

Micro-Nikkor-P
Auto
55mm
f/3.5

Nikon INSTRUCTION MANUAL

Micro-Nikkor-P



FOREWORD

The Micro-Nikkor-P is a close-up lens which reaches maximum performance at a 1 : 10 reproduction ratio. It also produces an excellent image at greater reproduction ratios as well as at distance, since the definition and distortion-correction remain virtually unchanged over the entire focusing range.

The built-in dual-helical system provides continuous focusing from infinity to a reproduction ratio of 1 : 2, using the Micro-Nikkor-P's own focusing ring. This allows the photographer to switch from distance shots to close-ups, or vice-versa, without interrupting his work. The insertion of the M2 ring, supplied with the lens, extends the reproduction range to 1 : 1. Macrophotography is possible in conjunction with other close-up attachments.

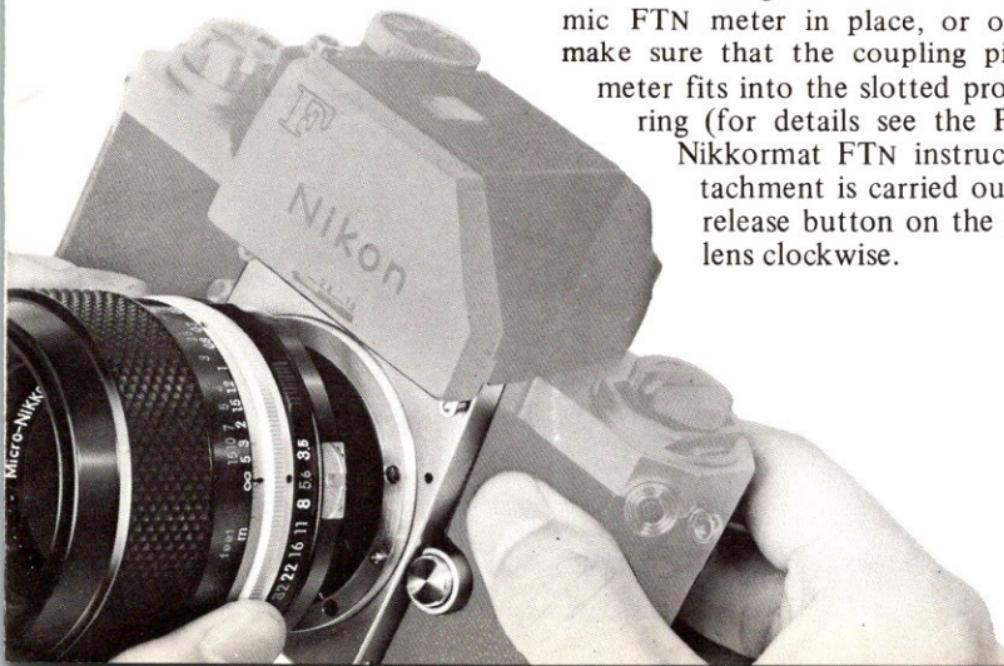
Like other Nikkor Auto lenses, the Micro-Nikkor-P has a fully automatic diaphragm which couples with the Photomic FTN and Nikkormat FTN thru-the-lens meters. The automatic diaphragm guarantees maximum image brightness on the focusing screen for ease of focusing.

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MOUNTING THE LENS

Attach the Micro-Nikkor-P to your Nikon F or Nikkormat camera as you would any other Nikkor Auto lens: position it in the camera's bayonet mount, aligning the black dot above the aperture scale on the lens with the black dot on the camera body. Then twist the lens counterclockwise until it locks into place with a click. When mounting the lens on the Nikon F with the Photomic FTN meter in place, or on the Nikkormat FTN, make sure that the coupling pin protruding from the meter fits into the slotted prong on the lens aperture ring (for details see the Photomic FTN and the Nikkormat FTN instruction manuals). Lens detachment is carried out by depressing the lens release button on the camera and turning the lens clockwise.

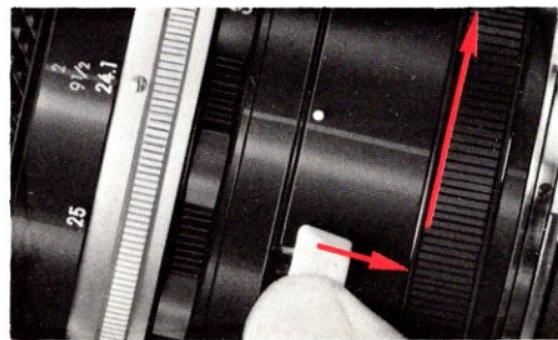
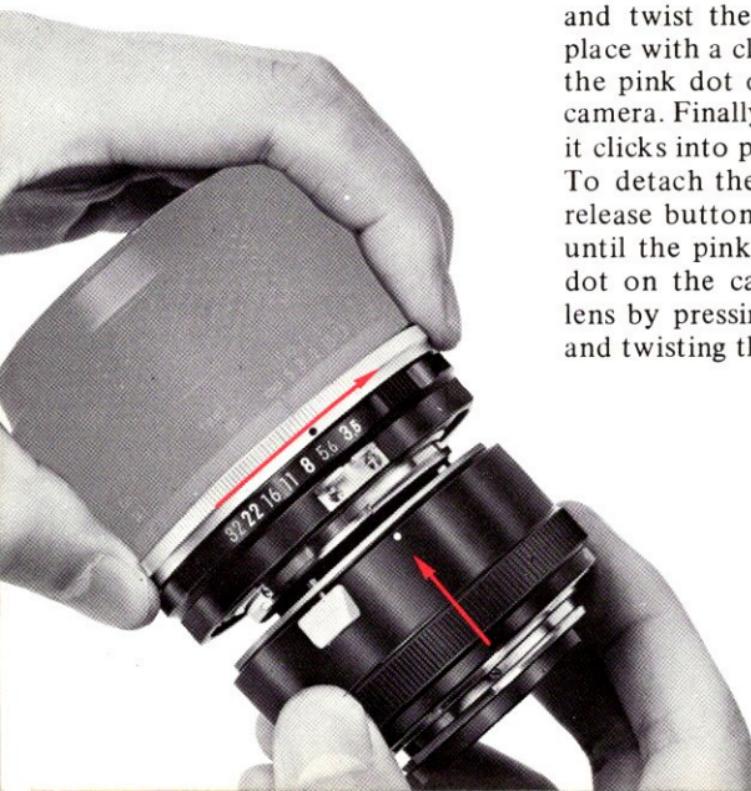


Mounting the Lens—continued

Mounting the M2 Ring

To attach the M2 Ring to the Micro-Nikkor-P, align the black dot on the lens with the white dot on the M2 Ring, and twist the lens counterclockwise until it locks into place with a click. Then mount the M2 Ring by matching the pink dot on the M2 Ring with the black dot on the camera. Finally, turn the M2 Ring counterclockwise until it clicks into position.

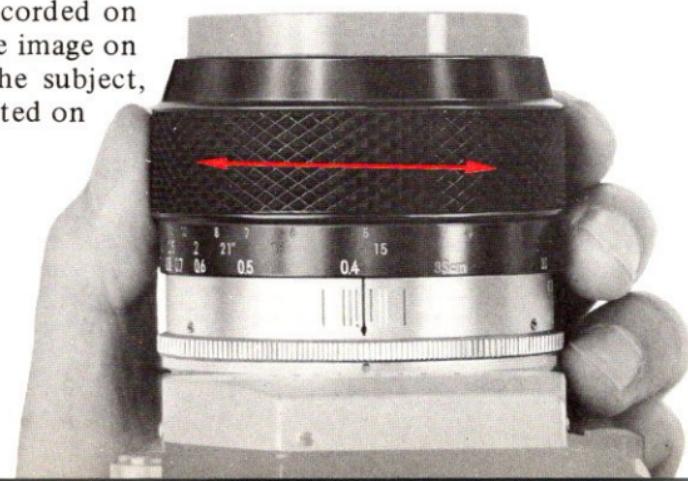
To detach the M2 Ring from the camera, press the lens release button on the camera and turn the ring clockwise until the pink dot on the M2 Ring aligns with the black dot on the camera. The M2 Ring is detached from the lens by pressing the lens lock release button on the ring and twisting the lens clockwise.



FOCUSING

Due to its fully automatic diaphragm, the Micro-Nikkor-P can be focused with maximum image brightness on the screen throughout the entire focusing range. Also, at maximum aperture, the depth of field is minimized, so that the image snaps in and out of focus rapidly and distinctly.

The distance scale is engraved on the focusing ring in both feet and meters. These figures indicate the distance from the subject to the film plane (see note on page 8). Immediately outside the distance scale is the reproduction ratio scale, which gives reproduction ratios, engraved in orange, ranging from 1:10 to 1:2. The reproduction ratio is the relation of the image size to be recorded on the film to the subject size. For example, if the image on the focusing screen is one-fifth the size of the subject, the reproduction ratio is 1:5, and this is indicated on the reproduction ratio scale by the figure 5.



FOCUSING—continued



To photograph a subject at a predetermined reproduction ratio, for example 1:5, turn the focusing ring so that the figure 5 on the reproduction ratio scale aligns with the black distance indicator line. Then aim the camera at the subject and move it toward or away from the subject until the image on the focusing screen is sharp and crisp. No calculations are necessary. The depth-of-field table on page 19 also serves as a quick reference in helping to determine the focused distance at each reproduction ratio, and the subject field to be covered.

Note: The exact position of the film plane is indicated on the top of the camera body. On the Nikon F, the top edge of the serial number is the exact position of the film. On the Nikkormat, the film plane is indicated by the symbol (-e-).

When the Micro-Nikkor-P is used with a Nikon F and a type A focusing screen, the central rangefinder area darkens at apertures smaller than f/4.5. Use of type B or E focusing screens is recommended. When using the Nikkormat, focus on the surrounding matte areas.

Focusing with the M2 Ring

The M2 Ring which comes with the lens should be inserted between the camera and the Micro-Nikkor-P when reproduction ratios from 1:2 to 1:1 are desired. With the M2 Ring in place, the automatic diaphragm action of the Micro-Nikkor-P remains operative so that focusing can be

carried out with the lens wide open, but the original distance and reproduction ratio scales on the focusing ring are no longer applicable, since the M2 Ring pushes the lens 28mm forward. As you rotate the focusing ring in order to focus at shorter distances, a new set of distance and reproduction ratio scales engraved in blue will appear to the right of the black indicator line. Distances from the subject to the film plane on this new scale are calibrated in centimeters and inches, and the reproduction ratios range from 1:2 to 1:1.

The M2 Ring has no focusing movement of its own. Instead, focusing is done by turning the focusing ring of the Micro-Nikkor-P. At the infinity setting of the focusing ring, the reproduction ratio is 1:2. By turning the focusing ring as far as it will go, the subject can be reproduced at life-size (1:1). The edge of the focusing ring should be used as the indicator in aligning with the blue line along each figure.

Close-up photography poses several problems not encountered in general photography. One of these is sensitivity to vibration: the magnification of the image on the film makes even slight image displacement prominent and results in a blurred image. Therefore, for best results, mount the camera on a tripod or on rigid supports, and use a cable release to trip the shutter.



DETERMINING EXPOSURE

The Micro-Nikkor-P has an automatic diaphragm and a set of click-stop aperture settings ranging from f/3.5 to f/32, with an intermediate click-stop at f/4, between f/3.5 and f/5.6. Like other Nikkor Auto lenses, the Micro-Nikkor-P couples directly to the Photomic FTN and the Nikkormat FTN thru-the-lens meters at full aperture over its entire aperture range. To obtain correct exposure, follow the normal exposure determination procedures described in the Photomic FTN and the Nikkormat FTN instruction manuals.

When the M2 Ring or other extension units, such as bellows, are used, the direct coupling of the lens diaphragm with the meter is lost, but the thru-the-lens metering system can still be used by the stop-down method where the lens diaphragm is manually closed to the f/number setting of the lens. See the Photomic FTN and Nikkormat FTN instruction manuals.

Unlike the Micro-Nikkor Auto 55mm f/3.5, the Micro-Nikkor-P Auto 55mm f/3.5 is designed especially for use in combination with the Photomic and the Nikkormat thru-the-lens meters. When exposure is determined by non-thru-the-lens metering systems, therefore, it is necessary to make compensations for correct exposures at reproduction ratios larger than 1 : 10. The table at right shows the exposure factors and the necessary exposure

corrections in aperture values at any reproduction ratio. If you want to calculate the necessary correction in shutter speed, rather than in aperture value, multiply a given exposure factor by the exposure time. For instance, if the normal exposure at a 1 : 1 reproduction ratio is 1/8 second, the correct shutter speed is $1/8 \times 4$, 1/2 second. The following formula is used to calculate the exposure factor:

Exposure factor = $(1 + R)^2$, where R=reproduction ratio

Note: The Micro-Nikkor-P 55mm f/3.5 is most efficient when used with the Photomic FTN or Nikkormat FTN thru-the-lens metering system, but it is rather inconvenient when exposure is measured by a non-thru-the-lens meter. The Micro-Nikkor 55mm f/3.5 is recommended for use with a Nikon F without Photomic FTN meter.

Caution: When the stop-down method is used at small apertures, a finder eyecup should be attached to the finder eyepiece to ensure complete exclusion of stray light.

Reproduction ratio	Exposure factor	Exposure increase in stops
1/10	1.21	2/7
1/8	1.27	1/3
1/7	1.30	3/8
1/6	1.36	4/9
1/5	1.44	1/2
1/4	1.56	2/3
1/3	1.77	5/6
1/2.5	1.96	1
1/2	2.25	1-1/6
1/1.5	2.75	1-4/9
1/1	4.00	2

The Micro-Nikkor gives excellent results whether with a nearby subject or a distant one, as the photos on these pages show.



Taken at infinity



Taken at 5 feet (1.5m)

(Photo: T. Tateishi)

Taken at reproduction ratio of 1 : 5



Taken at 1 : 1 (life-size)

DEPTH OF FIELD

The Micro-Nikkor-P permits depth-of-field preview. Press the depth-of-field preview button on the camera body and the lens will stop down to the preselected aperture to allow you to see how much background or foreground is in focus.

Depth of field can also be observed by reading the color-coded scale engraved on the lens barrel. The pairs of colored lines on either side of the black indicator line correspond to f/numbers of the same color. At close distances so little is in focus that the depth-of-field table on page 19 is more useful.

At extremely close working distances, depth of field decreases to the actual focused distance. This can be partially compensated for by stopping down the lens. But at very close distances an extremely narrow depth of field is inevitable. Careful placement of the subject, if it has depth, will be necessary to ensure that the important surfaces will be in the same zone of sharpness.

CLOSE-UP ATTACHMENTS

The range of reproduction ratios possible with the Micro-Nikkor-P can be extended by adding various close-up attachments, which are inserted between the camera and the lens. When used with the Bellows Focusing Attachment Model PB-4, for example, the possible reproduction ratios (image size : subject size) range from 1 : 1.3 to 3.4X. Using the BR-2 Macro Adapter Ring, the reproduction range is from 1 : 1.7 to 4.3X. The table on page 18 indicates the ranges of reproduction ratios possible with various combinations of close-up attachments. Remember that when an extension unit is inserted between the camera and the lens, the automatic diaphragm coupling action is no longer operative.

When using the bellows attachment to obtain reproduction ratios above 1 : 1, it is desirable to reverse the Micro-Nikkor-P so that its front faces the film and its back is to the subject. The Micro-Nikkor-P can be attached to the bellows in reverse position by means of the BR-2 Macro Adapter Ring. The BR-2 Ring has a bayonet mount at one end that fits onto the bellows, and a 52mm screw thread mount at the other to accept the Micro-Nikkor-P. In this arrangement, focusing is done by extending or contracting the bellows attachment.



CLOSE-UP ATTACHMENTS —continued

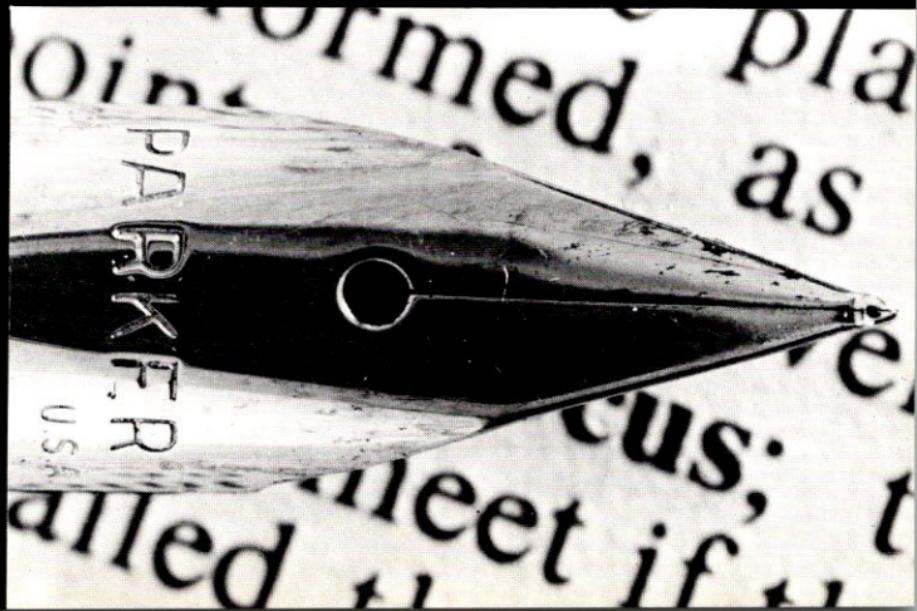


With the Micro-Nikkor-P in reverse position, the automatic diaphragm action is inoperative. Therefore, the lens diaphragm must be adjusted manually so that focusing can be carried out with maximum image brightness on the focusing screen. For details, see the instruction manuals for the Bellows Focusing Attachment Models PB-3, 4 and 5. When the lens is reversed by means of the BR-2 Ring, the Extension Ring E2 can be attached on the rear of the lens mount to provide semiautomatic diaphragm control for ease of focusing. See the E2 instruction manual for details. The Micro-Nikkor-P is excellent in combination with the Repro-Copy Outfit Model PF-1 for precise copying of documents, books or other small objects.

...ge. It is clearly formed, as in a camera. The point of convergence is called the ^{virtual} point of convergence. If their waves meet if they are in phase, the virtual point of any system of waves: an acoustic system of two points, whose distance is instant.

Taken at the reproduction ratio of 1 : 1 (life-size).

Taken at the reproduction ratio of 2 : 1 (twice life-size).



(Photo: M. Nishizawa)

CLOSE-UP TABLE

Photographic Ranges with Other Close-up Attachments

(in.)

Close-up attachments	Lens in normal position			Lens in reverse position		
	Reproduction ratio	Subject field	Subject distance	Reproduction ratio	Subject field	Subject distance
Bellows PB-3	1/1.7-2.6	1.6x2.4-0.4x0.6	9.0-10.6	1.5-3.5	0.6x0.9-0.3x0.4	8.8-12.2
Bellows PB-4, PB-5	1/1.3-3.4	1.2x1.8-0.3x0.4	8.5-12.0	1.7-4.3	0.6x0.9-0.2x0.4	9.0-13.8
Slide Copying Adapter PS-4, PS-5	1/1.3-1.8	1.2x1.8-0.5x0.8	8.6-9.2	1.7-4.3	0.6x0.8-0.2x0.3	9.1-13.9
* Repro-Copy Outfit PF-1	1/13.3-1.0	1.3x1.9-0.9x1.4	33.5-8.4	-	-	-

(cm)

Close-up attachments	Lens in normal position			Lens in reverse position		
	Reproduction ratio	Subject field	Subject distance	Reproduction ratio	Subject field	Subject distance
Bellows PB-3	1/1.7-2.6	4.0x6.0-0.9x1.4	22.9-26.8	1.5-3.5	1.5x2.4-0.7x1.0	22.3-31.1
Bellows PB-4, PB-5	1/1.3-3.4	3.1x4.6-0.7x1.1	21.7-30.5	1.7-4.3	1.4x2.2-0.6x0.9	22.8-35.1
Slide Copying Adapter PS-4, PS-5	1/1.3-1.8	3.1x4.6-1.3x2.0	21.8-23.4	1.7-4.3	1.4x2.1-0.6x0.8	23.0-35.4
* Repro-Copy Outfit PF-1	1/13.3-1.0	3.19x4.8-2.4x3.6	85-21.4	-	-	-

* These reproduction ratios are obtained with the Micro-Nikkor-P and M2 ring combination with the subject placed on the baseplate of the reprocopy outfit.

DEPTH-OF-FIELD TABLE

Focused distance	Depth of Field								Reproduction ratio
	f/3.5	f/4	f/5.6	f/8	f/11	f/16	f/22	f/32	
0.241	0.240 – 0.242	0.240 – 0.242	0.240 – 0.242	0.239 – 0.243	0.239 – 0.243	0.238 – 0.244	0.237 – 0.246	0.235 – 0.248	1/2
0.25	0.249 – 0.251	0.249 – 0.251	0.249 – 0.251	0.248 – 0.252	0.248 – 0.253	0.246 – 0.254	0.245 – 0.255	0.243 – 0.258	1/2.2
0.3	0.298 – 0.302	0.298 – 0.302	0.297 – 0.303	0.296 – 0.304	0.295 – 0.305	0.293 – 0.308	0.290 – 0.311	0.286 – 0.316	1/3.3
0.35	0.347 – 0.352	0.347 – 0.353	0.346 – 0.354	0.344 – 0.356	0.342 – 0.358	0.339 – 0.362	0.335 – 0.367	0.328 – 0.376	1/4.2
0.4	0.396 – 0.404	0.396 – 0.404	0.394 – 0.406	0.392 – 0.409	0.389 – 0.412	0.384 – 0.418	0.378 – 0.425	0.369 – 0.438	1/5.2
0.5	0.493 – 0.507	0.493 – 0.508	0.490 – 0.511	0.485 – 0.516	0.480 – 0.522	0.472 – 0.533	0.462 – 0.546	0.447 – 0.570	1/7.1
0.6	0.590 – 0.611	0.588 – 0.612	0.584 – 0.617	0.577 – 0.625	0.569 – 0.634	0.557 – 0.652	0.542 – 0.673	0.520 – 0.714	1/8.9
0.7	0.686 – 0.715	0.684 – 0.717	0.677 – 0.724	0.668 – 0.736	0.657 – 0.750	0.639 – 0.775	0.619 – 0.808	0.589 – 0.870	1/11
0.8	0.781 – 0.820	0.778 – 0.823	0.769 – 0.833	0.757 – 0.848	0.742 – 0.868	0.719 – 0.904	0.693 – 0.950	0.654 – 1.041	1/13
1.0	0.968 – 1.03	0.964 – 1.04	0.951 – 1.06	0.931 – 1.08	0.907 – 1.11	0.871 – 1.18	0.831 – 1.26	0.773 – 1.44	1/16
1.2	1.15 – 1.25	1.15 – 1.26	1.13 – 1.28	1.10 – 1.32	1.07 – 1.38	1.01 – 1.47	0.959 – 1.61	0.880 – 1.92	1/20
1.5	1.43 – 1.58	1.42 – 1.59	1.39 – 1.64	1.34 – 1.70	1.29 – 1.79	1.21 – 1.97	1.13 – 2.24	1.02 – 2.90	1/25
2.0	1.87 – 2.15	1.85 – 2.18	1.80 – 2.26	1.72 – 2.39	1.64 – 2.58	1.51 – 2.98	1.39 – 3.65	1.22 – 5.92	1/34
3	2.70 – 3.37	2.67 – 3.43	2.55 – 3.64	2.40 – 4.01	2.23 – 4.59	2.00 – 6.07	1.78 – 9.93	1.51 – ∞	1/53
5	4.21 – 6.15	4.12 – 6.36	3.85 – 7.14	3.51 – 8.75	3.16 – 12.21	2.71 – 36.07	2.31 – ∞	1.87 – ∞	1/89
∞	25.9 – ∞	22.7 – ∞	16.2 – ∞	11.4 – ∞	8.26 – ∞	5.68 – ∞	4.13 – ∞	2.84 – ∞	1/ ∞

DEPTH-OF-FIELD TABLE—continued

Focused distance	Depth of Field								Repro- duc-tion ratio
	f/3.5	f/4	f/5.6	f/8	f/11	f/16	f/22	f/32	
9 $\frac{1}{2}$ '	9 $\frac{15}{32}$ " - 9 $\frac{17}{32}$ "	9 $\frac{15}{32}$ " - 9 $\frac{17}{32}$ "	9 $\frac{15}{32}$ " - 9 $\frac{17}{32}$ "	9 $\frac{7}{16}$ " - 9 $\frac{9}{16}$ "	9 $\frac{13}{32}$ " - 9 $\frac{19}{32}$ "	9 $\frac{3}{8}$ " - 9 $\frac{5}{8}$ "	9 $\frac{11}{32}$ " - 9 $\frac{11}{16}$ "	9 $\frac{1}{4}$ " - 9 $\frac{3}{4}$ "	1/2.0
10 $\frac{1}{2}$ '	10 $\frac{15}{32}$ " - 10 $\frac{17}{32}$ "	10 $\frac{7}{16}$ " - 10 $\frac{9}{16}$ "	10 $\frac{7}{16}$ " - 10 $\frac{9}{16}$ "	10 $\frac{13}{32}$ " - 10 $\frac{19}{32}$ "	10 $\frac{3}{8}$ " - 10 $\frac{5}{8}$ "	10 $\frac{5}{16}$ " - 10 $\frac{11}{16}$ "	10 $\frac{1}{4}$ " - 10 $\frac{25}{32}$ "	10 $\frac{1}{8}$ " - 10 $\frac{29}{32}$ "	1/2.6
12"	11 $\frac{15}{16}$ " - 1"	11 $\frac{15}{16}$ " - 1"	11 $\frac{7}{8}$ " - 1 $\frac{1}{8}$ "	11 $\frac{27}{32}$ " - 1 $\frac{1}{8}$ "	11 $\frac{3}{4}$ " - 1 $\frac{1}{4}$ "	11 $\frac{11}{16}$ " - 1 $\frac{3}{8}$ "	11 $\frac{5}{8}$ " - 1 $\frac{1}{2}$ "	11 $\frac{7}{16}$ " - 1 $\frac{5}{8}$ "	1/3.4
15"	1'2 $\frac{7}{8}$ " - 1'3 $\frac{1}{8}$ "	1'2 $\frac{7}{8}$ " - 1'3 $\frac{1}{8}$ "	1'2 $\frac{3}{4}$ " - 1'3 $\frac{1}{4}$ "	1'2 $\frac{3}{4}$ " - 1'3 $\frac{1}{4}$ "	1'2 $\frac{5}{8}$ " - 1'3 $\frac{3}{4}$ "	1'2 $\frac{3}{8}$ " - 1'3 $\frac{5}{8}$ "	1'2 $\frac{1}{4}$ " - 1'3 $\frac{7}{8}$ "	1'1 $\frac{7}{8}$ " - 1'4 $\frac{1}{4}$ "	1/4.8
18"	1'5 $\frac{3}{4}$ " - 1'6 $\frac{1}{4}$ "	1'5 $\frac{3}{4}$ " - 1'6 $\frac{1}{4}$ "	1'5 $\frac{5}{8}$ " - 1'6 $\frac{3}{8}$ "	1'5 $\frac{1}{2}$ " - 1'6 $\frac{1}{2}$ "	1'5 $\frac{3}{8}$ " - 1'6 $\frac{5}{8}$ "	1'5 $\frac{1}{8}$ " - 1'7 $\frac{1}{8}$ "	1'4 $\frac{3}{4}$ " - 1'7 $\frac{3}{8}$ "	1'4 $\frac{1}{4}$ " - 1'8 $\frac{1}{8}$ "	1/6.3
21"	1'8 $\frac{3}{4}$ " - 1'9 $\frac{1}{4}$ "	1'8 $\frac{5}{8}$ " - 1'9 $\frac{3}{8}$ "	1'8 $\frac{1}{2}$ " - 1'9 $\frac{1}{2}$ "	1'8 $\frac{3}{8}$ " - 1'9 $\frac{3}{4}$ "	1'8 $\frac{1}{8}$ " - 1'10"	1'7 $\frac{3}{4}$ " - 1'10 $\frac{1}{2}$ "	1'7 $\frac{1}{4}$ " - 1'11 $\frac{1}{8}$ "	1'6 $\frac{1}{2}$ " - 2 $\frac{1}{4}$ "	1/7.7
2'	1'11 $\frac{5}{8}$ " - 2 $\frac{3}{8}$ "	1'11 $\frac{1}{2}$ " - 2 $\frac{1}{2}$ "	1'11 $\frac{3}{8}$ " - 2 $\frac{3}{4}$ "	1'11 $\frac{1}{8}$ " - 2'1"	1'10 $\frac{3}{4}$ " - 2'1 $\frac{3}{8}$ "	1'10 $\frac{1}{4}$ " - 2'2 $\frac{1}{8}$ "	1'9 $\frac{5}{8}$ " - 2'3"	1'8 $\frac{3}{4}$ " - 2'4 $\frac{5}{8}$ "	1/9.1
2.5'	2'5 $\frac{3}{8}$ " - 2'6 $\frac{3}{4}$ "	2'5 $\frac{1}{4}$ " - 2'6 $\frac{7}{8}$ "	2'4 $\frac{7}{8}$ " - 2'7 $\frac{1}{4}$ "	2'4 $\frac{1}{2}$ " - 2'7 $\frac{3}{4}$ "	2'4" - 2'8 $\frac{3}{8}$ "	2'3 $\frac{1}{8}$ " - 2'9 $\frac{5}{8}$ "	2'2 $\frac{1}{8}$ " - 2'11 $\frac{1}{4}$ "	2 $\frac{3}{4}$ " - 3'2 $\frac{3}{8}$ "	1/12

Focused distance	Depth of Field								(ft) Repro- duction ratio
	f/3.5	f/4	f/5.6	f/8	f/11	f/16	f/22	f/32	
3'	2'11" - 3'1 $\frac{1}{8}$ "	2'10 $\frac{7}{8}$ " - 3'1 $\frac{1}{4}$ "	2'10 $\frac{3}{8}$ " - 3'1 $\frac{3}{4}$ "	2'9 $\frac{3}{4}$ " - 3'2 $\frac{5}{8}$ "	2'9" - 3'3 $\frac{5}{8}$ "	2'7 $\frac{3}{4}$ " - 3'5 $\frac{5}{8}$ "	2'6 $\frac{1}{2}$ " - 3'8 $\frac{1}{4}$ "	2'4 $\frac{1}{2}$ " - 4'1 $\frac{1}{2}$ "	1/15
4'	3'10 $\frac{1}{8}$ " - 4'2 $\frac{1}{8}$ "	3'9 $\frac{7}{8}$ " - 4'2 $\frac{3}{8}$ "	3'9 $\frac{1}{8}$ " - 4'3 $\frac{3}{8}$ "	3'7 $\frac{7}{8}$ " - 4'5"	3'6 $\frac{1}{2}$ " - 4'7 $\frac{1}{8}$ "	3'4 $\frac{1}{2}$ " - 4'11 $\frac{1}{4}$ "	3'2 $\frac{1}{4}$ " - 5'5"	2'11 $\frac{1}{8}$ " - 6'5 $\frac{5}{8}$ "	1/20
5'	4'9" - 5'3 $\frac{3}{8}$ "	4'8 $\frac{5}{8}$ " - 5'3 $\frac{7}{8}$ "	4'7 $\frac{3}{8}$ " - 5'5 $\frac{1}{2}$ "	4'5 $\frac{1}{2}$ " - 5'8 $\frac{1}{4}$ "	4'3 $\frac{1}{2}$ " - 6"	4 $\frac{3}{8}$ " - 6'7 $\frac{3}{8}$ "	3'9 $\frac{1}{8}$ " - 7'6 $\frac{3}{8}$ "	3'4 $\frac{5}{8}$ " - 9'10"	1/26
7'	6'6" - 7'7"	6'5 $\frac{1}{4}$ " - 7'8"	6'2 $\frac{7}{8}$ " - 7'11 $\frac{3}{4}$ "	5'11 $\frac{5}{8}$ " - 8'5 $\frac{7}{8}$ "	5'7 $\frac{7}{8}$ " - 9'2 $\frac{3}{4}$ "	5'2 $\frac{3}{8}$ " - 10'9 $\frac{5}{8}$ "	4'9" - 13'7 $\frac{1}{4}$ "	4'1 $\frac{3}{4}$ " - 24'1 $\frac{5}{8}$ "	1/37
10'	8'12" - 11'3"	8'10 $\frac{1}{2}$ " - 11'6"	8'5 $\frac{7}{8}$ " - 12'2"	7'11 $\frac{3}{4}$ " - 13'5"	7'5" - 15'5"	6'7 $\frac{3}{4}$ " - 20'7"	5'10 $\frac{7}{8}$ " - 34'5"	4'11 $\frac{7}{8}$ " - ∞	1/54
15'	12'10" - 18'1"	12'7" - 18'8"	11'10" - 20'8"	10'10" - 24'8"	9'9 $\frac{1}{2}$ " - 32'6"	8'5 $\frac{5}{8}$ " - 69'10"	7'3 $\frac{1}{2}$ " - ∞	5'11 $\frac{1}{8}$ " - ∞	1/81
∞	85'2" - ∞	74'6" - ∞	53'2" - ∞	37'3" - ∞	27'1" - ∞	18'7" - ∞	13'7" - ∞	9'3 $\frac{3}{4}$ " - ∞	1/ ∞

ACCESSORIES

The lens comes in a plastic case, equipped with the M2 ring and a front lens cap. No lens hood is supplied for this lens since the deeply recessed lens front provides an efficient built-in hooding device. However, when a filter is used in close-up work, use of the lens hood for the Nikkor Auto 35mm f/2.8 is recommended in order to prevent reflection of light from the filter surface. The Micro-Nikkor-P can be used with a variety of 52mm screw-in filters.

Care and Cleaning

Always use a soft lens brush or a special lens cleaning cloth to clean the outside lens surfaces. When not in use, your Micro-Nikkor-P should be stored in its case with the front and rear lens caps in place.

FEATURES/SPECIFICATIONS

Focal length/aperture: 55mm f/3.5

Picture angle: 43° at infinity

Lens construction: 5 elements in 4 groups

Diaphragm: automatic type; stops down to f/32, with an intermediate click-stop at f/4. With M2 ring in place, the automatic coupling action is retained.

Meter coupling prong: provided; with M2 ring inserted, this linkage is lost.

Focusing range: ∞ to 9-1/2 in. (24.1cm); 9-1/2 in. (24.1cm) to 8-13/32 in. (21.4cm) with M2 ring.

Reproduction ratios: ∞ to 1 : 2; 1 : 2 to 1 : 1 with M2 ring; optimum performance at 1 : 10.

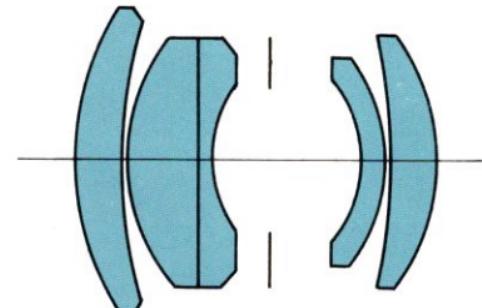
Distance scale: graduated in both feet and meters measured from the film plane.

Attachment size: 52mm screw-in. (P=0.75)

Dimensions: Lens: 65.5 x 64.6mm M2 Ring: 61.5 x 35.5mm.

Weight: Lens: 235g. M2 ring: 115g.

Focusing screen: type B especially recommended.





NIPPON KOGAKU K.K.