RICOH
imagine. change.

PENTAX 645Z

PENTAX 645Z

Distinct Format.
Unmistakable Brilliance.

PENTAX 645Z. The camera that garnered the name of “Ultimate”.
The flagship camera that ushers in the next generation has crafted a new legend.

The PENTAX 645Z is the medium-format camera that leads the pack in depictive performance. Among the spirit of the digital age, the PENTAX 645D made its presence felt intensely as a medium-format digital camera with an integrated image sensor, astounding resolution, and expressive power. And the advancements don’t stop there.

The PENTAX 645Z which is equipped with a new CMOS image sensor with its approx. 51.4 million pixels puts the power of ultra high definition images in your hand. In addition to the new tiltable LCD monitor and Live View function, significantly improved response including approx. 3 fps continuous shooting, AF, image processing and high-speed Instant Review are added. Mobility and agility have been polished, and image quality that can only be called ‘hyper realistic’ has been achieved without question.
The PENTAX 645Z. Gaze into distant heights at its goal and take a step into unknown realms of photography.

PENTAX 645Z

Approx. 51.4 million effective pixels, 43.8 x 32.8mm large CMOS image sensor

Capture everything reflected in the eyes and felt by the heart. The medium format CMOS image sensor meets the ideals of the photographer. This sensor is approximately 1.7 times larger compared to the dimension of a full-frame 35 mm format. The effective pixels are approximately 51.4 million. Together with the optical performance of PENTAX 645 lenses, this produces unsurpassed resolution and smooth gradation representations and the three-dimensional feeling and atmosphere that will overwhelm the viewers.

PENTAX 645Z

Approx. 3 fps continuous shooting & Quick Response

Exceptional image quality with approx. 51.4 million pixels and quick response that lets you capture decisive moments. Up to now, scenes that were not possible to capture on a medium format digital camera can be captured with the approx. 3 fps continuous shooting and excellent response of the PENTAX 645Z. Auto Focus, image processing, Instant Review display, and writing to the memory card have been enhanced. The number of continuous shooting in RAW has also increased for a comfortable shooting tempo when capturing portraits and moving subjects.

“Z” is one form of perfection. A ground-breaking camera that fulfills both image quality supremacy and mobility.

Live View and a tiltable LCD monitor

The Live View function is new to the PENTAX 645Z, freeing the photographer’s eye from the viewfinder. With this feature you can carefully prepare for the shooting, making it perfect for scenic photography or studio photography where you need to wait for the right moment to activate the shutter. The screen on the PENTAX 645Z is also equipped with a tilt mechanism so waist-level, high and low-angle shots are easy to frame and capture.

SMC PENTAX-FA645 80-160mmF4.5 F9.5, 1/320 sec., 0.0EV, ISO 100, WB:AWB, Custom Image:Bright, Kazutoshi Yoshimura

SMC PENTAX-FA645 80-160mmF4.5 F16, 1/50 sec., +1.0EV, ISO 200, WB:Daylight, Custom Image:Natural, Kiyoshi Tatsuno

SMC PENTAX-FA645 45mmF2.8 F16, 1/30 sec., 0.0EV, ISO 400, WB:Color Temperature setting, Custom Image:Natural, Motoyuki Kobayashi

SMC PENTAX-D FA645 55mmF2.8 AL[IF] SDM AW F10, 1/100 sec., 0.0EV, ISO 400, WB:Color Temperature setting, Custom Image:Bleach Bypass, Motoyuki Kobayashi

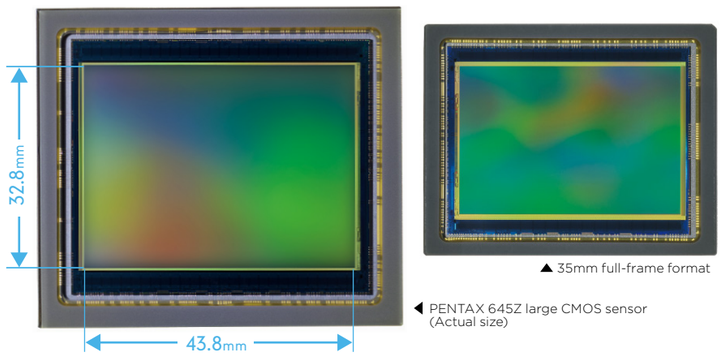
HD PENTAX-D FA645 MACRO 90mmF2.8ED AW SR F16, 1/60 sec., 0.0EV, ISO 200, WB:Color Temperature setting, Custom Image: Vibrant, Motoyuki Kobayashi

Surprising resolution and rich tones. This is what high image quality truly means.

43.8×32.8mm

Unsurpassed power of resolution and natural atmosphere provided by the large CMOS image sensor.

Resolution and depth of expression brought by the size of the imaging surface. This is the reason that medium-format cameras have been chosen for high-end photography that gives the top priority on image quality. The PENTAX 645Z is equipped with a large, 43.8 x 32.8 mm CMOS image sensor. With the size of approximately 1.7-times larger than a 35mm full-frame format, a higher degree of the sharpness and atmosphere of the scene can be captured. Also, because the depth of field is shallow, the blurring effects can be controlled freely. The PENTAX 645Z is all the more effective and expressive to focus on a single point that you want to express for titillating photos.



▲ 35mm full-frame format

◀ PENTAX 645Z large CMOS sensor (Actual size)

51.4 million effective pixels :

Overthrow the standards of high quality imaging

The effective pixels of PENTAX 645Z are approximately 51.4 million. This number of pixels is an absolute advantage when photographing subjects, such as scenery, that require high resolution. The difference in sharpness and density of details come across clearly even in A3 size prints. Also, because a rich amount of information is included in each shot, when working with RAW images, tone jumping is less likely to occur, letting you boldly change parameters and freely customize the finish without worrying about ruining the image.

AA-filter-free :

Design concept that brings out the full potential of the lens resolution

Although false colors and moire are suppressed, the AA (anti-aliasing) filter unfortunately reduces sharpness of the overall image. This filter was removed from the image sensor unit as part of the design concept to give first priority to resolution on the PENTAX 645Z. This construction succeeds in bringing out the full potential of the lens and image sensor's resolution. The unsurpassed resolution representation will resolve individual leaves on trees in a landscape shot.

Max. ISO 204800 :

Expanding the realm of exposure settings

The ultra high-sensitivity max. ISO 204800 is made possible by delicate and thorough noise processing through an image processor and image sensor of a high SN ratio. Even at high ISO settings, excellent image quality is possible with reduced noise and outline blurring. Even in the same shooting conditions, the greater freedom for the wider setting of aperture value and shutter speed allows you to express blur and emotion just the way you like.

ISO 6400

ISO 100

Image processor PRIME III :

Instantly process the high pixel count data of approximately 51.4 million effective pixels

The PENTAX latest image processor, PRIME III is used. This processor boasts an approx. maximum processing speed that is five times greater than the PRIME II, and instantaneous processing of the large data amounts produced by an approx. 51.4 million effective pixels. This processor also contributes to significantly improved performance, such as a faster Instant Review.

Diffraction correction function :

With an effect of up to 2 aperture stops

The PENTAX 645Z is equipped with full-featured lens correction functionality. Together with distortion, magnification chromatic aberration and peripheral illumination correction, revolutionary diffraction correction are newly added. PRIME III uses high-speed processing to compensate for the drop in contrast that occurs due to diffraction when stopping down the aperture as well as maintaining natural depiction in edges and defocusing effects. Additionally, it is equipped with fringe correction for use in processing RAW images. This camera will support the higher quality finish.

[Superior image depiction provided by a large and high pixel CMOS image sensor]

Fine and smooth gradations

The large CMOS image sensor has ample pixel pitch and output a high SN ratio signal even in a high pixel count. Highlight blowout and loss of shadow detail are uncommon on the PENTAX 645Z, and tonal changes are reproduced in the high pixel count areas only. The smooth connection between shadows and colors provides images with more detailed descriptions.

Beautiful blurring and rich three-dimensional feel

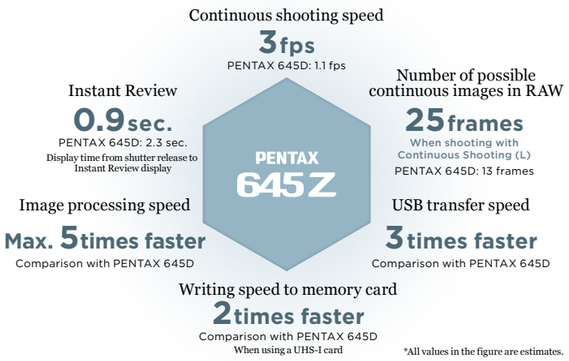
The main feature of medium-format cameras can also been seen in their blurring effects. The depth of field is shallow and blurring is smooth. Subjects captured with the aperture at its widest setting appear more three-dimensional than even when seen with the naked eyes. These features make the soft, rich three-dimensional expression and atmosphere that are particular to medium-format cameras possible for a deeper significance in photographs.

“Z” – the only medium- format digital camera equipped with both image quality and mobility.

3fps

The mobility - what was missing from medium-format digital cameras
Approx. 3 fps continuous shooting.

Quick response and operation have been achieved by renewing the driving speed of the mechanism and the entire image processing performance. Auto Focus, image processing, the operation of Instant Review display has became significantly faster, comparing to the PENTAX 645D. Also, the large-capacity buffer memory is equipped, and the writing time to the memory card has become less, which help you smoothly take a number of RAW-format images with continuous shooting. Continuous shooting speed is approx. 3 fps. These features make it possible to continue releasing the shutter with a comfort that had not been possible on medium-format cameras. The PENTAX 645Z is ideal for portrait and moving subject photography.



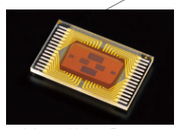
*All values in the figure are estimates.

SAFOX 11 :

An advanced Auto Focus system for high precision

The AF system used on the PENTAX 645Z is SAFOX 11. Diffraction lenses are used in the optical system for aberration suppression. By sharpening images on the sensor, superb focusing precision is achieved. A light source detection sensor is also included for thorough cancellation of even minute influence on AF from specific artificial light sources. This precision focusing and response system perfectly matches the needs of high-resolution images.

The diffractive lens can correct chromatic aberration



High-sensitivity AF sensor

F2.8 beam compatible AF :

Superb focusing precision

The three AF points at the center of the screen support F2.8 beam AF. When using a lens with a maximum aperture value of F2.8, a high focusing precision is possible. This is especially effective for when you want to make a depth of field extremely shallow or to make severe focus in shots.

-3EV compatible AF :

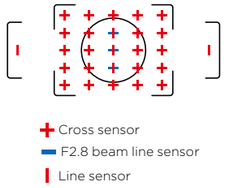
Capture dark subjects that are difficult to see

By using a high-sensitivity AF sensor, a low luminance limit of -3EV is achieved (25 center points). Even with darker subjects that are difficult to see, this AF provides smooth and accurate focusing for a greater range of scenes.

27 AF points :

Superb subject sensing capability

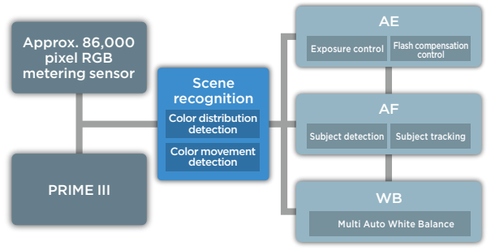
27 AF points are placed. 25 of those points are cross-type focus points equipped with line sensors in both the horizontal and vertical directions. The excellent sensing capability of this function applies to all subjects.



PENTAX Real Time Analysis System :

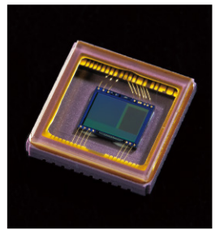
The camera analyzes the subject and optimizes function linkage and control

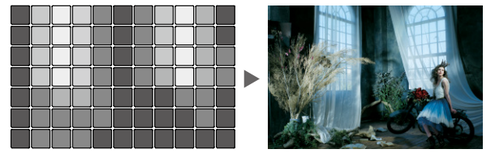
This feature detects the color distribution in the screen, subject color, and its movement, and optimizes automatic linkage and control of AE, AF and white balance. The backbone of this is the scene analysis system that links the approx. 86,000 pixel RGB metering sensor and PRIME III . By comprehensively analyzing scenes, high-precision and stable shooting is possible.



Approx. 86,000 pixel RGB metering sensor : Faithfully captures color, shape, and movement for precise analysis

The PENTAX 645Z uses approximate 86,000 pixel RGB metering sensor which captures scenes on a real-time basis, detecting brightness, color, and movement on a scale so finely that it is on a different dimension than the traditional 77 zone metering system. The low-luminance limit is -1EV (ISO 100/55mm, F2.8). This feature achieves a high accuracy of exposure control even with a low illumination.





PENTAX 645D
77 segment metering

PENTAX 645Z
approx. 86,000 pixel RGB metering

*Referential image to describe metering functions.

Multi-pattern Auto WB :

Favorable color reproduction in all areas of the image

The PENTAX 645Z is equipped with Multi-Pattern Auto WB, which divides the screen into small sections and applies the optimal white balance to each. This function resolves the color temperature differences due to differing light sources, shadow, and sunlight, and provides stable color reproduction that looks similar to the way scenes appear to the naked eyes.

Dual slot :

High-speed file writing

The dual slots conform to the UHS-I standard. With high-speed writing, buffer clearing time is shortened, contributing to quick shooting. Additionally, files are written sequentially to two separate card slots for recording duplicates, and RAW/JPEG separation. Eye-Fi cards and FLU cards (O-FC1, optional) can also be used.

Note: Eye-Fi and FLU cards with wireless LAN functions can be used in SD2 slot.

Inherits the PENTAX 645 tradition and takes it to the next level.

Flexible Angle

Equipped with a tiltable LCD monitor that can be moved -35° to 125°.

The PENTAX 645Z is equipped with an LCD monitor that features a tilt mechanism. It can be moved 35° in a downward direction and 125° upward direction. Coupled with a 3.2 inch, approximately 1.037 million dot, large, high-definition, wide viewing angle panel, this feature makes it possible to shoot at low angles and high angles while looking at the Live View display from a more comfortable position. It also features an air gapless construction that suppresses internal reflections. Reinforced glass with AR coating is used for superb visibility, protection from scratches, durability, and is crush resistant.

Live View :
Making Contrast AF possible

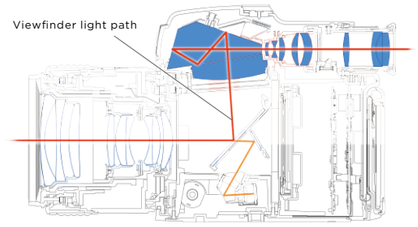
This model is equipped with the Live View function which can be used for accurate focus checking on a magnified display (max. 16x). In addition to Contrast AF which obtains extremely accurate focusing, you can set Focus Peaking and Face Detect AF. Because effects such as Custom Image and white balance are reflected on the screen, you can expand your range of expression.

Integrated design :
Achieving mobile, hand-held shooting

The PENTAX 645Z inherits the traditional DSLR style from the PENTAX 645 series in its integrated viewfinder, image sensor unit, and grip. Excellent operational reliability and focus accuracy are achieved so you never have to worry about poor connection with the digital back, or focus errors due to poor mounting. Additionally, by optimizing the weight balance and making the grip shape easy to hold, a medium-format digital camera that offers comfortable hand-held shooting is achieved.

Optical viewfinder : Wide open field of view that is only available on a medium-format camera

To make the camera body more compact, a trapezoidal prism was used. The mount is tilted forward at 9° from the body, further optimizing the optical route for a shorter overall height. A Kepplerian telescope type is used for the eyepiece optical system, achieving both a high magnification factor and wide angle of view. This viewfinder features a large field of view rivals that on 35mm full-size cameras. The field of view is approx. 98%, and the screen is replaceable. A natural bright matte is standard, making it easy to capture focus peaks.

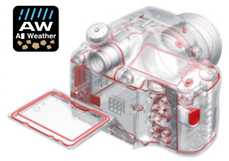


High durability mechanism :
Clears operation tests of 100,000 shots

The PENTAX 645Z is equipped with a high-speed, long-life drive unit that clears durability tests of over 100,000 shots, equivalent to double that of the PENTAX 645D. This not only allows you to shoot a continuous shot but also to shoot people and moving objects that are frequently being shot and to make digital archives, all of which meet the difficult needs of pro photographers.

Dustproof, weather-resistant construction:
Airtight body that keeps out rain and dust

Anticipating poor conditions encountered in outdoor shooting, this camera features a dust and weather resistant construction. 76 different places including buttons, dials, and covers are carefully sealed to keep out raindrops, humidity, and dust. The same construction is also used on AW lenses. When combined with an AW lens, this camera can shoot even in severe conditions such as waterfall and dust.



Cold-resistant operation guaranteed to -10°C : Able to shoot even in cold climates

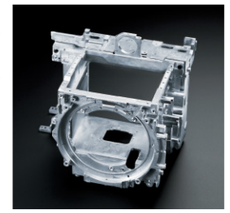
This camera was tested in -10°C environments, confirming operation accuracy, stability, responsiveness, and changes in battery status. With this kind of protection, you can always be ready to take the camera into cold environments where the digital devices normally do not work properly.

Magnesium alloy exterior :
Seeking lightness and strongness

The camera exterior and tiltable LCD monitor are made of lightweight and high-strength magnesium alloy. This material provides superb shock absorption, and heat dissipation, as well as excellent electromagnetic shielding, high durability, and reliability. It stands up to hard use and protects the internal precision mechanisms of the camera.

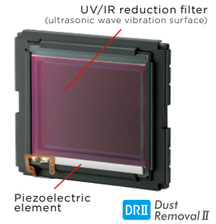
Aluminum die-cast chassis :
A highly precise and durable body

To achieve a chassis that supports the flange, viewfinder and optical system of the AF light path, a high level of strength and accurate dimensions are necessary. Die-cast aluminum was used for its high strength, achieving a highly precise assembly and high rigidity. Additionally, the image sensor unit is attached to the chassis via a heat dissipation shield. Heat is released by making the rear section of the chassis a heat sink, reducing noise that occurs due to dark current.



DR II and Dust Alert :
Remove dust using ultrasonic vibrations

The PENTAX 645Z is equipped with DR II (Dust Removal II), to avoid the problem of dust particles. The DR II can effectively remove all dust particles clinging to the surface of the CMOS image sensor unit by vibrating the UV/IR reduction filter with piezoelectric element at supersonic speed.



Transform all sensitivity and intention of photographer into art.

Movie shooting functions :
Create impressive creations with three dimensionality and high sensitivity

On the PENTAX 645Z, you can record Full HD movies at a maximum of 60i, and HD movies at a maximum of 60p. Even at the same resolution, when the large image sensor of the PENTAX 645Z is taken advantage of, depiction that overflows with three-dimensional detail can be obtained that rivals cinema camera super 35mm and 35mm full-frame cameras. Because you can apply Custom Image such as Cross Process effects, you can create movies with a diverse array of tones. Setting the maximum sensitivity of ISO 3200 for recording is possible. One of the merit is you can shoot movies with a minimum of lighting. In addition to a built-in stereo microphone, the PENTAX 645Z is also equipped with an external microphone jack (levels can be adjusted).

The compression format is MPEG-4 AVC/H.264, and file format is MOV.

4K interval movies :
Record movies that boast a resolution four times that of Full HD

4K interval movies function is equipped on this camera which lets you take images that were captured for a certain interval and connect them to record as a single movie. Resolution is approximately four times higher than that of Full HD. With this feature you can experience the world of super high-resolution movies. Full HD and HD is also supported.

- The compression format is Motion JPEG, and file format is AVI.
- The shooting interval can be set from 2 seconds to 1 hour, and the shooting time can be set from 14 seconds to 99 hours. The shooting time available for setting will change depending on the shooting interval.
- Max. shutter speed is 1/30 sec.
- To play back a 4K Interval Movie, a computer environment that supports 4K movie playback is required.

RAW/JPEG/TIFF :
Recording formats that support TIFF files

Recorded format can be selected from RAW, JPEG and TIFF. For RAW images, the PENTAX-original PEF is supported, as well as DNG, which is highly compatible with Adobe applications. JPEG files can be recorded simultaneously with RAW images, and have flexibility in recording size and image quality settings. You can select TIFF when you would like to record with uncompressed format.

**TIFF files can not be recorded simultaneously with RAW and JPEG.*

In-camera RAW processing :
A rich array of adjustment options is available

RAW data can be processed on the camera and saved as a JPEG or TIFF file. The PENTAX 645Z features a full range of adjustment options at high speeds. Enjoy the freedom of adjusting images only with a camera.

[Adjustable options when processing RAW images]

- Recording settings: File Format (JPEG/TIFF), Aspect Ratio, JPEG Recorded Pixels, JPEG Quality, Color Space
- Lens Correction: Distortion Correction, Lat-Chromatic-Ab Adj, Peripheral Illumin. Corr., Diffraction Correction, Color Fringe Correction
- White Balance • Custom Image • Digital Filter • HDR (only when shooting HDR)
- Sensitivity • High-ISO NR • Shadow Correction

Interval shooting/compositing :
Capture subjects that changes moment to moment

The shutter will automatically be activated at the set interval and number of shots. This feature is effective for recording subjects that slowly change over time. Interval Merge with multiple exposure is also possible for use with this function. Intervals can be set from 2 seconds to 24 hours, with a maximum of 2,000 shots, for a variety of expressions.

HDR(High Dynamic Range) : Automatically generates images with a wide dynamic range

A single image with a wide dynamic range is created from three images with differing exposures. In addition to adjusting the exposure amplitude*1 according to the scene, because the camera can automatically correct minor changes to the position of the composition between images*2, you can enjoy easy hand-held HDR photography. Also, because the original three images are saved as RAW data, you can use them separately for development as other creations. All three images are saved as a single RAW file, making data management easy.

** 1 : Exposure amplitude can only be set when shooting*
** 2 : Automatic position adjustment may not be possible for large position differences and due to patterns in some subjects.*

Multi-exposure : Select the composite mode according to your expressive intentions

Set the amount of shots (from 2 to 2,000) and merge them into a single image. Each time the shutter button is pressed, exposure is adjusted and images are merged, and you can check the results in detail on the LCD screen. You can select the composite mode from three options to match your varied expressive intentions.

[Composite Mode]

Average: Creates a composite image with the average exposure. You can easily enjoy multi-exposure photography without adjusting the exposure for each shot

Additive: Creates a composite image of the cumulatively added exposure.

Bright: Compares each shot, selects the bright sections and merges those selected sections. Because the dark sections are left as-is, this is effective for photographing the moon, fireworks, or illuminated buildings and other objects when you want to highlight the contrast.

Custom Image :
Control tone variation

Custom Image lets you create images that match the subject and your expressive intentions. The PENTAX 645Z has 11 variations for flexible image control that matches your preferences. The color saturation, hue, key, contrast, and sharpness can all be adjusted in each Custom Image variation.

** The parameters that can be adjusted will differ depending on the Custom Image option.*

Custom Image Options

Bright
Snappy colors with diversity, whose recreation are close to that in memory

Natural (default setting)
A natural, unexaggerated finish that is perfect for any subject

Portrait
Expresses skin in a healthy tone

Landscape
Makes the blue in the sky and green in trees more vivid for a highly sharp image

Vibrant
Blue is represented as indigo, and red as scarlet for a unique and refined nuance

Radiant
Color tints are emphasized, which is effective for reviving flat or low-saturation

Muted
Toned down color saturation while leaving the core of the color

Bleach Bypass
Low color saturation and high contrast for the feel of an old print

Reversal Film
High color saturation and contrast make images and finish with impact

Monochrome
With 8 different monochrome filters, you can create a rich array of tones

Cross Processing
Unique colors and contrast are created through a reproduction of film processing methods

Digital Filter :
19 different special effects

You can apply Digital Filter when playing back images. There are 19 different types of filters to choose from. When processing RAW images in-camera, select a filter to add an effect and save the image.

[Digital Filter Options]

• Base Parameter Adj • Extract Color • Toy Camera • Retro • High Contrast • Shading
• Invert Color • Unicolor Bold • Bold Monochrome • Tone Expansion • Sketch
• Water Color • Pastel • Posterization • Miniature • Soft • Starburst • Fish-eye • Slim

** You cannot apply Digital Filter when shooting images.*

Wireless Live View shooting :
Controls the camera using a smartphone

The PENTAX 645Z is compatible with FLU cards equipped with a wireless LAN function. Using the browser on a smartphone or tablet device, you can control the camera while checking the Live View display. In addition to touching anywhere on the screen to start AF, you can set the exposure, ISO sensitivity, release, as well as view and save recorded images.

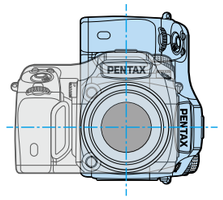
** Compatible cards: FLUCARD FOR PENTAX 16GB O-FC1 (sold separately)*
** Smartphones and tablet devices that use iOS or Android™ can be used.*

Electronic Level :
Detects and displays tilt in two directions

This function detects camera tilt in the left/right directions, and forward/backward directions and displays information in 0.5° increments. In addition to monitoring images when shooting with the viewfinder, it is possible to display the exposure bar in the viewfinder. You can also display this function when shooting in Live View, helping you adjust the composition and camera tilt at the same time.

Tripod socket for vertical use :
No optical axis movement in the vertical or horizontal position

In addition to the bottom section of the camera, the sides are also equipped with tripod sockets. Because the optical axis does not change when switching from a horizontal to vertical holding position, you can efficiently continue stable shooting.



Equipped with the new functions and interface, PENTAX 645Z will become your main camera for studio work.

Automatic Transmission

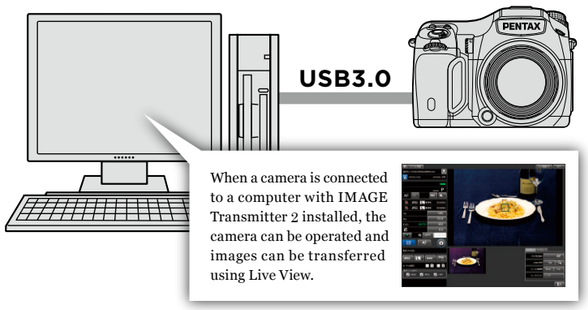
High speed transfer of images to a PC.

In studios that use digital cameras, each trial shot is viewed on a computer so that lighting and camera settings can be refined. With the new IMAGE Transmitter 2 software, the PENTAX 645Z can be remotely operated using a computer. In addition to importing images to a user-set folder on the computer, exposure settings such as aperture and ISO sensitivity can be set, as well as activating the shutter while viewing the Live View screen for significantly improved studio shooting efficiency.

[IMAGE Transmitter 2] (optional)

Main Features

- Automatically transfer images to a computer
- Remote camera operation from a computer (shutter release, aperture, shutter speed, ISO sensitivity , EV compensation)
- Live View display on a computer



When a camera is connected to a computer with IMAGE Transmitter 2 installed, the camera can be operated and images can be transferred using Live View.

Detailed square grid display :

For easier compositions

Two types of new square grids with a narrower vertical/horizontal line pitch (width) are now available, making it easier to capture images that you plan to merge later, and to make recording usage more efficient. Because the grid pattern is tighter than previous versions, it is easier to match the positions of the main subject image and the image for merging. It is also possible to select 16 zones, the golden ratio, and scale display. Because grid colors can be selected from transparent white or transparent black, visibility is guaranteed, as well.

HDMI™ output :

Display Live View or images on an external monitor

The PENTAX 645Z is equipped with an HDMI jack. With this, you can connect the camera to a TV or computer monitor to output Live View or recorded images. This jack provides a variety of uses such as checking images with multiple staff at the same time, and viewing slide shows or movies.

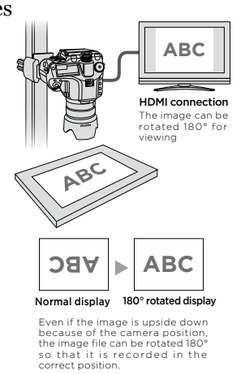
** While the camera is connected to an AV device, nothing is displayed on the camera monitor. Also, you cannot adjust the volume on the camera.*

180° rotating display/recording* :

Streamline digital archives

This feature is useful when making copies of images. Normally, when setting materials to shoot at the correct position from the photographer's point of view, the recorded image is rotated 180° as seen in the right figure. Simply rotate 180° to record the rotate information of the correct position. Because Live View and HDMI output is also rotated 180° and displayed, it is easy to operate while viewing on a computer or TV screen.

** Only rotate information is recorded.*



USB 3.0 :

Ultra high-speed communication with a PC

The PENTAX 645Z is equipped with a USB 3.0 jack. When connected with a compatible computer, high-speed communication that is leaps and bounds beyond USB 2.0 is possible. This feature makes image transfer stress free when shooting with Live View on a computer.

Key/dial operation lock :

Prevent incorrect operation

The PENTAX 645Z is equipped with a key/dial operation lock to prevent mistaken operation of dials and buttons when shooting. In addition to the front/back dials, this feature temporarily deactivates the buttons mainly connected to exposure controls such as exposure compensation and ISO sensitivity. Additionally, the scope of the locking function can be expanded to encompass virtually every button except for the shutter release button.

Digital Camera Utility™ 5

SILKYPIX®

Put the high-grade finishing touches on images with this included software

This software can be used to process RAW images, save as JPEG and TIFF format, adjust images, and manage files. This software uses the highly-reputed SILKYPIX® engine. Putting finishing touches on images is easy and comfortable with RAW processing and a rich variety of adjustment options. You can also use this software to add copyright information to the Exif data, and check the authenticity of images.

System Requirements

We recommend the following system requirements to connect your camera to a computer and to install and use the Digital Camera Utility 5 software included.

Windows®

- OS: Windows® 8.1 (32bit/64bit)/Windows® 8 (32bit/64bit)/Windows® 7(32bit/64bit)/Windows Vista® (32bit/64bit) - CPU:Intel® Core™ 2 Quad or higher - Memory: 4GB or higher - Hard drive space: Approx. 100 MB or more (available space during installation or when launched), approx.. 25 MB (for image file storage) (JPEG) or approx.. 70 MB (RAW) - Monitor: 1280 x 1024 pixels, 24bit color or greater

Macintosh

- OS:OS X 10.9/10.8/10.7, Mac OS X 10.6 - CPU:Intel® Core™ 2 Quad or higher - Memory: 4GB or higher - Hard drive space: Approx. 100 MB or more (available space during installation or when launched), approx.. 25 MB (for image file storage) (JPEG) or approx.. 70 MB (RAW) - Monitor: 1280 x 1024 pixels, 24bit color or greater

** Supported operating systems are limited to those installed on a computer and updated to the latest versions.*
** Operation is not guaranteed on all computers with the recommended specifications.*

Other Functions

- **D-Range settings**
  Highlight Correction, Shadow Correction
- **Slow Shutter Speed Noise Reduction**
- **High ISO Noise Reduction**
- **One Push File Format+**
  Instantly switch recording format with a button
- **Save RAW Data**
  ** The JPEG image that was just taken can also be saved in RAW format.*
- **Metering Mode**
  TTL open aperture metering using 86K pixel RGB metering sensor, Multi-segment metering, Center-weighted metering, Spot metering
- **Exposure Bracketing shooting**
  2/3/5 frames
- **Exposure Compensation ±5EV**
  ±2EV when taking movies
- **Exposure Modes**
  Program (P), Sensitivity Priority (Sv), Shutter Priority (Tv), Aperture Priority (Av), Shutter & Aperture Priority (TAv), Manual (M), Bulb (B), Flash Sync Speed (X)
- **AF modes: Single AF, Continuous AF**
  Focus operation customizable
- **AF point selection**
  Spot, Select, Expanded Area AF (S, M, L), Zone Select, Auto (27 AF Points)
- **Mirror Lock-up Shooting**
  ** It is possible to disable the mirror up dial operation*
- **Optical Preview, Digital Preview**
- **Edit**
  Color Moire Correction, Resize, Cropping (aspect ratio can be changed and tilt correction is available), Movie Edit (dividing a movie file and deleting unwanted segments), Capturing a JPEG still picture from a movie
- **LCD Monitor** 3.2 inch, approx. 1.037 million dots, wide viewing angle, brightness, saturation, color can be adjusted
- **Image playback** Multi-image display (6 to 80 thumbnails), display magnification (up to 16x display) grid display (5 types, line color: black/white selectable), rotation display, histogram display, etc.
- **USER Mode** up to 3
- **Custom Functions** 29 options
- **P-TTL auto flash compensation system compatible**
- **Add copyright information**
  Write photographer's name, copyright name to Exif data
- **GPS unit compatible**
  Record shooting position information with O-GPS1 (optional) is possible

The PENTAX 645 lenses, the compilation of optical technologies.

The PENTAX 645 has gained the support of photographers due to its priority on image quality when shooting in the field including scenery. This lens achieves superb resolution, high contrast, natural color reproduction, and favorable aberration correction. That unsurpassed depictive performance is brought to full fruition in images captured on the PENTAX 645Z.

DA DFA

The optimal lens for the PENTAX 645Z which is compatible with digital camera.

The optical design is optimized for digital cameras, along with a dust and splash resistant mechanism, AF drive, Aero Bright Coating, and circular diaphragm. The D FA lens is compatible with a 645 film image circle.

This is an ultra wide-angle zoom lens designed specifically for digital use, featuring the best of PENTAX lens technology including HD coating. Image stabilization effects equal to 3.5 shutter steps are achieved with SR (Shake Reduction)*. This lens can be used for a wide range of application from landscapes to cramped indoor shots.

HD PENTAX-DA645 28-45mmF4.5ED AW SR NEW

Ultra wide-angle zoom

35 mm format: 22 – 35.5mm equivalent

*CIPA standard compliant [f=45mm, when attached to PENTA X 645Z and 645D]

This is a new standard lens, optimized for the 645Z, using the latest optical system.

SMC PENTAX-D FA645 55mm F2.8AL[IF]SDM AW

Standard

35 mm format: 43.5 mm equivalent

This medium telephoto lens is equipped with a built-in image stabilization mechanism suitable to portrait.

HD PENTAX-D FA645 MACRO 90mm F2.8ED AW SR

Macro

35 mm format: 71 mm equivalent

Plastic hood PH-SA67

This is for use with the D FA645 55mm F2.8AL [IF] SDM AW when attached to the PENTAX 645Z. If used in poor shooting conditions such as scenes that are semi-backlit due to strong lighting, troublesome light can be reduced effectively.

FA

The lens series that continues to be loved by photographers

These lenses are designed to respond to the creative impulses of professional photographers. They cover everything from wide angle to telephoto, and a wide range of focal lengths.

Wide-angle zoom lens with excellent mobility

SMC PENTAX-FA645 33-55mm F4.5AL

Wide-angle zoom

35 mm format: 26 – 43.5 mm equivalent

This is a wide-angle lens with an easy-to-use focal length that is perfect for capturing wide-open scenery and buildings in their entirety.

SMC PENTAX-FA645 35mmF3.5AL[IF]

Wide angle

35 mm format: 27.5 mm equivalent

A wide-angle lens with natural vision depiction that can be used for hand-held snapshots.

SMC PENTAX-FA645 45mmF2.8

Semi-standard

35 mm format: 35.5 mm equivalent

An easy-to-use zoom lens centered on standard shooting ranges.

SMC PENTAX-FA645 45-85mmF4.5

Standard zoom

35 mm format: 35.5 – 67 mm equivalent

This lens covers from standard lens angles to portraits at mid-telephoto focal areas.

SMC PENTAX-FA645 55-110mmF5.6

Standard zoom

35 mm format: 43.5 – 86.5 mm equivalent

This lens weighs a mere 215 g, and is only 37.5 mm long, making it possible to take along all the time so you never miss a photo opportunity.

SMC PENTAX-FA645 75mmF2.8

Telephoto

35 mm format: 59 mm equivalent

This mid-telephoto 2x zoom lens lets you frame scenery exactly the way you want.

SMC PENTAX-FA645 80-160mmF4.5

Telephoto zoom

35 mm format: 63 – 126 mm equivalent

With a minimum shooting distance of 39.5 cm, this macro lens lets you shoot images at actual size.

SMC PENTAX-FA645 MACRO 120mmF4

Macro

35 mm format: 94.5 mm equivalent

With a large diameter of F2.8, this lens can arrange the background with beautiful blurring effects for a three-dimensional feel.

SMC PENTAX-FA645 150mmF2.8[IF]

Telephoto

35 mm format: 118 mm equivalent

This 2x zoom covers a wide telephoto range.

SMC PENTAX-FA645 150-300mm F5.6ED[IF]

Telephoto zoom

35 mm format: 118 – 236 mm equivalent

This telephoto lens features just the right compression of perspective and soft blurring effects.

SMC PENTAX-FA645 200mmF4[IF]

Telephoto

35 mm format: 157 mm equivalent

A telephoto lens that provides sophisticated depictive performance without any compromises.

SMC PENTAX-FA*645 300mmF4ED[IF]

Telephoto

35 mm format: 236 mm equivalent

This lens features sharp resolution and minimal color bleeding.

SMC PENTAX-FA645 400mmF5.6ED[IF]

Telephoto

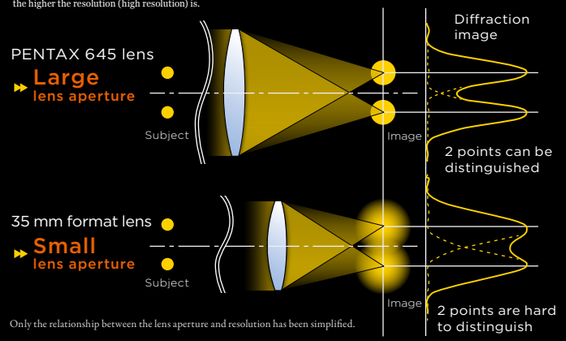
35 mm format: 315 mm equivalent

The timeless PENTAX 645 lens inherits tradition and tried-and-true quality.

Resolution and depictive power :
Clearly different from that of 35 mm format

An important metric for judging the brightness and resolution of an optical system is the lens aperture. There is a law* in optics which states that the larger the lens aperture, the higher the resolution of a lens becomes. When compared with a 35 mm format lens at the same angle, PENTAX 645 lenses have a larger aperture. This gives these lenses a high resolution, making it possible for a larger amount of information to be captured by the image sensor, which makes sense optically speaking.

*Rayleigh scattering: $a = 1.22 \frac{\lambda}{D}$ (Where a = resolution, λ = wavelength, D: lens diameter)
Here, resolution (a) means the 'minimum distance where two points can be recognized as two points', and the smaller the value, the higher the resolution (high resolution) is.



Only the relationship between the lens aperture and resolution has been simplified.

PENTAX 645 lens mount :
The gateway to a rich variety of lenses

The PENTAX 645Z inherits the 645 lens mount, which boasts for thirty years of tradition. This mount makes it possible to use the many famous lenses created for the 645 since the film era.

Dustproof, weather-resistant construction :
Overcome poor conditions like rain and dust

The PENTAX 645Z inherits the 'Super Field Camera' concept of its predecessor. Because of this, lenses also demand excellent dust and weather resistant performance. AW lenses feature a modified construction that is thoroughly sealed to keep out water droplets and dust. This construction makes it possible to shoot in difficult conditions such as rainy weather and by the waterside, and in dusty locations.

AW All Weather

HD coating :
Nanoscale technology that catches light

PENTAX multi-coating is the progenitor of multi-coating in camera history, and still boasts excellent transparency, low reflection, and color balance. HD (High Definition) increases those properties even further. The optical technology that has led the generation supports high-performance on 645 lenses.

HD Coating

Aero Bright coating : Making clear images possible

Aero Bright coating is the latest lens coating created from nanotechnology. In addition to normal multi-coating, a layer of silica aerogel coating is used, which has homogenous gaps. By injecting air with a low refractive index in the spaces between stable silica nanoparticles, an ultra-low refractive index and high transparency coating is achieved. This coating goes beyond the limits of traditional coating, succeeding in significantly reducing surface reflection.

Aero Bright Coating

*Aero Bright coating is used on D FA645 and DA645 lenses.

HD/SMC PENTAX 645 Lenses

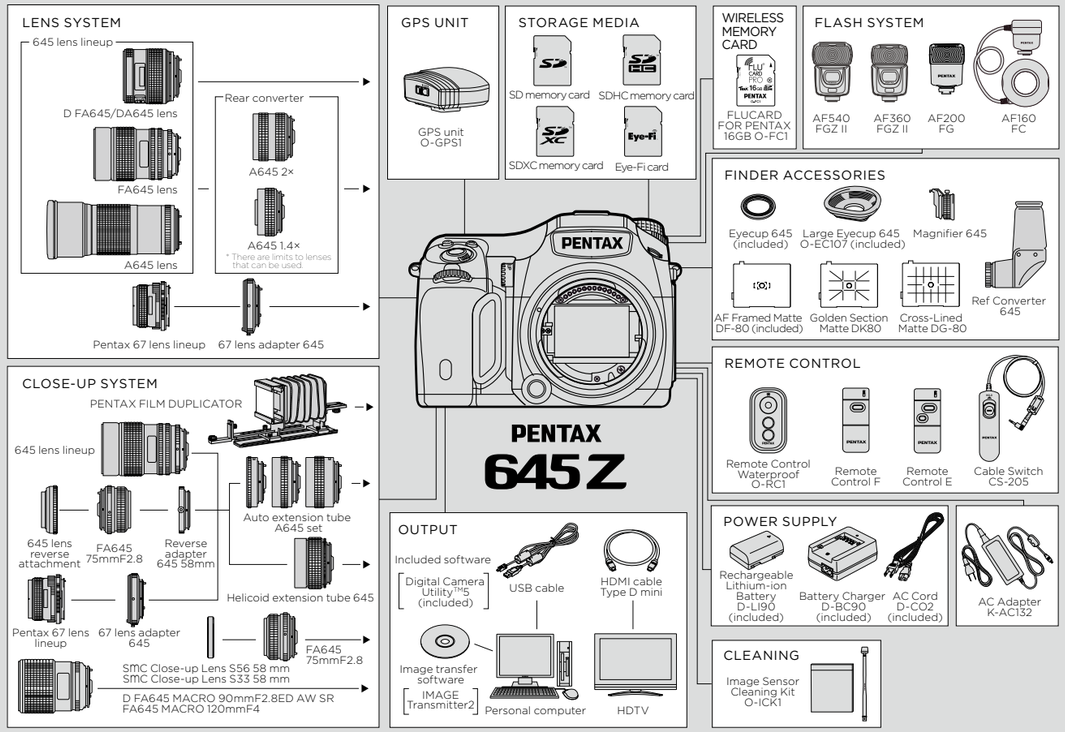
			Angle of view [Degrees]	Lens construction [No. of groups/lenses]	Smallest aperture [F]	Minimum shooting distance [m]	Filter diameter [mm]	Maximum magnification [times]	Shooting area [mm (approx.)]	Max diameter x length [mm (approx.)]	Mass (weight) [g (approx.)]
Ultra wide-angle zoom	DA645 28-45mmF4.5ED AW SR *	AF	89 - 63	12 / 17	32	0.4	82	0.21	210×157	99×151.5	1,470
Wide-angle zoom	FA645 33-55mmF4.5AL	AF	80 - 53	8 / 11	32	0.4	82	0.21	210×157	88×104	585
Standard zoom	FA645 45-85mmF4.5	AF	63 - 36	9 / 11	32	0.5	77	0.22	200×150	85×99.5	815
	FA645 55-110mmF5.6	AF	53 - 28	9 / 9	45	0.8	82	0.16	275×206	88×104	500
Telephoto zoom	FA645 80-160mmF4.5	AF	38 - 19.5	10 / 11	32	1	77	0.17	259×194	85×130.5	1,010
	FA645 150-300mmF5.6ED[IF]	AF	21 - 10.5	13 / 15	45	2	67	0.18	244×183	80×201	920
Wide angle	FA645 35mmF3.5AL[IF]	AF	76	7 / 10	32	0.3	82	0.25	176×132	88×90	560
Semi-standard	FA645 45mmF2.8	AF	63	8 / 9	22	0.45	67	0.15	293×220	76.5×66.5	475
Standard	D FA645 55mmF2.8AL[IF] SDM AW *	AF	53	7 / 9	22	0.5	67	0.17	259×194	81.3×68.2	416
Telephoto	FA645 75mmF2.8	AF	40.5	5 / 6	22	0.6	58	0.18	244×183	74.5×37.5	215
	FA645 150mmF2.8[IF]	AF	21	7 / 7	22	1.2	67	0.15	293×220	74.5×96	500
	FA645 200mmF4[IF]	AF	15.5	5 / 6	32	1.5	58	0.16	275×206	74.5×119	625
	FA*645 300mmF4ED[IF]	AF	10.5	8 / 8	32	3	77	0.11	400×300	83×207.5	1,490
	FA645 400mmF5.6ED[IF]	AF	7.9	6 / 7	45	3	77	0.14	314×236	83×252	1,260
Macro	D FA645 MACRO 90mmF2.8ED AW SR *	AF	34	9 / 11	22	0.413	67	0.5	88×66	90.5×111.6	1040
	FA645 MACRO 120mmF4	AF	26	7 / 9	32	0.395	67	1	44×33	82.5×110	735
Rear converter	Rear converter A645 1.4×		—	4 / 5	—	—	—	—	—	77×31	265
	Rear converter A645 2×		—	4 / 6	—	—	—	—	—	77×60	350

* When attached to the PENTAX 645Z or 645D, autofocus on all AF lenses will operate; however, when (*) DA645 or D FA645 lens is attached to the 645NII or 645N, only manual focus is available.
* DA645 lens is not compatible with 645NII and 645N.

System accessories that expand the realms of expression

The PENTAX 645Z maintains compatibility with the 645 series system that spans both film and digital cameras. With the possibility of attaching a rich variety of accessories, all types of shooting conditions and expressive intentions are supported. Go beyond borders for unsurpassed resolution and depictive power.

PENTAX 645Z System Map



*There are limits to lens and accessory combinations. For details, contact a service center.

Storage capacity (approx.) * When using a 32 GB memory card.

(Shots)

Recorded size (pixels)	RAW		TIFF	JPEG											
	51M(8256×6192)		51M (8256×6192)	L:51M(8256×6192)			M:36M(6912×5184)			S:21M(5376×4032)			XS:3M(1920×1440)		
Image quality	PEF	DNG		★★★	★★	★	★★★	★★	★	★★★	★★	★	★★★	★★	★
32GB	288	288	197	852	1940	3842	1213	2753	5446	1998	4526	8851	14796	30979	55074

Movie recording time (approx.) * When using a 32 GB memory card.

(Hours: minutes: seconds)

Recorded size (pixels)	Full HD (1920×1080)					HD (1280×720)				
	60i	50i	30p	25p	24p	60p	50p	30p	25p	24p
32GB	02:10:11	02:34:48	02:10:11	02:34:48	02:40:53	02:10:12	02:34:48	03:40:22	04:20:23	04:30:13

* You can record up to 25 min. or 4GB movie for one shooting.
* "Testing your camera' refers to confirmed operation by RICOH IMAGING, and is intended for customer convenience but is not a guarantee by RICOH IMAGING to the customer.
* Use a high-speed SD memory card when recording movies. If the writing speed cannot keep up with the recording speed, writing may be interrupted during recording.

Tested SD/SDHC/SDXC memory cards

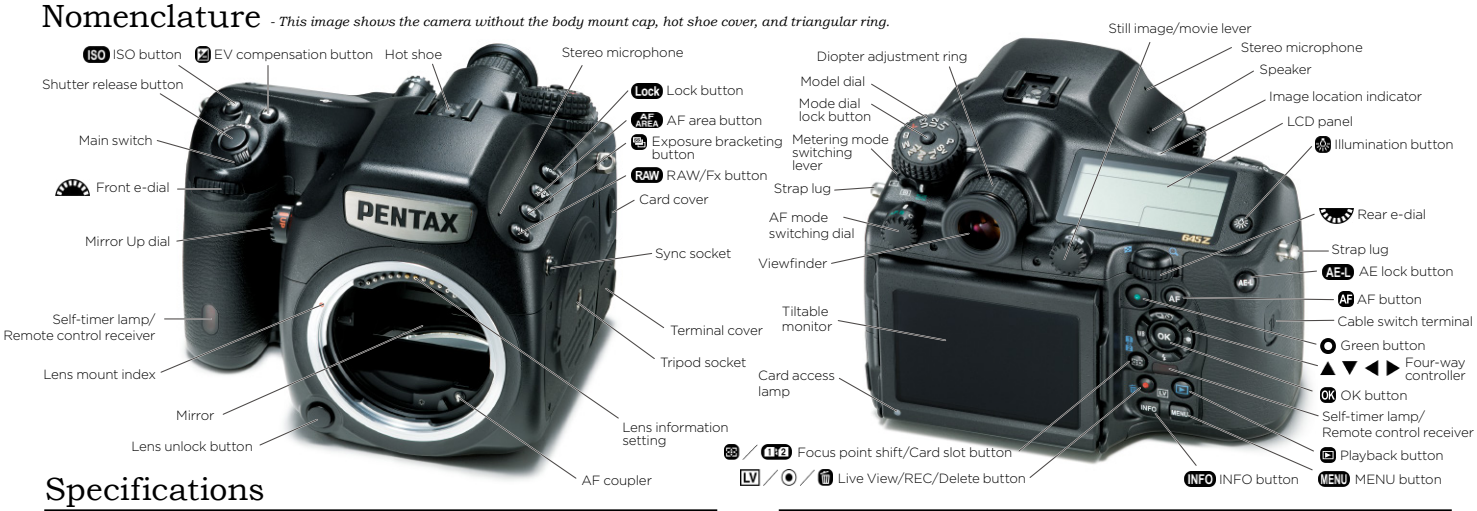
[Panasonic/Toshiba/Sandisk]
- ○SD memory card capacity: 1 GB, 2 GB
- ○SDHC memory card capacity: 4 GB, 8 GB, 16 GB, 32 GB
- ○SDXC memory card capacity: 64 GB

[Sandisk]
- ○SDXC memory card capacity: 128 GB

[Eye-Fi]
- ○SDHC memory card capacity: 4 GB (Connect X2), 8 GB (Mobile X2/Pro X2/Mobi), 16 GB (Pro X2/Mobi), 32 GB (Mobi)

As of April 2014

Nomenclature *- This image shows the camera without the body mount cap, hot shoe cover, and triangular ring.*



Specifications

Model Description	**Type**...TTL autofocus, auto-exposure medium format digital SLR camera **Lens Mount**...PENTAX 645A$_{F2}$ mount with AF coupler, lens information contacts, and power contacts Usable **Lens**...PENTAX 645A$_{F2}$, 645A$_{F}$ and 645A mount lenses compatible), K$_{AF}$, K$_{A}$ mount lens
Image Capture Unit	**Image Sensor**...Type: CMOS with a primary color filter, Size: 43.8 x 32.8 (mm) **Effective Pixels**...Approx. 51.4 megapixels **Total Pixels**...Approx. 52.99 megapixels **Dust Removal**...Image sensor cleaning using ultrasonic vibrations "DR II" with the Dust Alert function **Sensitivity (Standard output)**...ISO AUTO/100 to 204800 (EV steps can be set to 1EV, 1/2EV, or 1/3EV) **Image Stabilizer**...Lens-shift type (By using SR system lens)
File Formats	**Recording Formats**...RAW (PEF/DNG), TIFF, JPEG (Exif 2.30), DCF2.0 compliant **Recorded Pixels**...JPEG: L (51M: 8256 x 6192), M (36M: 6912 x 5184), S (21M: 5376 x 4032), XS (3M: 1920 x 1440) RAW: L (51M: 8256 x 6192) TIFF: L (51M: 8256 x 6192) **Quality Level**...RAW (14 bit): PEF, DNG JPEG: ★★★ (Best), ★★ (Better), ★ (Good), RAW + JPEG simultaneous recording available **Color Space**...sRGB, AdobeRGB **Storage Media**...SD, SDHC*, SDXC* memory card, Eye-Fi card, FLUCARD *UHS-I compatible **Dual Card Slot**...Sequential save, Save to Both Dual save, Separate RAW/JPG, Copying images between slots possible **Storage Folder**...Folder Name: Date (100_1018, 101_1019...) or user-assigned (default: PENTX) **Storage File**...File Name: user-assigned (default: IMGP****) File No.: Sequential Numbering, Reset
Viewfinder	**Type**...Keplerian telescopic trapezoid prism finder **Coverage (FOV)**...Approx. 98% **Magnification**...Approx. 0.62 x (55mmF2.8 at infinity), Approx. 0.85 x (75mmF2.8 at infinity) **Eye-Relief Length**...Approx. 21 mm (from the view window), Approx 24.1 mm (from the center of lens) **Diopter Adjustment**...Approx. -3.5 m to +2.0 m^{-1} **Focusing Screen**...Interchangeable Natural-Bright-Matte focusing screen
Live View	**Type**...TTL method using CMOS image sensor **Focus Method**...Contrast detection AF (Face Detection, Tracking, Multiple AF Points, Select, Spot) Focus Peaking: ON/OFF **Display**...Field of view: approx. 100 %, Magnified view (2x, 4x, 8x, 12x, 16x), Grid Display (Grid Style: 4x4 Grid, Golden Section, Scale, Square 1, Square 2, Grid Color: translucent black, translucent white), Histogram, Highlight Alert, Rotate Display 180°
LCD Monitor	**Type**...Tiltable TFT color LCD monitor featuring an air-gapless structure with an AR-coated, tempered-glass front panel **Size**...3.2 inch **Dots**...Approx. 1037K dots **Adjustment**...Brightness, Saturation and Color adjustable
White Balance	**Type**...Combination system of CMOS image and light source detection sensors **White Balance**...Auto, Multi Auto, Daylight, Shade, Cloudy, Fluorescent Light (D: Daylight Color, N: Daylight White, W: Cool White, L: Warm White), Tungsten Light, Flash, CTE, Manual (up to 3 settings can be saved), Color Temperature (up to 3 settings can be saved), Copying the white balance settings of a captured image possible **Fine Adjustment**...Adjustable ±7 steps on A-B axis or G-M axis
Autofocus System	**Type**...TTL: phase-matching autofocus **Focus System**...SAFOX 11, 27 AF points (25 cross-type focus points in the center) **Brightness Range**...EV -3 to 18 (ISO 100, at normal temperature) **AF Modes**...Single AF (AF.S), Continuous AF (AF.C), Focus operation customizable **Focusing Area Selection Modes**...Spot, Select, Expanded Area AF (S, M, L), Zone Select, Auto (27 AF Points)
Exposure Control	**Type**...TTL open aperture metering using 86K pixel RGB sensor Metering Modes: Multi-segment metering, Center-weighted metering, Spot metering **Metering Range**...V -1 to 21 (ISO100 at 55mmF2.8) **Exposure Modes**...Program, Sensitivity Priority, Shutter Priority, Aperture Priority, Shutter & Aperture Priority, Manual, Bulb, Flash X-sync Speed, USER1, USER2, USER3 **EV Compensation**...±5 EV (1/3 EV steps or 1/2 EV steps can be selected) **AE Lock**...Button type (timer-control: two times the meter operating time set in Custom Setting), Continuous as long as the shutter release button is halfway pressed **Exposure Bracketing**...2, 3 or 5 frames, Available with Continuous, Self-timer or Remote Control
Shutter	**Type**...Electronically controlled vertical-run focal plane shutter **Shutter Speed**...Auto: 1/4000 to 30 sec., Manual: 1/4000 to 30 sec. (1/3 EV steps or 1/2 EV steps), Bulb
Drive Modes	**Mode Selection**...[Stills]Single Frame, Continuous (H, L), Self-timer (12 sec., 2sec.), Remote Control (immediately, 3 sec., continuous), Multi-exposure (available with Continuous, Self-timer or Remote Control), Interval Shooting, Interval Composite [Movie]Remote Control, Interval Movie Record **Mirror Lock-up Shooting**...Available with Continuous, Self-timer, Remote Control or Multi-exposure **Continuous Shooting**...Max. approx. 3 fps, JPEG (L: ★★★ at Continuous H): up to approx. 30 frames, RAW: up to approx. 10 frames, TIFF: up to approx. 12 Max. approx. 1 fps, JPEG (L: ★★★ at Continuous L): up to approx. 300 frames, RAW: up to approx. 25 frames, TIFF: up to approx. 15 *When the sensitivity is set to ISO100. **Multi-Exposure**...Composite Mode: Additive, Average, Bright, Number of Shots: 2 to 2000 images **Interval Shooting**...[Stills] Interval: 2 sec. to 24 hr. Number of Shots: 2 to 2000 images Start Interval: Now, Set Time [Movie] Recorded Pixels: 4K, Full HD, HD Interval: 2 sec. to 1 hr. Recording Time: 14 sec. to 99 hr. Start Interval: Now, Set Time
Flash	**Flash Modes**...Flash On, Flash On+Red-eye Reduction, Slow-speed Sync, Slow-speed Sync+Red-eye, P-TTL, Trailing Curtain Sync, contrast-control-sync, high-speed sync, wireless sync (available with a dedicated external flash) **Sync Speed**...1/125 sec. **Flash Exposure Compensation**...'-2.0 to + 1.0 EV

Capture Settings	**Custom Image**...Bright, Natural, Portrait, Landscape, Vibrant, Radiant, Muted, Bleach Bypass, Reversal Film, Monochrome, Cross Processing **Cross Processing**...Random, Preset 1-3, Favorite 1-3 **Noise Reduction**...Slow Shutter Speed NR, High-ISO NR **Dynamic Range Settings**...Highlight Correction, Shadow Correction **Lens Correction**...Distortion Correction, Lateral Chromatic Aberration Correction, Peripheral Illumination Correction, Diffraction Correction **HDR Capture**...Auto, Type1, Type2, Type3, Exposure Bracket Value adjustable, Auto Align (automatic composition correction function) available **Electronic Level**...Displayed in viewfinder and LCD panel (horizontal direction only); displayed on LCD monitor (horizontal direction and vertical direction)
Movie	**File Formats**...MPEG-4 AVC/H.264 (MOV) *Motion JPEG (AVI) for Interval Movie Record **Recorded Pixels**...Full HD (1920 x 1080, 60i/50i/30p/25p/24p), HD (1280 x 720, 60p/50p/30p/25p/24p) **Sound**...Built-in stereo microphones, external microphone (stereo recording compatible), Recording Sound Level adjustable **Recording Time**...Up to 25 minutes; automatically stops recording if the internal temperature of the camera becomes high. **Custom Image**...Bright, Natural, Portrait, Landscape, Vibrant, Radiant, Muted, Bleach Bypass, Reversal Film, Monochrome, Cross Processing **Cross Processing**...Random, Preset 1-3, Favorite 1-3 **HDR Capture *Available only for Interval Movie Record**...Auto, Type1, Type2, Type3, Exposure Bracket Value adjustable
Playback Functions	**Playback View**...Playback View...Single image display, Multi-image display (6, 12, 20, 35, 80 thumbnails), Image magnification (up to 16x, 1x display and quick zoom available), Grid Display (Grid Style: 4x4 Grid, Golden Section, Scale, Square 1, Square 2, Grid Color: translucent black, translucent white), Rotated image display, Histogram (Y histogram, RGB histogram), Highlight Alert, Auto Image Rotation, Detailed Information Display, Copyright Information (Photographer, Copyright Holder), Folder Display, Calendar Filmstrip Display, Slideshow, GPS information [latitude, longitude, altitude, Coordinated Universal Time (UTC)] **Delete**...Single image, all images, select & delete, folder, Instant Review image **Digital Filter**...Base Parameter Adj, Extract Color, Toy Camera, Retro, High Contrast, Shading, Invert Color, Unicolor Bold, Bold Monochrome, Tone Expansion, Sketch, Water Color, Pastel, Posterization, Miniature, Soft, Starburst, Fish-eye, Slim **RAW Development**...Development options: Select single image, Select multiple images, Select a folder, Development parameters: File Format (JPEG/TIFF), Aspect Ratio, JPEG Recorded Pixels, JPEG Quality, Color Space, Distortion Correction, Lateral Chromatic Aberration Correction, Peripheral Illumination Correction, Diffraction Correction, Color Fringe Correction, White Balance, Custom Image, Digital Filter, HDR, Sensitivity, High-ISO NR, Shadow Correction **Editing Features**...Color Moiré Correction, Resize, Cropping (aspect ratio can be changed and tilt adjustment is available),Movie Edit (dividing a movie file and deleting unwanted segments), Capturing a JPEG still picture from a movie, Saving RAW Data, Image Copy, Eye-Fi Image Transfer
Customization	**USER Modes**...Up to 3 settings can be saved **Custom Functions**...29 items **Mode Memory**...11 items **Button Customization/E-dial Programming**...RAW/Fx Button: One Push File Format, Optical Preview, Digital Preview AF Button: Enable AF1, Enable AF2, Cancel AF, Preview Dial: Optical Preview, Digital Preview Illumination Button: LCD Panel Illumination, Modeling Flash, Test Flash E-dials (front/rear): customizable to each exposure mode **Enable/Disable Controls**...Type1: e-dials (front/rear), EV Compensation button, ISO button, AE Lock button, Green button, Exposure Bracketing button, AF area button, four-way controller, AF point change button, OK button, AF button, RAW/Fx button **Text Size**...Standard, Large **World Time**...World Time settings for 75 cities (28 time zones) **Language**...English, French, Germany, Spanish, Portuguese, Italian, Dutch, Danish, Swedish, Finnish, Polish, Czech, Hungarian, Turkish, Greek, Russian, Korean, Traditional Chinese, Simplified Chinese, Japanese **AF Fine Adjustment**...±10 step, adjustment for all lenses or individual lenses (up to 20 can be saved) **Copyright Information**...Names of "Photographer" and "Copyright Holder" are embedded to the image file. Revision history can be checked using the provided software.
Power Supply	**Battery Type**...Rechargeable Lithium-ion Battery D-LI90 **AC Adapter**...AC Adapter Kit K-AC132 (Optional) **Battery Life**...Number of recordable images: Approx. 650 images Playback time: Approx. 400 minutes *Tested in compliance with CIPA standard using a fully-charged lithium-ion battery under the temperature of 23°C. Actual results may vary depending on the shooting conditions.
Interfaces	**Connection Port**...USB 3.0 (micro B), external power supply terminal, cable switch terminal, X-sync socket, HDMI output terminal (Type D) , stereo microphone input terminal **USB Connection**...MSC/PTP
Dimensions and Weight	**Dimensions**...Approx. 156 mm (W) x 117 mm (H) x 123 mm (D) (excluding protrusions) **Weight**...Approx. 1550 g (including dedicated battery and an SD memory card) Approx. 1470 g (body only)
Software	Digital Camera Utility 5
Package Contents	Strap O-ST150, Large eyecup 645 O-EC107, Rechargeable Lithium-ion Battery D-LI90, Battery Charger D-BC90, AC plug cord, Software (CD-ROM) S-SW150 <Installed on the camera> Standard eyecup 645, Hot shoe cover FK, Sync socket 2p cap, Body mount cap 645, Triangular ring and protective cover

Attention In order to use this product safely and correctly, you are strongly advised to read the operating manuals carefully and thoroughly before use.

RICOH
imagine. change.

April 2020