

**Panasonic**

**LUMIX**

**NEWS**

**A New Hybrid Full-Frame Mirrorless Camera, the LUMIX S5  
Featuring Exceptional Image Quality in High Sensitivity Photo/Video  
And Stunning Mobility**

Panasonic is delighted to announce the new LUMIX S5, a new hybrid full-frame mirrorless camera that achieves both excellent performance in photo/video and stunning mobility for serious photographers and videographers.

At the heart of the camera, the LUMIX S5 contains a 24.2-megapixel 35mm full-frame CMOS sensor that boasts a wide dynamic range and high sensitivity performance made possible by sufficient light condensation. The LUMIX S5 further realizes recording maximum ISO51200 crystal-clear high sensitivity video with the adoption of the Dual Native ISO technology.

As a pioneer of photo/video hybrid mirrorless cameras, the LUMIX has the largest lineup of cameras that record 4K 10-bit video\*1. As the latest member of the family, the LUMIX S5 is capable of 4K 60p/50p 4:2:0 10-bit, and 4K 30p/25p 4:2:2 10-bit internal recording. It is also capable of 4K 60p/50p 4:2:2 10-bit HDMI output. For 4K 30p/25p 4:2:0 8-bit internal recording, there is no time limit. Panasonic's exceptional heat dispersion technology realizes stable, long time video recording. The LUMIX S5 provides 14+ stops of dynamic range, which is as wide as those of cinema cameras, and V-Log / V-Gamut compatibility with popular colorimetry called "VariCam Look". A variety of recording formats and modes including 4:3 Anamorphic mode, Slow & Quick Motion, 4K/60p interval shooting and 4K HDR are also provided.

The LUMIX S5 boasts high-speed, high-precision AF in both photo shooting and video recording that are made possible with advanced deep-learning technology featuring real-time detection of the subject's type and parts such as human eye, face, head and body.

Combining the Body I.S. (5-axis) in the camera and the O.I.S. (Optical Image Stabilizer, 2-axis) in the LUMIX S Series lens, the 5-axis Dual I.S.2 compensates for blurring even powerfully, allowing the use of a 6.5-stop\*2 slower shutter speed. The splash/dust-resistant rugged design provides professional photographers with high reliability.

To enhance the photographic experience, the 96-megapixel High Resolution Mode (JPEG/RAW), Live View Composite function and HLG Photo mode are available.

Thanks to the high energy efficiency and a new 2,200mAh high-capacity battery, it can capture approximately 470 pictures (using the LVF) / 1,500 pictures (in Power Save LVF mode). It complies with a USB power charging and power supply. Double SD Card slot (UHS-IIx1 and UHS-I x1), 5GHz/2.4GHz Wi-Fi and Bluetooth 4.2 connectivity are also supported. The LUMIX S Series full-frame mirrorless camera system adopts the L-Mount system to provide users with a diverse and future-proof range of products from Panasonic, Leica Camera and Sigma. Panasonic now offers four innovative models in the LUMIX S Series of full-frame Digital Single Lens Mirrorless cameras – the S1R, the S1, the S1H, and the

new S5. The LUMIX S1R is ideal for taking high-resolution pictures, the LUMIX S1 is an advanced hybrid camera for high-quality photos and videos, and the LUMIX S1H is designed and developed specifically for film production. The LUMIX S5 packs the essence of these conventional S Series cameras in a compact, lightweight body. With this lineup, Panasonic is committed to meeting the demands of all creators by challenging the constant evolution of the photo/video culture in today's new digital era.

\*1 \*Of mirrorless interchangeable lens cameras, as of 2 September, 2020.

\*2 Based on the CIPA standard [Yaw/Pitch direction: focusing distance f=200mm when S-E70200 is used. Firmware must be updated to the latest version.

## 1. High image quality even in high sensitivity photo/video and Dual I.S. to suppress virtually any type of blurring

The LUMIX S5 contains a 24.2-megapixel 35mm full-frame CMOS sensor (35.6 mm x 23.8mm). Taking advantage of sufficient light condensation, the LUMIX S5 boasts a wide dynamic range and reproduces sharp images with exceptional clarity. Noise is minimized even when shot at maximum ISO 51200 high sensitivity. It is an ideal camera to use especially in low-light situations.

The LUMIX S5 features Dual Native ISO sensitivity, the technology that was first introduced in the Panasonic professional cinema camera VariCam line-up. Normally, noise increases as sensitivity rises with a single native ISO image sensor. However, the image sensor with Dual Native ISO in the S5 minimizes noise generation by choosing an optimal circuit to use according to the sensitivity before gain processing. As a result, it allows a maximum ISO 51200 high sensitivity recording. Dual Native ISO gives film creators a greater variety of artistic choices as well as the ability to use less light on the set, saving time. The LUMIX S5's Dual Native ISOs are 640 and 4000\*1

Taking full advantage of its high-resolution sensor, the LUMIX S5 provides a High Resolution mode that faithfully reproduces precise details to be saved as beautiful, highly realistic images not only RAW but also in JPEG. Eight consecutive images are automatically shot while shifting the sensor using the Body I.S. (Image Stabilizer) mechanism and synthesized into a 96-megapixel equivalent (12,000 x 8,000-pixel) image by the Venus Engine, which boasts high-speed signal processing. This magnificently high resolution photo is ideal for landscape photography of stationary subjects or fine arts with delicate details using a tripod. However, it can also be used in situations where moving subjects are included in the scene, by switching the sub mode.

The LUMIX S5 integrates the Body I.S. (Image Stabilizer) for powerful handshake correction. Panasonic developed an algorithm that precisely calculates shake information acquired not only from a gyrosensor, but also from the image sensor and accelerometer sensor. This enables more accurate shake detection and compensation, making it possible to use a 5-stop slower shutter speed\*2. Combining the Body I.S. (5-axis) in the camera and the O.I.S. (Optical Image Stabilizer, 2-axis) in the LUMIX S Series lens, the 5-axis Dual I.S. 2 the correction power is maximized to allow 6.5-stop slower shutter speed\*3. It

# Panasonic

# LUMIX

# NEWS

is highly beneficial in telephoto shots and in adverse situations, such as in low-light or with one-handed shooting. The 5-axis Dual I.S. 2 works for both photo and video recording, including 4K. The Body I.S. compensates for camera movement even when other L-Mount lenses without O.I.S. are used.

With the new Live View Composite function, the camera releases the shutter at designated intervals of exposure time and synthesizes the parts with high luminosity to produce a single picture. While the total brightness of each consecutive image is accumulated in bulb shooting, only the target subject, the bright parts of an image, are detected and the user can synthesize them carefully while seeing it in live view. This is useful for capturing shots of fireworks or stars in the night sky where the background needs no gain-increase.

\*1 When recording mode is set to V-Log. The sensitivity varies depending on the recording mode.

\*2 Based on the CIPA standard [Yaw/Pitch direction: focusing distance f=60mm when S-R2060 is used.

\*3 Based on the CIPA standard [Yaw/Pitch direction: focusing distance f=200mm when S-E70200 is used

## 2. Exceptional video recording performance for cinema-quality film creation

As a pioneer of photo/video hybrid mirrorless cameras, the LUMIX has the largest lineup\*<sup>1</sup> of cameras that record 4K 10-bit video. As the latest member of the family, the LUMIX S5 is capable of 4K 60p/50p 4:2:0 10-bit, and 4K 30p/25p 4:2:2 10-bit internal recording up to 30 minutes. It is also capable of 4K 60p/50p 4:2:2 10-bit HDMI output. For 4K 30p/25p 4:2:0 8-bit internal recording, there is no time limit. It will comply with RAW video output to ATOMOS NINJA V over HDMI as well as C4K video recording with the future firmware update (which will be detailed in Chapter 6).

Dynamic range measures the luminance range that a digital camera can capture. The LUMIX S5 delivers 14+ stops of Dynamic Range, which are virtually the same as those of the Panasonic cinema cameras, to precisely reproduce everything from dark to bright areas. The ability to capture accurate colors and rich skin tones is a must for any filmmaker. The LUMIX S5 imports the renowned colorimetry of the VariCam lineup of cinema cameras. The LUMIX S5 contains V-Log/V-Gamut capture to deliver a high dynamic range and broad colors. V-Log renders a very flat image while maintaining all of the color information within the image. This means that there is a greater level of play when the images are put through post-production processes. The CMOS sensor of the LUMIX S5 achieves a wide color gamut known as V-Gamut, which is the S5's optimum color space and achieves a color space that is wider than BT.2020. V-Log has log curve characteristics that are somewhat reminiscent of negative film and V-Gamut delivers a color space even larger than film. 35 conversion LUTs for VariCam cinema cameras can be downloaded free of charge for use in the LUMIX S5. It is easy to match the color tone with the footage recorded in V-Log of S1H/S1 and V-Log L of GH5/GH5S. Practical tools like a Waveform Monitor and V-Log View Assist are also available.

With Slow & Quick mode, impressive video slow and quick motion in 4K(1-60fps, 30x quick to 2.5x slow) or in FHD (1-180fps, 60x quick to 7.5x slow)\*<sup>2</sup> is available. It is possible to use AF\*<sup>3</sup> to capture the subject in sharp focus in this mode, too. It can also be accessed directly using the mode dial.

The HDR (High Dynamic Range) video recording in 4K is also available, which reproduces both the

bright parts and dark parts of an image, making it look just like human eyes see it. The camera records video with a designated gamma curve compatible with ITU-R BT.2100, and the user can now choose Hybrid Log Gamma (HLG) in Photo Style. The HLG\*<sup>3</sup> Photo mode provides a wider dynamic range to reproduce light and shadow with more natural contrast. The HLG Photos can also be produced as an HSP file\*<sup>4</sup> with compressed high-brightness signals in its full resolution (5,888 x 3,312, in 16:9) in addition to JPEG/RAW files. The user can playback these vibrant images on the latest Panasonic HLG-compliant 4KTV via HDMI cable connection or other HLG-compliant devices.

For more continuous burst shooting, 6K PHOTO\*<sup>5</sup> makes it possible to capture unmissable moments at 30 fps by extracting the frame with the best timing out of a 6K burst file (in 4:3 or 3:2 aspect ratio) to save as an approximate 18-megapixel equivalent high-resolution photo.

\*1 Of mirrorless interchangeable lens cameras, as of 2 September, 2020

\*2 The AF mode switches to MF when the frame rate is set to of 150 fps or more. The angle of view is reduced when the frame rate is set to 180 fps. Recording stops when the continuous recording time exceeds 30 minutes.

\*3 "HLG (Hybrid Log Gamma)" is an international standard (ITU-R BT.2100) HDR format.

\*4 "HSP" is an HDR picture format using HLG format video technology.

\*5 6K PHOTO' is a high speed burst shooting function that cuts a still image out of a 4:3 or 3:2 video footage with approx. 18-megapixel (approx. 6000 x 3000 effective pixel count) that the 6K image manages.

### 3. High-speed, high-precision AF achieved supported by real-time detection technology

The LUMIX S5 boasts high-speed, high-precision AF in both photo shooting and video recording. Combining the Contrast AF with DFD (Depth From Defocus) technology, it focuses on the target in approximately 0.08 sec\*<sup>1</sup>. As a camera that excels in low-light shooting, the LUMIX S5 boasts -6EV\*<sup>2</sup> luminance detection performance with Low Light AF thanks to the higher sensitivity and optimized tuning of the sensor. Allowing maximum 480 fps communication speed between the sensor and the lens, users can take full advantage of this high-speed, high-precision AF when LUMIX S Series lens is used.

The LUMIX S5 also incorporates an advanced deep learning technology that detects specific subjects - humans and fast-moving animals, including canidae, felidae and birds. Notably for humans, in addition to the eye, face, body the head is also separately recognized by real-time detection technology to provide even more precise focusing. The camera keeps tracking the subject person even if he/she moves quickly, turns his/her back to the camera, tilts his/her head or moves far away from the camera. On the other hand, improvements to the DFD technology has enhanced AFC, which also enables users to keep tracking small or fast-moving subjects to capture them in crisp focus whenever you release the shutter.

\*1 11EV, at wide-end with S-R24105 (CIPA) in LVF120 fps setting.

\*2 At ISO100, F1.4, AFS

### 4. Reliable basic performance and expandability for creative freedom

The LUMIX S5 boasts outstanding mobility yet excels in basic performance and expandability. To withstand heavy field use, the LUMIX S5 is composed of a magnesium alloy full die-cast body and is splash/dust-resistant\*<sup>1</sup>. With an optimum layout of heat dispersion components, heat is effectively

transferred outside which results in stable, continuous video recording for a long time.

The LUMIX S5 has a large LVF (Live View Finder) with a high magnification ratio of approx. 0.74x. High-precision, high-speed OLED (Organic Light-Emitting Diode) display features 2,360K-dot high resolution. Adoption of OLED for the LVF achieves high speed response with minimum time lag of less than 0.005 sec. With an eyepoint of approximately 20 mm, it offers high visibility with comfort for users wearing glasses.

A 3.0-inch free-angle LCD in 3:2 aspect with 1,840K-dot high resolution provides touch control. Composition during recording in various popular aspect ratios such as 16:9, 4:3, 1:1, 4:5, 5:4 and 9:16 can be checked with the Frame Marker function. The REC Frame Indicator identifies whether the camera is recording or not.

The LUMIX S5 has a double SD Memory Card slot - one slot complies with UHS-I and the other with the high-speed, high-capacity UHS-II (Video Class 90).

The camera's battery can be recharged either via AC or USB according to the user's convenience.

Compatibility with Bluetooth 4.2 (called BLE: Bluetooth Low Energy) enables constant connection with a smartphone/tablet with minimum power consumption. The settings of a LUMIX S5 camera can also be copied and transmitted wirelessly to other S5 cameras when using multiple S5 camera. Also, Wi-Fi 5-GHz (IEEE802.11ac)\*2 is effective in addition to 2.4-GHz (IEEE802.11b/g/n.) This provides secure and stable connection on location for smooth remote control and high-speed data transfer.

\*1 Dust and Splash Resistant does not guarantee that damage will not occur if this lens is subjected to direct contact with dust and water.

\*2 5GHz Wi-Fi is not available in some countries.

## **5. Optional accessories and application software**

A variety of accessories can be used for the LUMIX S5 to enhance its usability and convenience. Microphone Adaptor (DMW-XLR1) is a plug-in type adaptor for an XLR microphone to record high-quality stereo sound. It is ideal for lip-sync recording. Dedicated switches allow direct, quick control. MIC, LINE and CONDENSER MICROPHONES are switchable. Battery Grip (DMW-BGS5) allows approximately 940 pictures (using the LVF) / 3000 pictures (in Power Save LVF mode) with an extra battery inside the grip. More accessories such as Remote Shutter (DMW-RS2), DC coupler (DMW-DCC17), Tripod Grip (DMW-SHGR1) are available.

Application software LUMIX Tether enables tethered shooting via USB. Users can control the camera by connecting it to a PC via USB. It lets them view the image on a large PC screen while shooting. For live streaming, LUMIX Tether for Streaming (Beta) with LIVE VIEW mode can be used.

The LUMIX Sync application for iOS/Android devices enables photo transmission to a smartphone or a tablet via easy wireless connection. It also allows remote control of the camera using these devices.

## **6. Future Firmware Update**

To further enhance its performance, a firmware update is scheduled for the LUMIX S5 by the end of

**Panasonic**

**LUMIX**

**NEWS**

---

2020. In addition to C4K video recording, it will support RAW video data output to ATOMOS NINJA V over HDMI at a resolution of 5.9K (5888x3312) 29.97p/25p, 4K(4128x2176) 59.94p/50p and Anamorphic 3.5K (3536x2656)/50p. A variety of video recording assist functions such as the Vector Scope Display, Master Pedestal Adjustment and SS/Gain Operation(SEC/ISO, ANGLE/ISO, SEC/dB) will also be available. L.MonochromeS and L.ClassicNeo are the new options to be added for Photo Style.

- L-Mount is a trademark or registered trademark of Leica Camera AG.
- Wi-Fi® is a registered trademark of Wi-Fi Alliance®
- The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Panasonic Corporation is under license.
- Other trademarks and trade names are those of their respective owners.
- Design and specifications are subject to change without notice.