Mamiya

LENSES

for Mamiya RB

50mm f/4.5 C
65mm f/4.5 C
90mm f/3.8 C
127mm f/3.8 C
180mm f/4.5 C
250mm f/4.5
360mm f/6.3

INSTRUCTIONS

Before Attaching a Lens...

Before attaching a lens to the camera, always cock both the lens shutter, and cock the mirror down position in the camera body.

Refer to page 3 for details.

When using the 50mm and 65mm lenses, be sure to read the special instructions described on page 7.

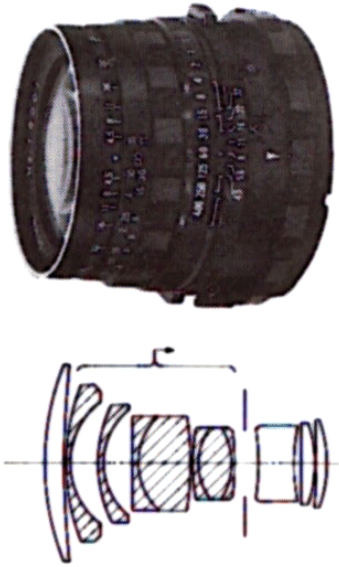
Specifications

High-performance Seiko #1 shutters are built-in Mamiya Sekor lenses, offering excellent image quality, and superb resolving power, are equipped with an automatic aperture control feature. The lenses are available in seven types from 50 mm wide angle to 360 mm telephoto.

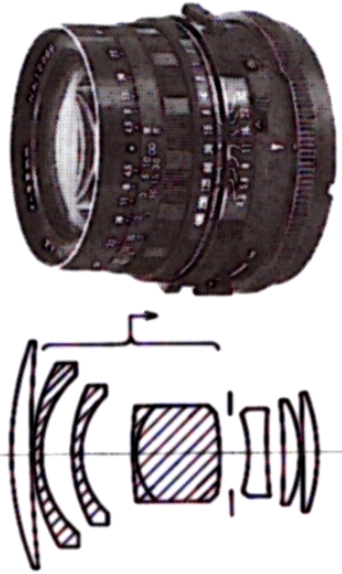
Lens mount : Bayonet type
Shutter : Seiko #1 lens shutter
Shutter speed scale : T, 1 to 1/400 second
Flash synchronization : M-X
Shutter charging : By lever on the camera body
With independent shutter release
With depth of field preview lever
Filter screw diameter : 77 mm

Lens	Composition	Picture angle	Minimum aperture	Hood	Weight
50mm f/4.5 C	11 element 8 group	82°	32	Slip-on type 80mm ϕ Common use	32 7/16 oz (920g)
65mm f/4.5 C	8 element 7 group	69°	32		29 7/16 oz (835g)
90mm f/3.8 C	7 element 5 group	52°	32	Screw-in type 77mm ϕ Common use	28 6/16 oz (805g)
127mm f/3.8 C	5 element 3 group	38°	32		26 7/16 oz (750g)
180mm f/4.5C	5 element 3 group	28°	45		30 7/8 oz (875g)
250mm f/4.5	5 element 4 group	20°	45		46 3/16 oz (1310g)
360mm f/6.3	8 element 5 group	14°	45	Screw-in type 77mm ϕ	43 3/8 oz (1230g)

50mmF4.5 C



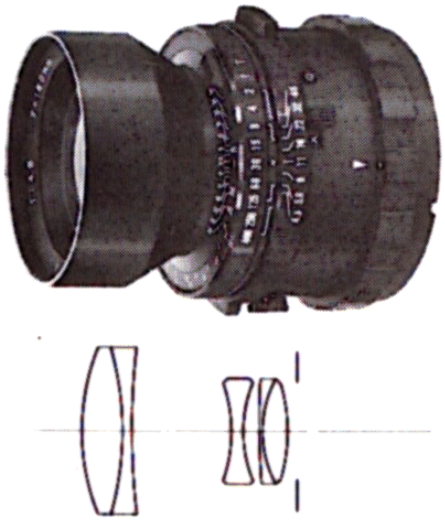
65mmF4.5 C



90mmF3.8 C

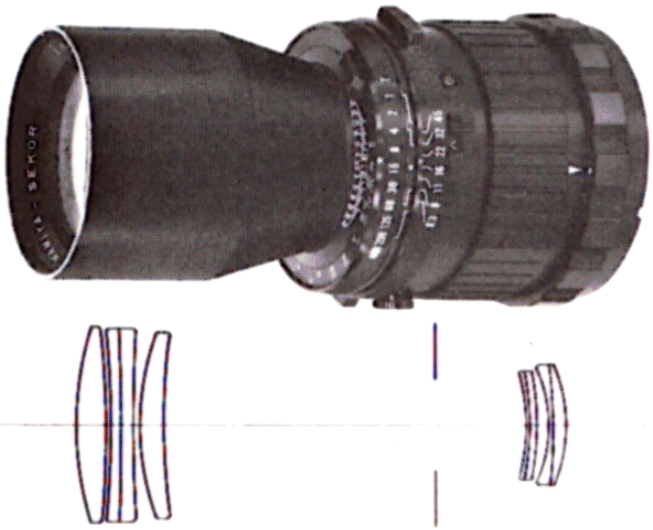
127mmF3.8 C

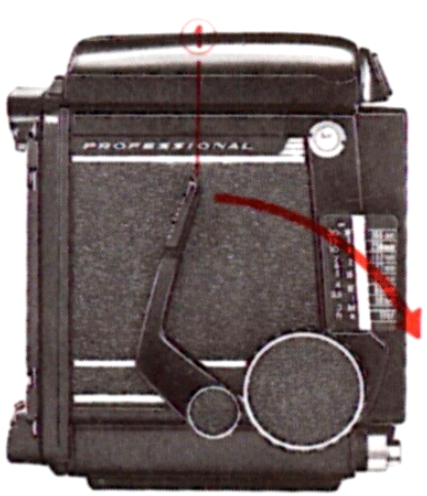
180mmF4.5 C



250mmF4.5

360mmF6.3





■ Attaching the Lens

1. Cock the mirror by fully pushing down the shutter cocking lever (1) toward the front of the camera.
2. Remove the rear cap of the lens.
3. Cock the lens shutter.

Firmly turn the shutter cocking pins (2) with your fingers, to the red cocking position marks (3). When removing your fingers from the pins, the cocking pins will turn back to the green marks, and the shutter blade will be left opened. The shutter will not be cocked perfectly if turned only to the green marks.

When removing the lens from the camera body, the shutter is always in a cocked condition.

4. Turn the bayonet ring and align the red mark (4) on the bayonet ring with the triangular mark at the center.
5. Mount the lens keeping the triangular mark aligned with the red lens mounting mark (5) on the camera body, then firmly twist the bayonet ring clockwise.

■ Removing the Lens

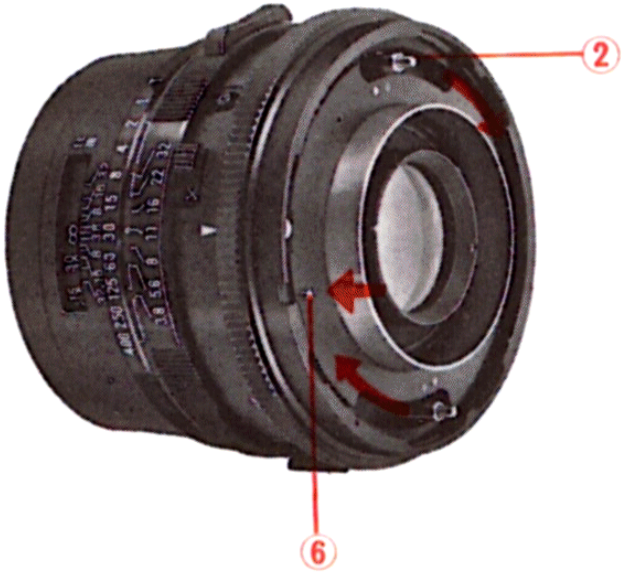
1. Press the shutter cocking lever down fully.
2. Turn the bayonet ring counterclockwise, aligning its red mark (4) with the lens mounting mark (5) on the body, and remove the lens.

If you attempt to remove the lens with the mirror in the up position, the camera safety interlock mechanism is engaged which does not permit the lens bayonet ring from turning fully to the dismount position. Cocking the camera, which lowers the mirror and protects the film plane from accidental light leak, disengages this safety mechanism permitting lens removal easily.

It is advisable to release the shutter when the lens is not to be used for several days or longer.

How to Release the Shutter

To release a lens shutter which is removed from the camera body, turn the cocking pins (2) clockwise, while pressing the shutter lock pin (6) with a finger. The cocking pins should be turned all the way, do NOT leave the pins turned only halfway.



*Always set the shutter speed to the click stop position. In-between shutter speeds cannot be used.
*After cocking the shutter, do not turn the shutter speed ring rapidly.
*The fully automatic diaphragm can be set at full and half click stops.

Time Operation

When releasing the shutter by setting the shutter speed scale on T (time) the shutter will remain open for effecting an extended time exposure.

To close the shutter, turn the shutter speed ring toward the 1 second marking or press down the shutter cocking lever about 30°; however, do not move the shutter cocking lever until just before closing the shutter.

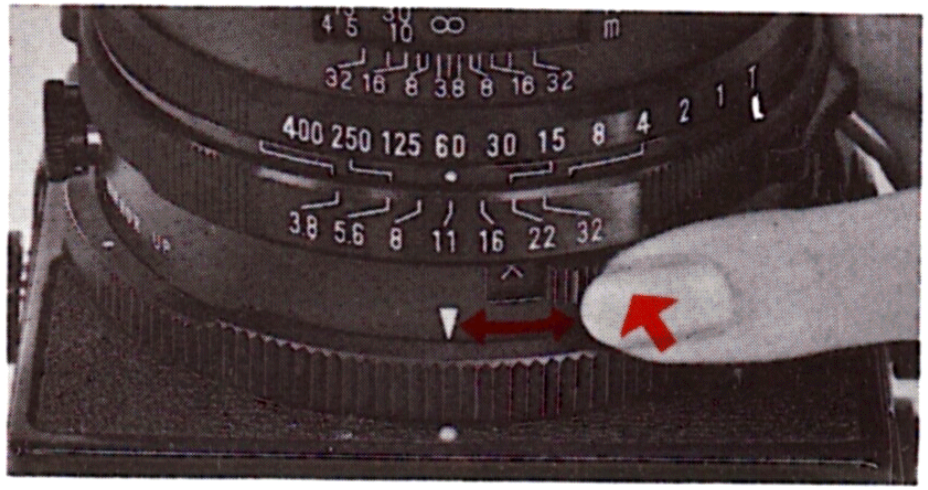
Switching the M-X Selector

The M-X selecting lever is internally locked to prevent unintentional switching of the mode.

When switching the synchronization mode, push the lever against the lens barrel. While pressing, turn it right or left until it reaches the end.

The letter X or M, which indicates the contact type, should appear in the window.

When not using flash, the M-X selector lever can be set to either M or X; however, never set the lever between M and X.

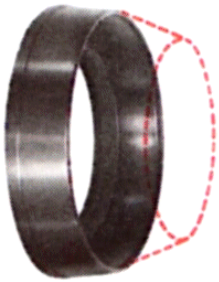


■ Lens Hood

50mm f/4.5 60mm f/4.5	Common use	Square, slip-on type 80mm ϕ
90mm f/3.8 127mm f/3.8 180mm f/4.5 250mm f/4.5	Common use	Round, screw-in type 77mm ϕ
360mm f/6.3	Exclusive use	

For 90mm lens

For 127, 180, and 250mm lenses



Folded lens hood

Square type lens hood

This hood can be attached by slipping it to the lens front ring. By pushing the hood from the front, it can be folded flat. A filter can be screwed in the lens front ring.

Round type lens hood

(for 90mm to 250mm lens)

This hood can be attached by screwing it into the lens front ring. When using it as the hood for the 127mm, 180mm, and 250mm lenses, pull the folded rubber hood straight out. For the 90mm lens, fold the hood back halfway.

By pushing the extended hood from the front, the hood is easily folded.

By pushing back and turning out the hood while it is attached to the lens, you can also leave the hood on the lens so that the lens barrel is protected.

A filter can be screwed in between the lens and the hood, or in front of the lens hood.

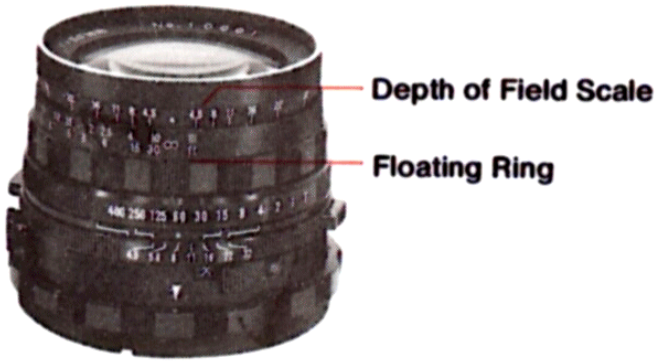
(for 360mm lens)

This hood can be attached by screwing it into the lens front ring.

When using a filter, first attach the filter to the lens, and then screw the lens hood into it.

■ Instructions for the 50mm and 65 mm Lenses

These lenses have a built-in floating system which move a portion of the lens system to the front or rear, according to the photographing distance, in order to obtain sharp resolution down to the picture circumference.



Focusing and photographing method

1. As with a standard lens, adjust focusing by turning the focusing knob on the camera body.
- Merely turning the floating ring will not produce accurate focusing.

2. Next, read the distance to subject, set the distance scale of the floating ring to the center index mark (red dot), and then take a picture.
- The floating ring may be turned to set the distance scale either before or after focusing.
- When turning the floating ring, a portion of the lens system is shifted to the front or rear; however, no variations can be observed on the ground glass focusing screen.

3. Note the depth of field by observing the depth of field scale on the front frame of the lens, or on the ground glass focusing screen by depressing the depth of field preview lever.

When placing emphasis on spur-of-the-moment snapshots, set the infinity ∞ mark (red) of the floating ring to the center index mark (red) when the distance to subject is from infinity ∞ to approximately 7 ft. (2m.), and if the distance to subject is less than approximately 7 ft. (2m.), a sufficiently sharp image can be obtained merely by setting 3.3 ft/1m (red) to the index.
- In the case of close-up photography nearer than 3.3 ft. (1m.), set the floating ring to 3.3 ft/1m, then stop down the lens as much as possible.
- The distance to subject implies the distance from the film plane to the subject.

50mm

Depth of Field Table

Aperture	Distance in Feet									
	∞	30	15	10	8	7	6	5	4	3
4.5	20′ 5″ ∞	12′ 3″ ∞	8′ 9″ 54′	6′ 10″ 19′	5′ 10″ 12′ 9″	5′ 3½″ 10′ 4″	4′ 8¾″ 8′ 3″	4′ 1¼″ 6′ 5½″	3′ 5″ 4′ 10¼″	2′ 8″ 3′ 5¼″
5.6	16′ 3″ ∞	10′ 8″ ∞	7′ 11″ ∞	6′ 3½″ 24′ 9″	5′ 5½″ 15′ 1″	5′ 11′ 10″	4′ 5¾″ 9′ 2″	3′ 11″ 6′ 11½″	3′ 3½″ 5′ 1½″	2′ 7¼″ 3′ 6¾″
8	11′ 7″ ∞	8′ 5½″ ∞	6′ 8″ ∞	5′ 6″ 65′ 2″	4′ 10¼″ 24′ 2″	4′ 5¾″ 16′ 8″	4′ ¾″ 11′ 9″	3′ 7¼″ 8′ 4″	3′ ¾″ 5′ 10″	2′ 5⅝″ 3′ 10¼″
11	8′ 2½″ ∞	6′ 6½″ ∞	5′ 5″ ∞	4′ 7¾″ ∞	4′ 2¼″ ∞	3′ 10¾″ 39′ 10″	3′ 7″ 19′ 10″	3′ 2¾″ 11′ 8″	2′ 9¾″ 7′ 2½″	2′ 3⅝″ 4′ 4¾″
16	5′ 10½″ ∞	4′ 11¾″ ∞	4′ 3¾″ ∞	3′ 9¾″ ∞	3′ 6″ ∞	3′ 3¾″ ∞	3′ 1″ ∞	2′ 10″ 26′ 11″	2′ 6″ 10′ 11″	2′ 1¼″ 5′ 5½″
22	4′ 2¼″ ∞	3′ 8¾″ ∞	3′ 4¼″ ∞	3′ ¾″ ∞	2′ 10½″ ∞	2′ 9″ ∞	2′ 7″ ∞	2′ 4⅞″ ∞	2′ 2⅛″ ∞	1′ 10½″ 8′ 6″
32	3′ ¼″ ∞	2′ 9¼″ ∞	2′ 7″ ∞	2′ 4⅞″ ∞	2′ 3½″ ∞	2′ 2½″ ∞	2′ 1⅜″ ∞	2′ ∞	1′ 10⅛″ ∞	1′ 7⅝″ ∞

When using the 50mm lens closer than 3¼ feet (1 meter) it is necessory to use a lens aperture of f/16, or smaller, in order to obtain satisfactory lens performance.

50mm

Depth of Field Table

Aperture	Distance in Meter									
	∞	10	5	4	3	2.5	2	1.5	1.2	1
4.5	6.22 ∞	3.87 ∞	2.81 24.04	2.47 10.77	2.06 5.61	1.81 4.06	1.54 2.87	1.23 1.92	1.03 1.45	0.88 1.16
5.6	4.96 ∞	3.35 ∞	2.53 ∞	2.25 19.23	1.91 7.25	1.70 4.84	1.46 3.23	1.18 2.08	0.99 1.53	0.85 1.21
8	3.52 ∞	2.63 ∞	2.10 ∞	1.91 ∞	1.66 17.92	1.50 7.97	1.31 4.35	1.08 2.48	0.92 1.73	0.81 1.33
11	2.51 ∞	2.03 ∞	1.70 ∞	1.58 ∞	1.40 ∞	1.29 ∞	1.15 8.65	0.97 3.42	0.85 2.13	0.75 1.55
16	1.79 ∞	1.53 ∞	1.35 ∞	1.27 ∞	1.16 ∞	1.08 ∞	0.98 ∞	0.85 7.49	0.76 3.17	0.68 2.01
22	1.28 ∞	1.15 ∞	1.04 ∞	1.00 ∞	0.93 ∞	0.88 ∞	0.82 ∞	0.73 ∞	0.66 10.90	0.60 3.57
32	0.92 ∞	0.85 ∞	0.80 ∞	0.77 ∞	0.73 ∞	0.70 ∞	0.66 ∞	0.61 ∞	0.56 ∞	0.52 ∞

When using the 50mm lens closer than 3¼ feet (1 meter) it is necessory to use a lens aperture of f/16, or smaller, in order to obtain satisfactory lens performance.

65mm

Depth of Field Table

Aperture	Distance in Feet									
	∞	30	15	10	8	7	6	5	4	3.5
4.5	35' 4" ∞	16' 6" 186'	10' 9" 25' 2"	7'11½" 13' 6"	6' 8" 10'	5'11½" 8' 5½"	5' 3" 7'	4' 5¾" 5' 7½"	3' 8¼" 4' 4½"	3' 3¼" 3' 9¼"
5.6	28' 2" ∞	14' 9" ∞	10' 30' 7"	7' 7" 14'10"	6' 5" 10' 9"	5' 9" 8'11½"	5' 1" 7' 4"	4' 4½" 5' 10"	3' 7¼" 4' 6"	3' 2½" 3'10¼"
8	20' 1" ∞	12' 3" ∞	8'10" 54' 8"	6'11" 18' 8"	5'11" 12' 6"	5' 4½" 10' 2"	4' 9½" 8' 1"	4' 2" 6' 3½"	3' 5¾" 4' 8¾"	3' 1¼" 4' ¼"
11	14' 4" ∞	9'11" ∞	7' 7" ∞	6' 1½" 29' 9"	5' 4½" 16' 6"	4'11¼" 12' 6"	4' 5¼" 9' 6"	3'11" 7' 1"	3' 3½" 5' 1½"	2'11½" 4' 3½"
16	10' 3" ∞	7'10" ∞	6' 4" ∞	5' 3½" ∞	4' 9" 30' 8"	4' 5" 19' 1"	4' ¼" 12' 8"	3' 7" 8'7 ½"	3' 1" 5'10"	2' 9¾" 4' 9"
22	7' 4" ∞	6' 1" ∞	5' 2" ∞	4' 6" ∞	4' 1¼" ∞	3'10¼" ∞	3' 6¾" 24'10"	3' 2¾" 12' 8"	2'10" 7' 4"	2' 7¼" 5' 7½"
32	5' 4" ∞	4' 7¾" ∞	4' 1½" ∞	3' 8½" ∞	3' 5½" ∞	3' 3½" ∞	3' 1" ∞	2'10¼" 41'	2' 6½" 11' 8"	2' 4½" 7' 9"

When using the 65mm lens closer than 3¼ feet (1 meter) it is necessory to use a lens aperture of f/16, or smaller, in order to obtain satisfactory lens performance.

65mm

Depth of Field Table

Aperture	Distance in Meter									
	∞	10	5	4	3	2.5	2	1.5	1.2	1
4.5	10.8	5.27	3.48	2.98	2.40	2.08	1.73	1.35	1.11	0.939
	∞	∞	9.01	6.15	4.03	3.16	2.38	1.69	1.31	1.071
5.6	8.60	4.70	3.24	2.80	2.29	1.99	1.67	1.32	1.09	0.925
	∞	∞	11.4	7.16	4.42	3.39	2.51	1.75	1.34	1.091
8	6.12	3.87	2.83	2.50	2.08	1.84	1.57	1.26	1.05	0.898
	∞	∞	24.8	10.8	5.53	3.98	2.81	1.88	1.42	1.134
11	4.36	3.10	2.41	2.17	1.86	1.66	1.44	1.18	0.99	0.862
	∞	∞	∞	38.5	8.64	5.33	3.39	2.11	1.53	1.203
16	3.12	2.44	2.00	1.83	1.61	1.47	1.30	1.08	0.93	0.817
	∞	∞	∞	∞	∞	10.4	4.84	2.56	1.74	1.317
22	2.24	1.88	1.62	1.51	1.36	1.26	1.14	0.97	0.85	0.762
	∞	∞	∞	∞	∞	∞	12.8	3.70	2.16	1.529
32	1.62	1.44	1.29	1.22	1.13	1.06	0.97	0.86	0.77	0.697
	∞	∞	∞	∞	∞	∞	∞	10.8	3.37	2.001

When using the 65mm lens closer than 3¼ feet (1 meter) it is necessory to use a lens aperture of f/16, or smaller, in order to obtain satisfactory lens performance.

90mm

Depth of Field Table

Aperture	Distance in Feet									
	∞	30	15	10	7	5	4	3	2	1.5
3.8	80′ 7″ ∞	22′ 1″ 47′ 1″	12′ 9″ 18′ 2″	9′ 11′ 3″	6′ 6″ 7′ 7″	4′ 9¼″ 5′ 3″	3′ 10¼″ 4′ 1¾″	2′ 11″ 3′ ¾″	1′ 11¾″ 2′ ¼″	1′ 5⅞″ 1′ 6⅛″
5.6	54′ 3″ ∞	19′ 7″ 65′ 4″	11′ 11″ 20′ 3″	8′ 7″ 12′	6′ 3½″ 7′ 10½″	4′ 8″ 5′ 5″	3′ 9½″ 4′ 2¾″	2′ 10¾″ 3′ 1¼″	1′ 11⅝″ 2′ ½″	1′ 5⅞″ 1′ 6⅛″
8	38′ 6″ ∞	17′ 1″ 129′	11′ 23′ 10″	8′ 1½″ 13′ 1″	6′ ½″ 8′ 3½″	4′ 6¼″ 5′ 7″	3′ 8½″ 4′ 4″	2′ 10¼″ 3′ 2″	1′ 11⅜″ 2′ ⅝″	1′ 5¾″ 1′ 6¼″
11	27′ 4″ ∞	14′ 7″ ∞	9′ 11″ 31′ 7″	7′ 6½″ 15′ 1″	5′ 9″ 9′	4′ 4¼″ 5′ 10½″	3′ 7¼″ 4′ 6″	2′ 9½″ 3′ 3″	1′ 11⅛″ 2′ ⅞″	1′ 5¾″ 1′ 6⅜″
16	19′ 5″ ∞	12′ ∞	8′ 8½″ 59′ 2″	6′ 10″ 19′ 2″	5′ 4″ 10′ 3″	4′ 1¾″ 6′ 4″	3′ 5½″ 4′ 9″	2′ 8¾″ 3′ 4¼″	1′ 10⅞″ 2′ 1⅜″	1′ 5⅝″ 1′ 6½″
22	13′ 10″ ∞	9′ 8½″ ∞	7′ 5½″ ∞	6′ ½″ 31′ 6″	4′ 10¾″ 12′ 10″	3′ 10½″ 7′ 2″	3′ 3½″ 5′ 2″	2′ 7½″ 3′ 6¼″	1′ 10⅜″ 2′ 1⅞″	1′ 5⅜″ 1′ 6⅝″
32	9′ 10½″ ∞	7′ 7½″ ∞	6′ 2½″ ∞	5′ 3″ ∞	4′ 4¼″ 20′	3′ 6¾″ 8′ 9½″	3′ ¾″ 5′ 11″	2′ 6″ 3′ 9¾″	1′ 9⅞″ 2′ 2⅞″	1′ 5⅛″ 1′ 7″

90mm

Depth of Field Table

Aperture	Distance in Meter									
	∞	10	5	3	2	1.5	1	0.8	0.6	0.5
3.8	24.57	7.17	4.20	2.70	1.87	1.43	0.973	0.784	0.593	0.496
	∞	16.60	6.19	3.37	2.15	1.58	1.029	0.816	0.607	0.504
5.6	16.54	6.31	3.90	2.58	1.82	1.40	0.960	0.777	0.590	0.494
	∞	24.59	7.01	3.59	2.23	1.62	1.044	0.825	0.611	0.506
8	11.73	5.48	3.57	2.44	1.75	1.36	0.945	0.768	0.586	0.492
	∞	63.09	8.43	3.91	2.34	1.67	1.064	0.835	0.615	0.508
11	8.33	4.62	3.20	2.27	1.66	1.31	0.924	0.756	0.580	0.489
	∞	∞	11.84	4.48	2.52	1.76	1.093	0.851	0.622	0.512
16	5.92	3.79	2.79	2.06	1.56	1.25	0.896	0.739	0.572	0.485
	∞	∞	28.05	5.67	2.84	1.89	1.138	0.875	0.632	0.517
22	4.22	3.04	2.37	1.83	1.43	1.17	0.860	0.717	0.561	0.479
	∞	∞	∞	9.12	3.45	2.13	1.208	0.911	0.646	0.524
32	3.02	2.38	1.96	1.59	1.28	1.08	0.814	0.688	0.547	0.470
	∞	∞	∞	∞	5.03	2.60	1.327	0.968	0.668	0.536

127mm

Depth of Field Table

Aperture	Distance in Feet									
	∞	30	15	10	7	5	4	3	2.5	2.25
3.8	157' ∞	25' 4" 36' 9"	13' 9" 16' 5"	9' 5½" 10' 0"	6' 9" 7' 3"	4'10½" 5' 1½"	3'11¼" 4' ¾"	3' 0" 3' ½"	2' 5¾" 2' 6¼"	2' 2⅞" 2' 3⅛"
4	149' ∞	25' 2" 37' 2"	13' 8" 16' 6"	9' 5" 10' 7"	6' 9" 7' 3½"	4'10½" 5' 1½"	3'11" 4' 1"	2'11½" 3' ½"	2' 5¾" 2' 6¼"	2' 2⅞" 2' 3⅛"
5.6	106' ∞	23' 7" 41' 4"	13' 3" 17' 3"	9' 8" 10'11"	6' 7½" 7' 5"	4'10" 5' 2"	3'10¾" 4' 1¼"	2'11½" 3' ½"	2' 5½" 2' 6¼"	2' 2¾" 2' 3¼"
8	74'11" ∞	21' 8" 49' 0"	12' 8" 18' 5"	8'11½" 11' 4"	6' 6" 7' 7"	4' 9" 5' 3"	3'10¼" 4' 1¾"	2'11" 3' 1"	2' 5½" 2' 6½"	2' 2⅝" 2' 3⅜"
11	53' 1" ∞	19' 5" 66' 8"	11'11" 20' 4"	8' 7" 12' 0"	6' 3½" 7'10½"	4' 8" 5' 4½"	3' 9½" 4' 2¾"	2'11" 3' 1¼"	2' 5¼" 2' 6¾"	2' 2½" 2' 3½"
16	37' 8" ∞	17' 0" 137'	11' 0" 23'11"	8' 1" 13' 1"	6' 1" 8' 3½"	4' 6½" 5' 7"	3' 8¾" 4' 4"	2'10½" 3' 1¾"	2' 5" 2' 7"	2' 2¼" 2' 3¾"
22	26' 9" ∞	14' 5" ∞	9'10" 31'11"	7' 6" 15' 1"	5' 9" 9' 0"	4' 4½" 5'10"	3' 7½" 4' 5¾"	2' 9¾" 3' 2½"	2' 4⅝" 2' 7½"	2' 2" 2' 4⅛"
32	19' 0" ∞	11'11" ∞	8' 7½" 61' 3"	6'10" 19' 3"	5' 4½" 10' 2"	4' 2" 6' 3½"	3' 6" 4' 8½"	2' 9" 3' 3¾"	2' 4⅛" 2' 8¼"	2' 1⅝" 2' 4½"

127mm

Depth of Field Table

Aperture	Distance in Meter									
	∞	10	5	3	2	1.5	1	0.8	0.7	0.65
3.8	47.96 ∞	8.33 12.53	4.56 5.54	2.84 3.17	1.93 2.07	1.47 1.54	0.987 1.01	0.793 0.807	0.695 0.704	0.646 0.654
4	45.57 ∞	8.26 12.70	4.54 5.57	2.84 3.18	1.93 2.07	1.46 1.54	0.986 1.01	0.793 0.807	0.695 0.705	0.646 0.654
5.6	32.26 ∞	7.70 14.30	4.37 5.84	2.77 3.27	1.90 2.11	1.45 1.55	0.981 1.02	0.790 0.811	0.693 0.707	0.645 0.655
8	22.84 ∞	7.03 17.42	4.16 6.29	2.69 3.39	1.87 2.16	1.43 1.58	0.973 1.03	0.786 0.815	0.690 0.710	0.643 0.658
11	16.19 ∞	6.27 25.24	3.89 7.04	2.58 3.59	1.82 2.23	1.40 1.61	0.963 1.04	0.780 0.822	0.687 0.714	0.640 0.661
16	11.48 ∞	5.44 69.73	3.56 8.50	2.44 3.91	1.75 2.34	1.37 1.67	0.948 1.06	0.772 0.831	0.681 0.720	0.635 0.666
22	8.16 ∞	4.59 ∞	3.19 12.04	2.27 4.49	1.67 2.52	1.32 1.75	0.929 1.09	0.761 0.845	0.674 0.729	0.630 0.672
32	5.80 ∞	3.76 ∞	2.78 29.80	2.06 5.69	1.56 2.83	1.26 1.88	0.903 1.126	0.746 0.865	0.664 0.742	0.622 0.682

180mm

Depth of Field Table

Aperture	Distance in Feet									
	∞	100	50	30	20	15	10	7	5	4
4.5	263′ 0″ ∞	72′ 10″ 160′ 0″	42′ 3″ 61′ 3″	27′ 1″ 33′ 7″	18′ 8″ 21′ 6″	14′ 3″ 15′ 10″	9′ 8½″ 10′ 4″	6′ 10½″ 7′ 1½″	4′ 11¼″ 5′ ½″	3′ 11½″ 4′ ½″
5.6	209′ 0″ ∞	68′ 1″ 189′ 0″	40′ 8″ 65′ 1″	26′ 5″ 34′ 8″	18′ 5″ 21′ 11″	14′ 1″ 16′ 0″	9′ 7½″ 10′ 5″	6′ 10″ 7′ 2″	4′ 11″ 5′ 1″	3′ 11½″ 4′ ½″
8	148′ 0″ ∞	60′ 2″ 301′ 0″	37′ 9″ 74′ 5″	25′ 2″ 37′ 2″	17′ 10″ 22′ 10″	13′ 9″ 16′ 6″	9′ 5½″ 10′ 7″	6′ 9″ 7′ 3″	4′ 10¾″ 5′ 1½″	3′ 11¼″ 4′ ¾″
11	105′ 0″ ∞	51′ 8″ ∞	34′ 3″ 93′ 5″	23′ 8″ 41′ 2″	17′ 0″ 24′ 3″	13′ 4″ 17′ 2″	9′ 3½″ 10′ 10″	6′ 8″ 7′ 4½″	4′ 10¼″ 5′ 2″	3′ 11″ 4′ 1″
16	74′ 5″ ∞	43′ 1″ ∞	30′ 4″ 146′ 0″	21′ 9″ 48′ 10″	16′ 1″ 26′ 8″	12′ 9″ 18′ 4″	9′ 0″ 11′ 3″	6′ 6½″ 7′ 6½″	4′ 9½″ 5′ 3″	3′ 10½″ 4′ 1½″
22	52′ 9″ ∞	34′ 11″ ∞	26′ 2″ ∞	19′ 7″ 66′ 2″	14′ 10″ 30′ 11″	12′ 0″ 20′ 2″	8′ 8″ 11′ 11″	6′ 4½″ 7′ 9½″	4′ 8½″ 5′ 4″	3′ 10″ 4′ 2¼″
32	37′ 6″ ∞	27′ 8″ ∞	21′ 10″ ∞	17′ 1″ 135′ 0″	13′ 5″ 40′ 2″	11′ 1″ 23′ 7″	8′ 2½″ 12′ 11″	6′ 1½″ 8′ 2″	4′ 7¼″ 5′ 6″	3′ 9¼″ 4′ 3″
45	26′ 8″ ∞	21′ 4″ ∞	17′ 10″ ∞	14′ 7″ ∞	11′ 11″ 69′ 11″	10′ 0″ 31′ 1″	7′ 7½″ 14′ 9″	5′ 10″ 8′ 9½″	4′ 5½″ 5′ 8½″	3′ 8¼″ 4′ 4½″

180mm

Depth of Field Table

Aperture	Distance in Meter									
	∞	30	15	10	7	5	3	2	1.5	1.2
4.5	80.18 ∞	21.94 47.55	12.71 18.32	8.94 11.34	6.48 7.62	4.74 5.30	2.91 3.10	1.96 2.04	1.48 1.52	1.19 1.21
5.6	63.82 ∞	20.53 55.99	12.23 19.43	8.71 11.75	6.36 7.79	4.67 5.38	2.89 3.12	1.96 2.05	1.48 1.52	1.19 1.21
8	45.18 ∞	18.16 87.53	11.36 22.14	8.27 12.68	6.12 8.18	4.55 5.55	2.85 3.17	1.94 2.07	1.47 1.53	1.18 1.22
11	32.00 ∞	15.62 ∞	10.33 27.62	7.72 14.26	5.82 8.80	4.39 5.82	2.79 3.25	1.91 2.10	1.46 1.55	1.18 1.23
16	22.68 ∞	13.05 ∞	9.16 42.59	7.06 17.35	5.45 9.85	4.18 6.25	2.71 3.37	1.88 2.14	1.44 1.57	1.17 1.24
22	16.09 ∞	10.60 ∞	7.90 ∞	6.30 25.08	4.99 11.88	3.91 6.98	2.60 3.56	1.83 2.20	1.42 1.60	1.15 1.25
32	11.43 ∞	8.39 ∞	6.62 ∞	5.47 68.63	4.47 16.80	3.60 8.37	2.47 3.86	1.77 2.30	1.38 1.64	1.14 1.27
45	8.13 ∞	6.49 ∞	5.40 ∞	4.62 ∞	3.90 41.26	3.23 11.71	2.30 4.38	1.70 2.46	1.34 1.71	1.11 1.31

250mm

Depth of Field Table

Aperture	Distance in Feet								
	∞	200	100	50	30	20	15	10	7
4.5	507′ ∞	144′ 328′	83′ 10″ 124′	45′ 9″ 55′ 2″	28′ 5″ 31′ 9″	19′ 4″ 20′ 9″	14′ 8″ 15′ 5″	9′ 10″ 10′ 2″	6′ 11½″ 7′ 1″
5.6	404′ ∞	134′ 393′	80′ 6″ 132′	44′ 9″ 56′ 8″	28′ 1″ 32′ 2″	19′ 2″ 20′ 11″	14′ 7″ 15′ 6″	9′ 10″ 10′ 2″	6′ 11″ 7′ 1″
8	286′ ∞	118′ 657′	74′ 7″ 152′	42′ 10″ 60′ 1″	27′ 4″ 33′ 3″	18′ 10″ 21′ 4″	14′ 4″ 15′ 8″	9′ 9″ 10′ 3″	6′ 10½″ 7′ 1½″
11	202′ ∞	101′ ∞	67′ 5″ 195′	40′ 6″ 65′ 6″	26′ 5″ 34′ 9″	18′ 5″ 21′ 11″	14′ 1″ 16′ 0″	9′ 7½″ 10′ 5″	6′ 10″ 7′ 2″
16	143′ ∞	84′ 1″ ∞	59′ 6″ 321′	37′ 6″ 75′ 3″	25′ 2″ 37′ 3″	17′ 10″ 22′ 10″	13′ 10″ 16′ 5″	9′ 6″ 10′ 7″	6′ 9½″ 7′ 3″
22	102′ ∞	67′ 11″ ∞	51′ ∞	34′ 1″ 95′ 5″	23′ 7″ 41′ 5″	17′ 1″ 24′ 3″	13′ 4″ 17′ 2″	9′ 3½″ 10′ 10″	6′ 8½″ 7′ 4″
32	72′ ∞	53′ 5″ ∞	42′ 6″ ∞	30′ 1″ 154′	21′ 8″ 49′ 3″	16′ 1″ 26′ 8″	12′ 9″ 18′ 3″	9′ ½″ 11′ 2″	6′ 7″ 7′ 6″
45	51′ 2″ ∞	41′ 2″ ∞	34′ 5″ ∞	25′ 11″ ∞	19′ 6″ 67′ 6″	14′ 11″ 30′ 11″	12′ 1″ 20′ 1″	8′ 8½″ 11′ 9″	6′ 5″ 7′ 8½″

250mm

Depth of Field Table

Aperture	Distance in Meter									
	∞	50	30	20	15	10	7	5	3	2
4.5	155 ∞	37.9 73.5	25.2 37.0	17.8 22.9	13.7 16.5	9.44 10.6	6.73 7.30	4.87 5.14	2.96 3.04	1.98 2.02
5.6	123 ∞	35.7 83.6	24.2 39.4	17.3 23.7	13.4 17.0	9.30 10.8	6.66 7.38	4.83 5.18	2.95 3.06	1.98 2.02
8	87.1 ∞	32.0 116	22.5 45.3	16.4 25.7	12.9 18.0	9.04 11.2	6.53 7.54	4.77 5.26	2.92 3.08	1.97 2.03
11	61.6 ∞	27.8 257	20.3 57.5	15.2 29.2	12.2 19.6	8.69 11.8	6.36 7.80	4.68 5.37	2.89 3.11	1.96 2.04
16	43.7 ∞	23.5 ∞	18.0 93.1	13.9 36.1	11.3 22.4	8.25 12.7	6.12 8.19	4.56 5.55	2.85 3.16	1.94 2.06
22	30.9 ∞	19.3 ∞	15.4 ∞	12.3 54.4	10.3 28.2	7.70 14.4	5.82 8.81	4.40 5.81	2.80 3.24	1.92 2.09
32	22.0 ∞	15.4 ∞	12.9 ∞	10.7 195	9.09 44.7	7.03 17.6	5.45 9.88	4.19 6.23	2.72 3.35	1.89 2.12
45	15.6 ∞	12.0 ∞	10.4 ∞	8.95 ∞	7.84 ∞	6.28 25.8	5.00 11.9	3.93 6.96	2.62 3.52	1.85 2.18

360mm

Depth of Field Table

Aperture	Distance in Feet									
	∞	700	500	200	100	70	50	30	20	15
6.3	751′ ∞	363′ ∞	301′ 1484′	159′ 271′	88′7″ 115′	64′4″ 76′10″	47′1″ 53′4″	29′ 31′1″	19′7″ 20′5″	14′9″ 15′3″
8	592′ ∞	322′ ∞	272′ 3172′	150′ 300′	86′ 120′	62′11″ 78′11″	46′4″ 54′3″	28′9″ 31′5″	19′6″ 20′7″	14′9″ 15′4″
11	419′ ∞	263′ ∞	229′ ∞	136′ 379′	81′3″ 130′	60′5″ 83′4″	45′ 56′3″	28′3″ 32′	19′3″ 20′10″	14′7″ 15′5″
16	296′ ∞	209′ ∞	187′ ∞	120′ 602′	75′5″ 149′	57′2″ 90′5″	43′3″ 59′5″	27′7″ 33′	18′11″ 21′2″	14′5″ 15′7″
22	210′ ∞	162′ ∞	149′ ∞	103′ ∞	68′6″ 187′	53′2″ 103′	40′11″ 64′5″	26′8″ 34′5″	18′7″ 21′9″	14′3″ 15′10″
32	149′ ∞	123′ ∞	115′ ∞	86′2″ ∞	60′8″ 293′	48′5″ 128′	38′1″ 73′3″	25′6″ 36′7″	18′ 22′6″	13′11″ 16′3″
45	106′ ∞	92′ ∞	87′8″ ∞	69′11″ ∞	52′3″ ∞	42′11″ 196′	34′9″ 90′11″	24′ 40′4″	17′4″ 23′9″	13′6″ 16′10″

360mm

Depth of Field Table

Aperture	Distance in Meter									
	∞	100	50	30	20	15	10	7	5	4
6.3	228.93 ∞	69.83 176.51	41.20 63.64	26.64 34.35	18.47 21.81	14.14 15.97	9.62 10.41	6.82 7.19	4.92 5.09	3.95 4.05
8	180.36 ∞	64.58 222.55	39.33 68.71	25.85 35.76	18.10 22.35	13.93 16.26	9.53 10.52	6.78 7.24	4.89 5.11	3.94 4.07
11	127.64 ∞	56.34 453.28	36.15 81.36	24.46 38.85	17.42 23.50	13.52 16.85	9.35 10.76	6.69 7.34	4.85 5.16	3.91 4.09
16	90.36 ∞	47.74 ∞	32.44 110.06	22.73 44.29	16.54 25.35	13.00 17.76	9.10 11.10	6.57 7.49	4.79 5.23	3.87 4.13
22	64.00 ∞	39.28 ∞	28.34 220.31	20.66 55.25	15.44 28.53	12.32 19.23	8.78 11.64	6.41 7.72	4.71 5.33	3.83 4.19
32	45.36 ∞	31.44 ∞	24.06 ∞	18.32 85.18	14.11 34.71	11.48 21.80	8.36 12.50	6.19 8.07	4.60 5.48	3.76 4.28
45	32.18 ∞	24.55 ∞	19.84 ∞	15.80 ∞	12.59 50.16	10.47 26.90	7.83 13.95	5.91 8.62	4.46 5.71	3.67 4.41