

Medical-Nikkor

120mm

f/4 IF

Nikon INSTRUCTION MANUAL

NOMENCLATURE

DATA button

Power socket

Power cord connection mark

Focusing lamp

2X close-up attachment lens

Ringlight flash

Sync cord connection mark

Sync socket

LAMP button

Reproduction ratio/distance index

LED ready-light

Reproduction ratio scale (with prime lens)

Reproduction ratio scale
(with 2X close-up attachment lens)

ASA/ISO ring locking screw

ASA/ISO film speed scale

ASA/ISO ring

Film speed/aperture index

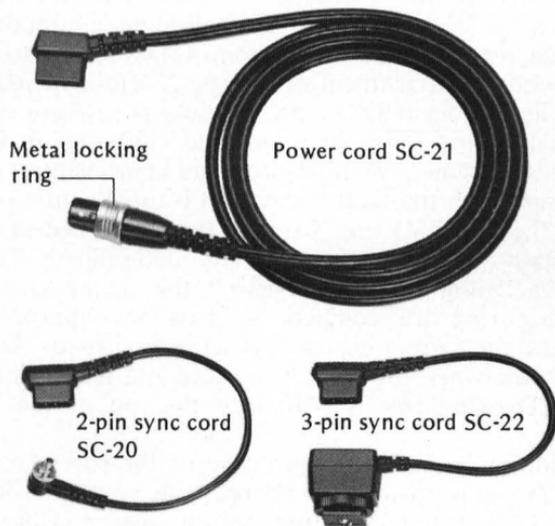
Aperture scale

Focusing ring

Distance scale
(with 2X close-up attachment lens)

Distance scale (with prime lens)

Cords

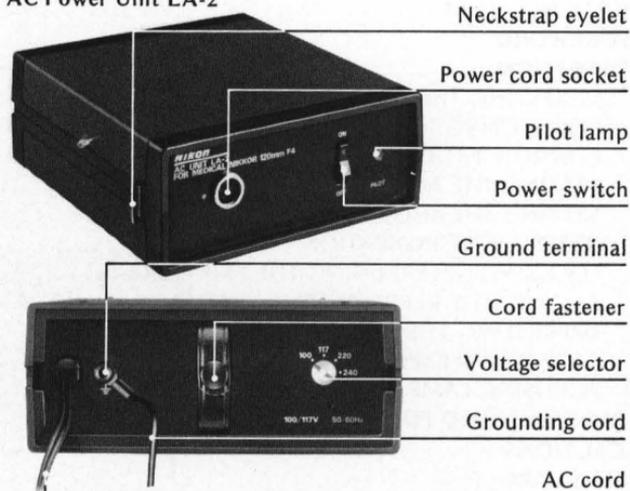


ft	X	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	1
	X	0.25	0.39	0.62	0.72	0.95	1	1.1	1.2	1.3	1.5	1.8	2
ft	X	0.8	0.85	0.9	0.95	1	1.1	1.2	1.3	1.5	1.8	2	0.85

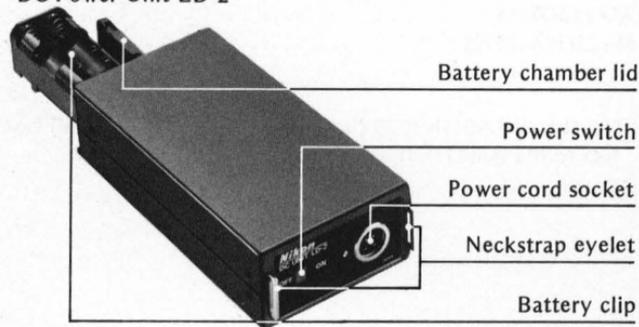
Distance scale conversion sticker (in feet)

Power Supply (Optional)

AC Power Unit LA-2



DC Power Unit LD-2



CONTENTS

NOMENCLATURE	2—3
FOREWORD	4
OPERATION	5—18
MOUNTING THE LENS	5
CONNECTING THE POWER SUPPLY	6—7
CONNECTING THE SYNC CORD	8—9
SETTING THE ASA/ISO FILM SPEED	10
SETTING THE SHUTTER SPEED DIAL	11
READY-LIGHT INDICATION	12
FOCUSING/DETERMINING THE EXPOSURE	13
SETTING THE REPRODUCTION RATIO	14—15
IMPRINTING THE REPRODUCTION RATIO	16
STOP-DOWN EXPOSURE MEASUREMENT	17
FOCUSING LAMP	18
RECOMMENDED FOCUSING SCREENS	19
CAUTIONS	20
LENS CARE	20
ABOUT GROUNDING	21
ACCESSORIES	21
SPECIFICATIONS	22—23

*The Nikon F-501/N2020 (not mentioned in this manual) is subject to the same treatment as the Nikon F-301/N2000.

FOREWORD

Featuring internal focusing (IF), the Medical-Nikkor 120mm f/4 IF is a close-up lens providing continuously variable reproduction ratios from 1/11X down to 1X and, with the attachment of a single 2X close-up attachment lens, from 0.8X to 2X. Because focusing is done internally, there is no extension in the lens barrel, making the lens extremely well-balanced and convenient to use. Exposure with the built-in ringlight is totally automatic. Once the ASA/ISO ring is set for the film speed in use, the flash output is automatically determined. Then, using a "guide number system," the diaphragm and focusing ring are coupled, so that the appropriate aperture for correct exposure is set as you focus. To let you know when the flash is recycled and ready to fire, an LED ready-light is built into the top of the lens barrel.

In addition, automatic imprinting of the reproduction ratio in use is possible via an ingenious system. Using a green LED and a miniature optical system inside the lens barrel, the ratio is projected *through the lens* and appears in the camera's viewfinder at the lower right-hand corner of the frame. Then, at the instant of exposure, the ratio is imprinted on the film.

Finally, this lens offers a choice of AC or DC power units for use indoors or out.

Although this complete close-up system is called a "Medical-Nikkor" lens, it has many other applications, including dental, scientific, industrial, and nature photography.

OPERATION

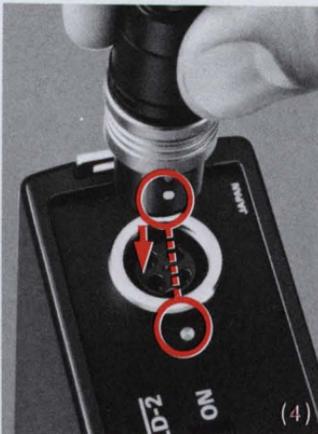
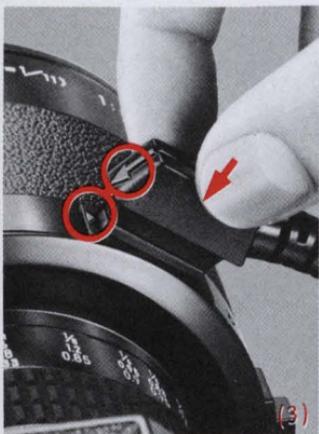
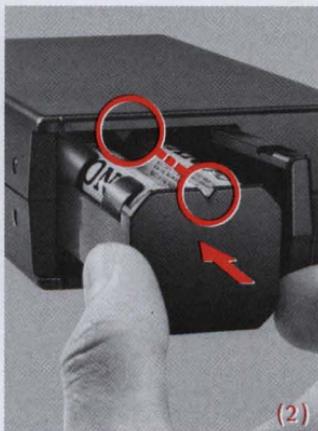
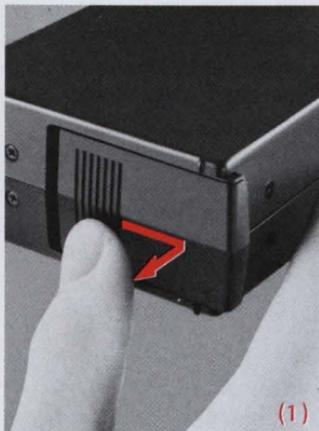


MOUNTING THE LENS

Position the lens in the camera's bayonet mount, lining up the black dot on the lens with the lens mounting index on the camera. Grasp the lens barrel and twist it counterclockwise until the lens clicks into place. To remove, depress the lens release button on the camera and twist the lens clockwise.

Note: To mount the 2X close-up attachment lens, refer to page 14.





CONNECTING THE POWER SUPPLY

The Medical-Nikkor 120mm f/4 accepts either AC or DC power units, allowing the lens to be used indoors or out.

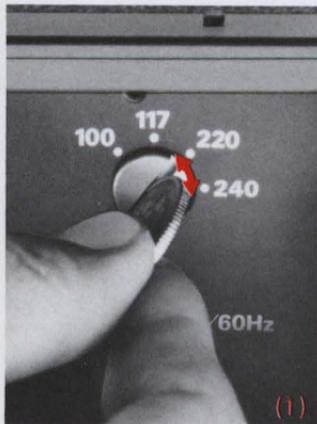
● DC Power Unit LD-2

This battery unit holds eight 1.5V AA-type penlight batteries. To install the batteries, first slide the battery chamber lid in the direction of the arrow, and open the lid (1). Remove the battery clip. Load the batteries making sure that the positive and negative (+ and -) poles are aligned correctly as shown inside the battery clip. Put the battery clip back into the chamber, making sure that the contacts go in first (2). Then, slide the lid back into place. When replacing batteries, replace all eight at once.

To connect the battery unit to the lens, plug one end of the power cord SC-21 (supplied with the lens) into the power socket on the lens barrel by aligning the arrow on the plug with the ▼ mark next to the socket (3). Then, align the white dot on the other end of the plug with the metallic dot near the edge of the LD-2's power socket, and push the plug into the socket until it clicks into place (4).

To remove the plug from the DC unit, grasp the plug by its metal locking ring and pull it out.

Caution: Before connecting the power cord SC-21 to or disconnecting it from the LD-2, make sure that the power switch is off. Otherwise, the ringlight might be damaged.



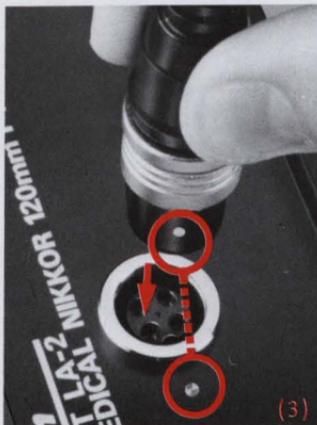
• AC Power Unit LA-2

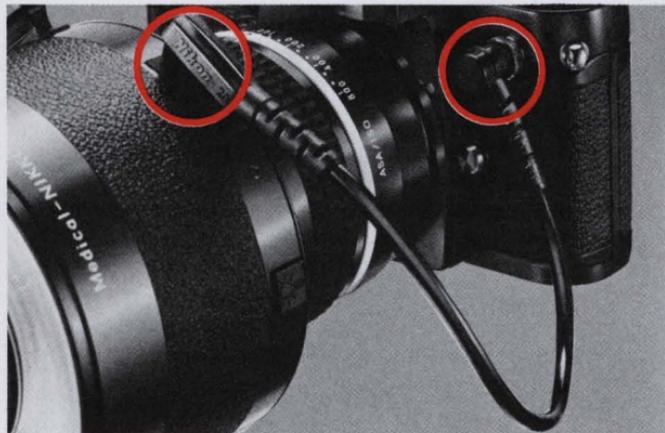
Before using the AC unit, make sure the voltage selector is set for the proper voltage. The unit has separate settings for 220 and 240 volts. Insert a small coin in the slot and turn the screw so the slot points to the proper setting (220 or 240). The 100 and 117 volt settings shown in the photo (1) cannot be used. To use the 100 or 117 volt settings, take the unit to your nearest Nikon service centre for adjustment.

To connect the AC unit, plug one end of the power cord SC-21 into the power socket on the lens barrel by aligning the arrow on the plug with the ▼ mark next to the socket (2). Next, align the white dot on the other end of the plug with the metallic dot near the edge of the LA-2's power socket, and push the plug into the socket until it clicks into place (3). Finally, plug the AC cord into a wall outlet. When the AC unit is switched on, the pilot lamp on top of the unit lights up immediately. To remove the power cord's plug from the AC unit, grasp the plug by its metal locking ring and pull it out.

Caution 1: The grounding cord (supplied with the LA-2) should be plugged into the ground terminal at the back of the AC power unit to ground the system whenever possible. (See page 21 for details).

Caution 2: Before connecting the power cord SC-21 to or disconnecting it from the LA-2, make sure that the power switch is off. Otherwise, the ringlight might be damaged.





CONNECTING THE SYNC CORD

Two separate sync cords are supplied with the lens. Select the cord best suited to your type of camera.

● 2-Pin Sync Cord SC-20

The 2-pin sync cord is for use with all Nikon and Nikkormat cameras, except the Nikon F-301/N2000*; FG, FG-20 and EM. Connect one end of the 2-pin cord to the sync socket on the lens barrel by aligning the arrow on the plug with the ▼ mark next to the socket. Then, plug the other end into the sync terminal on the camera. This end of the sync cord is threaded for positive connection to the camera's sync terminal. If you are using a Nikkormat FTN which has two sync terminals on the side of the body, connect the sync cord to the X terminal.

* In the U.S.A. and Canada, the Nikon F-301 camera is sold as the Nikon N2000.



EM



FE



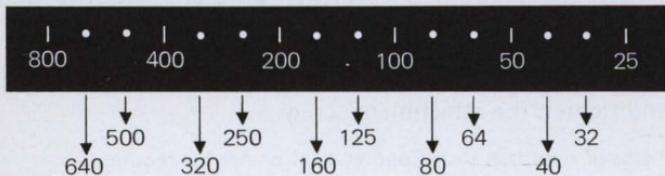
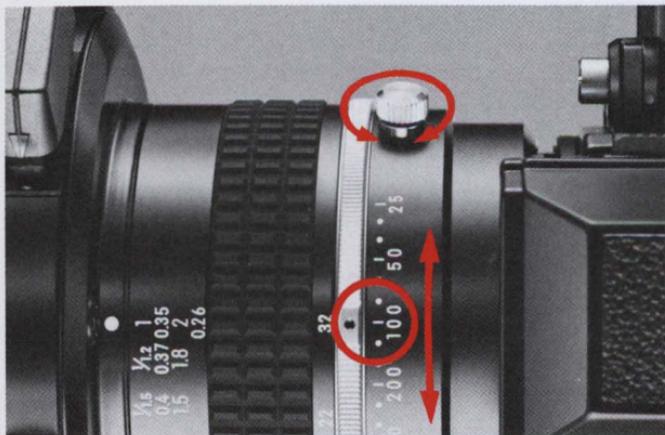
F3

● 3-Pin Sync Cord SC-22

The 3-pin sync cord can be used with all Nikon and Nikkormat cameras having standard ISO-type hot shoe. When the SC-22 is used with the Nikon F3-series*, FA, FE2, FE, FM2, F-301/N2000, FG, FG-20, or EM, the camera's ready-light in the viewfinder operates, so you can take pictures without removing your eye from the viewfinder. In addition, with the Nikon F3-series, FA, FE2, FE, F-301/N2000, FG, FG-20, or EM camera set for automatic operation or at certain manual shutter speeds, the proper sync speed is automatically set by turning on the power supply for the Medical-Nikkor 120mm f/4 IF lens. (For details about automatic switchover to flash sync speed, refer to your camera's instruction manual.)

To use the 3-pin sync cord, first plug one end into the sync socket on the lens barrel by aligning the arrow on the plug with the ▼ mark next to the socket. Then, slip the other end into the camera's hot shoe until it stops, and tighten the attachment screw.

* Use of the Flash Unit Coupler AS-4 or AS-7 is required.



SETTING THE ASA/ISO FILM SPEED

The flash output of the ringlight varies according to the setting of the ASA/ISO ring. To get correct exposure with the ringlight flash, you must first adjust the ASA/ISO ring for the film in use. To do this, loosen the locking screw on the ASA/ISO ring and turn the ring until the number corresponding to the ASA/ISO of your film is opposite the index mark. It is possible to set any film speed from ASA/ISO 25 to 800. Dots between the numbers on the film-speed scale represent intermediate settings such as 32, 40, etc. (see illustration). Once you have lined up the ASA/ISO number, retighten the locking screw to hold the ring in place.

Note: When shooting predominantly light or dark-toned subjects, it may be necessary to make exposure compensation by resetting the ASA/ISO ring to a higher or lower setting.

SETTING THE SHUTTER SPEED DIAL

The shutter speed setting necessary for proper flash synchronization depends on the type of sync cord used, the film speed set on the lens ASA/ISO ring and the

Nikon or Nikkormat camera you are using. Please refer to the table below for the appropriate shutter speed setting.

● With 2-pin Sync Cord SC-20

Camera ASA/ISO film speed	F3-Series (via AS-4 or AS-7)	FA, FE2, FM2 (with 1/250 sec. sync speed)	FE	FM2 (with 1/200 sec. sync speed)
800~100	1/80 sec. (X) or slower	1/250 sec. or slower	1/125 sec. or slower	1/200 sec. (X200) or slower
80~25	1/60 sec. or slower	1/125 sec. or slower	1/60 sec. or slower	1/125 sec. or slower

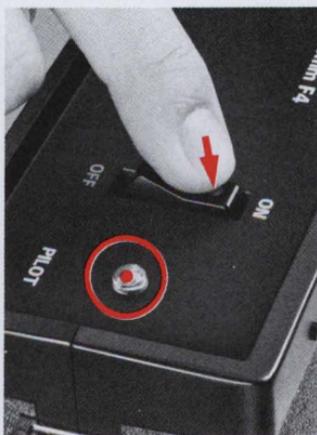
● With 3-pin Sync Cord SC-22

Camera ASA/ISO film speed	F3-series (via AS-4 or AS-7)	FA, FE2	FE	FM2 (with 1/250 sec. sync speed)	FM2 (with 1/200 sec. sync speed)	F-301/N2000, FG	EM
800~100	All settings*	All settings*	AUTO, 1/125 sec. or slower*	1/250 sec. or slower	1/200 sec. (X200) or slower	All settings*	All settings*
80~25	1/60 sec. or slower	1/125 sec. or slower	1/60 sec. or slower	1/125 sec. or slower	1/125 sec. or slower	1/60 sec. or slower	B

* With the camera set for automatic operation or at certain manual shutter speeds, the proper sync speed is automatically set when the power supply for the Medical-Nikkor 120mm f/4 IF lens is turned on.



LD-2



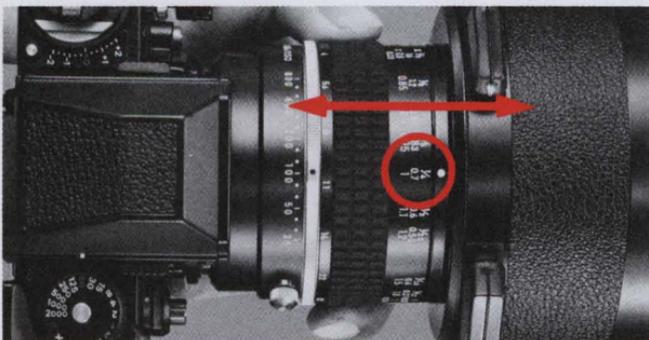
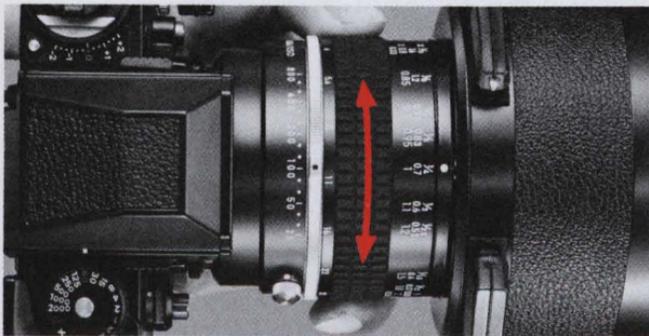
LA-2



READY-LIGHT INDICATION

After the power supply is switched on, a red LED ready-light, built into the top of the lens barrel, lights up as soon as the ringlight is ready to fire. When the shot is taken, the ready-light goes out, but then comes back on as soon as the ringlight is recycled and ready to fire again. In addition, with the DATA button on, the reproduction ratio visible inside the viewfinder serves as a ready-light. Thus, you can take pictures with any Nikon or Nikkormat camera without removing your eye from the viewfinder.

If the Medical-Nikkor is used in conjunction with the SC-22 sync cord and the Nikon F3-series (via AS-4 or AS-7), FA, FE2, FE, FM2, F-301/N2000, FG, FG-20, or EM (see the previous section, "Connecting the Sync Cord"), the ready-light inside the camera's viewfinder operates, too.



FOCUSING/DETERMINING THE EXPOSURE

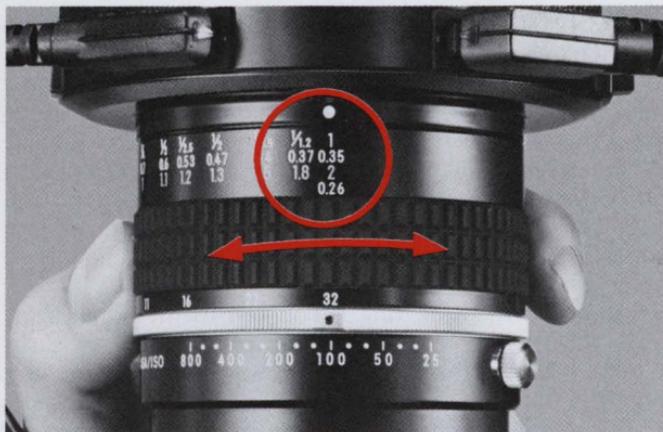
This lens focuses in the same way as other Nikon/Nikkor lenses do. Therefore, if the reproduction ratio is less important to you, simply turn the focusing ring until the subject appears sharp in the viewfinder. However, if you wish to take pictures at a certain reproduction ratio, first set the focusing ring to the desired setting (e.g. 1/4X) and then move in and out until the subject appears sharp. This will produce photographs at a predetermined reproduction ratio.

Because the focusing ring is coupled to the diaphragm, once the lens is focused, the aperture is simultaneously set to provide the correct exposure when using the ringlight.

If the ambient light is dim, use the focusing lamp to illuminate the subject. (For details, see page 18.)

Note 1: If you are using a camera with a split-image rangefinder and/or microprism focusing aid, they may become dark and cannot be used. In this case, focus on the surrounding matte field instead.

Note 2: If you want to convert the distance scale to feet, use the distance scale conversion sticker provided. First peel off the sticker's backing; then attach the sticker to the focusing ring on top of the meter scale.



SETTING THE REPRODUCTION RATIO

To set the reproduction ratio between 1/11X and 1X, simply turn the focusing ring until the desired reproduction ratio on the white scale clicks into place. If you want to shoot at magnifications between 0.8X and 2X, attach the 2X close-up attachment lens (as described below), and set the focusing ring to the appropriate reproduction ratio on the orange scale.

Once the reproduction ratio is set, both the focused distance and aperture are automatically set.

Use the table on the next page to determine the reproduction ratio according to the focused distance and the desired subject area.

● Mounting the 2X Close-Up Attachment Lens

Before mounting the 2X close-up attachment lens, make sure the aperture of the prime lens is set to f/32. Then, grasp the attachment lens by its knurled ring, insert the threaded portion into the hole in the center of the ringlight, and while applying slight pressure, screw the lens clockwise until it stops. Proper exposure value is then obtained according to the continuously variable reproduction ratio between 0.8X and 2X.

The attachment lens can be removed with the aperture set to any value.

Note: With the attachment lens attached, the operative aperture is fixed at f/32 regardless of the aperture set on the scale.



● Prime Lens Only

Reproduction ratio	Focused distance m (ft)	Depth of field mm (in.)	Subject field mm (in.)
1/11X	1.6 (5.25)	+25.4 (+1.000) -24.4 (-0.961)	264 x 396 (10.40 x 15.59)
1/8X	1.2 (3.94)	+17.9 (+0.705) -17.3 (-0.681)	192 x 288 (7.56 x 11.34)
1/6X	0.95 (3.12)	+13.2 (+0.520) -12.7 (-0.500)	144 x 216 (5.67 x 8.50)
1/5X	0.83 (2.72)	+10.8 (+0.425) -10.5 (-0.413)	120 x 180 (4.72 x 7.09)
1/4X	0.7 (2.3)	+8.45 (+0.333) -8.15 (-0.321)	96 x 144 (3.78 x 5.67)
1/3X	0.6 (1.97)	+6.18 (+0.243) -5.97 (-0.235)	72 x 108 (2.83 x 4.25)
1/2.5X	0.53 (1.74)	+4.99 (+0.196) -4.81 (-0.189)	60 x 90 (2.36 x 3.54)
1/2X	0.47 (1.54)	+3.85 (+0.152) -3.71 (-0.146)	48 x 72 (1.89 x 2.83)
1/1.5X	0.4 (1.31)	+2.74 (+0.108) -2.64 (-0.104)	36 x 54 (1.42 x 2.13)
1/1.2X	0.37 (1.21)	+2.07 (+0.081) -1.99 (-0.078)	28.8 x 43.2 (1.13 x 1.70)
1X	0.35 (1.15)	+1.63 (+0.064) -1.56 (-0.061)	24 x 36 (0.94 x 1.42)

● With 2X Close-Up Attachment Lens

Reproduction ratio	Focused distance m (ft.)	Depth of field mm (in.)	Subject field mm (in.)
0.8X	0.33 (1.08)	+2.47 (+0.097) -2.35 (-0.093)	30 x 45 (1.18 x 1.77)
0.85X	0.325 (1.07)	+2.21 (+0.087) -2.11 (-0.083)	28.2 x 42.4 (1.11 x 1.67)
0.9X	0.32 (1.05)	+1.95 (+0.077) -1.88 (-0.074)	26.7 x 40 (1.05 x 1.57)
0.95X	0.315 (1.03)	+1.78 (+0.070) -1.71 (-0.067)	25.3 x 37.9 (1.00 x 1.49)
1X	0.31 (1.02)	+1.55 (+0.061) -1.50 (-0.059)	24 x 36 (0.94 x 1.42)
1.1X	0.30 (0.98)	+1.28 (+0.050) -1.23 (-0.048)	21.8 x 32.7 (0.86 x 1.29)
1.2X	0.29 (0.95)	+1.10 (+0.043) -1.06 (-0.042)	20 x 30 (0.79 x 1.18)
1.3X	0.285 (0.94)	+0.90 (+0.035) -0.86 (-0.034)	18.5 x 27.7 (0.73 x 1.09)
1.5X	0.275 (0.90)	+0.67 (+0.026) -0.65 (-0.026)	16 x 24 (0.63 x 0.94)
1.8X	0.27 (0.89)	+0.52 (+0.020) -0.50 (-0.020)	13.3 x 20 (0.52 x 0.79)
2X	0.26 (0.85)	+0.41 (+0.016) -0.40 (-0.016)	12 x 18 (0.47 x 0.71)

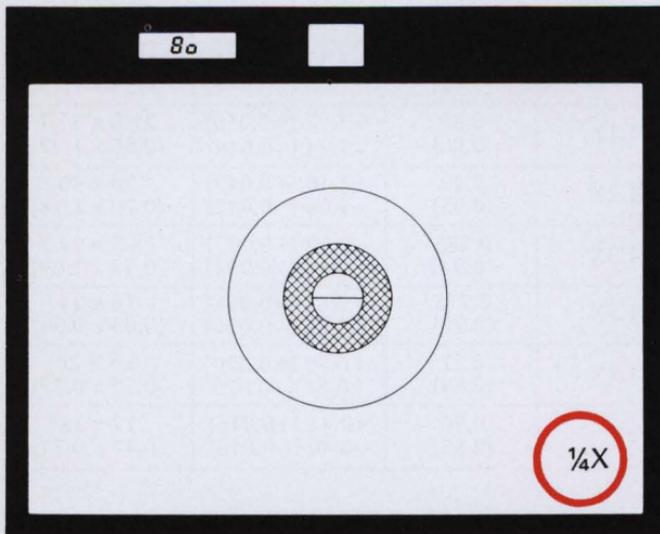
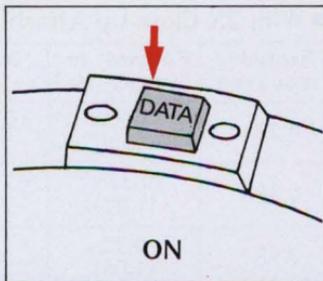
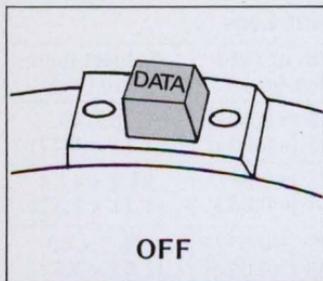
Note:

+ indicates rear (farther) depth.

- indicates front (nearer) depth.

Focused distance means distance between subject and film surface.

Circle of confusion for the Medical-Nikkor 120mm f/4 IF is 1/20mm.



IMPRINTING THE REPRODUCTION RATIO

The DATA button on the side of the lens barrel determines whether or not data will be displayed in the viewfinder and imprinted on the film.

When the DATA button is pushed once, it remains in the down or ON position. In this case, the reproduction ratio set on the lens appears in green at the lower right-hand corner of the viewfinder image as soon as the ringlight flash is ready to fire. Because the data glows when the flash is recycled, you can use it as a ready-light.

Then, at the instant of exposure, the data is imprinted at the same place on the film frame. With the 2X close-up attachment lens in place, the reproduction ratio between 0.8X and 2X will be displayed and imprinted in green.

Press the DATA button a second time, and it returns to the up or OFF position. With the button in this position, data is not visible inside the viewfinder nor will it be imprinted on the film.

If you shoot with the focusing ring set between click-stops, the reproduction ratio will not be shown correctly inside the finder. In this case, make sure the DATA button is in the OFF position, so that the incorrect data will not be imprinted on the film.

Note: When using color film, the imprinted data may be difficult or impossible to read if the background in the lower right-hand corner of the frame is green; with black-and-white film, it may not show up if the background is light in tone.

STOP-DOWN EXPOSURE MEASUREMENT

Although the lens has a built-in ringlight for shooting, you can take pictures without it. In this case, use the stop-down method for exposure measurement. When focused or set to a particular reproduction ratio, the Medical-Nikkor is also automatically set to a particular aperture, which can be read off the focusing ring. Then, to get the correct exposure, you must depress the camera's depth-of-field preview button to stop the lens down to the taking aperture prior to using the camera on Automatic or before adjusting the shutter speed manually. (For details about stop-down exposure measurement, refer to your camera's instruction manual.)

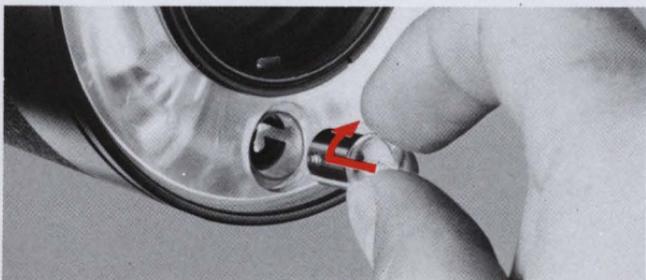
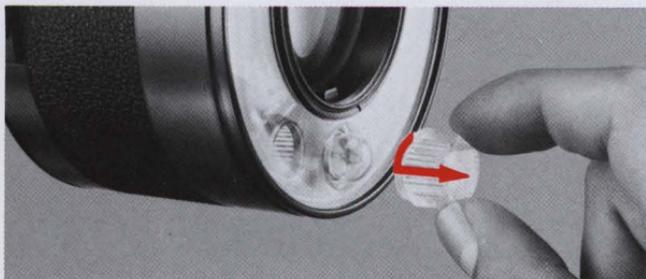
Note: If the automatically or manually selected shutter speed is below approx. 1/125 sec., the use of a tripod to support the camera/lens assembly is recommended. Otherwise, the photograph will come out blurred because of camera shake.



FOCUSING LAMP

If the ambient light is dim, push the LAMP button to illuminate the subject for focusing. After removing your finger from the button, the lamp stays on for 16 seconds, then turns off automatically to conserve power. If necessary, you can press the button once again. After taking a picture using the ringlight, the focusing lamp immediately goes out. To turn the focusing lamp off before the 16-sec. automatic timing period is up, simply switch off the power supply.

If the focusing lamp fails to light up after the LAMP button is pushed, it needs replacement. First, remove the power cord from the lens; then remove the lamp cover by unscrewing it counterclockwise. Then, while applying pressure, turn the old bulb counterclockwise and replace it with a new one. Align the protrusions at the base of the new bulb with the notched portion of the lamp housing and, while applying pressure, turn the bulb clockwise until it is fully seated into position. Finally, replace the lamp cover. For your convenience, a spare bulb is provided with the lens.



RECOMMENDED FOCUSING SCREENS

Various interchangeable focusing screens are available for F3- and F2-series cameras to suit any type of lens or picture-taking situation. Those which are recommended for use with your lens are listed below. For screens used with Nikon cameras other than F3- and F2-series cameras

(e.g., Nikon FA, FE2, FM2 and FE), refer to the column for F3-series cameras. For the K2, B2 and E2 focusing screens, refer to the columns on the K, B and E screens, respectively. For details, also refer to the specific focusing screen's instruction sheet.

Screen \ Camera	K	E	B	A/L	C	D	G1	G2	G3	G4	H1	H2	H3	H4	J	P	M	R	T	U
F3	⊙	⊙	⊙	⊙	○	○			○			⊙	○		⊙	⊙		⊙	⊙	⊙
F2	⊙	⊙	⊙	⊙	○	○			○			⊙	○		⊙	⊙		⊙		

⊙ = Excellent focusing

○ = Acceptable focusing

Slight vignetting or moire phenomenon affects the screen image.

But the image on film shows no trace of this.

Blank means not usable.

CAUTIONS

1. Due to the electrical characteristics of the Medical-Nikkor's ringlight flash and focusing lamp, this lens should not be used in an explosive environment (i.e., an oxygen-enriched atmosphere) or in close proximity to highly combustible materials (i.e., high-pressure gas bottles).
2. To eliminate any possibility of electric shock, the following precautions should be observed when using the Medical-Nikkor lens with the AC or DC power unit.
 - Do not attempt to repair the AC or DC power units yourself. Tampering with their internal circuits with the cover removed can result in a dangerous electric shock. Leave repairs to an authorized Nikon dealer or send the unit directly to the manufacturer.
 - Be sure to turn the power switch to the "OFF" position before opening the battery compartment to replace the batteries in the DC power unit. Touching the terminals with the switch in the "ON" position can cause an electric shock.

LENS CARE

- Although you should always keep the lens surfaces clean, rough cleaning must be avoided. Wipe with a soft, clean cotton cloth moistened with alcohol to remove grease or fingerprints from the lens surfaces.

If you use ether in cleaning the lens, a smudge sometimes appears on the surface of a multi-coated lens. If this happens, wipe it again with a cotton cloth moistened with alcohol.
- Keep the lens cap in place whenever the lens is not in use.
- Attach both the front and rear caps when the lens is stored separately.

ABOUT GROUNDING

- Before connecting or disconnecting the ground cord, make sure the LA-2's AC plug is not connected to a wall outlet.
- With an outlet having a ground terminal, connect the ground cord securely to the ground terminal.
- To connect the ground cord to a metallic water tap (a plastic tap cannot be used), securely wind the cord around the tap.
- Never connect the ground cord to a gas pipe.

ACCESSORIES

Compartment Case for Medical-Nikkor 120mm f/4 IF

This optional black leatherette compartment case easily accommodates a Medical-Nikkor 120mm f/4 IF lens mounted on a camera body (motor-drive equipped or not), a 2X close-up attachment lens, an AC or DC power unit, the necessary cords and other small accessories. You can use either the hand strap or the shoulder strap provided to carry the complete set around.



3m Power Cord

Enables the Medical-Nikkor 120mm f/4 IF lens to be used up to three meters off the power supply.

SPECIFICATIONS

Focal length	120mm (at 1/11X)
Maximum aperture	f/4
Lens construction	Prime lens: 9 elements in 6 groups; 2X attachment lens: 2 elements in 1 group
Picture angle	20°30'
Distance scale	Graduated in meters from 1.6m to 0.35m for 1/11X to 1X (white numerals) and 0.33m to 0.26m for 0.8X to 2X (orange numerals) when using 2X close-up attachment lens; sticker-type conversion scale for feet also provided
Aperture scale	f/4—f/32
Diaphragm	Fully automatic; guide number system automatically sets appropriate aperture as subject distance is set on focusing ring
Reproduction ratio	Continuously variable from 1/11X to 1X (prime lens only) and 0.8X to 2X (with 2X close-up attachment lens)
Data imprinting	Reproduction ratios (1/11X—2X) can be recorded in lower right-hand corner of the film; non-data shooting also possible by leaving DATA button in OFF position
Flash illumination	Via built-in Xenon ringlight flashtube; output approx. 60W/sec.; flash output via silicon-

controlled rectifier and series circuitry determined by ASA/ISO ring setting; flash duration approx. 1/500 sec. at ASA/ISO 25 Provided; red LED on top of lens barrel; reproduction ratio seen in the viewfinder also serves as ready-light

Ready-light Provided; 12V lamp at front of lens glows for 16 sec. after finger is taken off LAMP button; automatically stops glowing when ringlight fires or power source is turned off

Focusing lamp 49mm (P=0.75mm)

Attachment size 49mm, 2X close-up attachment lens provided

Attachment lens Nikon bayonet mount

Mount AC Power Unit LA-2 and DC Power Unit LD-2 (both are provided with a neckstrap)

AC Power Unit LA-2

Film speed	Recycling times	Number of flashes
ASA/ISO 25	Approx. 6 sec.	Unlimited
ASA/ISO 100	Approx. 4 sec.	

DC Power Unit LD-2 (with 8 AA-type batteries)

Film speed	Recycling times		Number of flashes	
	Manganese batteries	Alkaline-manganese batteries	Manganese batteries	Alkaline-manganese batteries
ASA/ISO 25	Approx. 12 sec.	Approx. 9 sec.	Approx. 50	Approx. 90
ASA/ISO 100	Approx. 5 sec.	Approx. 4 sec.	Approx. 250	Approx. 450

Dimensions 98mm ϕ x 150mm long (overall);
142mm extension from flange

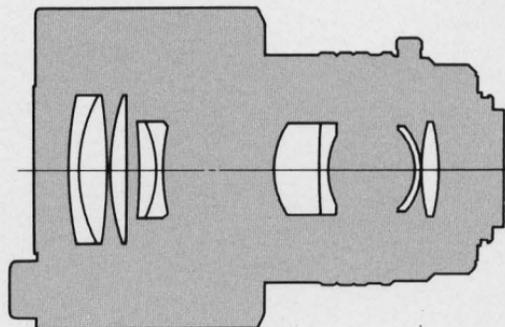
Weight Approx. 890g (prime lens only)

Accessories provided:

- Front lens cap
- Rear lens cap LF-1
- 12V lamp
- 4-pin power cord SC-21
- 2-pin sync cord SC-20
- 3-pin sync cord SC-22
- Distance scale conversion sticker

Optional accessories:

- AC Power Unit LA-2
- DC Power Unit LD-2
- Leatherette Compartment Case
- 3m Power Cord



Specifications and designs are subject to change without notice.



No reproduction in any form of this booklet,
in whole or in part (except for brief quotation in
critical articles or reviews), may be made without
written authorization from Nippon Kogaku K.K.

NIPPON KOGAKU K.K.

Fuji Bldg., 2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo 100, Japan
Phone: 81-3-214-5311 **Telex:** J22601 (NIKON) **Fax:** 81-3-201-5856

Printed in Japan 8&056-e06