

Carl Zeiss Vario-Tessar T* FE 4/24-70 ZA OSS Review

by

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The Carl Zeiss Vario-Tessar T* FE 4/24-70 ZA OSS lens, henceforth to be called the Zeiss 24-70, is a Sony E mount lens designed for the full frame sensors currently found in the Sony a7 and a7R full frame mirrorless cameras (See my full review of the Sony a7R here: <http://www.ejphoto.com/Quack%20PDF/Sony%20Alpha%207R%20Review.pdf>). This lens offers a fixed f/4 aperture with Optical Steady Shot (Sony's version of Image stabilization) built in. Unlike many Zeiss lenses, it is an autofocus lens. The lens is solidly built with a combination of polycarbonate and metal materials and has a very aesthetically pleasing look. It has a 67mm filter thread, very smooth telescoping manual zoom function and a smooth fly-by-wire manual focus ring.

Resolution:

The Zeiss 24-70 is an excellent performer for a zoom lens in the wide to short telephoto focal length regime. While it lags most high quality prime lenses, as virtually all zoom lenses do, it has excellent resolution for a wide to short telephoto zoom lens. It easily beats the Nikon 24-70 f/2.8G lens, used for comparison in this review, in both center and corner resolution at 24mm and still outperforms the Nikon lens at most apertures at 28mm. By 35mm, the Nikon lens catches up in center resolution but still lags the Zeiss lens in the corners. At 50mm the two are largely equal for resolution and at 70mm the Nikon slightly outperforms the Zeiss lens in the center and the corners.

Vignetting:

As is true for the majority of Carl Zeiss designed lenses, vignetting is not its strong suit. The Zeiss 24-70 loses more light in the corners at every



focal length and every aperture. I am looking forward to when Adobe supports lens correction for this lens so that my workflow is simplified by not having to correct for this manually in every shot.

Chromatic Aberration:

This lens quality category is a landslide victory for the Zeiss 24-70. There simply is no visible Chromatic Aberration when viewed at 100% at any focal length and any aperture. This is quite impressive for a zoom lens. To make sure that the Nikon 24-70 lens wasn't suffering from excessive CA due to the microlens design on the Sony a7R, I took identical test shots using a D800E with the Nikon lens and found no reduction in CA using that camera. Fortunately, simply checking the Remove Chromatic Aberration box in ACR or Lightroom completely eliminates this making it a non-issue in most cases. This lack of CA in a lens like this is a truly impressive feat on the part of the Carl Zeiss designers.

Linear Distortion:

While all 24-70 regime zooms have a significant amount of linear distortion through the zoom range, the Zeiss 24-70 f/4, at the widest settings, has the most of any lens I have tested which includes the Nikon 24-70 f/2.8, Canon 24-70 f/2.8, Canon 24-70 f/2.8 II, and Tamron 24-70 f/2.8. The new Zeiss lens goes from strong barrel distortion at 24mm to moderate pincushion distortion at 70mm with the crossover point being at 30mm. In comparison, the Nikon lens goes



from moderate Barrel distortion at 24mm to light pincushion distortion at 70mm with the crossover occurring at 45mm. Until the RAW converter software packages include lens profiles, this will have to be corrected manually. I have included a table of Distortion adjustment transform values for the Adobe products at the end of this review.

Transmission Loss:

A notable finding with all of the recent Carl Zeiss mirrorless lenses is that their T-stop value is essentially the same as their stated f-stop value. This would indicate that there is no transmission loss at all as light travels through the lens. Of course this is impossible so the only logical conclusion to be drawn is that the actual aperture of the lens is slightly larger than indicated (the opposite of other manufacturers which often cheat on the side of a slightly smaller actual aperture than indicated). In comparison with the Nikon 24-70, at identical exposures, the Zeiss 24-70 is 1/2 stop brighter. So for the same aperture setting, to get the same final photo, one can shoot with a faster shutter speed.

Shooting Impressions:

I find the Zeiss 24-70mm lens a pleasure to shoot with on the a7R. Autofocus is fast and accurate and the OSS system seems to offer at least a 3 stop hand holding advantage. Photos taken with OSS on even on a tripod do not suffer negative image quality problems from leaving OSS on. The lens does not have a manual focus override button or switch so switching to manual focus must be done on the camera. Fortunately the a7/a7R have a button that is already assigned to this task or it can be retasked to another button (see my a7R review linked above). Manual focus, even though it is an electronic fly by wire operation is Carl Zeiss smooth and accurate. Those of you that have ever shot with a Zeiss manual focus lens will know what I mean - there is nothing in the Canon/Nikon world that focuses as smoothly as a Zeiss lens. Similarly, there is no OSS off switch on the lens, it needs to be turned off through the camera's menu system. I have tasked one of the Items in the Functions menu to control that but it's still several clicks rather than just flipping a quick switch.

Image quality is excellent for a zoom of this nature, as described above. Once Adobe get lens profiles into their software, the linear distortion issue and vignetting issue will be a non-factor as it will be automatically corrected if you have your software set-up for automatic lens corrections. I recommend this being turned on for all cameras and lenses except for fisheye lenses.

There are no filter induced vignetting issues with standard depth filters; a thin or slim mount filter is not necessary but the filter thread ring is plastic so make sure to avoid cross threading. Overall I wish the lens had a bit less plastic and a bit more metal like my Zeiss primes which are all metal; but in order to keep this lens balanced well on the camera, weight savings measures had to be taken.

While \$1200 is a lot for an f/4 zoom, it is one of the finest zooms of this type on the market and is still \$300 less than Canons 24-70 f/4L IS lens. The only 24-70 lens in the Canon/Nikon world that beats it hands down is the Canon 24-70 f/2.8L II but that is much larger, much heavier and twice as expensive although you do gain one stop of light. For landscape photography on the

go, my primary purpose for this lens, I never need f/2.8. Overall I am pleasantly surprised by the images I am getting from this lens. They are every bit as good as images taken with the D800e and Nikon 24-70 f/2.8 lens, and at the widest angles even better. Certainly my 25mm f/2 Zeiss prime lens outperforms it on the wide end and my Sigma 35mm f/1.4 outperforms it in the middle of its range, but comparing the world's best primes to any zoom is not a fair comparison. Compared to other 24-70 zoom lenses, this lens holds its own and exceeds expectations in many regards.

Lens image quality parameter table:

	Nikon 24-70 f/2.8G	Zeiss 24-70 f/4
24mm - Center Resolution f/4		x
24mm - Corner Resolution f/4		x
24mm - Center Resolution f/5.6		X
24mm - Corner Resolution f/5.6		X
24mm - Center Resolution f/8	Tie	Tie
24mm - Corner Resolution f/8		X
24mm - Vignetting	x	x
24mm - Chromatic Aberration		x
24mm - Linear Distortion	x	
24mm - Transmission		x
28mm - Center Resolution f/4	Tie	Tie
28mm - Corner Resolution f/4	x	
28mm - Center Resolution f/5.6		X
28mm - Corner Resolution f/5.6		X
28mm - Center Resolution f/8	Tie	Tie
28mm - Corner Resolution f/8		X
28mm - Vignetting	x	
28mm - Chromatic Aberration		x
28mm - Linear Distortion	Tie	Tie
28mm - Transmission		x
35mm - Center Resolution f/4	Tie	Tie
35mm - Corner Resolution f/4		X
35mm - Center Resolution f/5.6	Tie	Tie
35mm - Corner Resolution f/5.6		X
35mm - Center Resolution f/8	Tie	Tie
35mm - Corner Resolution f/8		X
35mm - Vignetting	X	
35mm - Chromatic Aberration		X
35mm - Linear Distortion	Tie	Tie
35mm - Transmission		x
50mm - Center Resolution f/4	Tie	Tie
50mm - Corner Resolution f/4		x
50mm - Center Resolution f/5.6		x
50mm - Corner Resolution f/5.6	Tie	Tie
50mm - Center Resolution f/8	Tie	Tie
50mm - Corner Resolution f/8	Tie	Tie

50mm - Vignetting	x	
50mm - Chromatic Aberration		x
50mm - Linear Distortion	x	
50mm - Transmission		x
70mm - Center Resolution f/4	x	
70mm - Corner Resolution f/4	x	
70mm - Center Resolution f/5.6	x	
70mm - Corner Resolution f/5.6	X	
70mm - Center Resolution f/8	Tie	Tie
70mm - Corner Resolution f/8	X	
70mm - Vignetting	x	
70mm - Chromatic Aberration		x
70mm - Linear Distortion	x	
70mm - Transmission		x

Transform Adjustment Values to correct linear distortion in Adobe RAW conversion software:

FL	Distortion Adjust	FL	Distortion Adjust
24	19	47	-9
25	16	48	-9
26	14	49	-10
27	8	50	-10
28	5	51	-10
29	3	52	-10
30	1	53	-10
31	-1	54	-10
32	-3	55	-10
33	-5	56	-10
34	-5	57	-10
35	-6	58	-10
36	-6	59	-10
37	-6	60	-10
38	-6	61	-10
39	-7	62	-10
40	-7	63	-10
41	-7	64	-10
42	-8	65	-10
43	-8	66	-11
44	-8	67	-11
45	-8	68	-11
46	-9	69	-11
		70	-11



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