

Part 4

Camera Settings

When it comes to studio photography, your images are governed by two main elements – the amount of light, and the type of subject. In still life photography, it's relatively easy to set up lighting and make a decent exposure of a subject as firstly the subject doesn't move and secondly, the subtlety of the light may not be quite so important as it is with a portrait – to capture the person, rather than the object.

In portraiture, in order to balance the lighting and the subject, this can be done through careful light placement and the strength of the light. But what about the camera? What settings should you use?

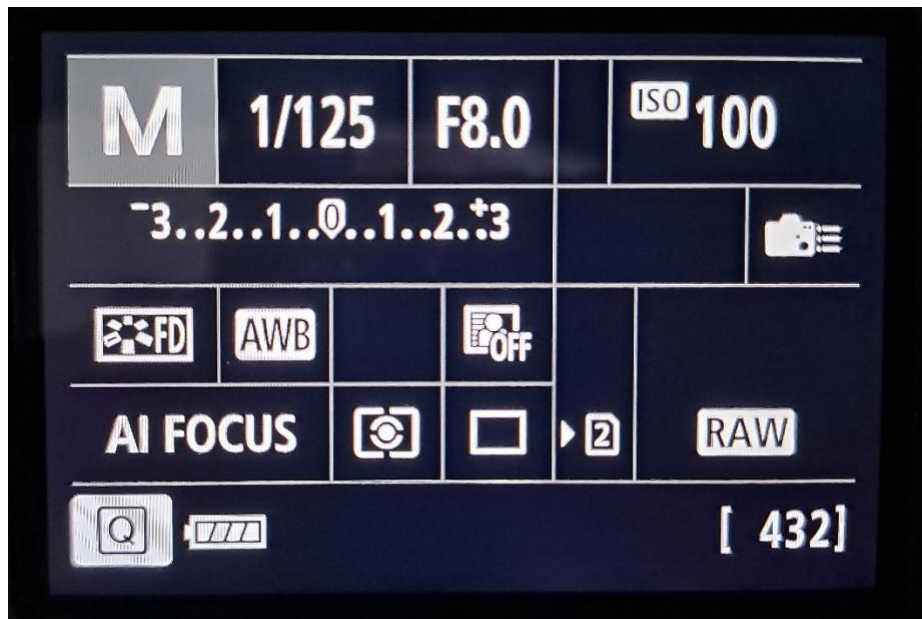
Manual Setting

The dreaded word when you're learning photography! But when you break it down, it is relatively simple to achieve great results. What do you want from a good portrait image?

- Good colour saturation (even for black and white images to give good grey tones)
- Pin-sharp images of the eyes
- A blurred background with no unintended light spill
- A reasonably fast shutter speed to:
 - Minimise movement of the camera and subject
 - To synchronise with the flash system (if used)
 - Allow a shorter depth of field



What setting should I start with?

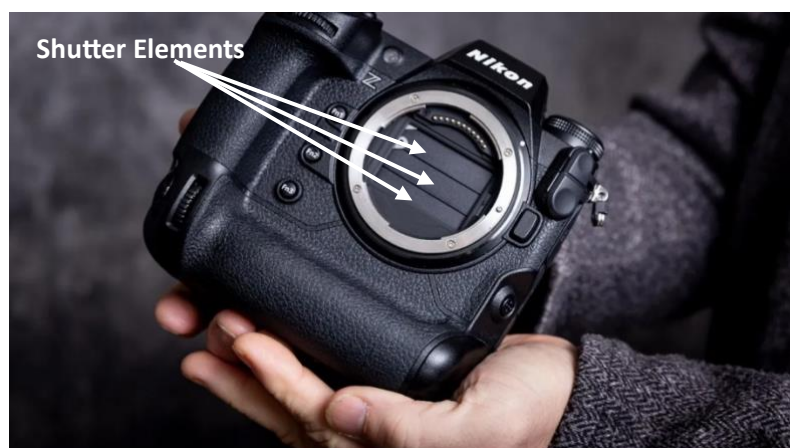


The default, standard, go-to settings are:

- ISO – 100
- Aperture – $f8.0$
- Shutter speed $1/125^{\text{th}}$ of a second

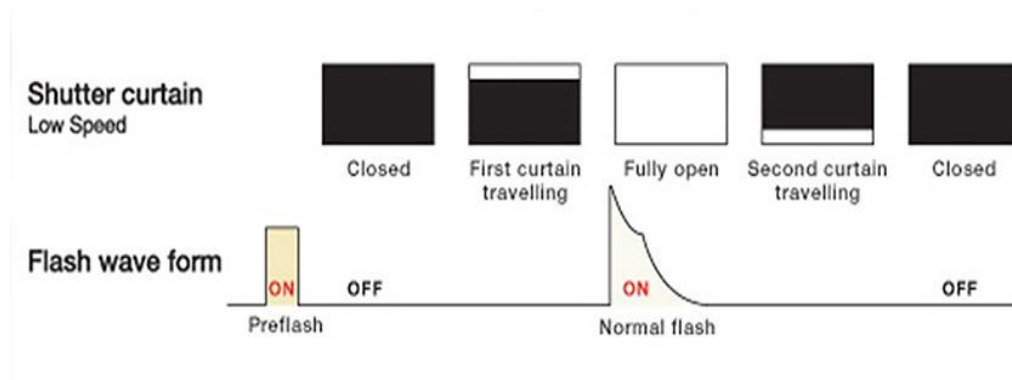
This will, with a good light setup, allow you to take shots that have a reasonable depth of field and sync with the flash heads (if used). Variations can then be made from this starting point but there is a need for caution. If you increase the aperture size (lower the f number) to lower the depth of field (more blur of the background) you will need to decrease the ISO setting or increase the value of the shutter speed. You may not be able to lower the ISO further, so you're left with increasing the shutter speed. This in itself can cause problems when using flash due to the duration of the flash output. (Obviously, this does not apply with continuous lighting.)

Before we get deeper into this, we need to cover some basics first – how the camera's shutter works. The focal plane shutter found in D-SLRs, consist of two curtains that open and close. They open and close with a certain timing, to open the sensor to light. When the shutter is tripped, the first curtain opens, revealing the sensor to the light, and then the second curtain closes. The time interval between the first curtain opening, and the second curtain closing, is the shutter speed. It can be 1 second, or it can be $1/60^{\text{th}}$ of a second, or as short as $1/4000^{\text{th}}$ of a second.



Here's why you can't set your camera's shutter speed over a certain speed value.

As can be seen in this explanatory diagram below, the light from the flash is dissipated as an instantaneous burst of light. It is somewhere in the order of 1/2000th of a second. Fast! It is hugely important to realise here that the light from your flash isn't continuous light, but instantaneous. (Or rather, *near-instantaneous*, for the pedantic ones reading this.)

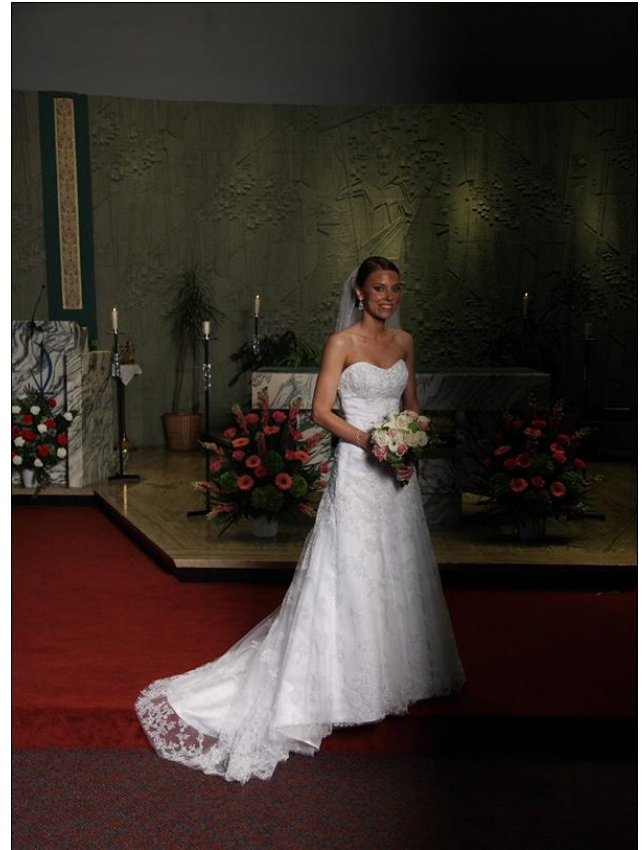


Your shutter consists of two curtains that travel across your sensor (or film gate). So, for flash to be exposed over the entire frame, your shutter speed needs to be low enough that the first curtain has completely cleared the sensor area (i.e., the sensor is fully open), BEFORE the second curtain starts moving. In that moment, the flash is discharged, and the entire frame is exposed.

If we work in a dark enough area such as a studio that is completely dark, then we can get correct flash exposure at shutter speeds like 1/8th or 1/15th or 1/60th ... the shutter speed has no effect on flash exposure ... while we remain below maximum sync speed.

So maximum sync speed, is the highest shutter speed at which the entire frame is still open for flash to expose for the entire frame (whether a digital sensor or piece of film).

If we go over maximum sync speed, we'll get one of the shutter curtains blocking the flash exposure, such as in this example:



The image on the left had the shutter speed at $1/60^{\text{th}}$, and the image on the right had the shutter speed at $1/320^{\text{th}}$. That dark area on the right is the shadow of the one shutter curtain obscuring the light from the flash – resulting from a too-high shutter speed setting.

There is also Exposure Compensation to consider to help lighten or darken a subject. However, as this adjusts the shutter speed to faster (to darken the image) or slower (to brighten the image) it may fall into the same trap as discussed above.

It is unlikely, with studio flash, that there will not be enough light. With the flash heads set to medium or higher, it is likely you will have too much light. It is therefore a consideration to lower the intensity of the light and use a slower shutter speed, rather than trying to adjust the camera to cope.

For speed settings below $1/60^{\text{th}}$ of a second, a tripod becomes essential.

Filters

Another alternative to reduce the Depth of Field, without changing the Shutter Speed is to use a Neutral Density Filter.



These filters work by reducing the amount of light that enters the camera lens without changing the colour or tone of the image. By doing so, ND filters allow photographers to use wider apertures or longer shutter speeds, which can result in more striking and artistic portraits.

3-stop ND filters

A 3-stop ND filter can be useful in slightly reducing the amount of light entering the camera, allowing you to use wider apertures or slower shutter speeds without overexposing the image. This can help achieve a shallower depth of field and create a more visually appealing portrait.

6-stop ND filters

A 6-stop ND filter can be helpful when shooting in bright sunlight, as it can reduce the amount of light entering the camera enough to allow you to use slower shutter speeds or wider apertures without overexposing the image. This can help create more creative effects, such as motion blur or a shallow depth of field.

Shallow depth of field

By reducing the amount of light entering the camera, ND filters allow photographers to use wider apertures, resulting in a shallower depth of field. This effect can help make the subject stand out more from the background, creating a more visually appealing portrait.

For indoor portrait photography, lighting conditions are often controlled, and the ambient light levels are lower than in outdoor settings. Therefore, you may not need an ND filter at all. Instead, you can use lighting equipment to create the desired lighting effect and control the exposure settings of your camera to achieve the desired result.