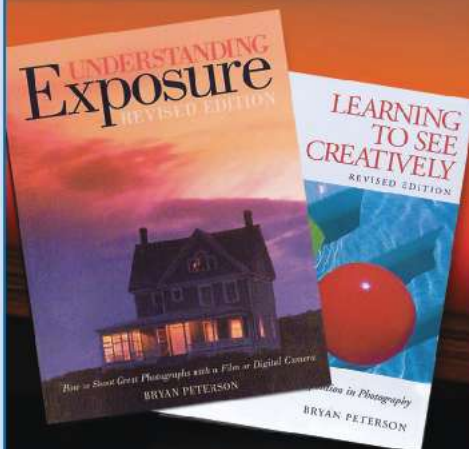
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### CONTINUED FROM PAGE 60

Interaction between family members will prompt these emotions. "I try to tease out character by prompting unscripted behavior," says Charlotte Geary, a pro from Manitou Springs, CO ([www.charlottegeary.com](http://www.charlottegeary.com)).

"I give vague suggestions instead of specific poses. I'll ask, for example, that subjects touch or hold each other, or I'll say, 'Try to make her laugh.' They interpret my requests, and the reactions usually look natural and realistic."

**Stay awhile.** When working with groups, be patient. Eleonora Chornaya, a pro from Kiev, Ukraine ([www.evachornaya.com](http://www.evachornaya.com)), advises that the best shots often come deep into a shoot, when subjects are tiring and lacking the energy for artificial-seeming poses. In her father/daughter portrait (on page 60), she intentionally left her subjects alone "to give the scene time to settle. I watched them from a distance, and when they relaxed almost to the point of boredom, I took out my camera."

**Learn to work with children.** Bing Liem, who specializes in shots of his daughters, says that if you're shooting

children you should get down on their level at first. Then change your point of view. "Shoot from slightly above to emphasize the child's eyes, or from below to give a child a monumental, adult treatment," he says.

Tilting the camera so the subject isn't square within the frame is an effective way to produce tighter shots that don't look like elementary-school portraits.

"But be careful not to include door jams or windows in the background, because the tilted camera will show these normally horizontal and vertical lines askew, which can be subconsciously off-putting," says Liem.

And, "shoot in relaxed settings that the kids are accustomed to," he advises. "Hauling out big lights only makes them nervous."

You should work quickly. "Flow from moment to moment," counsels amateur Nolke. "Work with the child's poses, expressions and moods. Don't dictate."

### Keep lighting soft.

Direct flash almost never works—it often fights the sense of intimacy, warmth, and naturalness that characterize the best family portraits. "I avoid direct flash like the plague," says Sue Barr. "It will flatten an image and drain it of all spontaneity."





JOHN KRAUS/JOHN KRAUS PHOTOGRAPHY

▲ **Look for relaxed, intimate, and familiar interaction between family members. These four cousins have known each other their entire lives—and it shows.**

◀ **Coaxing family members into talking and touching will keep your portraits lively.**

To work without flash, you'll want the fastest lens you can afford. This allows you to shoot in low light, defocus (and thereby declutter) backgrounds, and use fast, kid-freezing shutter speeds.

Another lighting tip: avoid direct sun. "I like shooting on cloudy days," says Barr, "and I use gold or silver reflectors to add spark." The latter helps lighten the shadows of wrinkles, making it helpful with older family members.

Family portraiture is rewarding because it gives you the chance to celebrate something that's life-affirming and positive.

As amateur photographer Jeremy Rule ([www.flickr.com/photos/JeremyRule/](http://www.flickr.com/photos/JeremyRule/)) of North Bend, WA—whose portrait of an extended family is on page 60—says, "Family portraits rarely focus on disease, divorce, fighting, business, addiction, or a recession. When you hand a family a portrait, you're giving them something to celebrate, bond, and rally around."



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## SPOTTING SCOPES



SPOTTING SCOPES







# What a Blast

Ben Cooper tells how he sacrificed his lens for the shot

**I SHOT THIS** Delta 4-Heavy rocket—the world’s largest unmanned launch vehicle—on freelance assignment at Cape Canaveral in fall of 2007. I’d decided to do something insane for once and put the camera right under the rocket, so I used a Nikon N2000

with ISO 400 film. It was preset to 1/125 sec at f/8, manual focus, and continuous shooting—and, of course, fired remotely.

I’d secured it with leg stakes, but the nylon rope ratcheting it down was severed by the heat. The sound trigger was thrown

**A launch shooter since age 14, Ben Cooper, now 24, works part-time for NASA.**

backwards 100 feet. The lens was sandblasted by the flame and debris, which comes out at 4 miles per second and thousands of degrees Fahrenheit. But the film was fine, and when we found the camera, it still worked.

—As told to Lori Fredrickson

BEN COOPER, WWW.LAUNCHPHOTOGRAPHY.COM



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