

Camera Filters

What is a filter?

A filter is an item that is placed in front of the camera lens to produce a desired effect on the photo. It is called a filter because it usually filters the light entering the lens in some way.



How do they fit?

Two common methods are used and both have pros and cons.

Screw on Type

As shown in the picture these filters screw on to the front of your lens. It is therefore important when buying them that the filter thread matches your lens. Your lens thread size is normally marked on the front of your lens, typical threads are 55mm or 58mm but you should double check your own lens before buying as there are many different sizes. The filters themselves normally have a thread on the front allowing you to stack more filters if required.



Pros: Easy/convenient to use; Good light seal against the lens

Cons: Not suitable for all types of filter requirements; Stacking of filters may be seen in the photo.

Slot in type

This type requires some attachments to make them fit your camera. You need the 'holder' that the filters slide in to and an 'adapter ring' to attach the 'holder' to your lens. The 'adapter ring' has to match the thread size of your lens as it normally screws on.



Pros: More versatile than screw on; Easy to 'stack' filters; Best system for Grad ND Filters (see below for details on Grad ND filters).

Cons: Generally more expensive than screw on; Less convenient to use; Potential for lens flare issues although not normally a problem.

Different types of Filters

UV Filter

UV stands for ultra violet. A UV filter therefore filters out any ultraviolet light from entering the camera lens. Whilst not a problem to the human eye in some situations ultra violet light can have a negative impact on a photo. Using a UV filter can reduce haze giving a clearer image. As the UV filter is clear it doesn't affect the image in other ways so can be left on for most photos and will therefore also act as a lens protector. Many camera shops recommend that you buy one for this reason. If you drop your camera, better to only scratch your UV filter than your expensive lens. That said many professionals opt not to use a UV filter these days believing that their expensive lens will give them a better image without the cheap UV filter on the front, also the clearer image benefits from the UV filter are minimal. So the choice is yours, if you would rather use one as a lens protector then do so, but don't expect it to do much for the photo. (Personally I don't use one and run the risk instead.)



Polariser Filter

This filter is a very special filter, its effects cannot accurately be simulated in software like some other filters. It is therefore worth learning about this filter so you understand a bit about how it works and when to use it.

When light reflects from a 'non-metallic' surface it becomes polarised. In simple terms this filter blocks the polarised light and stops it from entering the lens. This reduces glare, makes some reflections disappear and also deepens colours making them more saturated. These are some uses with example photos:



Removing glare from surfaces like leaves leaving a rich colour captured by the camera.

Removing reflections from water surfaces.



*Deepens the sky colour
(clouds stay white)*

Polariser Usage Notes

When purchasing one make sure it is called a 'circular polariser'. Nearly all ones sold these days will be this type, just don't buy a linear polariser. Although the filters effects are essentially the same a linear polariser does not work well with digital cameras.

After attaching the filter to the lens you will notice that the filter can still rotate. Before taking the photo rotate the filter to increase or decrease the effect of the filter.

For removing glare from surfaces like leaves it works best on sunny days.

For removing reflections on water it works at any time. (still rotate the end until you get the best result).

For deepening sky colours it works best on sunny days, it has little or no effect on dull/cloudy days.

Also for deepening sky colours the best result is obtained at a 90 deg angle to the sun. If photographing directly in to the sun it will have little effect.

In general I use a polariser to remove glare, cut through reflections from water and during sunny blue sky days. If the sun is low in the sky the 'region of the effect' in the sky can sometimes be seen which is generally considered undesirable in a photo so don't think you need a polariser on for every photo. As with most filters practice will teach you when and when not to use it.

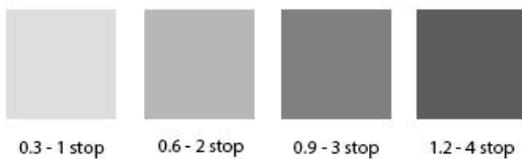
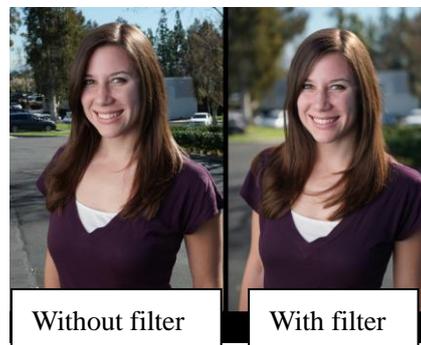
ND Filters

ND stands for neutral density. This means that the filter is a neutral grey colour meaning it will not affect the colours of your photo. What an ND filter does do is block the amount of light entering the lens. They can be purchased in different densities in order to block more or less light depending on your requirements. You may wonder why you would want to block light coming through the lens? They would be used for two main reasons, firstly if you intentionally want to lengthen the shutter speed and secondly if you want to use a low aperture (like f1.8) and there is too much light for the exposure to allow this. Some uses with example photos:



To increase the shutter speed to 'blur water movement'

To enable the use of lower apertures to reduce the 'depth of field' in bright conditions mainly when also using flash.



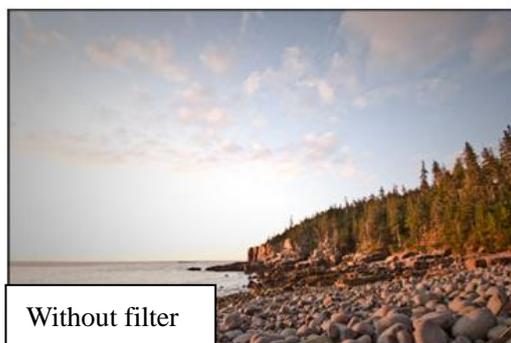
Examples of different density that can be purchased

Graduated ND Filter

As the name suggests these filters are similar to ND filters. The difference being that these filters only have a portion of the filter with the ND coating, the rest of the filter is clear, hence the name graduated. Like ND filters they come in different ND values to suit the photograph.



They are mainly used when you want to balance the exposure in a scene. For example if the sky is brighter than the foreground a graduated filter can be used to block some of the light from the sky portion of the photo to balance the exposure better. As shown below:



As well as coming in different ND values they also come in different types. A 'soft edge' type and a 'hard edge' type. A soft edge type has a transition between the clear portion of the filter and the grey portion. A hard edge changes from grey to clear with that soft change. As shown here:

Soft edge



Hard edge



A hard edge would be used if there is a clear definition between the foreground and the sky such as a horizon line. A soft edge would be better if the difference is not so clearly defined. Sometimes it is better to use both but as with most filters practice will teach you when and when not to use each type.

General Notes on other Filters

Infra-Red

Blocks all light except for infra-red light. Can turn up some interesting results, mainly when used for black and white photos. However most modern cameras have an internal 'infrared blocking filter' before the camera sensor making the use of an infrared filter useless. Therefore before exploring this type of filter make sure your camera is suitable, it probably won't be.

10 Stopper

10 Stopper is kind of a nick name as it is really just an ND filter with a strong effect. It blocks out 10 stops of light meaning that your shutter speed can be very long, even during the day time. Shutter speeds of 4mins are common with this type of filter. To be used for capturing moving clouds, smoothing out water etc giving an amazing effect if used correctly.

Close up

These filters magnify the subject by a given value depending on the filter. It is a good way of getting 'macro' type photos without the expense of a macro lens. However lens quality can be an issue and in the end you will desire that macro lens. Good cheap way to start with though.

Colour filters for b/w

In the days of film photographers would use coloured filters to block certain colours of light from the film. This could dramatically affect the photo in a good way. These days they are not really used in digital photography as the effects are much better performed or simulated in software.

Colour correction filters

Again in the days of film photographers would use coloured 'warm up' or 'cool' filters to correct the colour of the light to make colours appear natural in a photo. For example if you photograph in the shade the colour of the light is blue and this can be seen in the photograph. A 'warm up' filter would add slight orange to the photo to remove the blue hue and make the colours look correct. These days with digital photography these filters are not required because the camera (or software) corrects the colours by using white balance.

Soft focus

Mainly used for portrait photography this gives the photo a softer look. Again these are not really used these days because of software.

What should I buy?

Like with anything in life the more you pay the more you get but these are some recommendations.

UV & Polariser Filters

Costs range from £9.99 to £99.00. Don't buy the cheapest but don't think you need to buy the best. Spend around £30.00-£40.00 and you will get a good filter. 'Hoya' are a good budget brand. 'Hama' are questionable. 'Lee' make the best.

ND Filters

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Graduated ND Filters

With these you will need the slot in system. Round screw on ones are available but with them you cannot position them on the horizon so they are pointless, buy the slot in ones.

Hitech & Cokin make the budget but still good ones. Both are of good quality for beginners and enthusiasts. In general I lean towards Hitech out of the two. Lee make the best but they come at a price. Check out the internet for prices as there are lots of different options.

The above is a general guide, if you have any questions just ask.

Charles Spencer