

Panasonic Lumix DMC-FZ300 DMC-FZ330



Beginners Guide

Jargon Free Setup & Use

Easy to follow set up and use of the Panasonic Lumix Fz300/330 in conjunction with my YouTube video series

written by Graham Houghton September 2017

Welcome to this supplementary guide for the FZ300/330 camera from Panasonic.

This guide, plus the YouTube video series, will allow you to get the best image quality from your camera in a way that is easy to comprehend without any technical jargon or any pre-requisite understanding of this model.

To enable you to follow this guide and the YouTube videos it would be a great idea to reset the camera to the default factory set up so that all the items discussed in the video and this booklet will work without any problems due to the complex and inter reactive meaning system of the camera.

To do so, turn on your camera then press Menu/Set and choose the wrench icon (Setup) and go to page 4 - use Zoom tele to change pages quickly and select Reset and then Menu/Set again.

Select YES to each of the three prompts which will appear.





The Panasonic FZ300/330 Main Features

Once the camera has been reset select your home country and/or time and date if necessary.

As this camera has so many ways of setting up user preferences I would make the following changes to the setup of the camera so that any of the following instructions that I give will always work for you.

We will be first looking at the iA mode (intelligent Auto) which is the fully automatic mode where the camera will make all the adjustments for you to get the best exposure and image.

The camera defaults to the new mode of iA+ which offers a lot more user options and is one that I recommend that you stay with as this will allow you to become more comfortable with some of the adjustments we will be making in later modes.





Turn the TOP MODE dial to the iA position opposite the white marker.



If you press Menu/Set and you then use the left hand navigation button, you can see the iA+ is selected from the iA menu as it is highlighted with the yellow background.

Now we will set up some of the other menu items;



The ASPECT ratio is set from the REC Setup menu (the camera icon tab). This sets the height and width ratio of your image.

If you are shooting images primarily for prints then for 4 x 6 inch prints (and its multiples 8 x 12 etc) then select 3:2

For other sizes 4:3 may be selected bearing in mind some common print sizes like 5 x 7 inch will require some cropping of the final image.

If you intend to use the images for HD video or display without borders on your HD aspect TV select the 16:9 option from this menu.

Each of these aspect ratios will display the actual image area that you have selected on the LCD display or electronic viewfinder (EVF).



Always keep the largest Picture size (L) and the Quality should be left to the fine JPEG mode which is the double dotted bar until later setups when we will consider the other



format available to you.

Picture size (in Megapixels) will vary with each aspect ratio selected so you may see different values.

Here I have set the HD format aspect ratio of 16:9 which give 9Megapixel images.

Selecting the 4:3 aspect ratio will give the full 12Megapixel size.

To aid composition I would also recommend setting the Guide Line to the “Rule of Thirds” from the list of options.



You will find this on page 4/9 in the Custom Setup (wrench plus C icon tab)

The default time period for the camera self timer is 10 seconds.



For normal operation I would suggest making this value 2 seconds unless you are doing “selfies” and want to appear in the image yourself if using a tripod to shoot the image.

Self timer is found in the REC Setup menu tab, page 3/7. Set it to the 2 second option.

The self timer will operate when the camera drive mode is set to the self timer which we will see in a later section of this guide book.

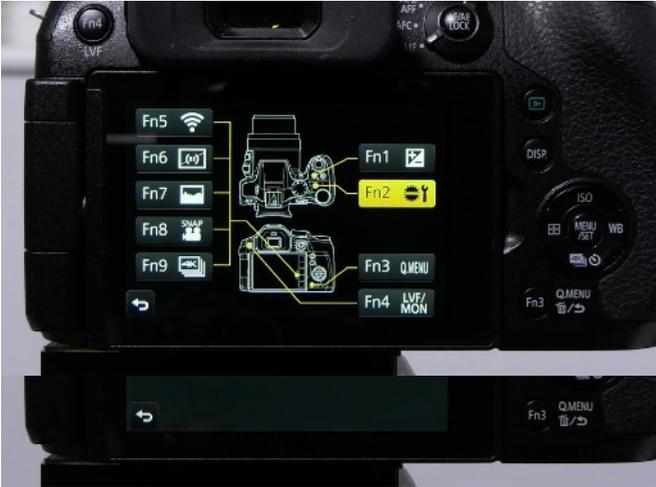
We are at this point just setting the default time that the self timer will delay the process of taking the image when the shutter button is depressed or the camera is used with an external remote wired cable plugged into the “remote” socket on the camera.

Using the self timer when the camera is on a tripod is a good way of preventing any vibration caused when pressing the camera shutter button. This vibration can cause loss of image sharpness.

I also recommend setting one of the Function buttons, Fn2 to select the AF focus area when the single area auto focus mode is selected. This makes it very convenient to make selection of the size and position of the AF (autofocus) area.



Begin by selecting the Fn Button Set option from the Custom Setup menu on page 7/9.



Select the “Setting in REC mode” and press Menu/Set

Select the Fn2 icon on the button layout screen.



Now step through to page 3/4 to select the Focus Area Set option and press Menu/Set

Now we have the camera with a common set up mode we can begin to look at the basics of charging and installing the battery and choosing a suitable memory card for use in the camera.



Batteries and Charging Units

The camera is supplied with the Panasonic battery however it is also possible to use third party batteries.

Some generic brands do not perform as well as the Panasonic battery but the DSTE types can actually outperform the Panasonic one and are entirely safe to use.

The battery should be fully charged using the supplied Panasonic charger.

Charging will take up to 2 hours depending upon how depleted the battery is when it is inserted into the charger. It is advisable to charge the battery only when it is cold, not when removed from the camera when it might be still warm. This ensures that you will get a full and not a partial charge.

Charging is complete when the green LED goes out. Remove the battery from the charger at this point.



The Panasonic original battery during charging in the Panasonic DE-A80 charger.

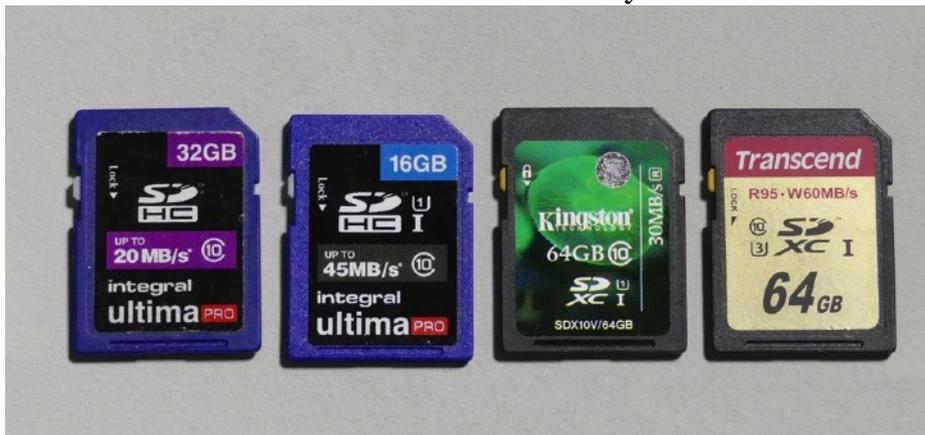
The FZ300/330 does not support USB charging of the battery in camera however there are USB chargers available from after market suppliers which will allow you to charge your batteries from any USB power source such as you laptop or from any USB power bank units.



A USB power bank and USB charger for the BLC12 battery

Memory Cards

The camera uses SDHC or SDXC memory cards.



In the illustration above you can see my recommendations for memory cards suitable for use with the Panasonic Lumix FZ300/330.

The two cards on the left are the SDHC cards suitable for all photographic stills shooting plus AVCHD or MP4 video at 1080p.

On the right the two SDXC memory cards with the new U1 and the faster U3 ratings code.

The two cards are required for reliable shooting in both 4K photo and video modes.

If you are shooting video, then the highest capacity card is advisable as the files can become quite large and fill smaller cards quite quickly.



One tip I can offer you here is to use the micro SDXC cards in their supplied SD adaptor.

Not only are they the same electronics in a smaller profile but are about half the cost of their equivalent SD card.

Their functionality is the same as their full size equivalent. Keep them in their adaptor when you use them in your pc or external card reader.

Formatting Memory Cards

Formatting the cards in camera is the best option after they have been used a few times, and especially if you share them across a range of cameras.

This has the advantage of recovering the file system and structure and thus overcoming some of the fragmentation which occurs if you delete files either from within the camera or later when the card is in your pc card reader.

This process allows the camera buffer to write to the card faster and hence allowing it to clear quickly.

This process is essential when shooting in the burst modes of the camera to achieve the highest burst speed.

Now we have a fully charged battery and a formatted memory card we can begin to look at using the camera to take images.

Adjusting the viewfinder focus

It is probably worth mentioning here the electronic viewfinder (EVF) and the facility to adjust the diopter of the viewing lens so that even if you wear glasses the focus can be set so that you can see the screen clearly.

To set the focus it is best to do this on a menu rather than looking at an image.

Press Menu/Set to bring up any menu and then bring the EVF up to your eye. The LCD will switch off and the image will appear in the EVF.

If the image is sharp you need not do anything else.

If it appears to be out of focus there is a small knurled wheel at the side of the viewfinder that will allow you to bring the viewed image into sharp focus.

Letting the Camera Take Full Control

When first beginning to take images with this camera it is a good idea to use the fully automatic mode - the iA mode to see what it can do in a variety of image taking situations.

You will probably find that in most situations the resulting image is extremely good however there are some scene types which are not recorded faithfully or with optimum results and later we will see how we can improve on these.



The intelligent auto mode iA is selected by turning the top Mode Control dial so that the iA icon is opposite the white marker on the camera top plate. On the LCD screen you will see the iA icon at the top left hand side of the screen.

The other Modes on the dial are as follows:

P Program Auto mode – use when fully automatic exposure is needed however this mode does not use scene recognition and the ability to change the selected aperture/shutter speed combination is available via the program shift option.

A Aperture priority mode – use when depth of field (DOF) - how much front to back focus is recorded in the image is the main requirement in the image.

S Shutter priority mode – use when it is necessary to select a specific shutter speed. For example, a fast shutter speed to eliminate subject motion blur or a slow shutter speed to create effects like silky running water or streaking clouds.

M Manual exposure mode – use when you want to select a specific aperture for DOF and a shutter speed for motion effects. Use the ISO to control the exposure.

M Creative Video Mode – used to select the recording mode for video capture using the same P/A/S/M options depending upon requirements.

C Custom mode – allows the recall of pre-set conditions for image capture after they have been registered to one of the custom mode settings

We will look at these other modes later in this guide book.

In the iA Mode (or the iA+ mode) the camera uses “scene” type recognition and automatic exposure determination to expose the images.

The enhanced iA+ mode allows you the user to adjust the exposure (brightness of the image) and the hue or tint of the image to apply either a warming or cooling tint to the image.

It also allows the user to set the amount of sharpness recorded in the image by allowing the user to set the aperture at which the image is taken.

The combination of aperture size and lens zoom value will determine how much of the image appears to be in focus. Thus you can create portraits with very blurred backgrounds or shoot landscapes with all from foreground to distant background in sharp focus.

When you point the camera at the subject the image processor will attempt to determine what type of scene that the lens is imaging on the sensor. It looks for colour and light intensity patterns and facial features to set the optimal exposure conditions.

You can see the scene type that has been selected by looking at the top left hand side of the LCD (or EVF if enabled).

Initially the icon will be displayed with a blue colour for about two seconds and then will turn red.

It is advised to check that the scene being captured is correctly interpreted by the camera.

Sometimes the scene recognition software incorrectly determines the scene being imaged.



If this is the case switch to the SCN scene mode on the Mode Control dial and then select the most applicable scene type from the associated menu for the scene being photographed.

The scene type is determined by the camera and can be one of the following cases.

i-Portrait, i-Scenery, i-Macro, i-Night Portrait, i-Night Scenery, i-Hand Held Night shot (*if set to ON in the REC set up menu*), i-Food, i-Baby, i-Sunset and the iA mode when neither of these scene types are determined.

This is a further increase in automatic scene detection over the previous FZ200 model.

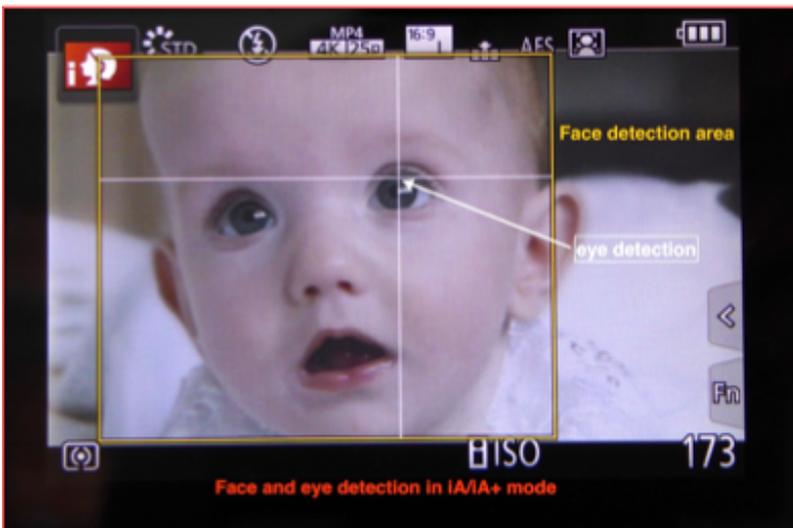
If shooting 4K still the scene detection works in the same way as recording video clips.

When recording video, the camera will automatically select one of the following scene types:

i-Portrait, i-Scenery, i-Low Light, i-Macro and iA when none of the scene types are recognised.

When shooting in the fully automatic mode (iA or iA+) the camera will select the most appropriate focus method.

In this mode, face detection is active (as shown in the image above) and eye detection software attempts to locate and focus on the eye closest to the camera.



This eye detection mode is automatic and focusses on the nearest eye to the camera. This method cannot be changed.

When in this mode the camera adjusts the exposure to give the best image based upon the metering from the face. If face recognition has been turned on and faces have been registered if the camera detects a subject which has been previously registered, then an “R” is displayed on the upper right corner of the display.

The icon could be the i-Portrait, i-Night Portrait or the i-Baby icon depending upon the subject recognised.

Face recognition is detailed later in this guide book.

If you experience some of your images not being recorded as you saw them at the time of shooting or images of a similar subject appear to be recorded differently to each other then it is worth having a look at how the iA/iA+ method recorded them.

Panasonic do state that, in some scene types, you should watch the indicated icon when you shoot in this mode and if the wrong scene type is detected then you should select the most appropriate mode from the SCN mode dial setting and menu choice.

To see how the image was detected by the camera, with the memory card still inserted in the camera, select the green playback button on the back of the camera body.

Using the left or right navigation buttons of the 4-way controller scroll through to the image in question.



When you have selected the image that you want to review you can see how the camera detected the scene type.

In the image above the camera correctly identified that this was a close-up scene and selected the I-Macro mode and below it identified the i-Landscape mode setting optimal parameters for this scene.



If the camera doesn't recognise a scene type, then it reverts to a default setting and determines the exposure without adjusting other parameters such as saturation of colour or aperture as seen in the illustration below.



A lot of thought has gone into the automatic scene detection and it is becoming very reliable in selecting the correct scene type for the image being recorded.

If the subject is being photographed where there is light shining behind the subject, which would cause the subject to be recorded with a dark appearance, the camera applies backlight compensation to lighten the recorded image.

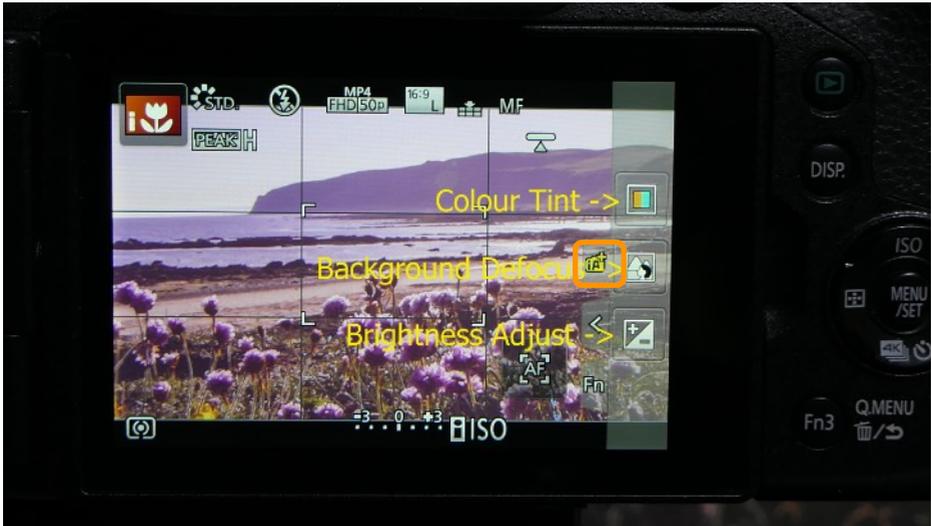
Lets look at a scene taken in the iA+ mode



The camera has selected the iLandscape mode and set the appropriate shooting conditions to capture the image. It slightly boosts the blue and greens in a scene compared to a standard image shown below captured with the P mode.



The three additional controls that are exposed when you touch the iA+ tab on the LCD screen.



The colour tint control allowing a warmer or cooler image to be selected



The background defocus control allowing aperture selection



The brightness adjustment control showing the +/- 3 adjustment scale.



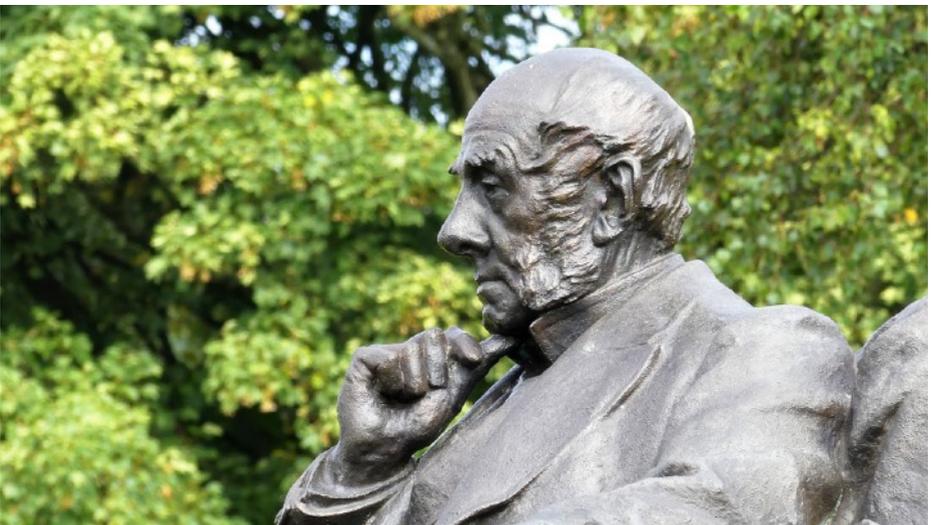
Colour Tint Control

In the iA+ mode the user has additional control by which the image can be change the colour tint from a warming bias to a colder look.



Background Defocus Control

The background defocus icon allows the user to select the aperture at which the image will be taken. The lower the number like f2.8 the image will have a blurred background (upper image) compared to the smaller apertures (larger number) like f8 (lower image)



When this is used with the longer zoom setting of the lens some very good images of plants can be captured which totally isolate the image against the background.



The image above taken at x24 zoom and f2.8 and f8 below using the defocus control





Use of the background defocus control to set the aperture to f2.8 and use of the x24 zoom position to isolate this pigeon against the background.

Brightness Adjust Control

One of the areas that will cause the image to be captured incorrectly will be when the camera captures large areas of sky as shown in the image below.



The camera always tries to make very image appear to be a neutral grey colour. When it sees this large expanse of bright sky it will generally underexpose the image causing any subject to become silhouetted.

The iA+ mode has the facility to be able to correct for this if you recognise this before taking the image.

You can use the image brightness adjustment control to change the image captured.

Moving the adjustment towards +3 makes the resulting images brighter and towards -3 makes it darker



Using +3 on the brightness adjustment scale

Image Stabilisation

The Panasonic Lumix FZ300/330 employs optical image stabilisation (OIS) to help the user get images which are free from handshake during exposure.

At low shutter speeds the movement of the camera would produce images with blur.

The image stabilisation keeps the image in the same place on the sensor even though the camera is moving slightly due to our natural body motion.

This stabilisation can help to allow the user to get images without blur at shutter speeds of 1/15 second.

Due to the way the camera is constructed the image stabilisation has to be always active - even though there is an OFF mode in the stabilisation menu options. Off just means the camera will not compensate for camera movement but the image stabilisation keeps the lens centred.

The mode can be selected to provide both axis of movement cancellation. If the camera is moved up or down or side to side the OIS will make the lens follow the movement keeping the image on the sensor in the same place. If the vertical mode only is selected the camera will not try to cancel any horizontal movement and allow things like focus pans to take place without cancelling the movement. During shooting from a tripod it is recommended to turn off the OIS to prevent false movements by the camera.

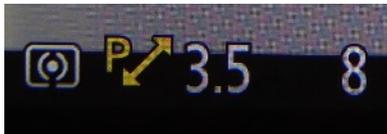
For Episode 3 PROGRAM AUTO MODE - “P”



The P mode can be considered to be the ISO priority mode for this camera.

You can set the ISO and the camera will set the aperture and shutter speed according to the amount of light reaching the sensor.

If you want to alter the settings that the camera has suggested you can use what is called the “Program Shift” operation to be able to set the aperture that you want - to get the right depth of field.



Program Shift isn't the same as exposure compensation.

Exposure compensation allows you to over ride the camera metering circuit to make the image darker or lighter.

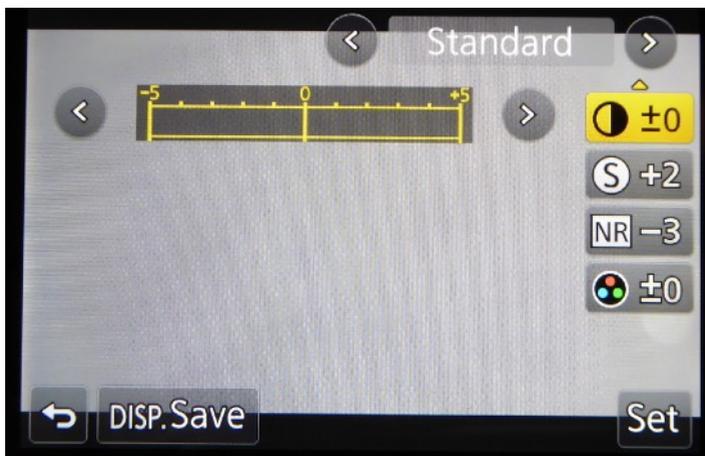
When using P Shift the exposure remains the same the element that will change in the image will depend on whether you are using the aperture or the shutter speed to influence the image outcome.

Alternatively you can set the shutter speed to either add subject motion blur, or remove it depending upon the desired look in your final image.

The “P” Mode also gives you access to the other metering modes that the camera has, such as the spot metering mode, and this can be an important feature for getting the right exposure in tricky lighting situations.

In using the The “P” Mode the camera does not use the scene detection process that intelligent auto uses to establish the optimum processing for the type of image detected if you are shooting in the JPEG only mode.

Instead you have the ability to choose one of the available “Photo styles”, and additionally, be able to fine tune the individual parameters within that photo style.



These parameters allow you to change the way that the out of camera JPEG images are processed.

The choices are highly subjective, and personal, as everyone's style of photography is different. The available styles and their effect is shown on the next table.

Photo Style	Image Effect
Standard	Basic Setting
Vivid	As the basic setting with slightly more image contrast/saturation
Natural	As the basic setting with slightly less contrast
Monochrome	Produces an image with shades of grey (black and white)
Scenery	Produces images with richer saturation in blue and greens
Portrait	Images have slightly reduced sharpness and slightly increased red
Custom	Uses your adjustments made to one of the photo styles

The “P” Mode is the first giant step in taking more control of the way the camera handles your desired image capture.

The “P” Mode however, always plays it safe and assumes that you are hand holding the camera.

It does take into account the focal length of the lens to set an appropriate shutter speed in attempt to reduce any handshake.

It generally follows the 1/focal length rule to establish the shutter speed.

In the “P”mode, the camera fully automates both aperture and speed, changing both together per measured subject light.

For brighter scenes, or subjects, the camera gradually closes the aperture and sets higher shutter speeds, reaching the smallest F8 only for very high speeds at or above 1/1000sec.

For dark subjects the camera gradually opens the aperture and sets slower shutter speeds.

Once the maximum aperture of F2.8 has been reached with a shutter speed of 1/100sec, if the subject is still too dark for this exposure, the “program” keeps the F2.8 aperture while decreasing shutter speed still further.

If the you set ISO to Auto in this mode, the camera will give priority to increasing the ISO sensitivity before setting too slow a shutter speed thus reducing the possibility of getting hand shake in the image.

If you wanted to change this aperture/shutter speed combination to increase depth of field, for example by selection a smaller aperture, then this can be achieved using a feature referred to as “program shift”.

When you half depress the shutter button to activate both focus and metering then, as the aperture/shutter speed combination is being displayed on the LCD screen if you rotate the back control dial you will enter this mode.

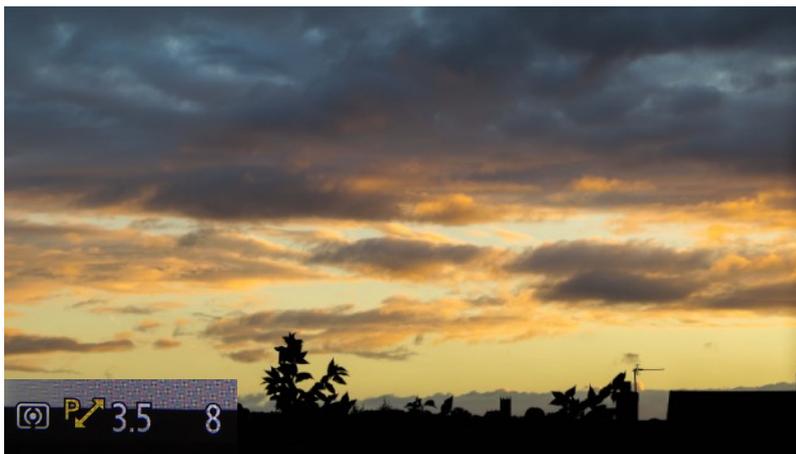
You can adjust the combination of aperture and shutter speed and the aperture will stay locked in at this value until you either turn off the camera or rotate the control wheel until the indication turns off.

The camera adjusts exposure by changing the shutter speed.

This value of aperture remains in memory even if you select another mode and then return to the “P” mode.

Essentially you have set the camera into “Aperture priority mode”

Program shift is indicated by a double headed arrow visible on the LCD screen.



As I first indicated at the beginning of this section I said the P Mode is almost my ISO Priority mode.

So what ISO should you use. Well it is always best to use the lowest ISO that you can.

The lower the ISO setting the less digital noise will appear in the image and the more of the expanse of highlight to shadows in your image can be captured (called dynamic range).

If you cannot use the lowest ISO because the shutter speed would be too long at even the widest aperture of f2.8 then you need to choose an ISO which would allow these hand held exposures.

Here is a table of suggested ISO settings for various lighting scenarios.

ISO Setting	Lighting Situation
100/200	Bright, sunny day
400	Outdoor shade
800	Indoor lighting at night or cloudy conditions outside.
1600	Late night, low-light conditions or sporting arenas at night

These are just suggestions, and your ISO setting will depend on a number of factors that will be discussed later in this series.

You might have to push your ISO even higher as needed, but at least now you know where to start.

Auto White Balance

The camera's auto white balance is designed to try and present a very neutral appearance to your images.

However, there are some situations where it fails to make the necessary correction.

It is the only option in the iA modes but in all other modes the white balance can be adjusted.

In the image below the background is very magenta, a failure of my LED studio lights, and the camera has not made the grey background neutral.



The image below is after a Manual White Balance Set has been made using a grey card (or white is acceptable to use).



The manual white balance set procedure allows the camera to set the correct white operating point given a white (or neutral grey) target used as the reference.

To set a manual white balance operating point we can choose any one of the four custom white balance presets by depressing the WB button on the 4-way controller



select one of the 4 custom settings and press Select White Set



ensure target is pointing at white area and then touch set or menu/set button



the display screen showing a white balance preset in use

For Episode 4 Aperture and Shutter Priority Modes

Aperture priority is selected by the user when the main exposure reason is one of the need for depth of field (DOF) or the amount of focus that is acceptably sharp from foreground to back ground.

Selecting a wide aperture (like F2.8) produces a shallow depth of field and conversely selecting a small aperture (like F8.0) will give deeper depth of field.



Selecting a large aperture for reduced depth of field

Selecting a large aperture, a long focal length and placing the subject close to the camera with the subject far from the background is the usual way to produce images with great differentiation of subject from background.

This can be used to great advantage in portraiture and wildlife.



Aperture priority is selected by rotating the top mode control dial to the “**A**” position. Use the top control wheel to set the aperture or the side control wheel if it has been programmed to F/SS in the custom menu setting for side button.

The range of adjustment is from F2.8 to F8.0 at any focal length setting.

If you have the “C” conversion lens setting turned on, this range will become F4.0 to F8.0.

The camera automatically adjusts shutter speed to give the correct exposure (and possibly ISO if iISO or Auto ISO is selected).

Taking Images Using the Shutter Priority Mode

Shutter priority mode is usually selected when the main exposure reason is one of controlling subject motion.

By selecting a fast shutter speed (like 1/2000 sec) subject motion may be completely frozen whilst conversely selecting a longer exposure (like 1/8 sec) will allow a degree of subject motion blurring such as you might see in images of flowing water or clouds streaking across a skyscape image.



A longer exposure allows some subject motion blur

Shutter priority is selected by rotating the top mode control dial to the “**S**” position.

Use the top control wheel to set the shutter speed or the side control wheel if it has been programmed to F/SS in the custom menu setting for side button.



The range of adjustment is from 1 second to 1/16000 sec if the electronic shutter is used and 60 seconds to 1/4000 sec when the mechanical shutter is used.

The camera automatically adjusts aperture to give the correct exposure (and possibly ISO if iISO or Auto ISO is selected).



Glossary of Photographic Terms For When You Need Them

Aperture – the variable opening in the lens through which light passes to the film or digital sensor. Measured in f-stops. I like to compare it to your pupil which opens and closes to allow light to enter your eye depending on the brightness level of the room.

Bracketing – taking a series of images at different exposures or EV. You may see a setting on your camera that says AEB (auto exposure bracketing). This is often used when creating HDR images or in difficult lighting situations where you may want to have a range of exposures from light to dark.

Bulb – the “B” setting on your camera where the shutter remains opened for as long as the button or cable release (remote trigger) is pressed.

EV – Exposure Value is a number that represents the various combinations of aperture and shutter speed that can create the same exposure effect.

Exposure compensation – modifying the shutter speed or aperture from the camera’s recommended exposure to create a certain effect (over or under exposing) – usually used in the Shutter Priority or Aperture Priority modes. Represented by a little +/- button on your camera. Your camera reads light bouncing off your subject and is designed to expose for medium grey. So, when photographing a subject that is lighter or darker than 18% grey, you can use this setting to tell the camera the proper exposure.

Exposure – the total amount of light reaching the camera sensor. It is controlled by the setting of the aperture, shutter speed and ISO. See my Exposure Triangle for more details.

F-stop – is a measure of the aperture opening in the lens defined by dividing the focal length of the lens by the aperture diameter. Sequence of f-stops that are multiples of the square root of 2 (1.4): giving a range of 1, 1.4, 2, 2.8, 4, 5.6, 8, 11, 16, 22, etc. Remember that each step is double the amount of light.

ISO – stands for International Standards Organization and represents the sensitivity of your camera's digital sensor to light and subsequent signal amplification. The lower the number (ISO 100), the less sensitive, the higher the number (ISO 3200) the more sensitive. A higher ISO allows you to shoot in low light conditions

Shutter speed – the amount of time the shutter is opened during an exposure. The shutter speed controls subject motion blur. Use a fast speed (like 1/2000th of a second) to freeze motion, or a slow one (1/4 of a second or longer) to blur moving objects.

Zoom lens – any lens that has variable focal lengths such as a 24-70mm or 18-55mm. You zoom in or out by rotating the barrel of the lens.

Remote trigger or digital cable release – a device that allows the camera to be fired without pressing the button or touching the camera. Helps eliminate movement of the camera during long exposures.

Macro lens – one that focuses very close to the subject allowing for 1:1 reproduction size of the object or larger.

Camera resolution – expressed in megapixels is the dimensions your camera’s sensor is capable of capturing. This is not the only factor in image quality, but generally the larger the number, the larger prints you can produce from it without loss of quality.

File format JPEG versus RAW – The FZ300/330 has the ability to shoot both formats. If you choose JPG, the camera will shoot a RAW file, process it using the Photo style you’ve selected in your menu, save it as a JPG and discard the RAW version. If shot in RAW the resulting file will be larger, carry more information (but the same pixel resolution, see above) and require software to process. It gives you the photographer more control over the final look of your image.

Lighting and Portrait Photography Terms

Ambient light – also referred to as available light, is the light that is occurring in the scene without adding any flash or light modifiers. This could be daylight, or artificial light such as tungsten or LED Lights.

Main light or key light: is the main light source for a photograph. It could be the sun, a studio strobe, a flash, a reflector or something else. But it is the source of light that is producing the pattern of light on the subject with the most intensity.

Fill light: is the light source that is secondary to the main light. It is used to “fill” in the shadows to a desired degree. It can be produced by using a flash, a reflector, or a studio strobe.

Lighting pattern: this is the way the light falls on the subject’s face. A pattern of light and shadow that is created.

Lighting ratio: is a comparison between the intensity (brightness) of the main light and the fill light and thus the difference of the lit and shadow sides of the subject's face.

Incident light meter: is a handheld device separate from your camera that measures the amount of light falling on a subject (as opposed to the reflective reading your camera takes which is light bouncing off the subject back to the camera). It is not fooled by the brightness range of the subject, whereas in camera reflective meters can be fooled.

Reflector – a device that is used to reflect light, generally back towards the subject. It can be a specialized factory made reflector or as simple as a piece of white cardboard.

Light meter – a device that measures the amount of light in a scene. Your FZ300/330 has one built in, it uses reflective readings (light bouncing off the subject coming back through the lens [TTL])

Remote flash trigger – a device used to fire remote flash units off camera.

Subtractive lighting – as the name implies it is the taking away of light to create a desired effect. Commonly it involves holding a reflector or opaque panel over the subject's head to block light from above and open deep eye shadows cause by overhead lighting. It can also mean holding a black reflector opposite your main light to create a deeper shadow, reflecting black onto the subject instead of light.

Hard light – harsh or undiffused light such as produced by bright sunlight, a small flashgun, or an on-camera flash. It produces harsh

shadows with well-defined edges, contrast, and texture (if used at an angle to the subject). Emphasizes texture, lines and wrinkles, and used to create a more dramatic type of portrait.

Soft light – diffused light such as from an overcast sky, north facing window with no direct light, or a large studio softbox. This type of light produces soft shadows with soft edges, lower contrast, and less texture. Generally preferred by most wedding and portrait photographers as it flatter the subject more.

Flash sync – simply put is the synchronization of the firing of an electronic flash and the shutter speed. You need to know what shutter speed your camera syncs at, otherwise if you shoot too fast a shutter speed you may get a partially illuminated image. For the FZ300/330 because of the in-lens shutter flash can be synched at any of the available shutter speeds.

Some Slang Photographic Jargon

Become familiar with them so you can walk among the pros with confidence!

Fast glass – refers to a lens with a very large maximum aperture such as f1.8 or f1.2. “Fast” as in, it allows you to shoot at a fast shutter speed due to the large aperture.

Chimping – slang term meaning looking at the back of the camera after every image. Spending too much time reviewing images on camera, not enough time shooting.

Bokeh – often mispronounced “bow-kay” or “bow-kuh” it is correctly pronounced as “bo-ke” like the ke in kettle. It is used to describe the out of focus blurred bits in the background when “fast glass” is used. Most often bokeh occurs where small light sources are in the background, far in the distance.

Depth of Field (DOF or DoF)- the distance between the nearest and farthest objects in your scene that appear in focus. It is controlled by many factors including the aperture, lens focal length, distance to subject.

Circles of confusion – closely related to the above bokeh, the textbook definition is: the largest blur spot that is indistinguishable from the point source that is being rendered. Objects outside the depth of field of an image that the human eye can determine as “out of focus”.

Hyperfocal distance – often used by landscape photographers, it is the focus distance providing the maximum amount of depth of field.

Gobo – something used to block unwanted or stray light from falling onto the subject. Often a reflector (using the black side) can serve a dual purpose and act as a gobo as well.

Scrim – a translucent device used to diffuse and soften the light, could be a reflector with a translucent panel or option. Also, used on movie sets scrims can be made extremely large, several feet across, and clamped in place to create shade where there is direct sun without it.

Shutter lag – the slight delay from the time you press the shutter button to the time it fires and opens.

Chromatic aberration – in terms of lens optics it is the failure of the lens to focus all colours (RGB) at the same point. It shows up as colour fringes in areas of the image where dark meet light (think edge of a building against the sky). It is more common in wide angle lenses, and those of inferior optics. It is correctable, to some degree, using Photoshop, Lightroom or software of your choice.

Rear shutter curtain sync – by default most cameras are set to front curtain sync which means that if the flash fires, it does so at the beginning of the exposure time. By setting to rear shutter curtain sync it fires the flash at the end of the exposure time. The difference in some cases may be negligible, but in shooting a moving subject front sync will put any motion blur in front of the subject, whereas rear sync will place the blur behind the subject. Neither is wrong, just preference.

Camera shake – this is a blurry image which has resulted from an insufficiently fast enough shutter speed, while hand holding the camera. So how slow is too slow? Many will say that 1/60th of a second is the rule of thumb. I tend to recommend 1 over the focal lens of your lens instead, as the longer the lens the more amplified any shake will become.

Lens flare – occurs when the light source hits the lens directly, it can manifest as a hazy looking image or artefacts such as circles of light. Some photographers desire lens flare and position their camera to create it and use it as a compositional element.

Kelvin – is the absolute measurement of colour temperature. On your camera under the White Balance settings you may see a “K” setting.

This allows you to adjust the colour manually by degrees Kelvin. The lower numbers represent warmer colours like orange (tungsten light) and the higher numbers are cooler (blues).

ND filter – stands for neutral density filter which is a filter designed to go in front of the lens to block out some of the light entering the camera. Often used by landscape photographers to be able to get slow shutter speeds when photographing waterfalls and streams in full daylight.

Panning – the act of using a slow shutter speed, and moving the camera in the same direction as a moving subject, during the exposure to create a blurred background.

Stopping down – the act of closing the aperture to a smaller opening say f2.8 to f4.

TTL and ETTL – stands for Through the Lens, refers to the metering system in regards to flash exposure. The flash emits light until it is turned off by the camera sensor. ETTL is evaluative through the lens metering and fires a “pre-flash” to evaluate and calculate for lost light then compensates and fires the main flash. It happens so fast you do not see two flashes.

Golden hour – also called “magic hour” is the hour right before sunset or right after sunrise. The sun is low on the horizon and it is an optimal time for photography.

Blown out – having highlights that are off the chart on the right side of the histogram, having no detail in the white areas.

Clipped – similar to blown out being off the histogram, but it can also apply to shadow or black areas of the image.

Selfie – a self portrait

SOOC – straight out of camera, no post processing or editing done.

Wide open – using your lens with the aperture at the widest setting (f2.8 for example)

The FZ300/330 Apertures in 1/3 F-stop increments

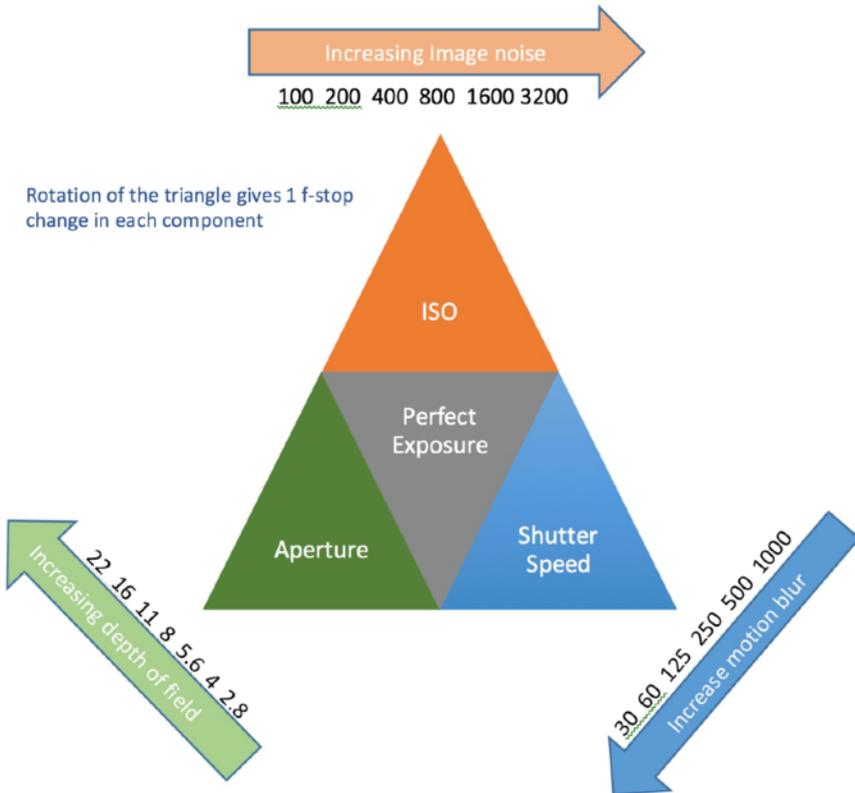
Full F-stops highlighted in **RED**

F2.8 F3.2 F3.5 **F4** F4.5 F5 **F5.6** F6.3 F7.1 **F8**

The FZ300/330 has a crop factor of 5.4 compared to a full frame 35mm sensor this the equivalent focal lengths of the lens are obtained by multiplying the native focal lengths x 5.4 and the equivalent apertures are obtained by multiplying by 5.4

So effectively the camera lens is 25mm to 600mm effective focal length and its effective aperture range is f16 to f44 in terms of the same depth of field as the 35mm equivalent lens at the same focal length. The light gathering properties are as set by the aperture from f2.8 to f8

The Exposure Triangle



The Exposure Triangle

Is the key to understanding exposure and the interaction of the three principal components of ISO (camera sensitivity to light), Aperture (which governs the amount of light entering the camera and the depth of field) and Shutter Speed (which governs the amount of light entering the camera and the amount of motion blur in the image).

We can adjust any one element in the exposure however to keep the exposure the same we need to make a corresponding and opposite change to one of the other (or a combination of each of the other two – as long as it adds up to the same EV).

For example: If our exposure is 1/250 sec, F8 and ISO 800 (as shown above) and we want more depth of field we could set the aperture to F11 (1 full F-stop or 1 EV unit) and then either change the shutter speed by the same 1 f-stop to a longer time to compensate for the reduction in light or we could increase the camera sensitivity by changing the ISO to a higher value by the equivalent of 1 f-stop or 1 EV unit. The effect on the image quality will be increased subject motion blur if we make the shutter speed longer, or higher image noise if we increase the ISO setting

