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Technologies Explained

CMOS

Canon’s CMOS technology is one of the company’s key competitive advantages, with noise reduction circuitry at each pixel site delivering virtually noise-free images. In comparison with CCD technology, the lower power consumption characteristics of Canon’s CMOS sensors also contribute to longer battery life.

Signal conversion in Canon’s CMOS sensors is handled by individual amplifiers at each pixel site. Unnecessary charge transfer operations are avoided, vastly speeding up the process of getting signal to the image processor. Noise generation is reduced, power consumption is limited and faster frame rate potential is increased.

DIGIC

Image data captured by the CMOS sensor is processed by Canon’s purpose-built DIGIC image processors before being written to the camera's memory card. DIGIC technology uses advanced image processing algorithms to ensure precise, natural colours, accurate white balance, and advanced noise reduction. Ultra-fast processing speeds result in highly responsive camera operation and near-instant start-up times.

DIGIC chips work with a high speed DDR-SDRAM image buffer – reading, processing, compressing and writing image data fast enough to keep the buffer clear during long continuous shooting bursts. And because DIGIC integrates all key processing functions, power consumption is kept to a minimum.

EOS Integrated Cleaning System

The EOS Integrated Cleaning System combats sensor dust in three important ways: Reduce, Repel and Remove.

1. Reduce - Internal camera mechanisms are designed to minimise dust generation. The redesigned body cap prevents dust generation through wear on the cap itself.

2. Repel - Anti-static technologies, including a special fluorine coating, are applied to the low-pass filter covering the front of the sensor so as not to attract dust.

3. Remove - A Self-Cleaning Sensor Unit uses hi-frequency vibrations to shake dust from the infrared filter for a period of approximately one second after each start up. For instant shooting after power up, this feature is disabled immediately the shutter release is depressed.

Canon has also developed an internal Dust Delete Data system, which can map the position of visible dust on the sensor. This can then be deleted automatically after the shoot with the latest Digital Photo Professional software.

Picture Style

Picture Style pre-sets simplify in-camera control over image qualities. Picture Style pre-sets can be likened to different film types – each one offering a different colour response. Within each selectable pre-set, photographers have control over sharpness, contrast, colour tone and saturation. The camera's factory default configuration is set to deliver immediately-usable JPEG images without need for additional menu settings. Picture Style presets applied to a RAW image can be revised with Canon's Digital Photo Professional software.

The six pre-sets are:

- Standard – for crisp, vivid images that don't require post-processing

- Portrait – optimises colour tone and saturation and weakens sharpening to achieve attractive skin tones

- Landscape – for punchier greens and blues with stronger sharpening to give a crisp edge to mountain, tree and building outlines

- Neutral – ideal for post-processing

- Faithful – adjusts colour to match the subject colour when shot under a colour temperature of 5200K

- Monochrome – for black and white shooting with a range of filter effects (yellow, orange, red and green) and toning effects (sepia, blue, purple and green).

The User Defined Picture Style can be used to store up to three customised pre-sets, or any of the pre-sets available for download from Canon's web site at www.canon.co.jp/Imaging/picturestyle/file/index.html.

Digital Photo Professional Software

Digital Photo Professional software provides high speed, high quality processing of lossless RAW images. Processing with Digital Photo Professional allows real-time display and immediate application of image adjustments, giving control over RAW image variables such as white balance, dynamic range, exposure compensation, noise reduction and colour tone – plus the ability to view Auto Focus points on an image. The Lens Aberration correction tool allows precise correction of different types of distortion caused by certain cameras. Images can be recorded in camera with sRGB or Adobe RGB colour space.

Digital Photo Professional supports sRGB, Adobe RGB, ColorMatch RGB, Apple RGB and Wide Gamut RGB colour spaces. ICC (International Colour Consortium) profiles can be attached to TIFF or JPEG images when converted from RAW. This allows faithful reproduction of colours in software applications that support ICC profiles, such as Adobe Photoshop. For improved efficiency, a set of image adjustments can be saved as a recipe and applied.

EOS Utility

The latest version of EOS Utility provides essential support for Live View remote shooting, camera configuration and image transfers. Tightly integrated with Digital Photo Professional, EOS Utility can be configured to monitor ‘hot’ folders, automatically renaming and moving incoming images to a structured file system. Users can also tag their images with EXIF data, including copyright information.

Picture Style Editor

Picture Style Editor allows users to create individual Picture Styles that fit with their personal requirements. Each Picture Style contains detailed information on how specific colours should be represented within an image. Once new Picture Styles have been created, they can be uploaded directly into the camera and applied to JPEG or RAW images. When working with RAW files in DPP, both personal Picture Styles and the 6 predetermined Picture Styles can all be adjusted.