

10 Common Mistakes in Long Exposure photography

A Post By: Francesco Gola

On all the 2015 Workshop I held here in Italy, I introduced a little game, where at the end of the workshop the attendees had to write down on a paper three mistakes that they used to make before taking the workshop. So I decided to collect all these lessons learned papers and make a list of the 10 most common errors in long exposure photography so you can learn from this also:



Mistake #1 – Vibration reduction system is set to ON

There are some lovely technologies that can help get much sharper images minimizing the blur caused by camera shake, which are extremely useful in low-light conditions where slow shutter speeds are required. Every brand calls this technology something different, but the aim is the same. They can be lens-based (like for Nikon and Canon cameras) or camera-based (like for Sony, Olympus and Pentax cameras), but at the end the result is that this vibration reduction can give you the same image quality up to four shutter speed stops slower than usual.

They use some movement sensors to detect motion and try to compensate for it 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!



Mistake #2 – Forgetting to use Mirror Lock-up

In a DSRL camera, light travels through the lens and is sent to the viewfinder by a mirror. When you press the shutter button, the mirror flips up so that the light goes directly onto the image sensor. This movement introduces a small vibration that will cause slight blurring in the photo.

To avoid this vibration, 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!

Yes, if you have a mirrorless camera, you can skip this advice!

Mistake #3 – Not using a GND filter because they are expensive

In some situation (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 condition require the use of a Graduated Neutral Density filter to balance the exposure.

If you are using a screw-on ND filter, you may believe that the only chance you have is to try to apply a GND filter in post-production – but you'd be wrong!



You can just hold the filter with your hand in front of the lens. For a shot with a shutter speed up to few seconds, your only problem will be the correct alignment of the filter. For shots which are minutes long, even if your hand is not perfectly still, the final result will be more than great – try it if you don't believe me. The holder is required if you want to use multiple filters together (or when you start having cramps in your hand).

Mistake #4 – Setting the aperture to f/22 to increase the exposure time

The rule was simple: if you decrease the aperture, you increase the exposure time.

With this rule in mind, you may think that you can transform your 30 second exposure to a two minute exposure just moving from f/11 to f/22. Theoretically, you're right. Unfortunately there is a physical phenomenon called optical diffraction that above f/16 is enough intense to ruin the sharpness of your image.

If you are already at f/11 and you need a slower shutter speed, decrease ISO if possible or use a stronger filter.



Mistake #5 – Forgetting to adjust the ISO

ISO can be a powerful ally in a long exposure. Sometimes you forget the possibility of changing the ISO setting, and you only play with filters and aperture. Remember that every camera has a range of ISO where the output quality is almost the same. In high-end cameras this range is usually between ISO 50 and 200.

This means that you have two stops to play with, and in a long exposure shoot, two stops mean minutes of exposure.

Mistake #6 – Shooting like you're in a studio



When you shoot pictures at home or comfortably seated in a studio, no external agent can affect the quality of your image. But if you are perched on a rock in front of the sea, on a beautiful stormy day, quite soon your filters will be completely wet.

Remember to fill your bag with cleaning cloths. A thin layer of water on your outer filter will result in a high diffraction, and this will irremediably ruin your image. Never underestimate nature, even on a sunny day, the weather conditions can change very quickly.

Mistake #7 – Choosing a low quality filter

Every time you add a filter in front of your lens, you inevitably decrease the overall quality of the optical system. Yes, some well-known filter brands are quite expensive, but do you believe it is worth putting a 5\$ filter in front of a camera of thousand dollars? No, it isn't – so focus on quality: fewer filters but better! You don't need the whole set of density ranges for ND and GND filters. Try to understand which filters you will probably use more often, then remember that you have ISO and Aperture to play with to cover the gap between. Finally, remember that a lot of good quality filters are available at incredibly affordable prices. Check in advance for filter reviews on internet.



Mistake #8 – Underestimating the wind

When you take a long exposure shoot, your camera is exposed to possible external vibration agents for minutes. Even a wind gust of a few seconds can ruin your image. Invest in a sturdy tripod, and then set it firmly on the ground. If needed, hook an additional weight to the tripod to make it even sturdier and solid.

Avoid using the tripod's central column too – if you raise it up, you raise the center of gravity of the system and it will be less stable.

Mistake #9 – Not covering the viewfinder

You took a three minute exposure, and the preview is full of strange purple lines and halos. Why?

It is because light, like water, loves to find a way – always.



Your camera is intended to allow light through only from the hole in your lens, but unfortunately there are some other accesses that can potentially harm your images.

The most common of them is the viewfinder. To avoid infiltration of light from it, cover it after composing the image. If your camera is not provided with a cap, you can even use some black tape. If you forgot the black tape, use a chewing gum. The typical result of viewfinder infiltration is a strange purple halo. Yes, if you have a mirrorless camera, you are also free of this issue!

If you use slot-it filter system, another possible source is the gap between one filter to another (this is one of the reason why many photographers love screw-on filters). In this case, the best solution is to cover that gap with black tape. The typical result of filter infiltration is a vertical purple line on the opposite side of the sun.

Finally, if you use a tilt-shift lens, or a lens adaptor, you may have an infiltration from the lens body. The best way to avoid this is to cover the lens with a black neck warmer.

Mistake #10 – Believing the filter vendor



When you buy a six stop ND filter, you expect that it has exactly the optical density to get a six stop reduction. Unfortunately, you are wrong. In my life I never found a filter with the exact intensity stated by the manufacturer. Of course, the difference usually is minimal, but remember that even $\frac{1}{2}$ stop of difference, in a long exposure means minutes of error.

To avoid errors when you are on field, test it in advance by following these steps:

- Choose a room in your home, turn on the lights and close the windows (you need a place where the lighting is perfectly constant).
- Mount your camera on a tripod and take a photo of the room until you get a shot with a good histogram. Note down all the parameters (ISO/Aperture/Shutter speed) of the shot.
- Mount the ND filter and compensate the shutter speed obtained before, according to the f-stop reduction introduced by the filter.
- Take a picture with the ND filter.
- Look at the histogram of the photo taken with the filter, and compare it to one taken without. If they are approximately super imposable (exactly the same), the filter intensity stated by the manufacturer is accurate. If the new histogram has shifted to the left, your filter has an intensity greater than that the one declared; if it is moved to the right, it has a lower intensity.

- If the two histograms are not super imposable, take another shoot changing the shutter speed to obtain a histogram approximately similar to the one of the picture without the filter.



When you have found the exact optical density, build your own shutter speed conversion table. Another possibility is the [PhotoPills](#) app for your iPhone, the only one that allows you to convert the shutter speed for non-standard f-stop reductions.

That's the ten mistakes to avoid when doing long exposure photography.

Kilde: <http://digital-photography-school.com/10-common-mistakes-in-long-exposure-photography/>