

# Digital Photography Principles

There is no right or wrong way to take any given picture. The ISO, Aperture, and Shutter speed are just tools to be used in order to achieve a desired aesthetic effect.

For our purposes we will shoot in **Manual Mode** (M on the dial on the top right)

We will also shoot in Camera Raw.

**On the SONY Alpha 3000:** MENU -> [Image Size] -> [Quality] -> desired mode.

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**ISO:** is the level of sensitivity of your camera to available light.

The lower the ISO number, the less sensitive it is to the light, while a higher ISO number increases the sensitivity of your camera



100 - 200

bright day

400 - 800

indoor ambient light

1600&up

low light



## On the SONY Alpha 3000:

(ISO) on the control wheel -> desired setting.

Or, MENU -> [Brightness/Color] -> [ISO] -> desired setting.

### Adjusting ISO Sensitivity (Recommended Exposure Index)

ISO setting (speed) is the sensitivity to light of recording media that incorporates an image sensor that receives light. Even when the exposure is the same, images differ depending on the ISO setting.



#### High ISO sensitivity

With high ISO sensitivity, images will be captured with an appropriate brightness even under insufficient exposure. However, increasing ISO sensitivity will cause images to become noisy.



#### Low ISO sensitivity

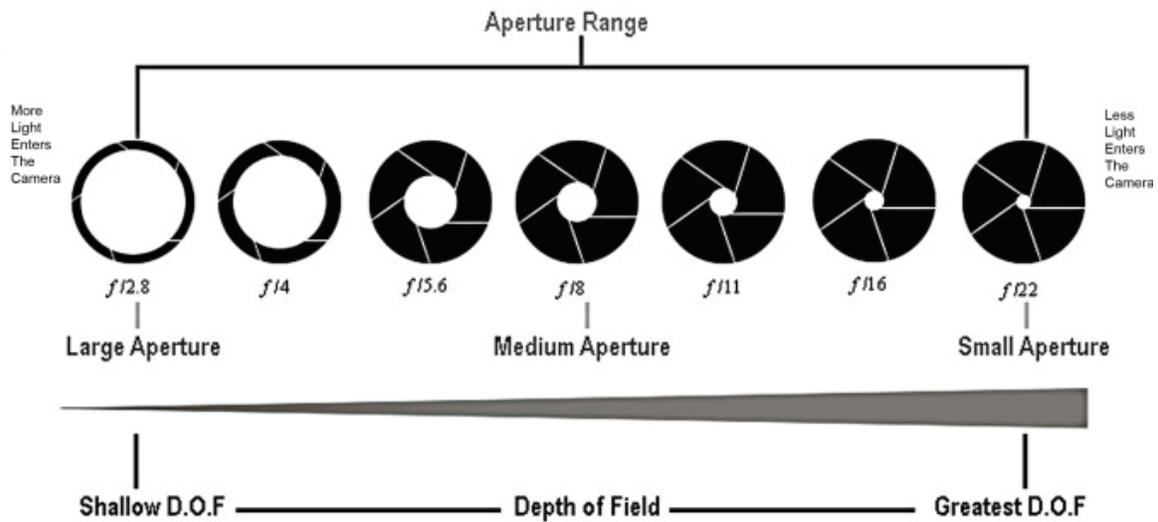
You can record smooth images. However, compensation for low ISO sensitivity will be made by slowing down the shutter speed. You should take camera-shake or movement of subjects into account, too.

**Aperture:** a hole in your lens that you can make smaller or larger to control how much light enters your camera.

When you hit the shutter release button of your camera a hole opens up that allows your camera's image sensor to catch a glimpse of the scene you're wanting to capture. The aperture that you set impacts the size of that hole. The larger the hole the more light that gets in – the smaller the hole the less light.

Aperture is measured in **f-stops**.

The size of the aperture effects how bright your image will be, as well as the **depth of field**.



**Depth of Field (DOF)** is that amount of your shot that will be in focus. Large depth of field means that most of your image will be in focus whether it's close to your camera or far away. Small (or shallow) depth of field means that only part of the image will be in focus and the rest will be blurred.

**Shutter Speed:** is 'the amount of time that the shutter is open'. In film photography it was the length of time that the film was exposed to the scene you're photographing and similarly in digital photography shutter speed is the length of time that your image sensor 'sees' the scene you're attempting to capture.

- Shutter speed is measured in seconds – or in most cases fractions of seconds. The bigger the denominator the faster the speed (ie  $1/1000$  is much faster than  $1/30$ ).
- In most cases you'll probably be using shutter speeds of  $1/60$ th of a second or faster. This is because anything slower than this is very difficult to use without getting camera shake. Camera shake is when your camera is moving while the shutter is open and results in blur in your photos.
- If you're using a slow shutter speed (anything slower than  $1/60$ ) you will need to either use a tripod or some type of image stabilization (more and more cameras are coming with this built in).

## On the SONY Alpha 3000:

Setting the camera to Manual (M on the dial on the top right) allows you to control both aperture (f stop) and shutter speed .

Both are controlled by first clicking the control wheel on the bottom edge and then spinning it.

Pushing the wheel toggles the two controls, showing you the one you have control over in yellow.

### Shutter speed



When a faster shutter speed is used, a moving subject such as a running person, cars, and sea spray appears as if they are stopped.



When a slower shutter speed is used, a trailing image of the movement of the subject is captured to make more natural and dynamic image.

### Aperture

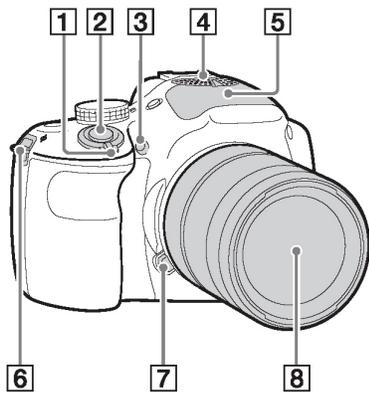


Smaller F-value (opening the aperture) narrows the range that is in focus. This allows you to put the subject in sharp focus and blur things in front of and beyond the subject. (Depth of field becomes shallower.)



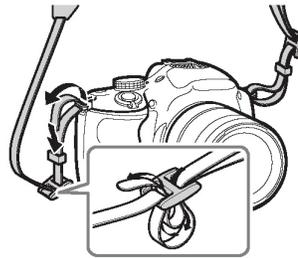
Larger F-value (narrowing down the aperture) widens the range that is in focus. This allows you to shoot the depth of the scenery. (Depth of field becomes deeper.)

# SONY Alpha 3000

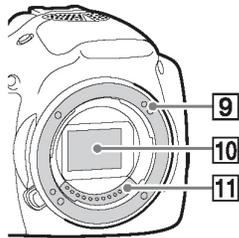


See the pages in parentheses for details on operation for the parts.

- 1** ON/OFF (Power) switch
- 2** Shutter button (27)
- 3** AF illuminator/Self-timer lamp/Smile Shutter lamp
- 4** Microphone<sup>1)</sup>
- 5** Flash (64)
- 6** Hook for shoulder strap  
Attach the shoulder strap to prevent damage caused by dropping the camera.

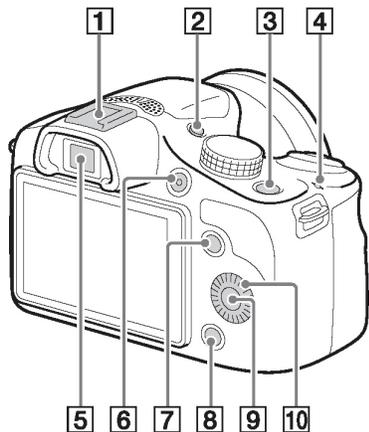


## When the lens is removed

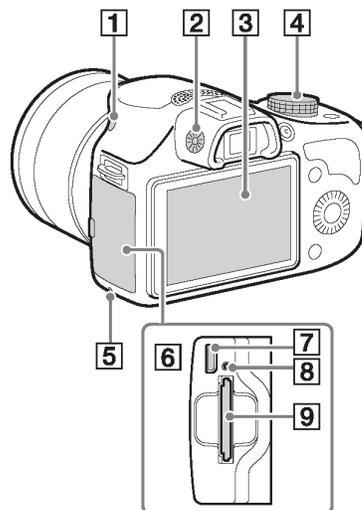


- 7** Lens release button
- 8** Lens
- 9** Mount
- 10** Image sensor<sup>2)</sup>
- 11** Lens contacts<sup>2)</sup>

- <sup>1)</sup> Do not cover this part during movie recording.
- <sup>2)</sup> Do not touch this part directly.



- 1** Multi Interface Shoe<sup>1)2)</sup>
- 2** FINDER/LCD button
  - You can switch between the LCD screen and the viewfinder display. (In playback mode, only the LCD screen is available.)
- 3** (Playback) button (29)
- 4** Image sensor position mark (65)
- 5** Viewfinder
- 6** MOVIE button (27)
- 7** Soft key A (20)
- 8** Soft key B (20)
- 9** Soft key C (20)
- 10** Control wheel (19)



- 1** (Flash pop-up) button (64)
- 2** Diopter-adjustment dial
- 3** LCD screen
- 4** Mode dial
- 5** Access lamp
- 6** Memory card/terminal cover
- 7** Multi/Micro USB Terminal (165)  
Supports Micro USB compatible device.
- 8** Charge lamp
- 9** Memory card insertion slot