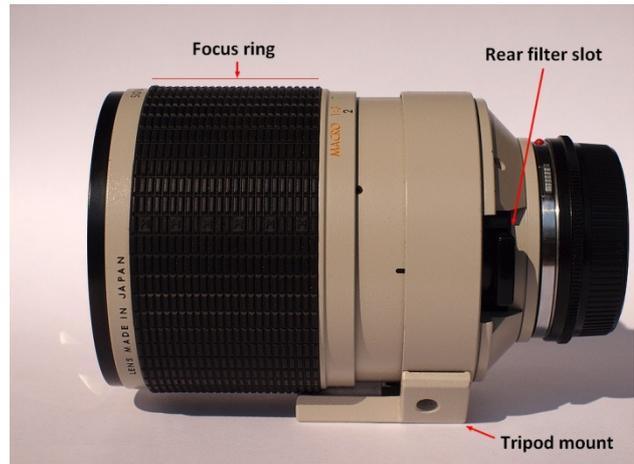


Introduction



Sigma 600mm f/8 is a super tele and it has quite a few years on the back. The lens is very special in its construction, since the light travels both forwards and backwards between the “elements” – the mirrors inside the lens. The advantage of this construction is a short lens; the general disadvantage is that sharpness is hard to get.

The lens has somewhat “paparazzi” to it. The lens is short and handy, but at the same time fat. Without the lens hood you just have 13.5 cm in front of your camera; the lens hood adds 6 cm. But the lens is 90 mm fat – uses 86 mm lens hood. It weighs about 750 gr. and has build in mount for the tripod.

The lens offer you a feeling of solidness and well build. The feeling is that you could use the lens as a small steppingstone, should the need ever occur. It operates nicely and the grip is very good due to the rubber diamonds.

You have 600 mm in front of you; using a crop camera that will give you about 900 mm FF; using Olympus you have 1.200 mm FF tele. It works. You do get very close – and if your motive has some size and you want it all in the frame, you really have to have some distance. Birds at 100 meters are not small dots in the picture and you don’t get all houses at 500 meters in the frame.

Of course the lens does appeal to the moon-shooter, the bird-shooter and the the animal-shooter. But the lens has some capability too when looking at insects; it might not be real macro but the lens has a good magnification (1:3) and combined with the possibility (the need) to have a long distance to the insect (near limit is 1.7 meters); there are some prospects here too. But you really have to remember that it is a powerfull tele and that will give you a very very very very small DOF (depth of field). Accordingly to DOFmaster.com the DOF will be 0 cm at 2 meters, f/8, 600 mm mounted on Olympus – as I use. At 5 meters



I have a 2 cm DOF. At 10 meters I have 6 cm DOF. Focussing must be very precise. At 20 meters the DOF will be 26 cm.

The lens has a very special filtersystem feeding small filters into the side of the lens. When new the lens came with a number of these filters. It is not a fast lens - f/8 and nothing else. Is bright sunshine or looking at a full moon that is okay; but you need light when using the Sigma 600 mm f/8 mirror lens. It is a full sun lens, as to speak. And the tripod mount is, I think, a good idea. Even with good light a tripod or a monopod is advisable due to the super tele. Using Olympus you get 1.200 mm and that means using at least 1/1.200 sec. At f/8 that needs some good light.

The focus ring is big, fat and has good rubber pattern. The grip is excellent. The turn of the focus ring is not too loose not too tight. The focus ring turns about 180 degrees. The first 90 degrees covers the focussing from 1.7 meter to 4 meters. Even the actual turn is just 180 degrees, it feels like more. The very fat lens gives you a larger turn on the outer rim than if the lens was just with 49 mm lens hood.

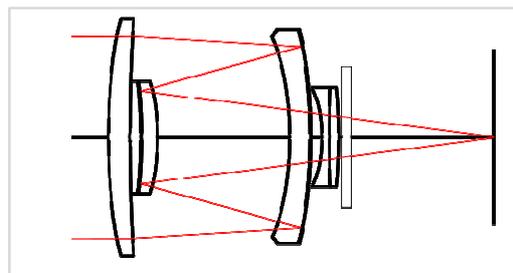
My lens is with Olympus's old mount OM. That mean you need a adaptor ring to use the lens. Such adaptor rings are available at eBay. You can get adaptor rings that enable your cameras biip-sound when focus is reached. But the lens is never the less fully manual.

Data

The specs are:

<i>Focal length:</i>	<i>600mm</i>
<i>Aperture range:</i>	<i>f8.0 (fixed)</i>
<i>Lens construction:</i>	<i>6 elements</i>
<i>Coating:</i>	<i>multiple-layer coating</i>
<i>Minimum focus:</i>	<i>6.6 ft (1.7 m) from the focus plane</i>
<i>Filter size:</i>	<i>86mm (front), 22.5mm (rear)</i>
<i>Weight:</i>	<i>26.6 oz (0.753 kg)</i>

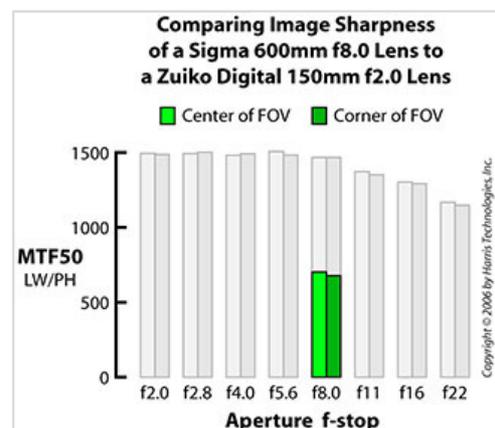
Right: The construction of the lens makes it possible to have a much shorter lens than normally. The image is mirrored forth og back within the lens before ending at the sensor.



Other reviewers have looked into the matter too comparing the Sigma 600 mm f/8 mirror lens with Zuiko Digital 150mm f/2 lens.

Right: The graph is made by "First light":
<http://forum.fourthirdsphoto.com/showthread.php?t=22306>

The grey and white columns show the result for Zuiko 150 mm f/2 and the green columns show the result for Sigma 600 mm f/8 mirror. It is worth noticing that the results are not absolute values, but should only be seen relatively against



each other. The conclusion is that Sigma 600 mm f/8 mirror will give you less than half the sharpness of a Zuiko 150 mm f/2 lens. The Zuiko lens is well know for its sharpness; but never the less: The difference is noticeable.

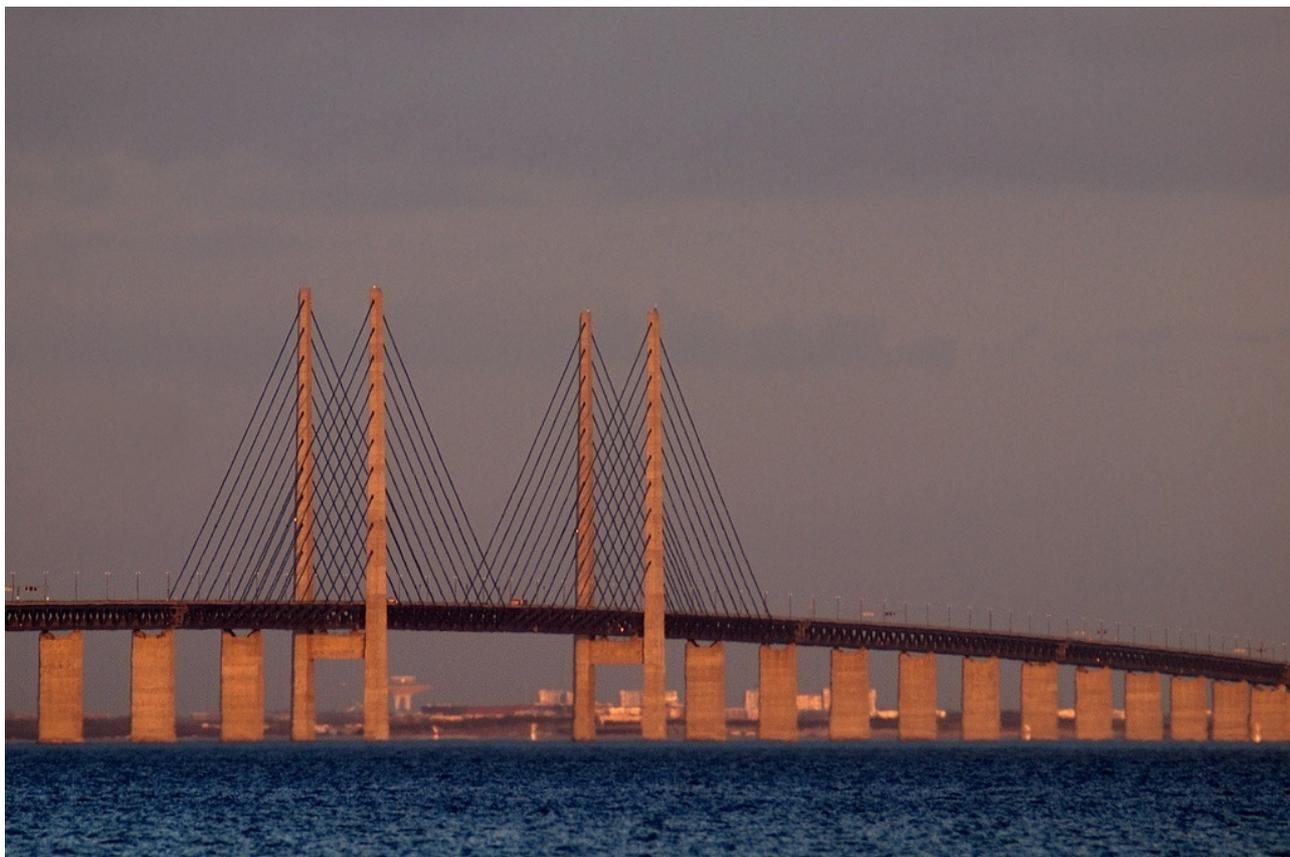
Price

The Sigma is an old lens using old mounts. eBay buy-now prices at at the present between £110 and £280. It is not a cheap lens; but you do get a lot of telepower for your money. The question is however, if the lens will deliver images in a quality that will meet your expectations.

Pictures

All pictures are shot using f/8 (of course) and all pictures as shot using Olympus Cameras (E-500, E-520 and E-30).

Below: Just before sunset and looking at the Bridge crossing Öresund between Sweden and Denmark. The distance to the brigde is about 10 km and the distance to the Swedish shore is 16 km. The pylons are 204 meters tall. The bridge has the longest span of its kind (stay cables) in the world: 490 meters.



My point of view: This image has an okay sharpness, nice warm colours (late afternoon) and a good handling of the light.

Right: The wind turbines are just about 2 kms away and the unclear (unsharp) impression is not from the lens – it is a haze from the heat. The turbines are ocean based and the warm air creates a blurry haze.

In my opinion: Sharpness is okay, the lens can't remove a haze. The colours are nice and subtle.



Right: A large stag roaring in the forest. It is breeding season and the wild life park is very busy. The distance is about 100 meters. The small "dots" above his back is flies.

In my opinion: Sharpness is okay. The doughnuts in the bokeh look a little funny. The colours are good and the light handling is okay.



Right: The white stag (not albino) is about 50 meters away.

In my opinion: Sharpness is okay, colours are a little pale and so is contrast.





Above: At 200 meters; using tripod and anti-shock. The pictures has been resized.

Right: A crop from the picture above.

In my opinion: The picture above, just resized, seems to have an okay sharpness. The colours are lacking some vibrancy and the shadow is a little harsh. Looking at the crop, it becomes clear that the sharpness isn't that good – and isn't good enough for most purposes.



Right: Telephone cables at 30 meters. The red square illustrates how much a 1000 x 750 pixels crop is:

Below: The crop.

In my opinion: The full picture looks okay; but the doughnuts are getting a little too loud. Looking below it becomes clear that sharpness is poor. Maybe I didn't get the focus right, maybe I did. But I did take 3 pictures giving good time to focus, used tripod and had anti-shock on.



Right: The top of a walnut tree. The distance is about 40 meters to the tree and the building in the background is about 150 meters away.



In my opinion: Resized like this, the sharpness is okay. The colours are nicely handled and the light is controlled. The doughnuts are not too strong here due to the lack of small isolated objects in the background.

Right: Some of my neighbours flowers. The distance is about 8 meters, giving a DOF of just 4 cm.



In my opinion: A nice picture with fine colours and a quite decent bokeh. Light is handled fine and the sharpness looks okay.

Moon

I did buy the lens with the moon-shooting in mind. I think many more will buy the lens with the same intention. My reasoning was: With 1.200 mm (full frame measurement) I would get so close to the moon that I could cut a slice of the cheese with no trouble. And I can. But the sharpness isn't really as good as I expected.

When I shoot the moon the camera is on a tripod and the anti-shock is on opening the mirror 2 sec. before the shutter is released. But let us start somewhere else – with the combination of luck and speed:

Below:

I was standing, getting ready to shoot the moon down; when I spotted that the plane was heading straight in front of the moon. I was lucky – and very quick to press the shutter release. Luckily I had not yet set anti-shock at that moment. No manipulation at all:



In my opinion: The sharpness of the moon should have been better; but resized and having the plane in front, it seems okay. Light is handled very fine – and I really like that the line of exhaust heat is visible throughout the surface of the moon.

Let's take some more:





Macro . . . ?

No. The lens does not give you macro as in 1:1. The best magnification is 1:3; but coming from a 600 mm lens that is not bad at all. Not bad at all. I have tried:



Above, left: Resized and just that.
Above, right: Resized and added a red square to show how much a 1000 x 750 crop is.

Right: The crop.

In my opinion: The crop tells the story about sharpness. It simply isn't good enough to use the pictures is heavy crops – or very large sizes.



Bokeh

I have several times mentioned the special bokeh that this lens might produce. The doughnuts. I do not like them, I think they take much too much attention from the motive. But if you have small items in the backgrounds – and if those items are lit up, you will get the doughnuts. That's life with the mirror lens.

But I have found a situation that is good for this kind of bokeh – I think:

Right: A guy standing in the water fishing. The distance is about 75 meters and the picture is heavily backlit – full sun.



In my opinion: Here the small doughnuts looks good in the water; and best of all: they are controlled very very nicely without major burn outs.

Conclusion

The Sigma 600mm f/8 mirror lens is very well build. It is very easy to operate and it does give you some street credit walking around with this “paparazzi lens”.

The main advantage of the mirror lenses is the size. Compare this lens to any normal 600 mm lens – and you will not doubt what lens is most handy and most easy to carry around.

But when it comes to the image quality, the Sigma 600 mm f/8 stands a little back. The pictures almost never get really sharp. They never seem to get razor sharp. There is a “blurriness” in the pictures, and it is, in my opinion, very difficult to take a picture that can be used full size or in crops close to the 100% mark.

On the other hand: If you don't use pictures full size and if you don't need 100% crops, you will find that the lens sometimes will give you some nice pictures and always will enable you to look closer at stuff far far away. But be prepared to accept that many pictures will be deleted again.

On a scale from 0 to 5 (5 being the best), I give the lens: 2

But if you have no trouble with resizing your pictures and deleting a lot of the picture, you will probably feel that it had been more fair to award the lens with a 3.

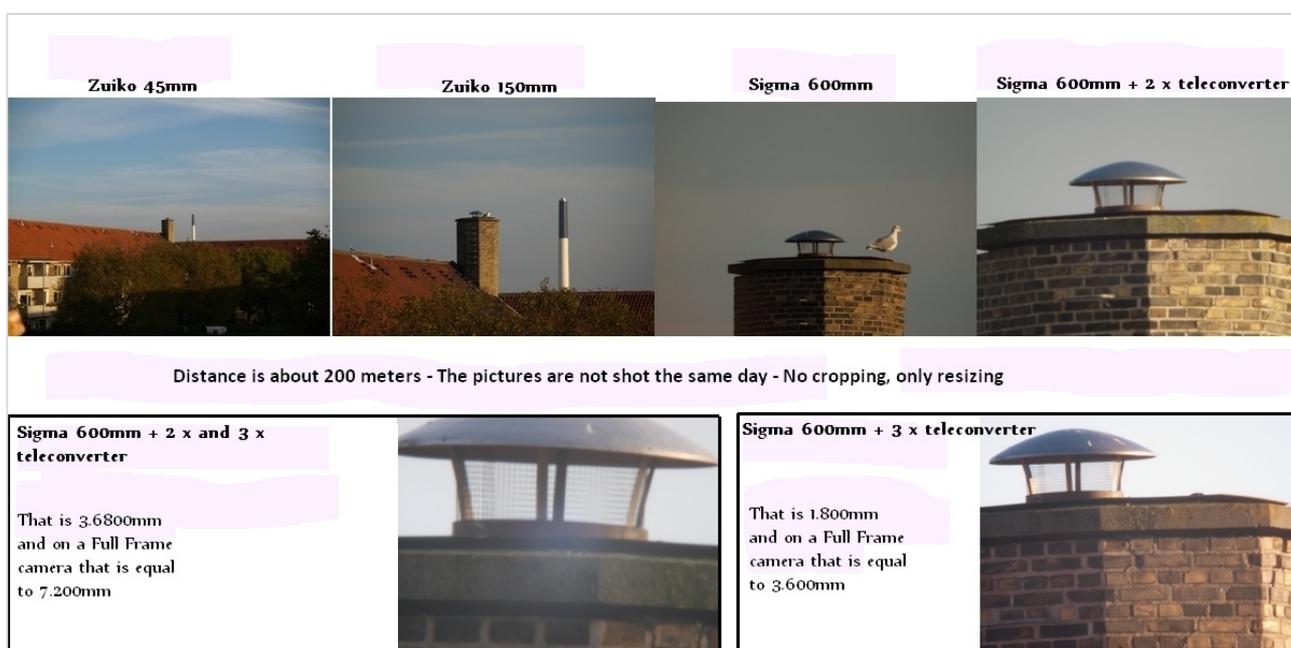
Wanna see 7.200 mm compared to 45 mm ?? Next page

EXTRA

I have not only bought the Sigma 600 mm f/8; I have also bought a 2 x teleconverter and a 3 x teleconverter to be used together with the lens.

In the picture below you will find a comparison of the effect of using:

- Zuiko 14-45 mm at 45mm
- Zuiko 40-150 mm at 150mm
- Sigma 600 mm
- Sigma 600 mm with 2 x teleconverter
- Sigma 600 mm with 3 x teleconverter
- Sigma 600 mm with 2 x and 3 x teleconverters



The difference is clear