

Video reporting on a mission using a mirrorless camera and *entry-level* cameras

Main photo and video settings for your *entry-level* camera

To take good photos or videos, there's a lot more to it than just point-and-shoot.

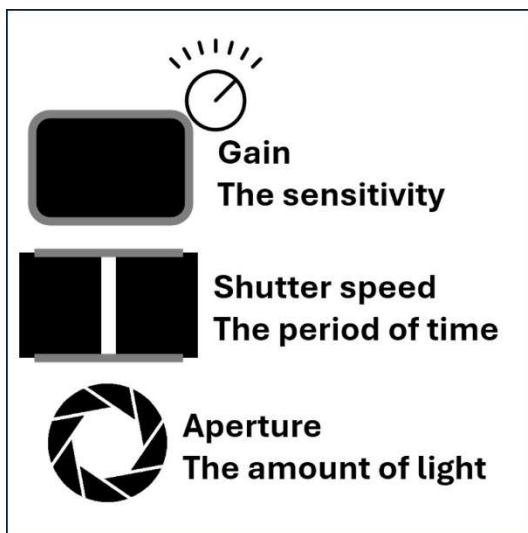
It's essential to understand the basic photo and video parameters and the settings that correspond to the types of photos and videos you want to take.

Here is some essential information for beginners as well as for those with some experience with mirrorless cameras.

A note for mobile phones

Some mobile phones offer some (limited) setting features, like those found in mirrorless cameras (see your mobile phone manual).

The exposure triangle (3 items)



They are:

1. The gain (in ISO)
To setup how much gain of the light to be received by the camera's sensor. A low value (as

100 ISO) produces a clean picture, but a higher value (as 3200 ISO and more) will add digital noise to the picture.

2. The shutter speed (in a sec or fraction of a sec)

To setup how long the camera's shutter stays open to let the sensor receive light.

Proposed shutter speeds:

1/60 sec, for video at 30 fps

1/1000 sec or more to freeze fast action

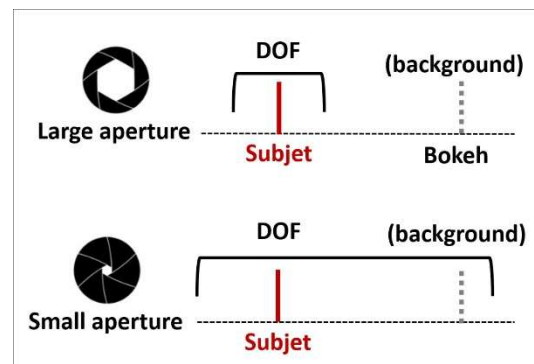
3. The aperture (in f-stops)

The opening in the lens that lets light to the sensor. A low number (as f/1.8) offers a wide opening and a higher number (as f/11) offers a small opening.

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The depth of field and *bokeh*

The depth of field (DOF)



Simply put, it is the condition when the closest and farthest items (subject and background) are and in focus in a picture. The depth of field is related to the aperture of the lens, as:

A large aperture (opening) of the lens will give a short depth of field, and a small aperture will give a long depth of field.

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What is *Bokeh*?

It is from the Japanese ボケ and it means out-of-focus. This technique is used when you want the subject in focus and the background blurry. You need then to use a wide aperture as possible (as f/1.8 or as wide as your lens permits), be close to your subject, which should be distant from the background.

Camera shake, motion blur and rolling shutter effect

Camera shake

A camera shake occurs when the camera moves (by instability), during a photo exposure or a video shot. This happens when you press the shutter button. (Do not confuse this with camera – slow movements, for video). This results in blurriness throughout the entire picture or video. At higher focal lengths (zoomed in with a telephoto lens) this problem gets worse. To avoid this, use a tripod or a monopod.

Motion blur (in photography)

This is caused by a shutter speed too slow related to a moving subject.

As example, to get a running child “in focus”, a shutter speed around 1/500 is suggested.

Rolling shutter effect (in video at 30fps)

If a sensor captures an image by scanning it line by line (instead of capturing the entire image all at once) we may have a rolling shutter effect. If a fast object moves fast while the sensor is scanning, this object will look like *jello*.

An example would be the deformed blades of a helicopter.

The autofocus (and zoom lenses)

It is recommended to use the AF (Auto Focus).

The modes are:

One-Shot AF: For still subjects

Servo AF: For moving subjects

The methods are:

Tracking: to focus on people's faces

1 Point AF: using a single AF box

Spot AF: narrower area than 1-point AF

Zone AF: uses a wide AF box

Subjects are given focus priority

White balance

Is it recommended to use the AWB (Auto White Balance)

There are several modes, as Ambience priority and White priority. Daylight, shade, Cloudy, Tungsten Fluorescent and Flash.

Ambience priority offers correction from 3000 to 7000 Kelvin

The file format (photography)

The photo camera offers the JPEG format (8 bits processed by the camera, in 422 colour subsampling) and the RAW format (14 bits unprocessed by the camera, in 444 colour sampling)

The file format (video)

For video the format is MP4 (container) using H.264/AVC coding, 8 bits, 420.

UHD 3840 X 2160 at 23.98 fps

FHD 1920 X 1080 up to 59.94 fps

Aspect ratio (AR) and resolution

The aspect ratio defines the width and the height of a picture and the resolution defines the number of pixels in a picture.

The AR can be 3:2, 4:3, 16:9 or 1:1.

The maximum resolution in RAW and JPEG Large (3:2 AR) is 6000 X 4000 pixels.

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My initial “default” settings

For photography

Aspect Ratio: 3:2

Coding: RAW + JPEG Large

Auto White Balance (AWB)

Auto Focus: Servo + Tracking

Auto ISO: set at 1200 max.

Manual (M): shutter speed and aperture

For videography

Aspect Ratio: 16:9

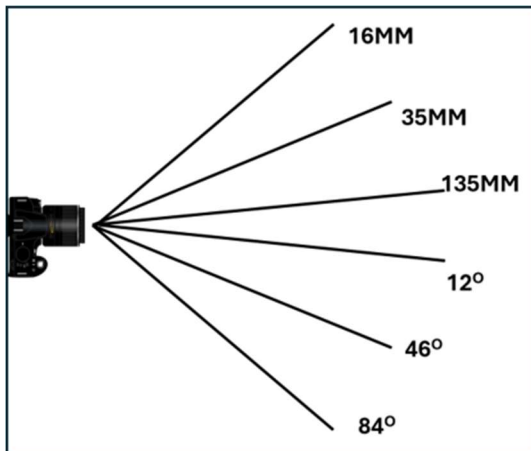
FHD 1920 X 1080 at 29.97 fps

Shutter speed: 1/60 sec.

Manual audio recording (external mic.)

Field of view (angle)

The area of “central focus” for the human eye is about 40 to 60 degrees. The equivalent for RF-S lenses and for APS-C size sensors is around 35mm (or a little less).



In our example:

A 16mm lens is to be considered as a wide angle. A 135mm lens is to be considered as telephoto.

A mid-telephoto lens of 50/55mm would be quite good for portraits. A fixed focal length may be an option.

My take on wireless microphones

A good wireless microphone is relatively expensive. In addition, not everyone is comfortable using those, especially guests and or collaborators. This is why I don't use them.

My take on “green screen”

A green screen allows you to replace the real background, and I prefer reality. This is why I don't use this.

Photo processing (with RAW files)

As for video, this is usually done at the mission “home base”, not in the field. That said, I use the Canon Digital Photo Professional 4 (free) software to: View and organize images. Adjust and correct images. Resize and convert images from RAW to JPEG or TIFF. As it is the case for video, some corrections (adjustments) can be made on pictures, but this process is also limited...

(Remember “garbage in garbage out”? Don't expect miracles!)

In the service of our Lord,

Pierre

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« ... how can they believe in the one of whom they have not heard...”.

Romans 10:14