Daylight Long Exposure Photography

Why Long Exposure?

The main reason for using a long exposure is to render movement in a scene, which is a technique that has several uses, movement can imply time passing, suggest speed and it makes anything that's static in the frame stand out or look sharper and more solid. For example in a landscape with a following river or stream, the sharp elements contrast with the blur of the water, it's the same with clouds moving past a skyscraper.
Long exposures can also create a minimalist beauty, defines a lone subject as the focal point. You can even use nothing but movement to create an impressionistic effect.

Equipment Required.

Camera with Bulb or "T" shutter speed option.

To avoid vibration from the mirror in a DSLR you can activate the Mirror Lock-up function in your camera. After its activation, the first time you press the shutter button, your camera will lift the mirror; the second time it will open the shutter. If you wait a couple of seconds between the first and the second press, you will avoid the vibration!

If you have a mirrorless camera, you can skip this advice!

ND Filters.

To achieve exposures of several minutes in daylight you will need at least 10 stops of ND filter.
I generally use a 10 stop + 6 stop or 3 stop to give me 16 stops or 13 stops of ND filter in total.
ND filters will give you some strange colour casts, the better the quality the more neutral they will be. B+W, Lee and Foramtt Hitech are amongst the most neutral and also the most expensive.
There are now 13 and 16 stop ND filters available from Foramtt Hitech called Firecrest.
Dust, keep the filters clean or you will get reflections on the image made worse when more than one filter is used.

Round or square? Both work, the square are easier to remove to reframe but are more prone to flare and reflections affecting the image. In some situations (in places where there is not a big difference in the exposure between different areas of the scene), just a Neutral Density filter can allow you to get the desired result. However, in many situations the light conditions require the use of a Graduated Neutral Density filter to balance the exposure.

Remember, each ND stop you add doubles the exposure time!

Lens.

Any lens is suitable as long as it light tight with long exposure times. Some lenses can be prone to affect from Infrared light and produce some strange “flare” like casts on the image. A Google search may help you find out if your lens is prone to Infrared flare.

Turn off the VR system. The movement sensors to detect motion will try to compensate for the slow shutter speed by moving an element group in the lens, or on the sensor

itself. The point is that if the camera is on a sturdy tripod (and if you are shooting a long exposure, your camera is definitely on a tripod!), you shouldn't expect any vibration. You may know this, but your camera doesn't, so even if there is no movement, it can happen that this anti-vibration system tries to compensate anyway moving a lens group (or the sensor), and this will actually result in an introduction of a vibration (and blur) instead of a removal.

So, if your camera is on a sturdy tripod, turn the anti vibration system to OFF!

Tripod. A good tripod is essential, if it is not stable then you will be wasting your time.

Battery This process is quite demanding on the camera battery so make sure it is fully charged or better still carry a spare.

Loupe/Finder If you are working on the camera screen to manually focus you may need a magnifier to help ensure correct focus. You may also finder a right angle finder or an off camera display screen useful for when the camera is at an unusual angle such as when pointing directly upwards for tall buildings.

Remote Release. Cable or electronic.

Black Tape. Black electrical tape to cover any areas that may let in light. The distance window on the lens is one of the usual places that let's light in.

Timer: Some method of accurately measuring the exposure time is required. Some cameras have a timer built in. Otherwise use a watch, stop watch on your phone, or get a remote release with a timer built in.

Exposure Calculator: A Paper chart or Smart phone app is needed to calculate the exposure once the filters are added. To find a suitable app for your phone search for Long Exposure Calculator.
There is a Long Exposure calculator included in the Photographers Tools app, this is a free app.
Other apps worth a look are:
iPhone: Longtime Pro App
https://itunes.apple.com/us/app/longtime-exposure-calculator/id362297743?mt=8
Android: Exposed App
https://play.google.com/store/apps/details?id=com.braxisltd.exposed&hl=en

Viewfinder: You need to keep light from entering the viewfinder. Some cameras have a blind fitted to the viewfinder which you can close, others have a plastic cover that fits over the viewfinder eyepiece.

Hat. The more you can do to cut out any light entering the system the better, covering the camera with cloth or a thick rain cover is a good idea but you could also just put your hat over the camera to help keep more light out!

Tide time tables are very useful if you plan on taking coastal pictures.
They available on the internet for free.

Exposure

For seascapes start with exposure tiomes of around 3 mins and be prepared to increase the time to get the desired effect.

Where clouds are the prominent part of your image you may need a longer exposure to show some movement, start at 4-5 mins and again be prepared to increase the time to get the effect you are looking for.

5mins @ f8 appears to be the target exposure for moving clouds and calm water suggested by the “experts”.

Don’t go too high up the f scale or sensor dust and lens defraction can become a problem.

ISO Use the lowest ISO that is possible to set on your camera. There’s no point in increasing the ISO and putting more ND filters on to compensate.

Manual exposure. The filters play havoc with the metering system

Shutter Speed. Set the camera to bulb, if your camera doesn’t have a Bulb or “T” setting you will be restricted to longest exposure time you can set the camera to.

Manual focus. Otherwise the camera will try to refocus when you press the shutter release! You can auto focus at the start but remember to turn auto focus off before try to take an exposure

Long Exposure Noise Reduction. Turn off or you will be waiting forever for the camera to catch up. Any noise reduction require can be done in post processing.

The Process.

Frame image.
Take a picture at your preferred f stop and lowest ISO, without the filters, to get a starting shutter speed, you can do this in Auto exposure, Aperture priority.
Always take a frame without the filters, you may need a sharp well exposed frame to copy some bits in!

Using an exposure calculator determine the new shutter speed with ND filters.
Beware of reciprocity failure. Even with digital cameras this can reduce your exposure by 50% but all cameras are different.
Put the filters on the lens.
Close the viewfinder blind or fit a cover.
Take your picture.
Check the histogram, adjust exposure if required and retake.
You may think this is quite straight forward, it isn't! The exposure chart is only a starting point, a fair amount of trial and error is required.

Patience. You will need lots of this, take something to read during the exposure, phone a friend, prepare a BBQ. This process does use up time, not just for the exposure but the time taken to set the camera up and for the number of exposures required to get it right.

Health & Safety

ND Filters don't float!
Water, especially salt water, and cameras don't go together well.
Be careful, water and slippery surfaces can be dangerous.
Check tide times, it is safer to work when the tide is going out rather than coming in so you don't get trapped.

Pictures.

Something must be moving.
Keep it simple.

For inspiration check these web sites:

www.michaellevin.ca

http://ianbramham.com

www.michaelkenna.net

www.darrenmoorephotography.com

www.rohanreilly.com

http://www.stephencairnsphotography.com/new-work

https://www.bwvision.com/

https://www.juliaannagospodarou.com/

https://www.neilhulmephotography.co.uk/browse

https://500px.com/oscarlopez9

https://www.lesforrester.com/

www.davidlowephotography.com

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