

Sony FE 20 to 70mm F/4 G

by Phil Rudin

For decades, just about every lens and camera manufacturer around has had several versions of the versatile full frame 24mm to 70mm lens in F/2.8 or F/4 apertures.

These are lenses with the standard 34 to 84 degree angle of view. Most manufacturers have also added a 24mm to 105mm F/4 with a 23 to 84 degree AOV extending the long end of the lens. I have used both of these focal lengths for years finding them great for things like travel photography but a little narrow for underwater work.

I have friends that do fish I.D. work that find the 24mm to 70mm focal length very useful and it has been supported by all of the U/W housing manufacturers for years. These are lenses that can be used with the smaller 170/180mm dome ports without a huge loss of image quality. They provide a smaller system size compared to using the more common 16mm to 35mm zooms with a 230mm dome port.

Sony has recently introduced an innovative new standard zoom lens that adds an additional 10 degrees on the wide angle end. The Sony FE 20mm to 70mm F/4 G

takes the wide end of the lens from 84 degrees to 94 degrees which is a massive improvement for underwater photography.

The 94 degree AOV was the gold standard for the venerable Nikonos 15mm film lens which are still relevant today. From the 1960's to 1990's the lion's share of underwater wide angle work was done with this lens. The Nikonos 15mm with a 94 degree coverage was considered the best rectilinear focal length for both landscape and portrait imaging underwater and hundreds of images with this lens adorned the covers and pages of every dive publication in the world.

Sony FE 20 to 70mm F/4 G lens

The Sony 20 to 70 zoom is an F/4 to F/22 lens that has a minimum focus distance of 25cm (9.8 inches) which gets you to a reproduction ratio of about 1:4 on the 70mm end of the lens. This is an excellent zoom range for just about every non-macro critter from a Wrasse to a Whale Shark.

The lens has nine rounded diaphragm blades which produce a smooth background shooting wide



open which I often do for portraits.

The lens is also a perfect zoom range for shooting splits of divers. The lens has a 72mm filter size using 16 elements in 13 groups for outstanding image quality. The lens weighs in at 488g (17.2 oz) which makes it a great travel lens for both underwater and topside use.

I would be remiss in my reporting if I did not point out the obvious advantage over 24mm for vloggers. Sony makes the 24mm to 70mm lenses in F/2.8 GM version II but I see little upside for this lens which at \$2298.00 US cost more than twice the \$1098.00 price for the Sony FE 20 to 70 F/4.

The GM II 24/70 version also according to the Nauticam port chart requires a 250mm optical glass port for best results. I suspect that also may be the case with the 20/70 F/4



but to me this is overkill for most underwater shooters who will most likely be happy with results from a 180 or 230 mm port.

The 20 to 70mm has two EX (extreme dynamic) linear motors which gave me excellent focus speed with extremely accurate focus tracking and smooth silent operation for both stills and video. For those of you that may be interested I have used the lens in a 230mm port with the Sea & Sea M77 correction lens on a 72mm to 77mm step-up ring. This will improve corners on the wide end of the lens but I think most users would be far more likely to want to stick to the 170/180mm port offerings. For that reason all of the images presented in this review were with the 180mm port and without the S&S lens which for me does not add value in ports smaller than 230mm.



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Field Testing

For this review I field tested the 20 to 70 zoom in the Marelux MX-A7RV housing for the new Sony A7R V camera. Some pool images were with the Sony A1 showing the AOV difference between 20mm and 24mm's. Both images of the Marelux SOFT Pro were taken with the same camera settings, un-cropped full frame and from the same distance to the SOFT Pro.

Along with the Marelux housing for A7R V I used a Marelux 180mm optical glass dome port, I fashioned a zoom gear from a Marelux gear for the Sony FE 12 to 24mm F/2.8 as the new 20/70 gear was not yet in stock, I also used the Marelux port charts recommend 50mm of extension for the 180mm port and 60mm of extension when I used the Marelux 230mm optical glass Fisheye port II. A note on port extensions, as a reviewer I stick to the manufacturers recommended port lengths because this is what consumers of these products will likely do. Tweaks in chart extension lengths may lead to slightly better corner

Cave Diver, Devils Eye, Florida Springs, Sony A7R V, Marelux housing with 180mm dome, two MF-2 Flashes using UWTechnics flash trigger set for HSS, 20mm, ISO-400, F/9, 1/160th sec

*AOV comparison Sony A1, Marelux housing with 180mm dome AV light, ISO-640, F/13, 1/100th sec.
24mm above
20mm above*



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sharpness but not by much and at the expense of having to buy an extension in an odd number like 15mm or 25mm's. If you already own an odd numbered extension it is always fun to try in the pool but I would not waste my time if I am already at a diving location where I want to make the most of the time I have unless you have serious issues with the recommended extension length.

Also be aware that at the time of writing this review no other aluminum housing manufacture was showing support for this lens. I am sure that support is on the way from others but not as of this review.

For my review I also used a pair of the new Backscatter MF-2 mini strobes and a fairly short set of flash arms. These were fiber optically fired using the UWTechnics TTL flash converter for Marelux. I had the flash trigger set for use with the MF-2 high speed sync (HSS) mode which works well at all shutter speeds. These strobes have plenty of power and coverage for this lens at all AOV's including the 20mm end. I used a flash defuser on the right hand side of the system for some of the wide shots. I also used the Inon Straight Viewfinder Unit II with the FUN-IN Underwater adapter for the Marelux housings.

Once underwater I used two

Marelux Flexibuoy's to trim the housing system for my needs. I chose the north Florida springs for this lens test because of its abundance of subjects both large and small.

Upfront I will say that this lens did not disappoint even in the smaller 180mm dome port. As advertised auto focus was both fast and accurate with silent operation. Set to eye AF the system locked on and held just about every subject with an eyeball. I credit these results to the new AI auto focus system in the new Sony A7R V camera. The small system was easy to swim with and checked all of the boxes for portability and performance.

The lens has white lettering around the front element which has caused issues for me with some systems I have reviewed in the past, reflecting back onto the image sensor. I have noticed this issue more with acrylic ports than with optical glass ones most often when shooting at or close to the surface. I did not have this issue with the Marelux 180mm dome but keep in mind that you may want to use some flat black tape to cover the lettering on the lens.

Also notice in the split images taken with the Marelux 180mm dome that water drops on the top half of the images were not a problem because

Cave Diver, Devils Eye, Florida Springs, Sony A7R V, Marelux housing with 180mm dome, two MF-2 Flashes using UWTechnics flash trigger set for HSS, 20mm, ISO-400, F/13, 1/640th sec





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*Pan Fish, Devils Eye,
Florida Springs,
Sony A7R V, Marelux
housing with 180mm
port, Two MF-2 flashes,
70mm, ISO-400, F/10,
1/250th sec*

*Zeri, Sony A7R V,
Marelux housing and
180mm dome, AV
light, 40mm, ISO-50,
F/4, 1/500th sec*



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of the Marelux coating that repels most water droplets. I found this to be a bonus when shooting splits rather than using a potato, mask cleaner etc etc for water droplets. I found that for most of my needs the 180mm port hit the sweet spot between image quality and system size.

As a portrait lens shooting at F/4 subject separation was excellent with smooth foregrounds and backgrounds. On the wide end of the lens everything from about f/9 onward could be used without a noticeable erosion of image quality. If optimal corner sharpness is required for your shooting situation my recommendation would be a 230mm dome and perhaps the Sea & Sea correction lens if you already own it.

The \$1098.00US Sony FE 20mm to 70mm F/4 G ships with a pinch lens cap, plastic lens hood which, if used in a housing would likely hit the inside of the

port glass at the 70mm.

The Sony 20/70 is an ideal travel lens for general photography, by that I mean not a macro intensive muck diving location where macro lenses and accessories are the norm and not a wreck diving spot where ultra wide and fisheye lenses are the norm. This is also a lens that would cover most of your land photography needs while traveling. I would also recommend this lens for someone starting to build a Sony full frame system that wants a wide range of coverage at a reasonable price.

Thanks to Marelux US for assistance with some of the equipment used for this review marelux.co web page has all of the components to support this lens.

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