

Micro-Nikkor

55mm

f/3.5

Nikon INSTRUCTION MANUAL

NOMENCLATURE

Micro-Nikkor

Distance indicator

Distance scale

Calibrated in both feet and meters

Focusing ring

Easy-to-grip, crosshatched surface

Reproduction ratio scale (Lens + PK-3 ring)

Set to photograph at a predetermined reproduction ratio when using the PK-3 ring (1:2 to 1:1, engraved in orange)

Reproduction ratio scale (Lens only)

Set to photograph at a predetermined reproduction ratio (1:10 to 1:2, engraved in orange)



Auto Extension Ring PK-3

Aperture index

Aperture scale

Ranging from f/3.5 to f/32, with an intermediate click-stop at f/4

Meter coupling pin

Meter coupling prong

Camera mounting index

Meter coupling prong

Connects to the meter coupling pin

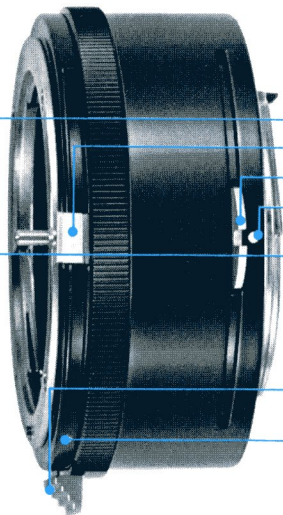
Lens spring catch release button

Press to detach ring from lens

Lens mounting index

Depth-of-field scale

Color-coded lines give depth of field at different apertures



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FOREWORD

The Micro-Nikkor 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 multi-layer coating on glass surfaces provides significant gain in image contrast, minimum flare at wide apertures, absence of ghost and assures natural color transmission. The built-in dual-helical system provides continuous focusing from infinity to a reproduction ratio of 1:2, using the Micro-Nikkor'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 PK-3 ring, supplied with the lens, extends the reproduction range to 1:1. Micro-photography is possible in conjunction with other close-up attachments.

The automatic diaphragm and meter coupling prong of the Micro-Nikkor enable full-aperture exposure measurement at all times with any Nikon F/F2 Photomic or Nikkormat-series camera for maximum image brightness and focusing ease regardless of reproduction ratio. And, as the PK-3 ring also features aperture and meter coupling, full-aperture exposure measurement remains operational with the PK-3 mounted between the lens and camera body.

MOUNTING THE LENS

Position the lens in the camera's bayonet mount, lining up the black dot on the lens with the black dot on the camera. Grasp the lens by the white metal ring and twist it counterclockwise until it clicks into place. When mounting the lens on the Nikon or Nikkormat cameras which have thru-the-lens meters, make sure that the meter coupling pin fits into the slotted coupling prong on the lens.

To remove, depress the lens release button on the camera and twist the lens clockwise.

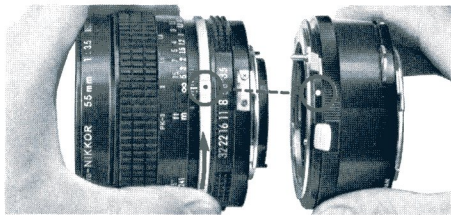


Mounting Auto Extension Ring PK-3

To mount the Micro-Nikkor on the PK-3 ring, position the lens in the ring's bayonet mount so that the lens' black aperture index dot is aligned with the ring's white lens mounting index. Then, twist the lens counterclockwise until it clicks and locks in place. Once seated, slide the ring's meter coupling pin either clockwise or counterclockwise until it locks in the lens' meter coupling prong.

To mount the Micro-Nikkor/PK-3 ring assembly onto the camera, position the ring in the camera's bayonet mount with the mounting index dots of both units aligned. Then, twist the lens/ring assembly counterclockwise until it clicks and locks into place. When mounting the lens on Nikon or Nikkormat cameras which have thru-the-lens meters, make sure that the camera's meter coupling pin fits into the slotted coupling prong on the ring. To detach, press the lens release button on the camera and twist the assembly clockwise.

To remove the lens from the PK-3 ring, press the lens release button on the ring and, keeping the button depressed, twist the lens clockwise.



FOCUSING



Thanks to its fully automatic diaphragm, the Micro-Nikkor (with or without PK-3 ring) can be focused with maximum image brightness on the screen throughout the entire focusing range. The depth of field is also minimized at maximum aperture, so that the image snaps in and out of focus rapidly and distinctly.

To focus, turn the focusing ring until the image on the focusing screen appears sharp and crisp. Thanks to the internal dual-helical system, the Micro-Nikkor focuses continuously from infinity to 9-1/2 inches (24.1 cm) at a reproduction ratio of 1:2.

The distance scale on the focusing ring is marked in both feet and meters. These figures indicate the distance from the subject to the film plane (see note on p. 11).

Recommended focusing screens

Nineteen different focusing screens are available for Nikon F and F2 cameras to suit any type of lens or picture-taking situation. Those which are recommended for use with the Micro-Nikkor 55mm f/3.5 are listed below.

Screen \ Camera	A/L	B	C	D	E	G1	G2	G3	G4	H1	H2	H3	H4	J	K/P	M	R
F	⊙	⊙			⊙		⊙				⊙			⊙	⊙		⊙
F2	⊙	⊙			⊙		⊙				⊙			⊙	⊙		⊙

⊙ = Excellent focusing

⊙ = Acceptable focusing

The split-image rangefinder, microprism or cross-hair area is dim. Focus on the surrounding matte area.

○ = Acceptable focusing

Although portions of the screen image may not be clear enough, this hardly affects picture-taking.

▨ = Exposure measurement not possible.

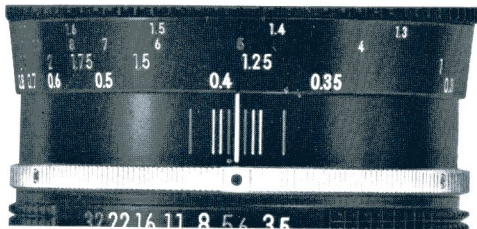
Blank means inapplicable.

Note: When using the Nikkormat camera, focus on the surrounding matte area.

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 on the focusing ring by the figure 5.

Focusing at predetermined reproduction ratio

In front of the distance scale are two reproduction ratio scales engraved in orange. The inner scale with figures from 1:10 to 1:2 represents values obtained when the lens is used alone, while the outer scale with figures from 1:2 to 1:1 represents values obtained with the PK-3 ring. Using either of these scales, you can photograph a subject at a predetermined reproduction ratio without any complex calculation. To photograph a subject at 1:5 reproduction ratio, for example, just turn the focusing ring so that the figure 5 on the reproduction ratio scale aligns with the white distance indicator line. 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.



Depth of field

The Micro-Nikkor 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 white indicator line correspond to f/numbers of the same color. At close distances so little is in focus that the depth-of-field tables on pages 20–22 are more useful.

Note: The exact position of the film plane is indicated on the top of the camera body. On the Nikon cameras, 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 (⊖).

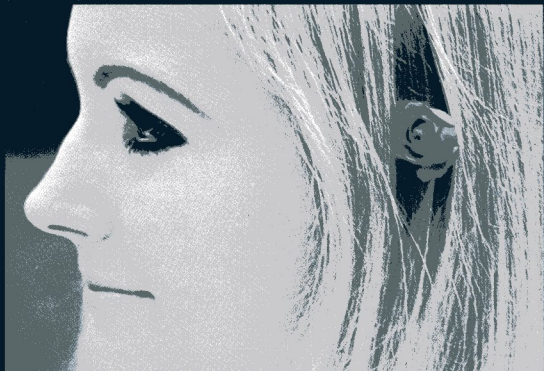
To avoid camera shake close-up photography poses several problems not encountered in general photography. One of these is sensitivity to vibration: the magnification of the image on the film makes even slight image displacement prominent and results in a blurred image. Therefore, for best results, mount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

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.

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



Taken at 1 : 1 (life-size)



Taken at reproduction ratio of 1 : 5

(Photo: T. Tateishi)



Taken at 5 feet (1.5m)



Taken at infinity

DETERMINING EXPOSURE

With built-in TTL meter

The Micro-Nikkor 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 $f/5.6$. The Micro-Nikkor (with or without PK-3 ring) couples fully to the camera's Photomic or Nikkormat TTL meter for full-aperture exposure measurement over the entire range of aperture settings. Follow the normal exposure determination procedures described in the instruction manual supplied with your camera or Photomic viewfinder for correct exposure measurement.

When non-automatic extension units, such as bellows, are used, the direct coupling of the lens diaphragm with the meter is lost, but the TTL 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 instruction manual supplied with your camera or Photomic viewfinder for details.

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

When non-TTL meter is used

At close ranges (reproduction ratios greater than 1:10), the amount of light reaching the film decreases as the lens-to-film distance increases. When non-TTL measurement is used for this range, the result is underexposed photographs unless compensation has been made for this decrease. (When the Micro-Nikkor 55mm f/3.5 lens is used with the Photomic or Nikkormat TTL meter it is not necessary to make compensations, since the meter is designed to give an accurate reading of the amount of light reaching the film.)

The table at right gives the exposure factors (compensation values) with exposure increase in f/stops for non-TTL exposure measurement at reproduction ratios greater than 1:10.

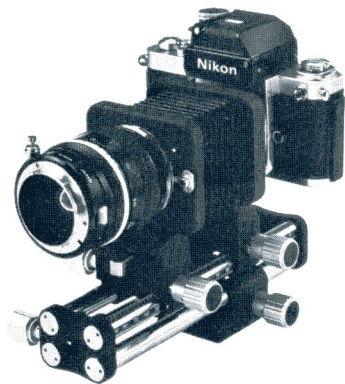
To calculate the necessary corrections in shutter speed rather than in aperture value, multiply a given exposure factor by the exposure time. For instance, if the normal exposure at a 1:1 reproduction ratio is 1/8 second, the correct shutter speed is $1/8 \times 4 = 1/2$ second.

The following formula is used to calculate the exposure factor: $\text{Exposure factor} = (1 + R)^2$

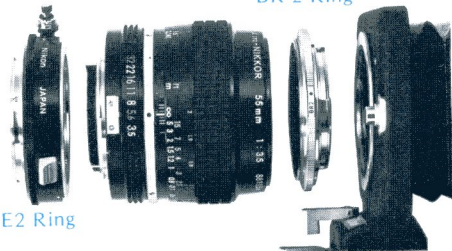
where R = Reproduction ratio

Reproduction ratio	Exposure factor	Exposure increase in f/stops
1/10	1.2	3/10
1/8	1.3	3/10
1/6	1.4	2/5
1/4	1.6	3/5
1/2	2.3	1-1/5
1/1.8	2.4	1-3/10
1/1.6	2.6	1-2/5
1/1.4	2.9	1-3/5
1/1.2	3.4	1-7/10
1/1	4.0	2

CLOSE-UP ATTACHMENTS



BR-2 Ring



E2 Ring

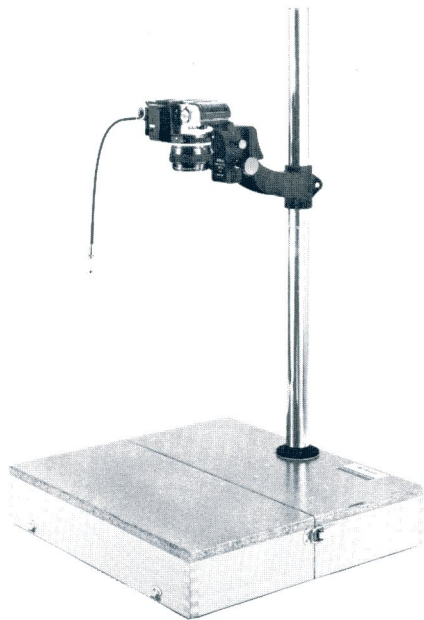
The range of reproduction ratios possible with the Micro-Nikkor can be extended by adding various close-up attachments, which are inserted between the camera and the lens. When the Bellows Focusing Attachment Model PB-4 is used, for example, the possible reproduction ratios (image size : subject size) range from 1:1.3 to 3.4:1 (3.4X). When the lens is used mounted reversely, the reproduction range is from 1:1.7 to 4.3:1 (4.3X). The table on page 19 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.

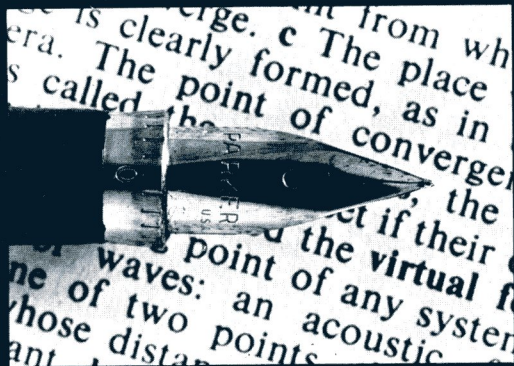
To obtain reproduction ratios above 1:1, it is desirable to mount the Micro-Nikkor reversely so that its front faces the film and its back is to the subject. Use the Macro Adapter Ring BR-2. The ring has a bayonet mount at one end that fits onto the bellows, and a 52mm screw thread mount at the other to accept the Micro-Nikkor. In this arrangement, focusing is done by extending or contracting the bellows attachment.

With the Micro-Nikkor in reverse position, the automatic diaphragm action is inoperative, and 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 manual for the Bellows Focusing Attachment Model PB-4 or 5.

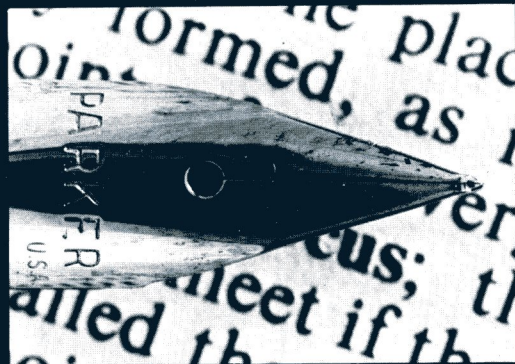
When the lens is reversed by means of the BR-2 ring, the Extension Ring E2 can be attached on the rear of the lens mount to provide semiautomatic diaphragm control for ease of focusing. See the E2 instruction manual for details.

The Micro-Nikkor is excellent in combination with the Repro-Copy Outfit Model PF-2 for precise copying of documents, books or other small objects.





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



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

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	Focused distance	Reproduction ratio	Subject field	Focused distance
Bellows PB-4, PB-5	1/1.3–3.4	1.2x1.8–0.28x0.42	8.5–12.0	1.7–4.3	0.56x0.83–0.22x0.33	9.0–13.8
Slide Copying Adapter PS-4, PS-5	1/1.3–1.8	1.2x1.8–0.52x0.79	8.5–9.2	1.7–4.3	0.56x0.83–0.22x0.33	9.0–13.8
*Repro-Copy Outfit PF-2	1/14–1.0	12.8x19.1–0.94x1.4	33.5–8.4	—	—	—

(cm)

Close-up attachments	Lens in normal position			Lens in reverse position		
	Reproduction ratio	Subject field	Focused distance	Reproduction ratio	Subject field	Focused distance
Bellows PB-4, PB-5	1/1.3–3.4	3.1x4.7–0.7x1.1	21.7–30.5	1.7–4.3	1.4x2.1–0.6x0.8	22.9–35.1
Slide Copying Adapter PS-4, PS-5	1/1.3–1.8	3.1x4.7–1.3x2.0	21.7–23.4	1.7–4.3	1.4x2.1–0.6x0.8	22.9–35.1
*Repro-Copy Outfit PF-2	1/14–1.0	32.4x48.5–2.4x3.6	85.0–21.4	—	—	—

*These reproduction ratios are obtained with the Micro-Nikkor and PK-3 ring combination with the subject placed on the baseplate of the Repro-Copy Outfit.

DEPTH-OF-FIELD TABLE

(m)

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/∞

(ft)

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	
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 $\frac{1}{2}$ " - 2'1 $\frac{1}{4}$ "	1/7.7
2'	1'11 $\frac{5}{8}$ " - 2'3 $\frac{3}{8}$ "	1'11 $\frac{1}{2}$ " - 2'1 $\frac{1}{2}$ "	1'11 $\frac{3}{8}$ " - 2'3 $\frac{3}{4}$ "	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 $\frac{1}{8}$ "	2'4 $\frac{1}{2}$ " - 2'7 $\frac{3}{4}$ "	2'4"	2'3 $\frac{1}{8}$ " - 2'9 $\frac{5}{8}$ "	2'2 $\frac{1}{8}$ " - 2'11 $\frac{1}{4}$ "	2'3 $\frac{3}{4}$ " - 3'2 $\frac{3}{8}$ "	1/12

DEPTH-OF-FIELD TABLE—continued

(ft)

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	
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'	4'3 $\frac{3}{8}$ " - 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/∞

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 PK-3 ring in place, the automatic coupling action is retained.

Meter coupling prong: Provided on both lens and PK-3 ring for full-aperture exposure measurement.

Focusing range: ∞ to 9-1/2 in. (24.1 cm)

Reproduction ratios: ∞ to 1:2; 1:2 to 1:1 with PK-3 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: 66 x 64.5mm;

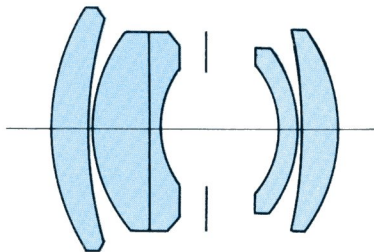
PK-3 ring: 64.5 x 41.5mm

Weight: Lens: 245g; PK-3 ring: 115g

Focusing screen: Type B especially recommended.

Accessories:

Standard	Optional
52mm screw-in front lens cap	52mm screw-in lens hood HN-3
Rear lens cap	52mm screw-in filters
	Flexible lens pouch No.55
	Leather lens case CL-33A
	Plastic case CP-2





NIPPON KOGAKU K.K.