

LEE Filters

ProGlass IRND

Instruction booklet



ProGlass IRND

Available in two, three, four, six, 10 and 15-stop strengths, ProGlass IRND filters are designed to extend shutter speeds and allow for the creative blurring of any area of the frame that is moving. Depending on the length of shutter speed, subjects can become soft and ghost-like – or even disappear entirely. Clouds, waterfalls, rivers and the sea are typical subjects, but the filters can also be used in the urban environment to depict movement in traffic or crowds of people.



Composing the Image

Set up the camera on a tripod and compose the image as normal **WITHOUT** the filter. Switch your camera from autofocus (AF) to manual focus (M).

Exposure

Calculating the exposure is simple. Take a meter reading as normal **WITHOUT** the filter in place, then choose and set your aperture. Then, taking the metered shutter speed, refer to the table to find out your new shutter speed with your chosen ProGlass IRND filter in place.

Each ProGlass IRND filter comes with a card featuring a chart that shows the shutter speed adjustments required when using the filters. You can also download the LEE Filters ProGlass IRND Exposure Guide app (free of charge, available for both Apple and Android), so that you have all the necessary information on your smartphone.

Be aware of changing light levels. If you are shooting at dusk, light levels will reduce over the period of your exposure, so you will have to increase your shutter speed further.

Conversely, if you are shooting at dawn, light levels will increase and you will want to reduce the length of the exposure. You will need to experiment!

Remember, your aperture stays the same, it is the **TIME** part of the exposure you want to change.

Shooting the Image

Once you have composed the image, focused in the normal way and metered, place the filter into the holder. The filter must be placed in the rear filter slot, closest to the holder backplate, with the foam seal facing the backplate (the two, three and four-stop versions of the ProGlass IRND filters do not have foam seals). This prevents any light getting behind the filter and causing flare.

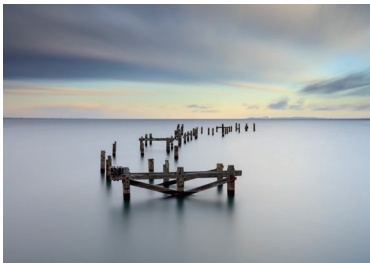
Before you press the shutter, cover the viewfinder eyepiece. This prevents light reaching the sensor through the viewfinder and creating fogging or flare that will spoil your image. Most modern cameras have a small built-in metal shutter or a plastic cap that can be placed over the eyepiece, but a piece of sticky tape is just as effective – or you can simply hold your hand over the eyepiece. However, be careful not to touch the camera during long exposures.

Electronic Noise

If your exposures are running to several minutes, electronic noise will increase and be visible in your image. If this causes problems, most photo-editing software has a noise-reduction facility, and many cameras have a long-exposure noise-reduction feature.

Shooting with Film

When shooting long exposures with film, you will encounter reciprocity failure. In basic terms, this means that beyond a certain shutter speed, film will underexpose, therefore your shutter speed will need to be extended accordingly. For example, if your shutter speed with the ProGlass IRND filter in place is 30 seconds, this may need to be doubled to one minute if shooting on film. It can vary from emulsion to emulsion, however, so check with the manufacturer of the film you are using.



Exposure Guide

Normal Shutter Speed	0.6ND (2 stop)	0.9ND (3 stop)	1.2ND (4 stop)	1.8ND (6 stop)	3.0ND (10 stop)	4.5ND (15 stop)
1/2000sec	1/500sec	1/250 sec	1/125 sec	1/30 sec	1/2 sec	15 seconds
1/1000sec	1/250 sec	1/125 sec	1/60 sec	1/15 sec	1 second	30 seconds
1/500sec	1/125 sec	1/60 sec	1/30 sec	1/8 sec	2 seconds	1 minute
1/250sec	1/60 sec	1/30 sec	1/15 sec	1/4 sec	4 seconds	2 minutes
1/125sec	1/30 sec	1/15 sec	1/8 sec	1/2 sec	8 seconds	4 minutes
1/60sec	1/15 sec	1/8 sec	1/4 sec	1 second	15 seconds	8 minutes
1/30sec	1/8 sec	1/4 sec	1/2 sec	2 seconds	30 seconds	16 minutes
1/15sec	1/4 sec	1/2 sec	1 second	4 seconds	1 minute	32 minutes
1/8sec	1/2 sec	1 second	2 seconds	8 seconds	2 minutes	1 hr, 4 mins
1/4sec	1 second	2 seconds	4 seconds	15 seconds	4 minutes	2 hrs, 8 mins
1/2sec	2 seconds	4 seconds	8 seconds	30 seconds	8 minutes	4 hrs, 16 mins
1 seconds	4 seconds	8 seconds	15 seconds	1 minute	16 minutes	8 hrs, 32 mins
2 seconds	8 seconds	15 seconds	30 seconds	2 minutes	32 minutes	17 hrs, 4 mins

Quick User Guide

- > **Step 1** - Set the camera up on a tripod and compose the image as normal **WITHOUT** the filter in place. Switch your camera from autofocus (AF) to manual focus (M).
- > **Step 2** - Take a meter reading and calculate your exposure as normal **WITHOUT** the filter in place, and set your preferred aperture for the shot. Now adjust your shutter speed to allow for the density of the filter you are using. Use the exposure card supplied or the ProGlass IRND Exposure Guide app to calculate your shutter speed.
- > **Step 3** - Once you have composed the image, manually focus the lens, then place the filter into the holder. The filter must be placed in the rear filter slot, closest to the holder backplate, with the foam seal facing the backplate. Attach a remote release to the camera. (Cover the viewfinder eyepiece before releasing the shutter). Fire the shutter and lock it open for the required time. At the end of the exposure, close the shutter.

The ProGlass IRND range can be used in conjunction with other filters such as neutral-density graduated filters and a polariser. Other filters should be set up and positioned in the holder before adding the ProGlass IRND filter – remember to keep the slot in the filter holder nearest the backplate free for the ProGlass IRND filter.



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