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## Steve's Conclusion

For 2008, Canon has introduced the latest addition to their powerful, yet compact "G" series line of Prosumer digicams with the PowerShot G10. This model builds on the **G9** from last year, with several changes. The G10 boasts a new 14.7-megapixel imaging sensor, Canon's DIGIC 4 image processor, a more powerful battery, and a broader shutter speed range (15 - 1/4000 sec. compared to the G9's 15 - 1/2000 sec. range). Other changes include the G10 now offers a 5x optical zoom lens instead of a 6x zoom like that found on the previous models, however this new lens does offer as much wider field of view with a 28mm (equivalent) wide angle extreme. Canon's claimed burst rate has slowed slightly (1.3fps, down from 1.5fps), and this new model does not offer the high-resolution 1024x768 movie mode that was featured on the G9.

While some of these may seem as improvements, and some may not, we were glad to see that the G10 still retains almost all of the features we have come to appreciate with this line. These include a nice large 3.0-inch LCD, Canon's true Optical Image Stabilization system, Face Detection AF/AE technology, a broad sensitivity range (from ISO 80 - 1600), RAW and JPEG image capture, flash hot shoe, zoom-couple optical viewfinder, sound recorder function, powerful built-in flash, etc.

Canon's "G" series is known for being a "photo enthusiasts" line, offering powerful features and plenty of exposure control, all in a refined body. With plenty of manual and custom options, this prosumer model is geared towards those who want much of the functionality found on a dSLR, without having to deal with lenses and bulkiness. However, if you are a novice user, don't let these statements turn you away from the G10. This camera has an exposure mode for Everyone, whether you're a seasoned photographer or a noob. These consist of full Auto, Program AE, Manual, Aperture/Shutter priority, Custom 1/2, and 17 pre-programmed "SCeNe" modes. Combined, these features and options will allow anyone to pick this camera up and start taking great photos.

The body design of the G10 is very similar to its predecessor, with only a few

slight changes. Like all of the past "G" series models, we were pleased with the ergonomics of the G10. The various camera controls are positioned in a comfortable manner around the body, and clearly labeled. One of the changes that Canon made was they "stacked" the Exposure mode dial on top of the ISO mode dial. While this not only adds to the "retro" look of the camera, it also allows you to effortlessly change the ISO or capture mode with the flick of your thumb. Another new addition on the G10 was a dedicated Exposure Compensation mode dial. While I think this was a very "cool" idea, I did have one issue with it. What I found was that it is very easy to accidentally change the EV Comp. without knowing. This happened to me while I was taking the G10 in and out of my camera bag to shoot sample images. There is an onscreen scale that pops up when you make a change, but this is only displayed while you are moving the dial. If the dial is bumped while the camera is Off, you won't have a clue until you see the dial has changed position or if you possibly notice that your images are brighter/darker than normal. As with the G9, I was glad to see Canon kept the Control Dial that is located around the 4-way selector. This useful tool allows you to quickly navigate through the menus and change exposure settings, depending on the mode being used.

Navigating the onscreen menu system is a breeze, and if you have had a Canon digital camera in the past, you'll be right at home. Like we mentioned in most all of our PowerShot reviews, we especially like the Function shortcut menu. This handy menu allows for quick changes to camera settings (image size/quality, white balance, metering, etc.), without having to enter the "main" record menu. Most users would not call the G10, or any past "G" model, a compact camera. However, when you consider that this is a high-end photographic tool that has almost as much functionality as a consumer level dSLR, you might change your thoughts. I feel this is a compact model that will allow you to carry a much smaller bag when on vacation or at your child's sporting event. Canon also added a larger or "fatter" hand grip on the right side, which I found offers a much more comfortable feel in your hands compared to past models. The G10 retains the same size LCD we saw on the G9 (3.0-inch), however this new display offers much more resolution at 461K pixels; up from 230K. I found that the LCD displays a very clear live image, and works well in almost any lighting. However, the surface is still slightly reflective (never caused a problem in framing though) and is very prone to fingerprints. As with most LCDs these days, the live image does gain up when you enter marginal lighting, like indoors.

While I was glad to see that the optical viewfinder remains, it seems Canon has still not resolved the framing/orientation problem we saw on past models like the **G7** and G9. As you can see by the illustrations below, when using the optical viewfinder to frame your subjects, the center of the frame does not match up with the center of the image that is actually captured. In other words, when you put your subject in the center of the frame with the optical viewfinder, when you review the image you captured on the LCD, your subject will be off center. I found this is most noticeable when taking photos with the camera held in the vertical or "portrait" orientation. With these types of viewfinders, you normally expect to capture more than what you saw in the viewfinder, but the orientation usually stays intact. Typically optical viewfinders on consumer models cover only 80-85% of the captured image. Below are two examples so you can see for yourself. The image on the left was framed with the LCD, while the image on the right was framed with the

optical viewfinder. In each instance, the spray can was centered in the frame. (Note: these images have been re-sized for illustration purposes only, no cropping has been performed.)



Shooting performance from the G10 was just as we expected, robust. From power up to first image captured measured just 1.3 - 1.4 seconds, most of that time was required to extend the lens. Shutter lag (the time from depressing the shutter release to capturing your image) was less than 1/10 of a second when pre-focused and only 1/10 - 2/10 of a second including autofocus. The shot to shot delay in single exposure mode time is better than average at about 1.8 - 2.0 seconds without the use of the flash and about 3 seconds with the flash, depending on subject distance and battery life. You are given the choice between two continuous modes (Continuous, Continuous AF.) Using the standard continuous capture mode, I was able to capture 10 frames in just 6.2 seconds (1.6fps), surpassing Canon's claim of 1.3fps. Continuous Shooting AF mode captured 10 frames in approx. 12.1 seconds, acquiring focus for each individual shot. Thanks to the new DIGIC 4 processor, the average user will rarely (if ever) run into a full buffer that will cause any type of delay while shooting. When shooting in continuous mode, the LCD briefly displays the last image captured; using the optical viewfinder during burst capture is preferred. All of our tests were done using an ATP Pro Max (Class 6) 4GB SDHC card, Program AE mode, Large SuperFine quality, preview On, Auto ISO, flash off, LCD on, and all other settings at default (unless otherwise noted.) Times may vary depending on lighting conditions, camera settings, media, etc.

As mentioned earlier, the G10 features an uncompressed RAW file format. This is a great tool that allows you to later process image data straight from the image sensor, without any of the in-camera processing. You can also shoot in RAW+JPEG mode and capture both formats simultaneously, which is also very useful. RAW mode obviously slows the camera down a bit. The shot to shot delay in RAW mode averaged about 2.3 seconds between shots, while Continuous mode allowed me to capture 10 frames in about 11.1 seconds (0.9fps), which is quite impressive when you consider these are huge ~16MB files. Canon's included ZoomBrowser software includes a function called Process RAW, which brings up the included Digital Photo Professional software for processing your RAW images. You can also see an

example of a converted RAW file on the [samples](#) page.

Unlike the 6x lens found on the [G7](#) and [G9](#), Canon has equipped the G10 with a "Wide view" all-glass 5x zoom lens with Canon's exclusive OIS technology. It covers approx. 28-140mm (in 35mm equivalence) with a maximum aperture of F 2.8 (W) - F 4.5 (T). This lens features Canon's true Lens-Shift type Optical Image Stabilization system, which will allow you to capture blur free images at slower than normal shutter speeds, as well as help you capture better handheld movie clips. While I was a bit upset that the G10 has lost some of the telephoto capabilities of past models, this new Wide lens is a great addition. I found it helps the camera capture sharp results throughout the zoom and aperture ranges, with moderate barrel distortion at full wide angle as well as slight pincushioning at the telephoto end. The zoom mechanism is smooth and fast with approx. 13 positions from wide angle to telephoto. The G10 features the same 9-point autofocus system that we have seen on past models, with the same focus range as well. It covers from 1.6 ft. (50cm) to infinity in normal mode, and the macro mode covers 0.39 in. - 1.6 ft. (1 - 50cm). In the Manual Focus mode, focus is set by using the Control Dial mounted around the 4-way controller and a sliding bar graph with distance marks is shown on the LCD. The center portion of the frame is also magnified to better determine critical focus. Overall, I found that the AF system on the G10 worked very well, even in marginal lighting thanks to the "green" AF-assist lamp.

The most important aspect to consider when looking to purchase a prosumer camera (or any camera for that matter) is image quality, and the G10 delivers. This compact powerhouse produces sharp images that show pleasing exposure, vivid colors, and nice contrast. The camera even did well on a very overcast snowy day, where there wasn't much outdoor light to be found. The 5x zoom offers a nice wide field of view that is perfect for indoor shooting or when out taking landscape type photos. The telephoto end won't bring a distant subject up close, but works very well for filling the frame with your subject in a portrait or when using the G10's macro capabilities for close-up shots. When viewing our M&M man series at 100%, I noticed that imager noise is well controlled on the G10. While there are slight amounts visible at ISO 200 and below, these are likely to only be seen by the trained eye on Huge prints or when viewing the images like we have (at 100%). As you increase the sensitivity, the noise does become more noticeable, however the higher ISO 400 and 800 setting still look great in my opinion. At 800, you can see noticeable speckling, but I feel you can still create large 11x14-inch prints without a problem. The highest setting of ISO 1600 shows strong speckling as well as some detail loss and a decrease in saturation from heavy NR (Noise Reduction). I would only use this setting if absolutely necessary, but you can be confident that these images will be able to produce usable 4x6-inch prints. As stated with past models, the OIS system on the G10 is very effective and will allow you to keep the sensitivity down (like ISO 400 and below) and still capture blur-free images without the flash. If you are in a bind, there is also a dedicated scene mode called ISO3200, which reduces the image size to M3 (1600x1200 or 2-megapixels).

The G10's built-in flash offers a pretty generous range of approx. 15 feet at wide angle with the ISO set to Auto. Using a lower ISO setting will greatly reduce this range. We keep the G10 set at ISO 80 during most of our indoor shooting, and found that it was still able to capture nice close-up portraits

from 4-6 feet away. Luckily, there is also a flash hot shoe that can control any of Canon's E-TTL Speedlites, which will help you further extend the indoor capabilities of this camera. Like we saw with the G9, our portrait or "people" photos looked great when captured in either Program or the dedicated Portrait scene mode. As you can see from our example on the [Samples](#) page, the G10 captures images that show sharp facial details, and rich color saturation, which gives your subjects a bit warmer skin tones. This doesn't always look 100% natural, as your subject might have a less rosy appearance, however it does make from some great looking prints. This is an instance where I would have liked to have seen more manual control over contrast, saturation, and sharpness.

I was a bit disappointed that the G10 does not offer any type of HD video mode or even an upgraded version of the 1024x768 mode found on the G9. While it only offers the typical 640x480 or 320x240 resolutions at 30fps, this unit does capture nice, smooth video. The microphone is located in a relatively good position, and overall produced pleasing sound. The exposure and AF systems also did well indoors, especially in our example that was recorded under some very strong fluorescent lighting. Overall, the G10 can capture some great video, whether outdoors at you child's football game or indoors during a dance recital.

The G10 is powered by a new Canon NB-7L 7.4v 1050 Li-ion battery pack that is charged in the handy CB-2LZ rapid AC charger. This unit features fold away prongs, making it perfect for traveling or carrying along in your camera bag. Canon claims this pack can power the camera for up to 400 shots with the LCD on or 1000 shots while using just the optical viewfinder, and a continuous playback time of approx. 10 hours. This pack is quite a bit more powerful than the 720mAh pack that was with the G9, with almost twice the battery life; kudos to Canon for this upgrade. I had no problems capturing all of our sample images (about 220 shots and several short movie clips) as well as concluding all of our other tests on a single charge with power to spare. With this pack offering almost dSLR like battery life, I only recommend you purchase a second battery pack if you are going to use this camera as a daily tool, or if you are planning on taking a Ton of pictures while on an extended vacation.

Bottom line - We always look forward to working with Canon's "G" series of PowerShot models, as they offer such a degree of versatility in a relatively compact package. This year's G10 proved to be yet another successful model in this category. While I was a bit disappointed at the loss of a few features from it predecessor, the G10 performed very well and all of the new additions (14.7-megapixel imager, 5x Wide zoom, new battery, etc.) helped me forget about the ones I missed. If you are one who isn't quite ready to jump into the dSLR world, but wants one of the most powerful and easy to use digicams on the market, look no further. With excellent image quality, speedy performance, loads of exposure options and manual controls, and a street price of around US\$450 or less (see our [Buy Box](#) below), I have no problem giving the Canon PowerShot G10 a very high recommendation.