



Information

PENTAX

PENTAX Corporation
2-36-9, Maeno-cho, Itabashi-ku
Tokyo 174-8639, Japan
TEL: (81)-3-3960-5151
FAX: (81)-3-3960-5226

Embargo: January 24, 2008

PENTAX K20D

A High-Performance Lens-Interchangeable Digital SLR Camera for Truly Demanding Photo Enthusiasts

Coupling a New Image Sensor to Optimize Lens Performance with an Array of Features to Maximize the Fun and Excitement of Digital Picture-Taking

PENTAX Corporation is pleased to introduce the PENTAX K20D lens-interchangeable digital SLR camera. This medium-class model offers superb image quality, an array of advanced features and outstanding reliability and operability to meet the specialized and exacting demands of photo enthusiasts, including advanced amateurs. It incorporates a newly developed image sensor to bring out the optimum performance of PENTAX interchangeable lenses, while offering the features and functions needed to maximize the pleasure and excitement of digital photography.



The K20D's development was based on the popular PENTAX K10D, which not only attracted great interest and high acclaim from users around the world, but also swept prestigious camera awards across the globe in 2007.

The new CMOS image sensor, exclusively developed for K20D, is designed to optimize the performance of PENTAX interchangeable lenses. Featuring approximately 14.6 effective megapixels and the latest noise-reduction technology, it assures superb image quality a step above its predecessors.

The K20D also offers an array of advanced features and user-friendly functions, including: a new Custom Image function that lets the user select or adjust the image's finishing touches to their preference; an upgraded, more reliable SR (Shake Reduction) system; a comprehensive Dust Removal system; a multi-mode exposure system for faithful reproduction of the photographer's creative intentions; and a dependable dust-proof, water-resistant body construction. As a result, the K20D easily meets the diversified, exacting demands of discerning photographers.

Major Features

1. High-quality image reproduction

[1] Newly developed CMOS image sensor:

The K20D features a newly developed CMOS (complementary metal oxide silicon) image sensor measuring 23.4 mm x 15.6 mm. After a thorough review of previous image sensors, PENTAX greatly reduced the area of circuitry around the pixel field to expand the light-sensitive area, while narrowing the camera's depth to nearly 60%, it achieved overall downsizing. Since it can detect diagonal light with great accuracy, the sensor can bring out the optimum performance of PENTAX interchangeable lenses. It also keeps annoying digital noise to a minimum by automatically raising its own sensitivity, allowing to increase the sensitivity from ISO 100 to the highest level of ISO 6400 (via a custom function).

[2] Approximately 14.6 effective megapixels for true-to-life, rich-gradation images:

The K20D's new CMOS sensor features an approximately 14.6 effective megapixels. Coupled with a high-performance imaging engine incorporating PENTAX-original image-processing technologies programmed to yield natural, true-to-life descriptions, it assures fine-detailed, rich-gradation images. In addition, the K20D features a new Custom Image function, which lets the photographer select one of six finishing touches to reflect his or her creative intentions with great ease.

[3] High-performance, high-speed PRIME imaging engine:

The K20D incorporates the PENTAX-original PRIME (PENTAX Real Image Engine) as its imaging engine. Designed exclusively for PENTAX digital SLR cameras, it assures well-balanced, true-to-life images with faithful color reproduction by efficiently controlling digital signals transmitted by the CMOS image sensor and other photographic factors, including white balance. This imaging engine also features a DDR2 (Double Data Rate 2) memory to assure speedy image processing and high-speed data transfer.

2. PENTAX-original SR (Shake Reduction) mechanism assuring greater reliability

The K20D is equipped with the PENTAX-developed SR (Shake Reduction) mechanism, which effectively reduces camera shake for sharp, blur-free images even under demanding shooting conditions, such as when using a telephoto lens, shooting in the dark or at night without supplementary flash illumination, or using extended exposures for sunset scenes. This innovative mechanism offers an outstanding compensation effect equivalent to approximately 2.5 to 4 shutter-speed steps. In addition, the lighter image sensor unit and refined data-control algorithm realize further image stabilization. Since it does not require special anti-shake lenses, this extends outstanding shake-reduction benefits to nearly all existing PENTAX interchangeable lenses.*

** Lenses compatible with this mechanism are: PENTAX K, KA, KA_F, and KA_{F2}-mount lenses, screw-mount lenses (with an adapter); and 645- and 67-system lenses (with an adapter). Some functions may not be applicable with certain lenses.*

3. New Live View function

The K20D features a new Live View function, which allows the user to view the image on the LCD monitor on the camera's back panel during shooting. This comes handy when the photographer must move his or her eye from the viewfinder in specialized applications, such as low- and high-angle compositions. This function also allows the user to confirm the shake-reduction effect on the monitor during the shooting.

4. Expanded Dynamic Range function

The K20D has added a dynamic-range expansion function, which allows the user to expand a dynamic range (or a range of gradation reproduction) while retaining the proper contrast to avoid white-washed areas. With an approximately 1EV expansion effect, it assures beautiful, rich-gradation images.

5. Comprehensive Dust Removal system, including prevention, removal and confirmation devices

The K20D features the user-friendly Dust Removal (DR) system to prevent dust from sticking to the surface of the CMOS image sensor (or low-pass filter). Applied to the image sensor surface through the vapor deposition of a fluorine compound, the PENTAX-original SP (Super Protect) coating effectively removes dust and stains from the surface. In the next step, dust that still remains on the surface will be shaken off when the SR system shifts the image sensor at high speed. Finally, the dust that is shaken off the image sensor will fall onto an adhesive sheet positioned at the bottom of the SR unit, eliminating any possibility of its returning to the image sensor surface. This upgraded DR system even offers a new Dust Alert function, which allows the user to confirm the dust-adhesion status of the image sensor in advance.

6. Custom Image function for easy creation of intended images

The K20D is equipped with a new Custom Image function that lets the users select one of the six modes and adjust the image's finishing touches to their presence. Allowing a minor adjustment of tone, saturation, contrast, and sharpness, this function enables the user to take photographs with their intended image. The user easily operates the selection and adjustment process by recording a preview image and checking the effect.

7. Versatile exposure system for faithful reproduction of creative intentions

[1] Hyper Program function:

The K20D's Hyper Program function allows the user to instantly switch to the Shutter- or Aperture-Priority AE mode from the Programmed AE mode, with a simple turn of the electronic dials on the grip. To return to the Programmed AE mode, simply press the green button positioned next to the shutter release button.

[2] Hyper Manual function:

When shooting in Manual mode, a single push of the green button allows the user to instantly set the proper exposure for the subject.

[3] Sensitivity-Priority mode:

The K20D features a unique Sensitivity-Priority (Sv) mode, which is designed to automatically select the optimum combination of aperture and shutter speed for a user-selected sensitivity. The sensitivity can be shifted instantly in 1/2 or 1/3 steps by turning the electronic dial on the back panel.

[4] Shutter/Aperture-Priority mode:

Taking full advantage of the unique capability of digital cameras permitting automatic shift of sensitivity at any time, the Shutter/Aperture-Priority (TAv) mode automatically selects the most appropriate sensitivity for a user-selected shutter-speed/aperture combination. It allows the user to experiment with a greater range of photographic expressions with great ease.

8. Bright, clear viewfinder

Featuring a glass pentaprism, the K20D's viewfinder offers an approximately 95-percent field of view and an approximately 0.95-times magnification for easy viewing of the subject and effortless confirmation of focus and composition. Coupled with the acclaimed Natural-Bright-Matte II focusing screen, it delivers a large, bright subject image.

9. Dust-proof, water-resistant construction

The K20D boasts an extremely reliable dust-proof, water-resistant construction, with special seals applied to 74 different parts of the camera body, including the shutter release button and all the switches, levers, dials. This dependable body makes it possible to use the K20D in the rain or dusty locations without worries.

10. Continuous shooting at approximately three images per second

To trace the movement of an active subject or capture a sequence of the subject's expressions, the K20D offers a continuous shooting mode that allows the photographer to capture as many as 38 images in succession (in JPEG recording format) at a maximum speed of approximately three images per second. When switched to the new high-speed advance mode, the user can take up to approximately 115 images at the speed of approximately 21 images per second.**

*** The image size is fixed at 1.6 megapixels in the Burst Shooting mode.*

11. Large 2.7-inch wide-view LCD monitor

The K20D features a large 2.7-inch color LCD monitor with approximately 230,000 dots on its back panel. Its wide-view design allows the photographer to check the monitor image from approximately 160 degrees both vertically and horizontally. Since it assures effortless image viewing from a diagonal position, it facilitates low- and high-angle shooting using the Live View function.

12. High-precision 11-point wide-frame AF

The K20D's sophisticated SAFOX VIII autofocus system features 11 sensor points (with nine cross-type sensors positioned in the middle) to automatically focus on the subject with utmost precision, even when it is positioned off center. When the subject is captured in focus, the in-focus sensor point is automatically superimposed in red in the viewfinder for at-a-glance confirmation.

13. Powerful rechargeable batteries

The K20D features new, large capacity lithium-ion rechargeable batteries, which can capture approximately 740 images***, approximately 50% more compared with conventional one, when fully recharged. Drastic improvement of battery capacity is realized with through energy saving design.

**** Under testing condition prescribed by PENTAX, when using D-LI50 lithium-ion rechargeable batteries with no flash*

14. Other features

- 1) Choice of 16-segment multi-pattern metering, center-weighted metering and spot metering to accommodate various photographic applications
- 2) Reliable, durable shutter unit assuring more than 100,000 shutter releases
- 3) High-rigidity stainless-steel chassis

- 4) 36 custom functions to personalize camera operations
- 5) Universal-type X-sync socket (new feature)
- 6) RAW button for single-action image-file switching
- 7) Digital Preview for recording images in addition to checking
- 8) Optional Battery Grip (D-BG2) for extended shooting sessions
- 9) Nine digital filters to add creative and artistic touches
- 10) In-body RAW data development for image filing in JPEG and TIFF formats
- 11) Compatibility with SDM equipped lenses for quiet, extra-smooth autofocus operation
- 12) **PENTAX PHOTO Laboratory 3**, RAW data processing software, **PENTAX PHOTO Browser 3**, browser software and **PENTAX REMOTE Assistant 3**, camera control software, included on the accompanying CD-ROM

◆ *PENTAX, and smc PENTAX are trademarks of PENTAX Corporation*

◆ *PENTAX PHOTO Laboratory, PENTAX PHOTO Browser, PENTAX REMOTE Assistant, and SDM are trademarks of PENTAX Corporation*

◆ *All other brands or product names are trademarks or registered trademarks of their respective companies*

◆ *Designs and specifications are subjects to change without notice*

K20D Main Specifications

Effective Pixels		approx.14.6 megapixels
Image Sensor	Total pixels	approx.15.07 megapixels
	Type	CMOS with a primary color filter
	Size	23.4mm x 15.6mm
Color Depth		8 bit (JPEG) or 12 bit (RAW)
Recorded Pixels		JPEG: [14.6M] 4672 x3104 pixels, [10M] 3872 x 2592 pixels, [2M] 1824 x 1216 pixels RAW: [14.6M] 4672 x 3104 pixels
Sensitivity(Standard output sensitivity)		Auto, Manual : ISO100 - 3200(1EV steps or 1/2EV steps) can be expand to ISO6400,Bulb mode:up to ISO1600
Recording Formats		RAW(Orijinal), JPEG (Conforms to Exif 2.21), Conforms to DCF (Design rule of Camera File system)2.0
Image Formats		Compressed: JPEG - Baseline (★★★★: Premium ,★★★: Best ,★★: Better ,★: Good) , RAW+JPEG : avaiable Compressed: RAW (PEF) Non-compressed: RAW (DNG)
Storage Media		SD , SDHC memory card
White Balance		Auto, Daylight, Shade, Cloudy,Tungsten Light, Fluorescent Light (W, D, N), Flash, Manual setting, with WB fine adjustment
Viewfinder	Type	Pentaprism type
	Focusing screen	Natural-Bright-Matte II focusing screen
	Field of view	approx.95%
	Magnification	approx.0.95X (with 50mm F1.4 lens, infinity, -1m ¹)
	Dioptr adjustment	approx.-2.5 - +1.5m ⁻¹
LCD Monitor	Type	TFT color LCD monitor, brightness adjustable, Color adjustable, Wide angle view
	Size	2.7 inch
	Dots	approx. 230,000 dots
Live View	Field of view	TTL by Image sensor
	Display	approx. 100%
		Enlargement (4X, 8x) , Grid pattern
Preview Method		Live View, Digital preview , Optical preview
Playback		One Image, Two Images, Index (4 or 9 or 16 thumb nails), Enlargement (up to 32X, scroll available), Image Rotation, Folder view, Slideshow, Histogram, Bright/Dark area
	Digital Filter	B&W(4 type), Sepia(3 type), Color (18 type), Color extract (6 type), Soft (three-level amount adjustable), Illustration, HDR (3 type), Slim (+/- 8 level amount adjustable), Brightness (+/- 8 level amount adjustable)
Focusing System	Type	TTL Phase-matching 11-point wide autofocus system (SAFOX VIII)
	Focus Mode	AF-single (with focus lock); AF-continuous available* Manual focus
	Focus Point	Auto, Select, Center
	AF assist lamp	avaiable (by Built-in Flash)
Image Stabilizer	Type	Image sensor shift mechanism , Max 4 stops
Dust Removal	Type	Image sensor moving mechanism and SP coating with Dust Alert
Exposure Control	Metering System	TTL open-aperture 16-segment metering (coupled with lens and AF information)
	Metering Mode	(1) Multi-segment metering (2) Center-weighted metering (3) Spot metering
	Exposure Range	EV 0 - 21 (at Standard Output Sensitivity 100 with 50mm F1.4 lens)
	Modes	(1) Green, (2) Program AE, (3) Sensitivity-Priority AE, (4) Shutter-Priority AE, (5) Aperture-Priority AE, (6) Shutter and Aperture Priority AE, (7) Metered Manual, (8) X speed, (9) Bulb
	Exposure Compensation	±3 EV (0.5EV steps) , ±2 EV (0.3EV steps)
	Auto-bracketing	3 or 5 frames within range of ±0.5EV, ±1.0EV, ±1.5EV, ±2.0EV (0.5EV steps) or ±0.3EV, ±0.7EV, ±1.0EV, ±1.3EV, ±1.7EV, ±2.0EV (0.3EV steps)
	AE Lock	available
Shutter	Shutter Type	Electronically controlled vertical-run focal plane shutter
	Shutter Speed	1/4000 - 30 sec. and bulb
Drive Modes		Single-frame , Continuous (Hi, Lo), Burst, Self-timer (12s, 2s), Remote control (0s, 3s), Remote control continuous, auto bracket, extended bracket and Multi-exposure
	Continuous shooting	approx. 3fps , sequence : until 38 frames (JPEG and continuous (Hi)) , 14frames (RAW(PEF)) , 16frames (RAW(DNG)) approx. 2.3fps , sequence : until the memory card becomes full (JPEG and continuous (Lo)) , 14frames (RAW(PEF)) , 16frames (RAW(DNG))
	Burst mode	approx. 21fps , sequence : 115frames (1.6M ★★★ JPEG)
Built-in Flash	Type	Built-in retractable P-TTL pop-up flash
	Guide number	approx. 13 (Standard Output Sensitivity 100/m)
	Angle of view coverage	28mm wide-angle (equivalent to 35mm)
Flash Synchronization		Hot shoe, X-sync socket, sync-speed: 1/180 sec., P-TTL, high-speed-sync, wireless-sync with PENTAX dedicated flash
Data Folder	Folder Name	Date (100_MMDD···) / PENTX (100PENTX, 101PENTX···) ,
	File Name	Standard / User customize
Power Sources		Rechargeable D-LI50 lithium-ion battery Optional AC adapter also available.
Battery Life	nber of recordable images	approx. 530 *1 (50% use Flash) , approx. 740 *2 (Normal Recording)
	Playback time	approx. 330 minutes *2
Interfaces		USB2.0 (HI-SPEED)/Video , DC input , Cable switch, X-sync socket
Lens Mount	Usable Lens	PENTAX K _{AF2} bayonet mount PENTAX K _{AF2} -, K _{AF} -, and K _A -mount lenses. * Power zoom function available. K-mount lenses usable with restrictions. S-mount lenses, 67/645 lenses usable with adapter and with restrictions.
Dimensions		approx. 141.5(W) x 101(H) x 70(D)mm (5.6 x 4.0 x 2.76 inches)
Weight		approx. 715g (25.2 oz.) without battery and SD memory card. approx. 800g (28.2 oz.) loaded and ready with battery and SD memory card

*1 Recording capacity shows approximate number of shots recorded during CIPA-compliant testing. Actual performance may vary depending on operating conditions.

*2 According to the result of PENTAX in-house testing.

K20 D

Storage capacity

Recorded Pixels	RAW		JPEG															
	4672 x 3104		4672 x 3104				3872 x 2592				3008 x 2000				1824 x 1216			
Quality Level	PEF	DNG	★★★★	★★★	★★	★	★★★★	★★★	★★	★	★★★★	★★★	★★	★	★★★★	★★★	★★	★
512MB	20		34	58	105	205	50	84	148	308	88	142	245	457	230	368	616	1118
1GB	40		68	117	212	411	101	168	296	616	176	285	491	915	461	737	1233	2238
2GB	82		138	239	429	830	206	343	602	1254	359	579	991	1862	931	1499	2458	4390
4GB	161		272	469	843	1630	404	674	1183	2463	705	1138	1946	3657	1828	2943	4827	8620
8GB	329		554	955	1717	3319	824	1372	2408	5012	1436	2317	3961	7442	3721	5990	9824	17544