

Newsletter for Week Ending 11th August 2018

New Tutorial Series for the FZ80/82 Bridge Camera

I have begun a new series that is aimed at new users of the Panasonic Lumix FZ80/82 super zoom bridge camera. The [playlist is here on YouTube](#)

I have created an e-book to accompany the series and it will be updated as the series progresses.

The e-book is available as a free download <https://www.grahamhoughton.com/download-section/>

In part 1 I have covered the use of the fully automatic, or point and shoot, mode – the iA+ mode

In Part 2 I looked at the use of the Program Auto (P) mode to overcome some of the shortcomings of the iA+ mode.

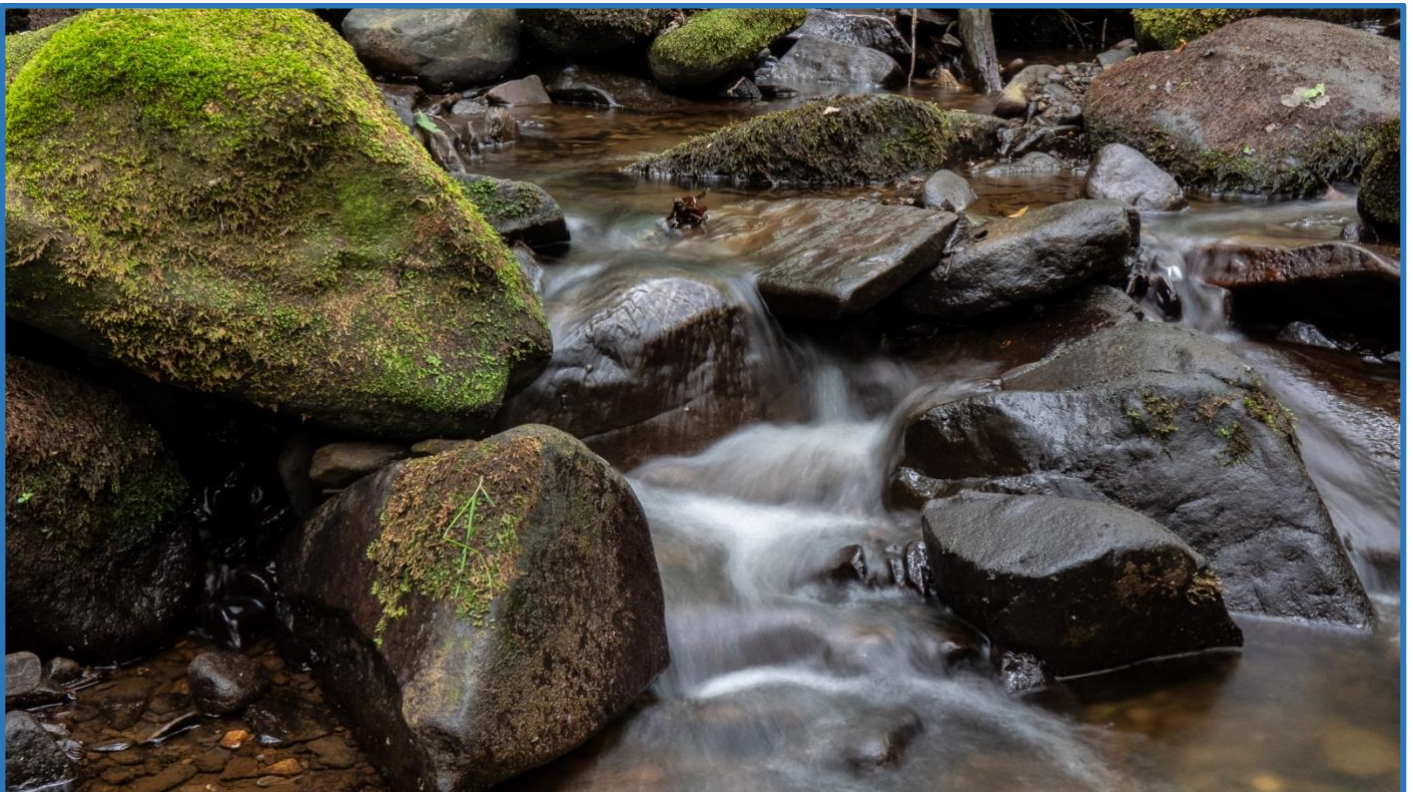
In part 3 I looked at the Aperture and Shutter priority modes and explained why the P mode is a better option with this camera.

Part 4 will cover the Manual mode

Part 5 will cover shooting video in both 1080p and 4K

Part 6 will look at some of the accessories that can be used with the camera such as filters, lens hoods, close-up lenses, eyecups, viewing hoods and shooting rigs.

Part 7 will cover using flash with the camera – both the pop up flash and the use of external flash guns with this camera.



slow shutter speed with the FZ80/82 to create the silky-smooth water effect

iPhone X Image Quality



Milngavie Village Centre on a Sunday Morning (7.55am)

The image above was taken with my iPhone X and is the jpeg conversion from the HEIF file from the camera. It is an in-camera HDR file (camera defaults to this) and below an enlargement from it.





another location and, below, the enlarged crop from it



The image capture and in-camera processing has created, in my opinion, some good images which will stand up to similar images captured using larger sensor cameras.

As the light was very flat from the very overcast sky the colours rendered very vibrant and the level of detail superb.

With such quality and increasing functionality in these smartphones, it's no wonder compact cameras are now in severe decline.

How Close-Up Lenses Work



A typical set of close-up lenses (sometimes called close-up filters)

The unit of measurement used to describe the magnification capability of close-up lenses is the Dioptre. The higher this number is the closer you can focus the camera and achieve higher magnifications.

The set shown above is typical of the ones that are readily available on EBay or Amazon etc., and are typically +1, +2, +4 and +10 dioptre strength.

Close-up lenses work by shifting the plane of focus of the camera lens from infinity to the corresponding focal length of the close-up lens.

By definition the +1 dioptre lens has a focal length of 1 metre, the +2 dioptre lens has a focal length of 0.5 metre and the +4 dioptre lens has a focal length of 0.25 metre.

Additionally, the system works regardless of the focal length of the camera lens so, whether you use the +2 dioptre lens with the camera lens set at 50mm EFL or at 250mm EFL when the camera lens is set to infinity focus the camera will focus the subject now at 0.5 Metres.

You don't have to use the camera at infinity focus, if you focus the lens at the minimum focus distance the close-up lens will take you much closer and allow you to shoot more powerful close-up images.

For optimum image quality, these lenses should be used with prime lens between 50mm and 135mm. If used on a bridge camera like the FZ200/300/80/82 the lens should be used between these focal lengths.

Most of these sets of lenses are constructed from single elements whilst the more expensive achromatic lenses have two or more elements.

If you intend to do a lot of macro work it is worth investing in at least 1 achromatic lens like the one shown below. The dioptre you chose will depend upon the magnification you need for your subjects.



a typical achromatic close-up lens (the 500D designation is the same as +4 dioptre)

The Raynox 150 and 250 lenses are good examples of achromatic lenses but their small lens size can mean that you must use more zoom to go beyond the vignette created by the lens mount.

A selection of images captured with the FZ80/82 and close-up lenses





To find the magnification ratio for say a 50mm EFL lens the ratio when the lens is set to infinity would be:

Close-up lens (dioptries)	Ratio of subject to image
+1	1:1
+2	1:6
+4	1:4
+6 (+4 and +2 stacked)	1:2.5

So, if you shoot at a ratio of 1:4 the subject will be captured at ¼ life size.

Depth of field will be very shallow as you increase the magnification as well as magnifying any camera shake or even motion in your subject.

For this reason, it is advisable to use flash or a tripod if the situation permits to get sharp images.



FZ80 with 250D close-up lens

It is often better to get a set of lenses which are the next filter size up. For example, when using a 55mm filter thread on the camera lens purchase a set of 58mm lenses and a 55mm to 58mm step up ring. This way prevents vignette from the extra thickness of the filter mount when using a wide-angle setting. Generally, though you will be using the camera lens with a small amount of zoom applied if you are using these on a bridge camera so this may not be necessary.

Rubber Eyepiece for the Panasonic Lumix FZ80/82 Bridge Camera



The basic viewfinder on this model is just a plastic housing. This can mark any spectacles pressed against it and in the long term is quite uncomfortable to use. It also does not do a good job of blocking out the light as you place your eye against it.

I had a modified viewfinder on my FZ200 using the Nikon DK-20 eyecup and have used this for this camera as well.

I tried hot glue but the bond was not strong enough to prevent the eyepiece being dislodged in my camera bag so I decided to go for a semi-permanent solution using a rubber contact solution.

If needed the eyepiece can be removed and the glue “rubbed off” the plastic frame of the camera eyepiece.



Begin by cleaning the eyepiece using microfiber cloth and then ensure there is no grease on the plastic surround of the eyepiece.

Run the contact adhesive along the top and the two sides of the eyepiece. A thin coating is all that is needed.

add contact adhesive to 3 edges of DK-20 viewfinder hood



Similarly run the contact adhesive on the top and two side of the Nikon DK-20 eyecup.

Allow the two components to dry (in my case 20 minutes for the adhesive to become tack dry).

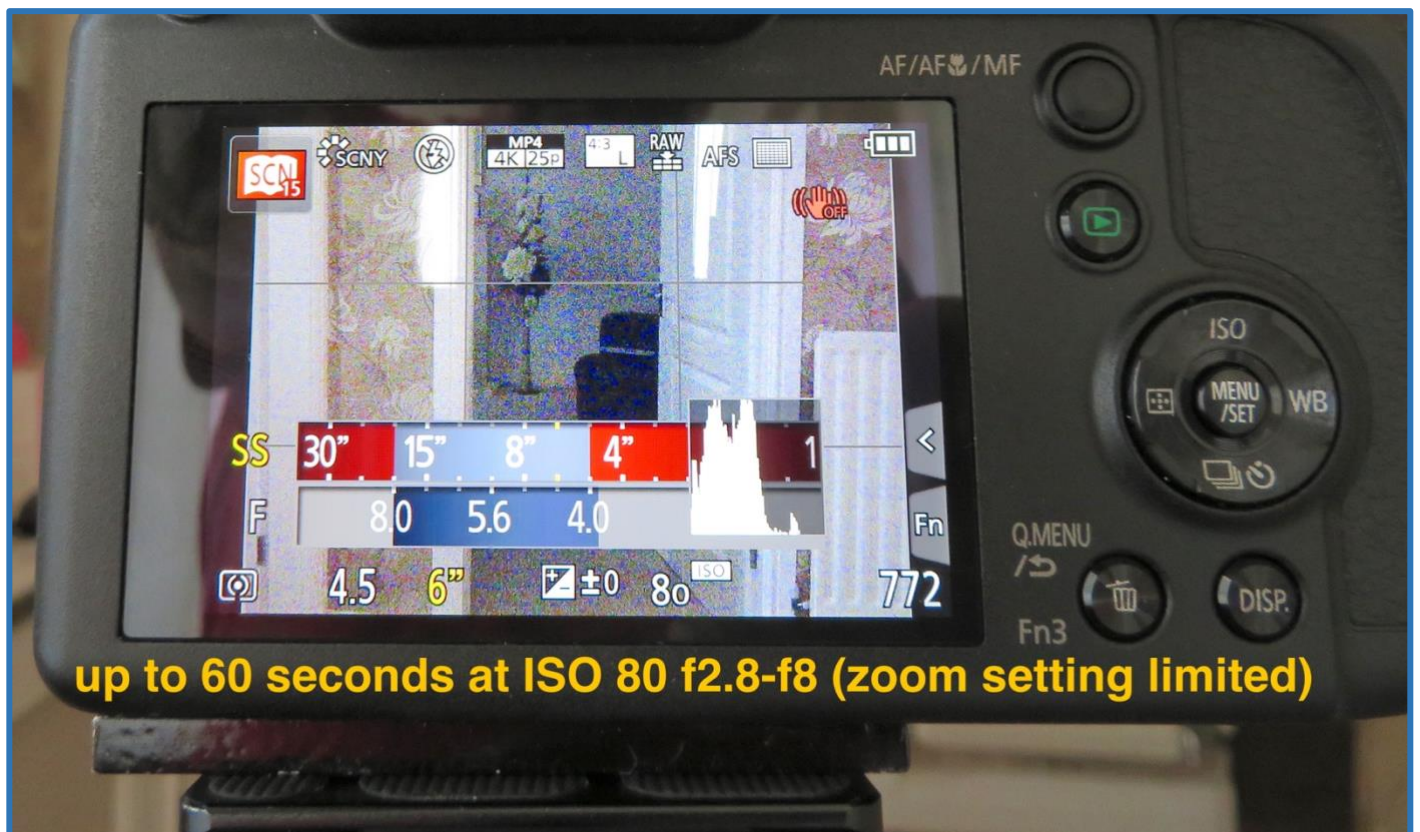
Then carefully align the DK-20 onto the eyepiece of the FZ80/82 and apply a little pressure for a few minutes to allow the bond to develop.

Leave for 24 hours to reach full strength.

For a more permanent fixing you could use an epoxy resin or a “super glue”.

For more accessories for the FZ80/82 see my upcoming video as part of the current FZ80 tutorials.

Long Time Exposures with the FZ80/82 – the Undocumented Feature



up to 60 seconds at ISO 80 f2.8-f8 (zoom setting limited)

The FZ80/82 has a maximum exposure time of 4 seconds with the mechanical shutter which imposes severe limitations for those wanting to create longer time exposures during daylight conditions using ND filters. This is the case when you want to create silky smooth seascapes or city scenes where long exposures are useful for “removing people” from them.

There is an undocumented feature in the FZ80/82 that I've found that can be used for this kind of photography.

To begin the process, you will need to have either a set of fixed ND filters (say ND 2, 4, 8, 16, 32) or a good quality variable ND filter (I found cheaper ones add significant colour cast and distortion) The density will depend upon the exposure time you wish and the ambient light level that you are shooting in. For sunlight exposures, you will need the "big – stopper" ND1000 or more which give 10 stops reduction of light.

To prevent vignette occurring if you want to shoot at 20mm (to achieve the f2.8 aperture of the field of view afforded at this setting) then you will need to use 58mm filters and a 55mm to 58mm step up ring.

Here is a 25 second exposure at 8, ISO 80 using a ND1000 filter.



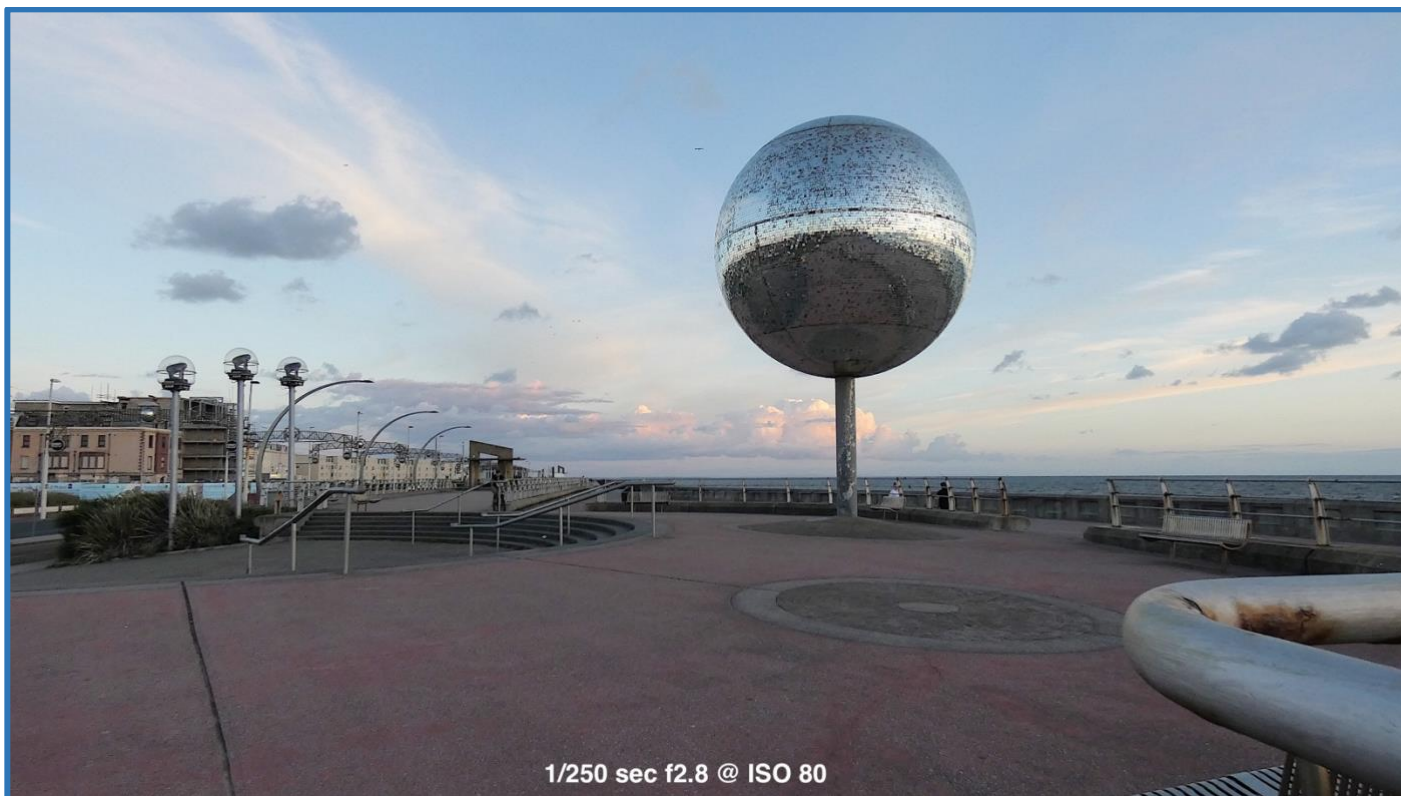
The facility is accessed using the "artistic night scene" mode from the scene menu.

The ISO is fixed at ISO 80 and cannot be changed.

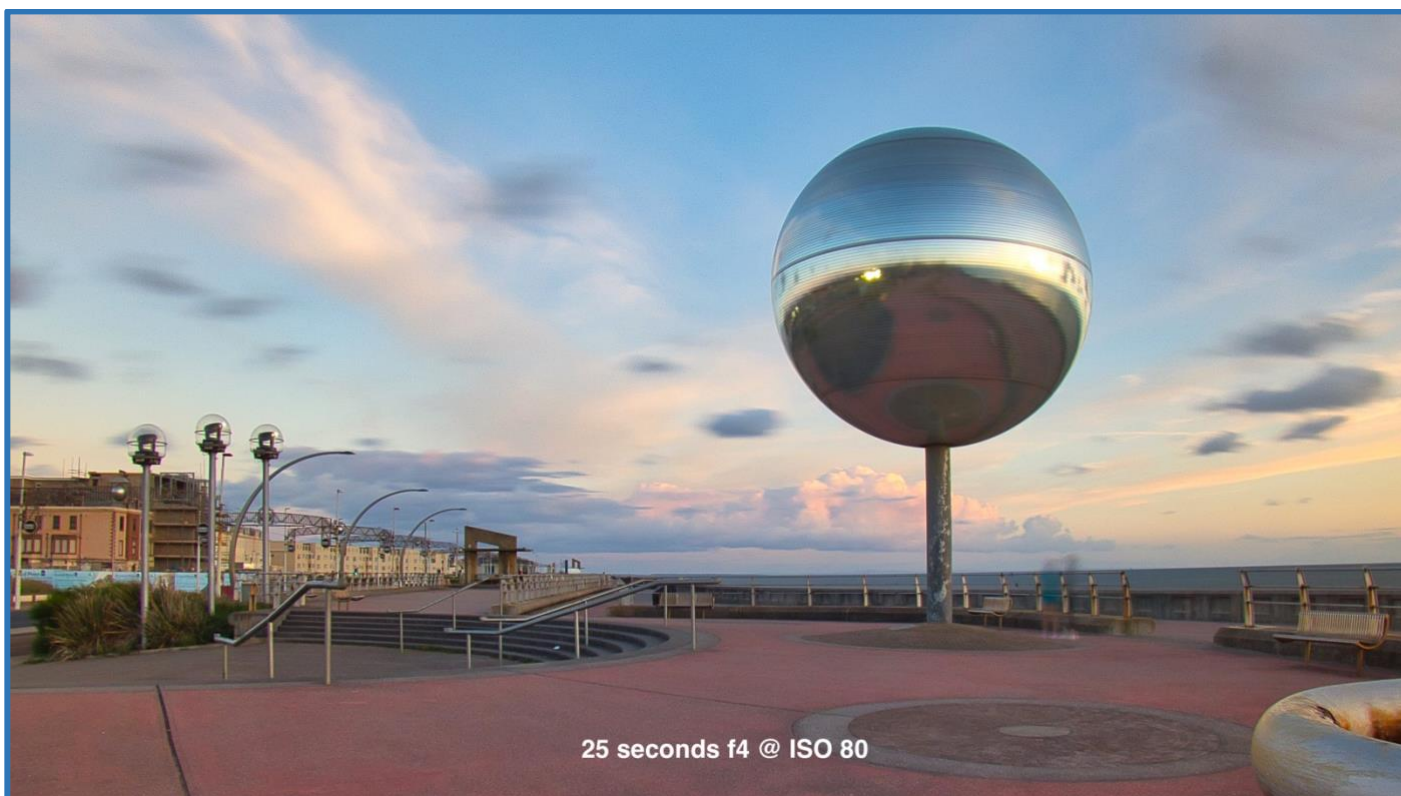
To adjust the shutter speed (as it is really a shutter priority mode) you will need to vary the amount of filtration over the lens until the exposure meter shows the shutter speed and aperture range that you want to capture the image with.

For the daylight example, above, I needed to use the ND 1000 filter (10 stops) to bring the shutter speed into the range that I wanted.

It doesn't matter if the exposure meter shows red as you do want the extended shutter speeds. EV adjustment can be used to control the aperture to a small degree but the ND filter is the main key to the exposure time.



the original scene dust before dusk



the same scene with a 25 second exposure to blur the spinning mirror ball using ND1000 filter (note the two ghostly figures who came and stood for about 15 seconds during the exposure!)

It is a bit of a balancing act between the amount of ND required, exposure compensation and shutter speed to get the required exposure but it does add new possibilities for creative shooting.

It is a case of finding the right subject with some motion to get the best effect from the technique.

In the case of the mirror ball I needed ND1000 (10 stops) to get the exposure.

I had to manual focus the lens and then carefully screw on the filter to take the shots.



this was my final shot using 50 seconds (ND1000 filter used)

It looks quite bright but it was actually quite dark (9.45pm) and quite windy which was blowing sand about on the promenade.

All the images processed from RAW files using Luminar

I was going to do a tutorial video but again I've been struck down with sore throat and chest infection rendering me pretty much out of it again. I hope it doesn't last for as long as the last time, which was several weeks.

Time to reach for the honey, lemon and malt whiskey!

The usual use of the artistic night shot is for light trails.



Spotted on the Clyde



HMS HURWORTH (M39)

HMS Hurworth is a Hunt-Class Mine Countermeasures Vessel, playing a vital part in the worldwide MCMV commitments from the Middle East to the North Atlantic. It was quite a way out so I shot this with the Canon 100-400 on my Canon 80D at full zoom giving an effective focal length of about 640mm

A Tripod Mounting Ring for the Panasonic 100-300mm Lens



the Panasonic 100-300mm lens

This is a nice focal length lens giving 200-600mm EFL on micro four thirds cameras however shame on Panasonic they do not include a tripod ring to hold this lens. It's far too heavy for a tripod mounted camera causing severe vibration and consequent image degradation.



www.r-roesch.de do a neat tripod ring, specially engineered by them for this lens however it is \$100 – far too expensive for me to contemplate buying one.

So, in true alternative mode I looked to find a ring which had the same diameter as the lens barrel. It turned out that there is a Sigma lens ring which has almost this diameter. It is the Sigma 70-200mm f2.8 II EX DG Macro APO lens.



the completed mount

Now the first problem was the position of the OIS switch on the lens barrel.

The Roesch ring has a slot milled out of the ring to allow actuation of the switch but as I will be using this with the G9 or the Olympus OMD EM1-II and mainly tripod mounted I decided that the image stabilisation should be OK set to OFF anyway.

So, at the position of the switch I simply used a craft knife to cut away the soft padding in the lens ring so that the switch would not be compressed as the ring is tightened.

The ring needed an additional 1mm thick rubber strip adding to all the other surfaces to get a tight fit on the lens barrel.

I used a piece of Gun-tape which has a textured finished but any material should be fine.



My adapted ring on the 100-300mm lens

The switch sits neatly in the space between the lens body and the ring and is not compressed at all even with the ring fully tightened.

I could drill out a hole at the position of the switch and then use a small square file to make a slot at this position if I wanted to have access to the switch but now I'm happy with the set up.

Unlike the Roesch ring you cannot rotate this to the portrait position.

To have the lens held with the camera body in portrait mode another section of the liner would need to be removed and the clamp undone to allow its repositioning.

The ring on Amazon UK is 10.99 GBP <https://amzn.to/2vTOHiU>

On Amazon USA is \$22.99 <https://amzn.to/2P0PxDI>

71mm Tripod Collar Mount Ring 1/4" for SIGMA APO 70-200mm F2.8 II EX DG MACRO HSM Lens

Testing the Zomei Vari-ND filter



This filter has a double anti-reflective coating, only 8.16mm thickness ultra-thin frame

Allows for variable light reduction from between 2-8 stops

Normally these vari-ND filters have issues with colour shift and distortion however I have been using the Zomei filters for a while now and found them to be very good so I tried their vari-ND type as they are useful for getting the right shutter speed when recording video clips.

This is a test image without the filter;



and at maximum density;



There is no colour shift or any distortion that I can see, I'll be using this more than the fixed type from now.

Long Exposure & F-Stop Calculator

Thinking about the Zomei vari-ND filter that I used for the long exposures I wanted to see just how long the exposure would be based upon a current meter reading if I fitted the filter.

30	15	8	4	2	1	1/2	1/4	1/8	1/15
1/30	1/60	1/125	1/250	1/500	1/1000	1/2000	1/4000	1/8000	1/16000

From the test example from no filter at 1/6 second to the max setting giving 8 seconds from looking at my shutter speed table from 8secs to 1/6sec is about 6 f-stops. A little short of the claimed 8 stops but this is by no means a scientific test but I will follow up with this.

I was happy that the colour shift was non-existent which was is a great benefit. The actual value of ND dialled in is not usually needed, just adjust the density until the shutter speed reads the value that you want (normally twice the frame rate for video)

