News Release

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PENTAX K-1
PENTAX's first 35mm full-frame digital SLR camera, and the new flagship model of the popular PENTAX K series, providing outstanding operability and superb reliability

RICOH IMAGING COMPANY, LTD. is pleased to announce the launch of the PENTAX K-1 digital SLR camera. Developed as the flagship model of the acclaimed PENTAX K series of digital SLR cameras, this new model features a large CMOS image sensor, equal in size to the full image area of 35mm film, to deliver super-high-resolution images required for the artistic work of photo enthusiasts and professionals.

Equipped with a large, high-performance CMOS image sensor (35.9mm by 24.0mm) and supported by approximately 36.4 effective megapixels and PENTAX-original imaging technologies, the PENTAX K-1 assures super-high-resolution images rich in gradation and superb in high-sensitivity rendition. Thanks to its large image sensor, the camera provides the same depth of field as a 35mm film-format camera, and allows the user to create a fine *bokeh* (defocus) effect more effectively than before. By further advancing its unique technologies, accumulated over decades of camera development, PENTAX has also equipped the K-1 with a host of the latest technologies. A new-generation shake reduction mechanism effectively reduces camera shake along five axes with a compensation range of five shutter steps. This mechanism also shifts the image sensor unit by a single pixel to assure super-high-resolution digital imaging. An extra-accurate exposure-control mechanism is supported by state-of-the-art artificial intelligence technology. Within its compact body, the K-1 also provides an array of PENTAX-original features and functions, such as a flexible tilt-type LCD monitor that can be tilted to the desired angle horizontally and vertically without deviating from the lens's optical axis; an Operation Assist Light function to facilitate camera operation in the dark; and an optical viewfinder with a nearly 100-percent field of view. In addition to an assortment of interchangeable lenses — from old film-era lenses to the latest D FA-series models — the K-1 also accepts more compact DA-series lenses with a smaller image circle, with the help of its Crop function.

Main Features

1. High-resolution, fine-gradation images supported by approximately 36.4 effective megapixels
   The K-1 incorporates a newly developed 35mm-format full-frame CMOS image sensor —the first time in a PENTAX K-mount digital SLR camera. It also features an AA (anti-aliasing) filter–free design that puts priority on image resolution. Coupled with a high-speed image processing system and the newly designed PRIME IV imaging engine, capable of 14-bit RAW-format

image recording, it optimizes the resolving power of approximately 36.4 effective megapixels to deliver super-high-resolution, fine-gradation images. It also allows for super-high-sensitivity shooting up to ISO 204800, and produces beautiful, high-resolution images over the entire sensitivity range — from the lowest sensitivity to the highest — while effectively minimizing annoying noise at all sensitivity levels.

2. New-generation SR II five-axis system

(1) In-body SR mechanism to assure optimal shake reduction performance with all compatible lenses:

The K-1 comes equipped with the PENTAX-developed SR II (Shake Reduction II) five-axis mechanism that enables accurate control of the large full-frame image sensor with all compatible PENTAX interchangeable lenses.* In addition to camera shake caused by pitch and yaw, this new system is also designed to effectively compensate for camera shake caused by horizontal and vertical shift (often generated in macro photography) and camera shake caused by roll, which is difficult to deal with by lens-installed shake reduction mechanisms. It has a compensation range of as much as five shutter steps — the widest of all PENTAX digital SLR models — to expand the limits of handheld shooting. Even when taking a panning shot, this system automatically detects the direction of the camera's movement, and efficiently controls the SR unit to always produce the best image possible without requiring any mode switching operation.

(2) Pixel Shift Resolution System with a new motion correction function

The K-1 features Pixel Shift Resolution System,** the latest super-resolution technology, which captures four images of the same scene by shifting the image sensor by a single pixel for each image, then synthesizes them into a single composite image. Compared to the conventional Bayer system, in which each pixel has only a single color data unit, this innovative system obtains all color data in each pixel to deliver super-high-resolution images with far more truthful colors and much finer details than those produced by conventional full-frame image sensors. This system even provides a new motion correction function,*** which automatically detects a moving object during continuous shooting and minimizes negative effects during the synthesizing process, in order to accommodate a wider range of scenes and subjects.

(3) Innovative AA filter simulator to minimize moiré

By applying microscopic vibrations to the image sensor unit at the sub-pixel level during image exposure, the K-1's AA (anti-aliasing) filter simulator**** provides the same level of moiré reduction as an optical AA filter. Unlike an optical filter, which always creates the identical result, this innovative simulator lets the user not only switch the AA filter effect on and off, but also to adjust the level of the effect. This means that the ideal effect can be set for a particular scene or subject based on given photographic conditions.

(4) Supportive shooting functions

Since the K-1's SR unit has a flexible design that tilts the image sensor unit in all directions, it provides a host of handy shooting functions, including auto level compensation, image-composition fine-adjustment, and ASTRO TRACER, which simplifies advanced astronomical photography using a built-in GPS module.

** Lenses compatible with this mechanism: K-, K_A-, K_{AF}-, K_{AF2}- and K_{AF3}-mount lenses; screw-mount lenses (with an adapter); and 645- and 67-system lenses (with an adapter). Some functions may not be available with certain lenses.*

*** When using this system, the user is advised to stabilize the camera firmly on a tripod. When a moving subject is captured in the camera's image field, its image may not be reproduced clearly, either in part or as a whole.*

**** The movement may not be sufficiently corrected when the object is moving in a certain direction and/or pattern. This function does not guarantee that the movement is properly corrected with all subjects.*

***** This function works most effectively with a shutter speed of 1/1000 second or slower. This function may not be combined with some shooting modes, including the Pixel Shift Resolution system.*

3. Flexible tilt-type LCD monitor to accommodate various shooting angles
   On its back panel, the K-1 features a newly designed, flexible tilt-type LCD monitor, which can be tilted to the desired angle horizontally, vertically or diagonally with a single action, without deviating from the lens's optical axis. The user can not only tilt it approximately 35 degrees horizontally and approximately 44 degrees vertically, but also pull it out from its base to view the on-screen image from above for waist-level photography. This large, 3.2-inch LCD monitor has approximately 1,037,000 dots and a 3:2 aspect ratio, and provides a protective tempered-glass front panel for added durability. In addition to its wide-view design, it also features a unique air-gapless construction, in which the air space between LCD layers is eliminated to effectively reduce the reflection and dispersion of light for improved visibility during outdoor shooting. A new Outdoor View Setting mode allows the user to instantly choose the desired monitor brightness level with a single push of a button.

4. Newly developed SAFOX 12 with 33 sensor points and full-frame-proportioned AF frame
   The K-1 features a newly developed SAFOX 12 AF sensor module with an expanded AF frame covering the full-frame image field with 33 AF sensors (25 cross-type sensors positioned in the middle). The center sensor and the two sensors located just above and below it are designed to detect the light flux of an F2.8 lens, making it easy to obtain pinpoint focus on a subject when using a large-aperture lens. Working together with the advanced PENTAX Real-Time Scene Analysis System, this AF system assures much improved AF tracking performance when photographing fast-moving subjects.

5. Upgraded PENTAX Real-Time Scene Analysis System, with application of artificial intelligence technology
   By combining an approximately 86,000-pixel RGB metering sensor with the new PRIME IV imaging engine, the K-1's advanced PENTAX Real-Time Scene Analysis System performs real-time analysis of the brightness distribution over the image field and the subject's colors and movement. Based on this data, it then measures the subject's lighting conditions with great accuracy and optimizes the exposure. In addition, by adopting a breakthrough artificial intelligence technology called deep learning to its algorithm,* it assesses each individual scene more accurately, and optimizes the exposure settings for a given scene or composition.

   ** Effective when the AUTO exposure mode is set to Scene Analyze Auto and the Custom Image mode is set to Auto Select.*

6. Easy-to-focus optical viewfinder with nearly 100-percent field of view
   Newly developed for its 35mm full-frame design, the K-1's optical viewfinder provides a nearly 100-percent field of view and an approximately 0.7-times magnification. It comes with a Natural Bright Matt III focusing screen, which is acclaimed for ease of focusing during manual-focus operation and a true-to-life rendition of defocused areas in the viewfinder image. In addition, its transparent viewfinder display makes it possible to superimpose a wide range of photographic data over the viewfinder image.

7. High-speed continuous shooting with a top speed of approximately 4.4 images per second
   The K-1 has a larger shutter unit, which is newly designed to accommodate the camera's full-frame image sensor. It also incorporates a range of new mechanisms to provide high-speed, high-accuracy control of the mirror unit, including a damper mechanism that effectively minimizes mirror shock. A high-speed data transmission system incorporated in the PRIME IV imaging engine allows the user to continuously record as many as 17 images in the RAW

format (or a maximum of 70 images in the JPEG Best format) in a single sequence, at a top speed of approximately 4.4 images per second.

8. Supportive shooting functions to improve picture-taking efficiency and operational comfort
・Operation assist light function, which provides LED lights at four different spots around the camera body (above the lens mount, behind the LCD monitor, at the memory car slot, and at the cable switch terminal) to facilitate lens and memory card changes, attachment and removal of a cable switch, and control button operation at night and in poorly lit settings.
・Key lock function, which prevents erroneous operation of the four-way controller and other exposure-related control buttons.
・Smart Function, which allows the user to swiftly choose and set desired functions using just the function dial and the set dial on the camera's upper panel, without referring to the menu screen on the LCD monitor.
・Control panel customize function, which allows the user to change a listing and/or position of the on-screen menu.

9. Compact, solid body with dustproof, weather-resistant construction
The K-1's top panel and front and back frames are all made of sturdy yet lightweight magnesium alloy. Although the camera features a dependable, durable shutter unit that can withstand 300,000 shutter releases (measured under actual shooting conditions) for professional use, its body has been downsized to the minimum, thanks to the incorporation of a newly designed floating mirror structure. With the inclusion of 87 sealing parts in the body, the K-1 also boasts a dustproof, weather-resistant and cold-resistant construction, assuring solid operation at temperatures as low as -10°C. All these features make the K-1 a dependable, all-purpose performer, even under demanding shooting conditions.

10. Wireless LAN connection to support smartphone operation
The K-1 provides a host of wireless LAN (Wi-Fi) functions to support the operation with smartphones and tablet computers. By installing the dedicated Image Sync application in a mobile device, the user can remotely check the live-view image, capture still images, and adjust such camera settings as aperture, shutter speed and ISO sensitivity to the desired level through the mobile device. It is even possible to download captured images onto the mobile device, then upload them on social networking service websites.

11. Full HD movie recording with an array of creative tools
The K-1 captures Full HD movie clips (1920 x 1080 pixels; 60i/30p frame rate) in the H.264 recording format, and comes equipped with a stereo mic terminal for external microphone connection and a headphone terminal. The user can also adjust the audio recording level manually, monitor sound pressure levels during microphone recording, and cut down wind noise using a new wind noise reduction mode. In addition to a host of distinctive visual effects available for movie recording,* the K-1 also provides the interval movie mode, which captures a series of 4K-resolution (3840 x 2160 pixels) movie clips at a fixed interval.

** When special image processing is required, the frame rate may vary depending on the selected special-effect mode.*

12. Built-in GPS module
Thanks to its built-in GPS module, the K-1 provides a variety of advanced GPS functions, including the recording of location, latitude, longitude, altitude and UTC (Universal Time Coordinated) and direction at the time of shooting. The user can easily access images

containing GPS data using a computer, to browse them, check on shooting locations and position data on the screen, or save them.
The K-1 also provides a set of other unique tools, including: Electronic Compass, which displays the camera's direction on its LCD monitor; GPS log, which keeps track of the photographer's movement; and ASTRO TRACER, which simplifies the tracing and photographing of celestial bodies by coupling GPS data with the camera's SR mechanism.

13. Other features
- ・High-grade DRII (Dust Removal II) mechanism for effective elimination of dust on the image sensor using ultrasonic vibration
- ・Crop mode with a choice of image area from AUTO, FF (Full Frame) and APS-C, to accommodate different types of lenses
- ・Clarity control and Skin Tone correction functions, a pair of the latest image processing technologies developed by RICOH Central Laboratory
- ・HDR (High Dynamic Range) shooting mode with RAW-format data filing, usable in handheld shooting
- ・The PENTAX-invented hyper operating system for quick, accurate response to the photographer's creative intentions
- ・Dual SD card slots for memory card flexibility (compatible with SDXC UHS-1 speed class in SDR104 buss speed mode)
- ・Compensation of various parameters: lens distortion, lateral chromatic aberration, diffraction, and brightness level at image-field edges. Fringe effect compensation is also available in RAW-format processing.
- ・Compatibility with PENTAX Image Transmitter 2 tethering software (Software update required from RICOH IMAGING official website)
- ・Digital Camera Utility 5 software (latest version) included

Optional Accessories

D-BG6 Battery Grip
A battery grip for exclusive use with the PENTAX K-1 camera body. Designed to facilitate vertical-position shooting, it provides a shutter release button, a set of control buttons (AE lock, AF, ISO, exposure compensation, green), a preview lever, and dual electronic dials — just like those provided on the camera body. It also features the dustproof, weather-resistant construction identical to the PENTAX K-1 camera body. In addition to the dedicated lithium-ion rechargeable batteries, it also accepts six AA-size batteries.

About RICOH IMAGING EUROPE S.A.S.

RICOH IMAGING EUROPE S.A.S. is a leading supplier of recreational and professional imaging equipment, with a long standing brand heritage in both Pentax and Ricoh branded products. Its product range is extensive and includes state of the art digital SLR, medium format, interchangeable lens system (mirror less) cameras, expert, action and outdoor compact cameras and an extensive range of high performance lenses and accessories. In addition, it has a wide range of binoculars and spotting scopes, suitable for a variety of activities.

The company traces its roots to 1919, when as Asahi Optical Joint Stock Co., it was established in the Nishi-Sugamo district of Tokyo to manufacture lenses for eyeglasses. In 1938, the company expanded its portfolio of products and services to include lens design, photographic lenses and binoculars under the name of Ashai Optical CO. LTD., and eventually was renamed again as PENTAX in 2002. Six years later, the company integrated with optical glass manufacturer HOYA CORPORATION. On October 1st, 2011, the company became a 100% subsidiary of Ricoh Company, Ltd. and operates as Ricoh Imaging Company, Ltd. as of August 1, 2013.

For further information please visit: www.ricoh-imaging.eu