

A Few Notes On...

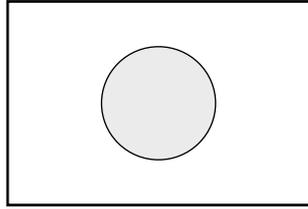
Light Meters

- SLR cameras have light meters built in, which measure the light passing through the lens (known as TTL) onto the chip. The camera uses this information to set the exposure according to which shooting mode you are using (P, A/Av, S/Tv etc), or to indicate correct exposure for manual mode (M).
- The meter assesses the light from different parts of the frame to produce the reading/settings.
- There are 4 main ways in which the meter makes this assessment, two or three of which are found on most digital SLRs, described below:



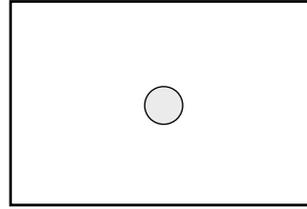
Average Metering

All parts of the frame are given equal priority in producing the meter reading. Separate hand-held lightmeters and some old film cameras use this method.



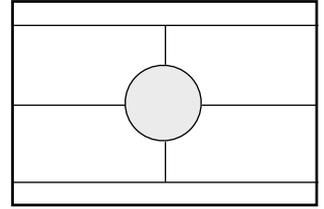
Centre-Weighted Metering

The centre of frame (shown in grey) is assumed to be more important, and typically provides around 60% of the final reading. This is to de-emphasise bright skies and dark foregrounds in landscapes, and backgrounds in portraits.



Spot Metering

Only the very centre of the frame is used for the reading, and the rest is completely ignored. For experienced users this gives the most accurate form of exposure assessment, but it is easy to make mistakes and meter wrongly.



Evaluative/Matrix Metering

A complex pattern of brightnesses from different sections of the frame are compared in order to calculate the exposure. Some cameras even take into account the distance of the subject. This is usually quite accurate and is the default setting for most digital SLRs.

However sophisticated the metering method of the camera, it can still be fooled by unusual subjects, such as light ones (snow) or backlit ones. If the exposure is not right, use *exposure compensation* to adjust it.

Flash

- The main use of flash is to provide illumination when there is not enough light to avoid camera shake.
- The pop-up flash on a camera can be useful, but has only a short range and can be obscured by a large lens or lens hood.
- A separate flash, attached to the camera's 'hot shoe' provides a better and more powerful light, but can be expensive and bulky to carry around.
- Direct flash can be harsh and unflattering, if your flash gun allows it and there is a fairly low, white ceiling, bounce flash can provide a much nicer illumination (see illustration below).
- Fill-in flash is a method where the flash is not the main light, but is used in daylight to add a bit of light to fill in harsh shadows or illuminate a backlit subject.
- To use fill-in flash, set the *flash exposure compensation* to -1, or to -2 for a more subtle effect.



Bounce Flash

Pointing the flash head straight upward gives a more flattering light on the subject as the light comes from above the photographer, not the subject.

Angling at 45° gives more range but can cause shadows under the eyes and chin.



no flash



no compensation



flash comp -1

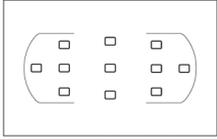


flash comp -2

Fill Flash - with different amounts of flash exposure compensation

Autofocus

- On most digital SLRs you can switch between 'single point AF' and one or more automatic modes, such as 'nearest subject' or 'dynamic area'. These vary from camera to camera so are not covered individually here...
- Single Point AF allows you to select the point in the frame where the camera will focus, usually by using the 'compass point' buttons or the control wheel on the back (depending on what system the camera uses).
- Check the manual for how the others work, some common options for single point AF are described below.
- The focus point which has been used will often light up when focus is achieved, or there will be a beep sound (or both).
- 'Single' AF, or a similar term, is used for the focus mode where the camera focuses only when the shutter button is pressed. 'Continuous' AF means it refocuses constantly as the subject changes; this is more useful for action photography but can be less accurate for most situations.



Focus Points

Typical range of focus points available to select for single point AF

Focus lock

Half-pressing the shutter release will usually lock the focus on a subject, and the picture can be recomposed while the button remains depressed. This is extremely useful and can allow a single, central focus point to be used to focus anywhere in the frame and then recompose the photo.



Selecting Focus Point

Diagram showing selection of focus point to focus on subject's face (top) or in the centre of the frame (bottom).

Focus-Assist Illumination

Many cameras can shine a light onto a dimly-lit subject to help the camera focus. This option is usually accessed through the custom functions menu and is useful for indoor, night and low light photography. The range of the assist light is very limited!



The latter would miss the subject and focus on the background...

Manual Focus

Sometimes the autofocus cannot get a good lock onto the subject - see the list below for situations where this might happen.

(both from Nikon D300 manual)

Switching to manual focus can often help in these circumstances, though it can be fiddly to use and hard to be certain when focus is best.

When Autofocus Doesn't Work Well

Here is Nikon's list of typical situations, taken from the D300 manual:

- There is little or no contrast between the subject and the background
Example: subject is the same color as the background.
- The focus point contains objects at different distances from the camera
Example: subject is inside a cage.
- The subject is dominated by regular geometric patterns
Example: a row of windows in a skyscraper.
- The focus point contains areas of sharply contrasting brightness
Example: subject is half in the shade.
- Background objects appear larger than the subject
Example: a building is in the frame behind the subject.
- The subject contains many fine details
Example: a field of flowers or other subjects that are small or lack variation in brightness.

RAW File Format

- Digital SLRs allow you to record RAW files instead of, or together with, JPEG files.
- Some cameras use a similar format called DNG instead, and some have an option to record another format called TIFF.
- All of these contain *much* more image data than JPEG files and can be adjusted substantially without the risk of any damage to the histogram, and hence the quality of the final image.
- RAW files do have some disadvantages, though: they take up a lot more disk space than JPEGs; they have to be processed and saved individually before they are usable for printing or emailing etc; they have to be processed using software which is compatible with the specific camera model, as each camera produces its own unique type of RAW files.
- Despite these potential drawbacks, photographers are increasingly using RAW files for their professional and hobby photography.
- Most cameras, whatever the make, come with free software for processing their RAW files. Commercial software such as Photoshop, Photoshop Elements and Lightroom process RAW files very quickly and efficiently, provided the version is compatible with the camera. A free program called 'DNG Converter', by Adobe, converts RAW files to the DNG format, which is then much more widely compatible with older software.