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POP FULL TEST PHOTO

Mamiya

Topnotch optical trio for Mamiya's 645AF

Hands On: All three lenses are beautifully finished in satin black with legible white-on-black metric and orange footage scales under Plexiglas windows. All focus very smoothly in manual mode, and have white orientation dots to aid mounting. All three lenses balance very nicely for handheld shooting on the M645AF—even the 105–210mm f/4.5, which, at 6¼ inches at infinity, is the longest of the three. Autofocusing is uniformly swift with little tendency to hunt even in low light or with low-contrast subjects, but AF noise is moderately high.

The 35mm f/3.5 is compact, extending only 2¾ inches at infinity. It has a very complete depth-of-field scale (f/4–22 plus IR index dot) a narrow, rubberized manual focus (MF)/autofocus (AF) ring at the rear, and a broader, grippably textured manual focusing ring at the front of the barrel. It comes with a bayonet-mount lenshood.

The 55–110mm f/4.5 and 105–210mm f/4.5 zooms have very wide, grippably-textured focusing collars toward the front, and slightly narrower zoom rings at the rear of the barrel. To select manual focus mode, push the focusing collar forward to MF position. Zooming action is very smooth and well damped, and the focal lengths are legibly engraved in large white numerals. There is no depth-of-field scale, but there are Infrared focusing indices (for 55mm and 105mm for the 55–110mm; for 105mm and 210mm for the longer zoom). Both lenses come with conventional bayonet-mount lenshoods.

In the lab:

Exposure accuracy at film plane

35mm AF f/3.5: Accurate, with underexposure: of ⅔ stop at maximum aperture due to light falloff, about ⅕ stop from f/5.6 to f/8, and about ⅔ stop from f/11–22.

55–110mm f/4.5: *At 55mm,* very accurate with underexposure of ⅓ f-stop at maximum aperture due to light falloff, about ⅕ stop from f/8–16, and about ⅓ stop from f/22–32.

At 110mm, extremely accurate, with underexposure of ⅓ stop at maximum

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Mamiya 35mm f/3.5 AF

SPECIFICATIONS

35mm (35.60mm tested), f/3.5 (f/3.71 tested), 9 elements in 7 groups. Focusing turns 90 degrees counterclockwise. Diagonal View Angle: 90 degrees. Weight: 1 lb 1 1/16 oz. Filter size: 77mm. Mount: Mamiya AF Lenshood: Included. List price: $1,679. Street price: $1,300

RESOLUTION (Lines/mm) @ 35mm

f/	Center	Corner
3.5	70 excellent	35 excellent
5.6	74 excellent	39 excellent
8.0	62 excellent	35 excellent
11.0	62 excellent	39 excellent
16.0	60 excellent	39 excellent
22.0	49 excellent	35 excellent

Mamiya 105–210mm f/4.5 ULD AF

SPECIFICATIONS

105–210mm (106.23–208.56mm tested), f/4.5 (f/4.7 tested), 13 elements in 11 groups. Focusing turns 150 degrees counterclockwise. Zoom ring turns 80 degrees clockwise. Focal lengths marked at 105–, 120–, 140–, 170–, and 210mm. Diagonal View Angle: 36–19 degrees Weight: 2 lbs 2 5/16 oz Filter size: 58mm Mount: Mamiya AF Lenshood: Included List price: $2,659 Street price: Approx. $1,700

RESOLUTION (Lines/mm) @105mm

f/	Center	Corner
4.5	60 excellent	45 excellent
8.0	72 excellent	50 excellent
11.0	57 excellent	40 excellent
16.0	51 excellent	40 excellent
22.0	45 excellent	38 excellent
32.0	37 very good	32 very good

RESOLUTION (Lines/mm) @140mm

f/	Center	Corner
4.5	54 excellent	45 excellent
8.0	60 excellent	51 excellent
11.0	57 excellent	45 excellent
16.0	51 excellent	40 excellent
22.0	51 excellent	40 excellent
32.0	40 very good	36 very good

RESOLUTION (Lines/mm) @210mm

f/	Center	Corner
4.5	55 excellent	48 excellent
8.0	62 excellent	55 excellent
11.0	55 excellent	38 excellent
16.0	49 excellent	34 very good
22.0	39 very good	32 very good
32.0	35 good	29 good

Mamiya 55–110mm f/4.5 AF

SPECIFICATIONS

55–110mm (56.70–112.03mm tested), f/4.5 (f/4.70–4.50 tested), 11 elements in 10 groups. Focusing turns 70 degrees counterclockwise. Zoom ring turns 70 degrees clockwise. Focal lengths marked at 55–, 75–, 90–, and 110mm Diagonal View Angle: 65–35 degrees Weight: 1 lb 14¾ oz Filter size: 67mm Mount: Mamiya AF Lenshood: Included List price: $2,659 Street price: Approx. $2,000

RESOLUTION (Lines/mm) @55mm

f/	Center	Corner
4.5	49 excellent	31 excellent
8.0	55 excellent	49 excellent
11.0	61 excellent	39 excellent
16.0	55 excellent	35 excellent
22.0	44 excellent	31 excellent
32.0	34 good	27 good

RESOLUTION (Lines/mm) @75mm

f/	Center	Corner
4.5	45 excellent	36 excellent
8.0	50 excellent	40 excellent
11.0	56 excellent	45 excellent
16.0	50 excellent	45 excellent
22.0	45 excellent	36 excellent
32.0	34 good	28 good

RESOLUTION (Lines/mm) @110mm

f/	Center	Corner
4.5	42 excellent	32 excellent
8.0	52 excellent	38 excellent
11.0	47 excellent	38 excellent
16.0	47 excellent	32 very good
22.0	41 very good	32 very good
32.0	37 very good	29 good

Distortion and measured focal length

Lenses	Distortion	Aperture size	Measured max. f-stop	Measured focal length
35mm AF f/3.5				
@35mm	Noticeable barrel (1.35%)	9.6mm	3.7	35.6mm
55–110mm f/4.5				
@55mm	Noticeable barrel (1.25%)	12.063mm	4.7	56.7mm
@75mm	Slight barrel (0.85%)			
@110mm	Minimal pincushion (0.45%)	24.9mm	4.5	112.03mm
105–210mm f/4.5				
@105mm:	Minimal barrel (0.35%)	22.602mm	4.7	106.23mm
@140mm:	Minimal pincushion (0.45%)			
@210mm:	Slight pincushion (0.75%)	44.375mm	4.7	208.56mm

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aperture due to light falloff, and less than 1/10 stop from f/8–32.

105–210mm f/4.5: *at 105mm and 210mm,* extremely accurate, with underexposure of 2/5 stop at maximum aperture due to light falloff, and less than 1/10 stop from f/8–32.

Closest distance/macro test

35mm f/3.5: *At 1:6 (13½ in.),* center sharpness was excellent at every aperture. Corner sharpness was poor at f/3.5, good from f/5.6–8, very good at f/11, and good from f/16–22. Optimum performance was at f/11.

55–110mm f/4.5: *55mm at 1:22.5 (56½ in.),* center sharpness was excellent from f/4.5–22 and very good at f/32. Corner sharpness was excellent from f/4.5–11, very good from f/16–22 and good at f/32. Optimum performance was at f/11.

At 75mm at 1:19.4 (59 in.), identical result as at 55mm: Center sharpness was excellent from f/4.5–22 and very good at f/32. Corner sharpness was excellent from f/4.5–11, very good from f/16–22, and good at f/32. Optimum performance was at f/11.

At 110mm at 1:12.7 (58 in.), center sharpness was excellent from f/4.5–22 and very good at f/32. Corner sharpness was excellent from f/4.5–16 and good from f/22–32. Optimum performance was at f/11.

105–210mm f/4.5: *At 105mm at 1:10.1 (59½ in.),* center sharpness was excellent from f/4.5–22 and very good at f/32. Corner sharpness was very good at f/4.5, excellent from f/8 to f/11, very good at f/16, and acceptable at f/32. Optimum performance was at f/11.

At 140mm at 1:8.4 (59½in.), center and corner sharpness was excellent from f/4.5–11, very good at f/16, excellent at f/22, and good at f/32. Optimum performance was at f/11.

At 210mm at 1:5.6 (58¾ in.), center sharpness was very good at f/4.5, excellent from f/8–11, very good at f/16, good at f/22, and acceptable at f/32. Corner sharpness was good at f/4.5, very good from f/8–11, good at f/22 and acceptable at f/32.Optimum performance was at f/11.

In the field:

Light falloff was gone by f/8 in all cases (all three lenses). With all lenses, flare was very well controlled with minimal ghosting images noticed. An excellent result.

Field exposure test: In general, the AF function of these three lenses was a bit noisy but extremely fast, with the 35mm slightly faster than the 55–110mm, and the 105–210mm slightly slower than the others.

Test slides with these three lenses were very sharp and contrasty from center to corners at all apertures, except at 210mm: where center sharpness at f/4.5 and corner sharpness at f/32 were slightly soft.

Conclusion:

An outstanding group of lenses that should provide ample incentive for pro and amateur photographers to consider the M645 AF when choosing a medium-format system.