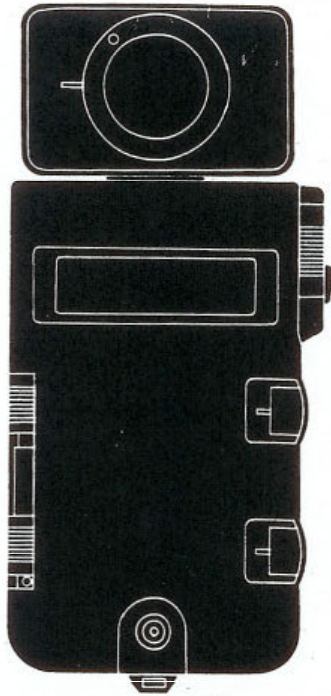


# MINOLTA FLASH METER III



## OWNER'S MANUAL



### CARE AND STORAGE

37

- Do not touch receptor, diffuser, and lens surfaces; keep them clean by using a soft brush from time to time. If they become soiled, remove loose matter with a blower brush, then wipe gently with a soft clean cloth, with or without first breathing on the surface to be cleaned.
- Do not subject your Flash Meter III to vibration or shocks.
- The unit should never be placed or left in the glove compartment or other places in motor vehicles or elsewhere in which it may be subject to temperatures higher than 55°C (131°F). Further, do not store it in humid places, near corrosive chemicals, temperature lower than -22°C (+7.6°F).
- Keep the power switch in its "OFF" position when the meter is not in use. If it is not to be used for two weeks or more be sure to remove the batteries.
- When the Flash Meter III is to be stored for a long time, it should ideally be placed in its original package and sealed in an air-tight container with an appropriate quantity of a dehumidifying agent such as silica gel.

Minolta Camera Co., Ltd., 30, 2-Chome, Azuchi-Machi, Higashi-Ku, Osaka 541, Japan  
Minolta Corporation, 101 Williams Drive, Ramsey, New Jersey 07446, U.S.A.  
Minolta Canada Inc., 1344 Fewster Drive, Mississauga, Ontario L4W 1A4, Canada  
Minolta Camera Handelsgesellschaft m.b.H., Kurt-Fischer-Strasse 50, D-2070 Ahrensburg, West Germany  
Minolta France S.A., 357 bis, rue d'Estienne d'Orves 92700 Colombes, France  
Minolta Vertriebsgesellschaft m.b.H., Seidengasse 19, A-1072 Wien, Austria  
Minolta Nederland B.V., Groen van Prinsterelaan 114 Amstelveen, Nederland  
Minolta (Schweiz) GmbH., Riedhof V, Riedstrasse 6, 8953 Dietikon-Zurich, Switzerland  
Minolta Hong Kong Limited, 49 Chatham Road, Kowloon, Hong Kong  
Minolta Singapore (Pte) Ltd., Chin Swee Tower, 52-E, Chin Swee Road, Singapore 3

Your Minolta Flash Meter III is a remarkably versatile multi-function exposure meter that can make precise incident-or reflected-light readings of electronic or bulb flash or continuous illumination, or combinations of them. Simply pushing a button registers the applicable f-number or exposure index number directly on a large liquid crystal digital display to within 1/10-stop accuracy without calculations or conversions of any kind. Strobe readings can even be taken cordlessly. A wide selection of measuring times (corresponding to shutter speeds) makes fill-in flash easy. It's unique exposure-index display mode simplifies determination of lighting ratios, flash guide numbers and measuring the illuminance value of continuous light. This extra-light-weight, advanced-feature unit incorporates a specially designed microcomputer which is able to store measurements for cumulative exposure with any number of successive flashes. A full range of accessories further increases the Flash Meter III's versatility in specialized uses.

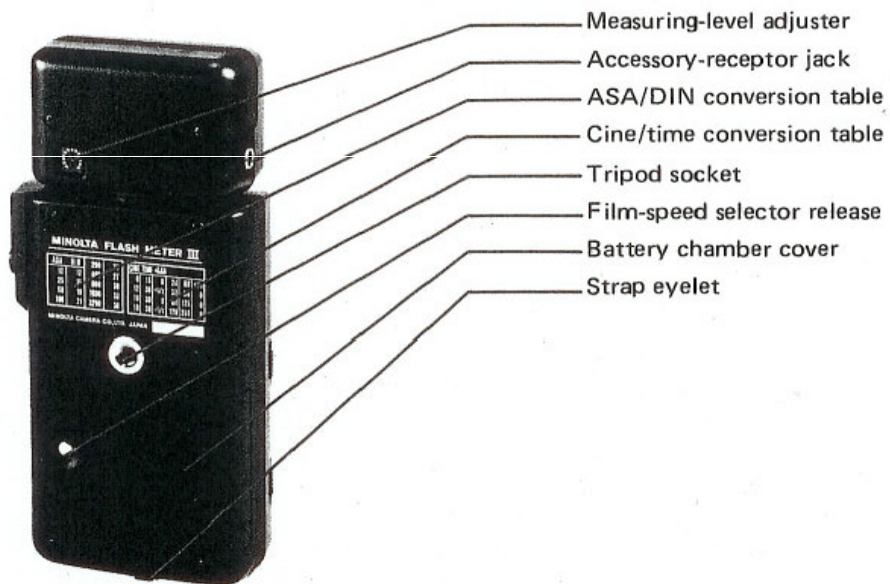
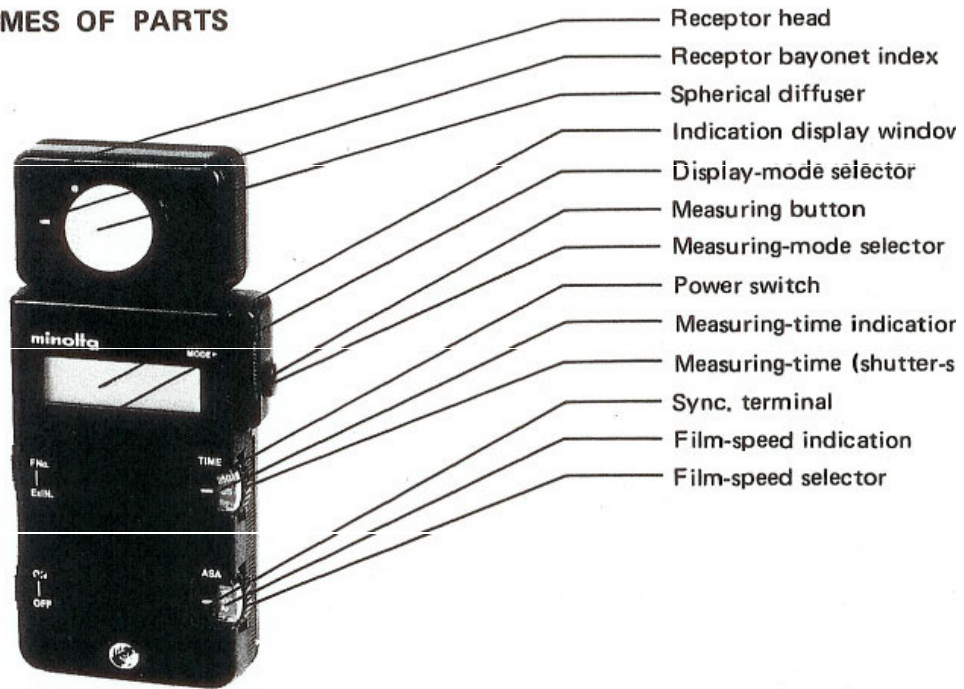
Before using this meter for the first time, please read this manual carefully while installing batteries and handling and acquainting yourself with the parts and features of your Minolta Flash Meter III. In this way, you can make excellent exposures and begin to realize its potential right for the start.

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## NAMES OF PARTS

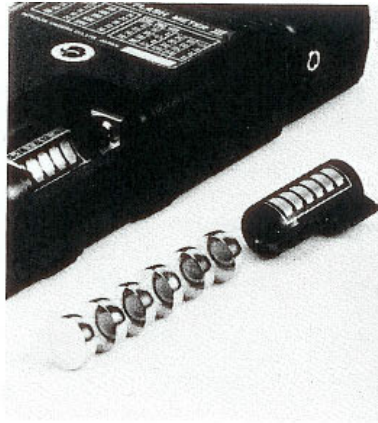




## 4 PREPARATION AND BASICS

### Installing batteries

1. Remove the battery-chamber cover by sliding it off in the direction of the arrow toward the side of the unit. Then lift out the battery-holder sleeve.
2. After wiping terminals with a clean dry cloth and handling only by the edges, insert six of the specified batteries into the sleeve as shown by the diagram on its outside and put the sleeve back into the chamber. (If the batteries are inserted improperly, they will not make contact and no current will flow.)
3. Close the compartment by aligning the cover carefully and sliding it on toward the center of the unit until it snaps securely in place.

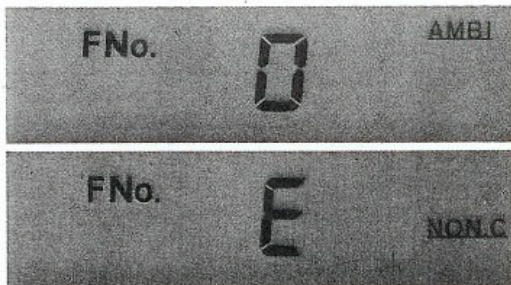


### Checking the batteries

With the mode selector at any setting, switch the meter on. If "0" or "E" is displayed, the batteries are serviceable. If either is flashing or the correct mode display does not appear, select another mode setting. If the display continues to blink, replace the batteries with fresh ones.

#### NOTE

- When not using the meter the power should be switched off.
- If the unit is not to be used for more than two weeks, it is advisable to remove the batteries.
- When replacing batteries be sure to change all six batteries at the same time.

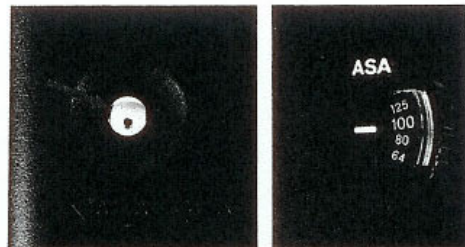


### Setting the film speed

While pushing the film-speed selector release, rotate the film-speed selector dial until the applicable ASA indication appears opposite the index in the film-speed window. The two dots on the scale between "12" and "25" indicate respective speeds of 16 and 20, while the ones between "800" and "1600" stand for values 1000 and 1250, and those between "1600" and "3200" indicate speeds of 2000 and 2500, respectively.

#### CAUTION

- Do not attempt to rotate the film-speed selector without pushing the release.
- Do not set the red separating area between "12" and "3200" opposite the index.

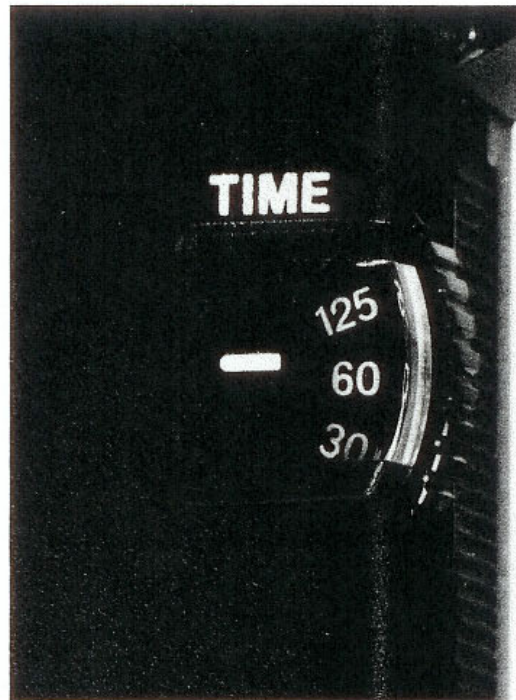


#### Setting measuring time (shutter speed)

Rotate the measuring-time selector dial until the value corresponding to the camera shutter speed being used (the reciprocal of the scale figure) clicks into position aligned with the index. Measuring times from 1 through 1/250 sec. printed on the dial in white indicate the usable speed range for "CORD," "NON. C," and "MULTI" modes. If set at one of the yellow times in one of these modes, the display indication will read "E" and light will not be measured when the measuring button is pressed. All measuring times from 1/1000 through 30 seconds can be used in "AMBI" mode.

Each time the meter is activated (i.e., by the measuring button) in "AMBI" or "CORD" modes or by an electronic-flash pulse in "NON. C" or "MULTI", it will measure for the period set.

For proper exposure as measured, therefore the camera's "X" synchronization must be used even with M-class flashbulbs.



#### Selecting measuring mode

The Flash Meter III has four measuring modes which cover virtually any type of light measuring need. These are set by sliding the measuring-mode selector to the click-stop at which the desired mode indication appears in the display window. As summarized in the table on the next page, these modes are intended for use under the following conditions with either incident or reflected measurements:



FNo.	0	AMBI
FNo.	0	CORD
FNo.	0	NON.C
FNo.	0	MULTI

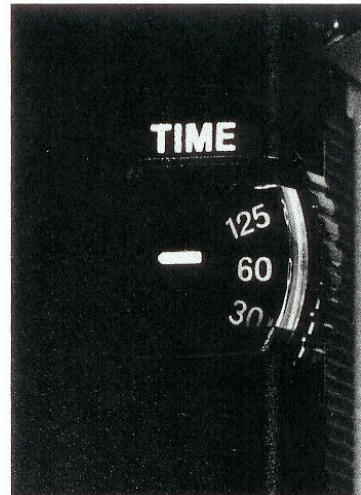


#### Setting measuring time (shutter speed)

Rotate the measuring-time selector dial until the value corresponding to the camera shutter speed being used (the reciprocal of the scale figure) clicks into position aligned with the index. Measuring times from 1 through 1/250 sec. printed on the dial in white indicate the usable speed range for "CORD," "NON. C.," and "MULTI" modes. If set at one of the yellow times in one of these modes, the display indication will read "E" and light will not be measured when the measuring button is pressed. All measuring times from 1/1000 through 30 seconds can be used in "AMBI" mode.

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#### Selecting measuring mode

The Flash Meter III has four measuring modes which cover virtually any type of light measuring need. These are set by sliding the measuring-mode selector to the click-stop at which the desired mode indication appears in the display window. As summarized in the table on the next page, these modes are intended for use under the following conditions with either incident or reflected measurements:



FNo.	0	AMBI
FNo.	0	CORD
FNo.	0	NON.C.
FNo.	0	MULTI

### "AMBI"

Measuring continuous available light, daylight or artificial.

### "CORD"

1. Measuring electronic-flash light using flash-unit sync. cord or Sync. Cord II.
2. Measuring flashbulb light using flash-unit sync. cord or Sync. Cord II.
3. Measuring synchro-daylight or other synchronized fill-in flash, electronic or bulb, using flash unit sync. or Sync. Cord II.

### "NON. C"

Measuring a single electronic-flash burst from one or more synchronized units along with any surrounding light.

### "MULTI"

Measuring non-synchronized multiple or successive electronic flashes along with any surrounding light.

On both "NON. C" and "MULTI," exposure for both flash (fill-in) and surrounding continuous or coincident light is measured cordlessly with electronic flash, but neither flashbulb light nor continuous light alone will activate the meter.

### NOTE

Measuring mode(s) for use with accessories are indicated in the instruction sheets packed with the accessory being used.

Measuring mode		Light source(s) to be measured		
		Electronic flash (including fill-in use)	M-class flashbulbs (including fill-in use)	Continuous light (daylight or artificial)
Incident or reflected	"AMBI" (Cordless system)	No	No	Yes
	"CORD" (Cord system)	Yes	Yes	Yes
	"NON. C" (Cordless system)	Yes	No	No
	"MULTI" (Cordless system)	Yes	No	No

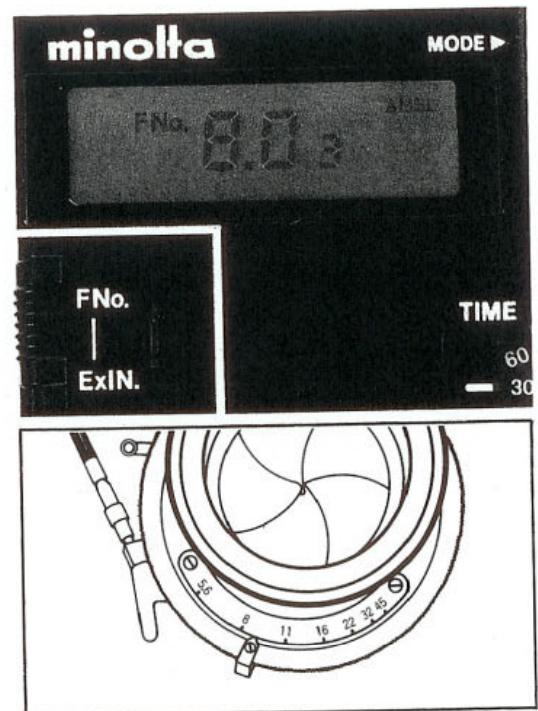
## Selecting display mode

### FNo. indication and setting the lens

The Flash Meter III's f-number display mode reads out in 1/10th stop increments. When light within the meter's range is measured, a digital aperture figure will appear next to the "FNo." designation in the display window. If a small "0" appears to the right of the two-place digital f-number, the camera lens should be set exactly at the same aperture for optimum exposure. Display of a number in this position indicates that exposure should be decreased by the 1/10th-stop value shown. For example, if a reading results in a display of 8.0<sub>3</sub>, the lens should be set approx. one third of the way between f/8 and f/11 (as pictured below) for optimum exposure.

Display of the blinking "0" (under-range) figure instead of an aperture indication when a reading is taken in "CORD," "NON. C," or "MULTI" mode indicates that brightness is below the measuring range of the meter.

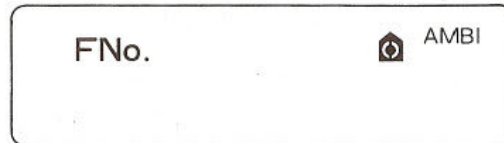
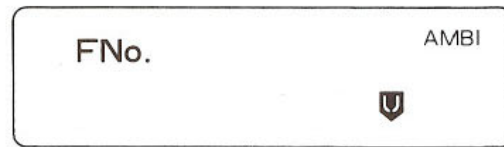
When the blinking "0" (over-range) indication is displayed in "CORD," "NON.C" or "MULTI" mode, brightness is above the



measuring range of the meter. Use of the optional 4X spherical ND diffuser (see p. 32) may permit incident-light measurements under the same conditions if the over-range indicator appears while using the normal diffuser.

The meter's measuring range in "AMBI" mode is greater than that of the indication display. Thus if both the blinking "FNo." and "⏏" appear in the display window, rotate the measuring-time selector dial to the next slower speed that displays an applicable f-number figure and adjust the camera and/or lens aperture accordingly. If only the blinking "⏏" is displayed, brightness is below the measuring range of the meter.

Similarly, when both the blinking "FNo." and "⏏" are displayed, rotate the measuring-time selector dial to the next faster speed that displays an applicable f-number figure and adjust the camera and/or lens aperture accordingly. If only the blinking "⏏" appears, brightness is above the measuring range of the meter.



#### Exposure index (ExIN) mode

When the display-mode selector is moved to "ExIN," light measurements in 1/10th-step increments are displayed in EV (exposure value) in "AMBI" mode, or AV (aperture value) for the corresponding measuring time (shutter speed) set in "CORD," or "NON. C" Modes. If the blinking "ExIN" and/or "⏏" are displayed, brightness is under the effective measuring range of the meter. Brightness is over the range of the meter when the blinking "⏏" appears. This display mode simplifies determination of lighting ratios (p. 28), flash guide numbers (p. 30), and measuring luminance (p. 29).

For the measuring range in ExIN display mode, see page 36.



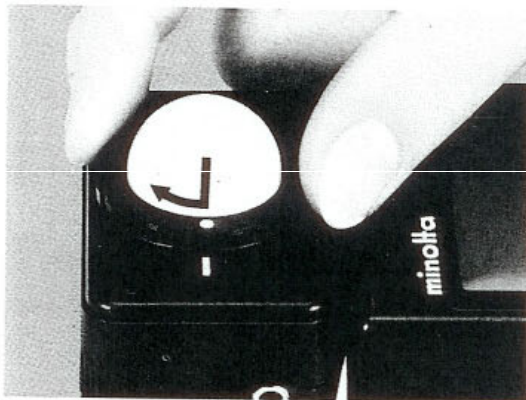


### Attaching and removing diffuser or attachments

The spherical diffuser and reflected-light attachment are attached and removed as follows:

#### To attach

Align the dot on the rim of the diffuser or attachment with the receptor-bayonet index; insert the bayonet into the mount over the receptor; and turn the diffuser/attachment clockwise as far as it will go (about 1/8 turn) to secure it.



#### To remove

Turn the diffuser/attachment counter-clockwise until the dot on it is aligned with the receptor bayonet index and lift the diffuser/attachment out of the receptor mount.

#### NOTE

The optional Viewfinder 10° is attached and removed as explained on p. 14.

13

### Measuring incident light

Regardless of the measuring mode, with or without sync. cord, light incident upon the subject is measured for usual photographic exposure using the spherical diffuser supplied with the Flash Meter III. This is attached and removed as explained on the preceding page.

The reading is taken from the subject position with the spherical diffuser pointed toward the camera and the meter held so that it receives the same light as the subject.

Incident readings may also be made with the optional mini receptor (see p. 31), 4X spherical ND diffuser (p. 32), or flat diffuser (p. 32) for special purposes.

### Measuring reflected light

Regardless of the measuring mode with or without sync. cord, light reflected from the subject is normally measured for usual overall photographic exposure using the reflected-light attachment supplied with the Flash Meter III. It is attached and removed as shown.

Readings are taken from the camera position, with the head turned so that the receptor is pointed toward the center of the subject or picture area. The angle of acceptance of the reflected-light attachment is about 40°, about enough to cover the field of a normal lens.



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#### Using the Viewfinder 10°

Reflected light readings may also be taken with the optional Viewfinder 10° (see p. 31).

To use that accessory:

1. Attach the Viewfinder 10° to the meter head by positioning it and the red dot on its grooved attaching ring aligned with the receptor-bayonet index as shown, inserting its bayonet into the receptor mount, and turning the ring clockwise as far as it will go. (The dot will be out of sight; the Viewfinder 10° can be removed by turning the ring until the dot is once more aligned with the index and lifting the bayonet out of the socket.)



2. Rotate the meter's receptor head 180° so that the eyepiece of the finder is on the front side of the meter above the readout windows.



3. Look through the eyepiece at your subject from the camera position. The broken circle visible in the finder indicates the field of the 10° angle of acceptance, while the dot indicates the center of the field.



4. With the area to be measured visible within the circle, push the measuring button to make the reading.

#### CAUTION

Do not point the Viewfinder 10°'s receptor lens at the sun or other extremely bright light sources, as this may damage the meter.



## Using sync. cords

## Flash-unit sync. cord

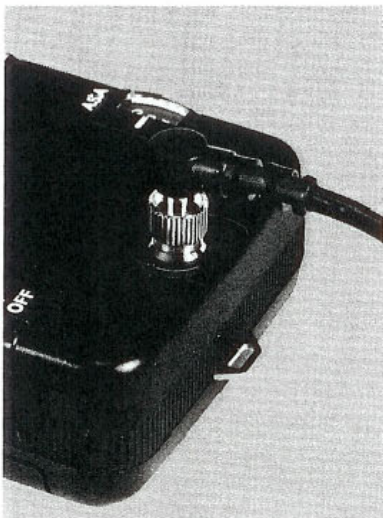
1. Insert the PC plug normally connected to the sync. terminal of the camera into the sync. terminal of the Flash Meter III. Flash will fire when the measuring button is pushed to take the reading.



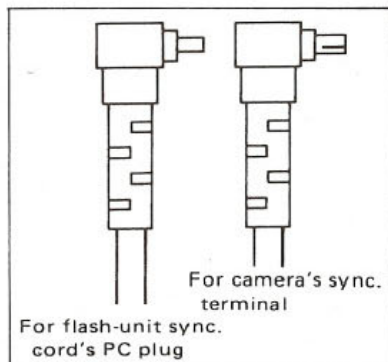
2. Re-connect the sync. cord to the camera to make the actual exposure. If it is not long enough to permit reflected or incident readings as desired, the optional Sync. Cord II (see p. 31) can be used instead as follows:

## Optional Sync. Cord II

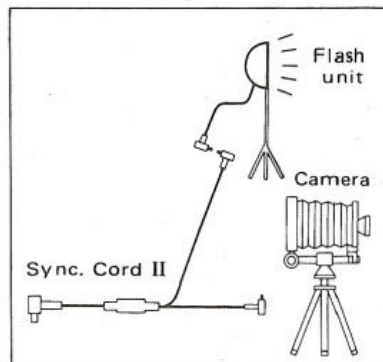
1. Insert the PC plug with the threaded collar into the sync. terminal of the Flash Meter III and turn the collar to screw it securely in place.



2. Connect the smaller of the cord's two other plugs with the flash-unit sync. cord's PC plug.

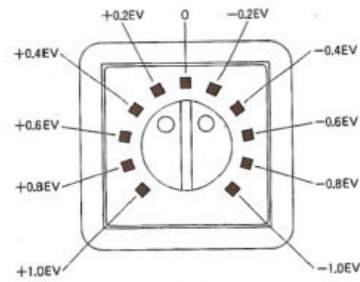
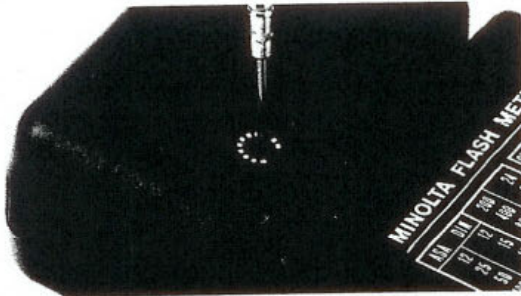


3. Insert the remaining plug into the X sync. terminal on the camera, making sure that single-terminal models are also set for X synchronization. Incident or reflected readings may be made as necessary with all three plugs connected, as the flash will fire when the reading is made and also when shutter is tripped to make the exposure.



### Measuring-level adjuster

The brightness-reading level of the Flash Meter III is properly adjusted to Minolta's standard. Fine adjustment of the measuring level up to approx. 1 EV (stop) over or under the standard setting is possible as individually desired. This is done by inserting a small screwdriver or similar instrument into the slot of the measuring-level adjuster's black screw head as shown and turning the screw clockwise or counterclockwise until the slot is aligned as desired. The white graduation marks on the blue collar surrounding the screw represent approx. 0.2 EV (stop) as shown by the diagram. With the same level of illumination, turning the



adjuster to the minus (-) side will produce a lower light reading; to the plus (+) side, a higher one. In other words, the aperture indication (e.g., f/8) becomes numerically smaller (e.g., f/5.6) as the screw is turned clockwise; numerically larger (e.g., f/11), counterclockwise.

### CAUTION

Do not attempt to turn the screw beyond the plus or minus 1 EV (stop) limit.

### NOTE

The measuring level should be adjusted only if considered desirable after determining the meter's characteristics from experience.

## OPERATION

19

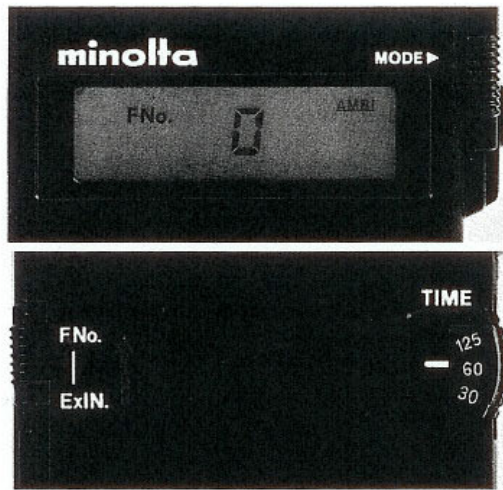
Select the appropriate measuring mode and instructions according to your light source(s) and picture-taking needs from the table below. All items are applicable to either incident-or reflected-light readings.

Light source	Other conditions	Measuring mode	Detailed instructions
Continuous light (natural or artificial)	Use as a general photographic (or illuminance) light meter for still or cine cameras	"AMBI"	p. 20
Electronic flash ("strobe")	Using sync. cord	"CORD"	p. 22
	Without sync. cord	"NON.C"	p. 23
	Measuring total exposure from two or more non-synchronized flashes	"MULTI"	p. 24
M-class flashbulbs	Sync. cord necessary	"CORD"	p. 27
Continuous light plus electronic or bulb flash	Synchronized fill-in flash with sync. cord	"CORD"	p. 27
Continuous light plus electronic flash	Synchronized fill-in flash without sync. cord	"NON.C"	p. 27



### Measuring continuous light

1. With serviceable batteries properly installed (p. 4), film speed set (p. 5), and arrangement for incident or reflected measurement (p. 13), slide the measuring-mode selector to "AMBI" position and the display-mode selector to "FNo."



2. Push the measuring button all the way in until a click is heard. This measures the light, and results in a readout indication. The f-number indication will remain displayed for approx. 60 sec. after which time it is automatically canceled and "0" is displayed.
3. If an f-number indication appears, set the lens aperture on the camera as indicated by the meter. If the blinking "FNo." and either the "☀" (over) or "☾" (under) indication appears, rotate the measuring-time selector dial clockwise to select shorter measuring times (higher shutter speeds), or counterclockwise to select longer measuring times (lower shutter speeds) until an f-number is displayed.
4. With the camera set for the shutter speed corresponding to the final measuring time used, make your actual exposure.

#### NOTE

Selection of "FNo." display may be done at any time after measurement is made.

### Cine readings

The Flash Meter III can also be used to meter light for movie exposure for cine cameras that have shutter sector openings of 180°. To do so:

1. With serviceable batteries properly installed (p. 4), film speed set (p. 5), and arrangement for incident or reflected measurement (p. 13), slide the measuring-mode selector to "AMBI" position and the display-mode selector to "FNo."
2. Set the measuring-time corresponding to the appropriate speed as indicated below for the movie camera frames-per-second film speed in use.
  - As the measuring-time selector cannot be set for frames-per-second rates of 12, 18, or 24, the film-speed selector must be adjusted to

obtain a proper reading. Thus when taking light readings for a 12fps or 24fps filming speed, increase the film speed rating by 1/3 stop (i.e., for 100 ASA set the film-speed selector at 125). For filming speeds of 18fps decrease the film-speed rating by 1/3 stop (i.e., for 100 ASA set the film-speed selector at 80).

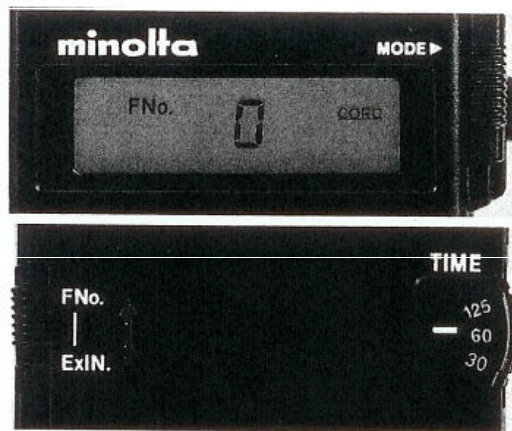
3. Push the measuring button all the way in until a click is heard. This measures the light, and results in a readout indication. The f-number indication will remain displayed for approx. 60 sec. after which time it is automatically canceled and "0" is displayed.
4. Set the lens aperture on the camera as indicated by the meter's f-number readout and the frame-speed selector to the proper rate and make your actual exposure.

Frames-per-second filming speed	8	12	16	18	24	32	64	128
Measuring-time selector setting	1/15	1/30	1/30	1/30	1/60	1/60	1/125	1/250
ASA compensation	0	+1/3	0	-1/3	+1/3	0	0	0

### Measuring electronic-flash light

#### Using sync. cord (either of flash unit or Sync. Cord II)

1. With serviceable batteries properly installed (p. 4), film speed set (p. 5), and arrangements made for incident or reflected measurement (p. 13), slide the measuring-mode selector to "CORD" position and the display-mode selector to FNo."



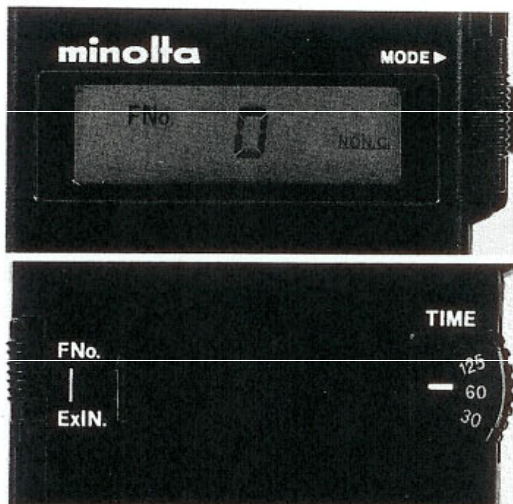
2. Attach desired sync. cord; flash-unit cords as indicated on p. 16, Sync. Cord II as on p. 17.
3. Set measuring time corresponding to the appropriate shutter speed (p. 6) being used from 1 through 1/250 sec.
4. Push the measuring button all the way in until a click is heard. This triggers the flash and light is measured. The meter's indication will remain displayed for approx. 60 seconds after which time it is automatically canceled and "0" is displayed.
5. Set the lens aperture on the camera as indicated by the meter's f-number readout.
6. With the sync. cord properly connected with the camera for X sync. make your actual exposure.

#### NOTE

Selection of "FNo." display may be done at any time after measurement is made.

#### without sync. cord

1. With serviceable batteries properly installed (p. 4), film speed set (p. 5), and arrangement made for incident or reflected measurement (p. 13), slide the measuring-mode selector to "NON. C" position and the display-mode selector to "FNo."



2. Set measuring time corresponding to the appropriate shutter speed (p. 6) being used from 1 through 1/250 sec.
3. Push the measuring button in until a click is heard and the "FNo." and "0" display disappear. This will arm the meter's circuit for approx. 60 seconds to measure cordlessly the first electronic-flash burst it receives until it automatically cancels the reading and "0" is displayed.
  - The flash Meter III may be attached to a tripod at either subject or camera position by means of its built-in socket and the flash triggered by the open-flash/test button on the flash unit.
  - Since a reading will be made only when the first electronic-flash burst strikes the receptor (though daylight or bulb flash alone will not affect it), be careful that unwanted bursts from other's strobe units do not reach it first.
  - If "0" should appear before the flash has been fired or if you wish to extend the armed period when some time has elapsed after the button was pushed without firing the flash, the circuit can be armed for



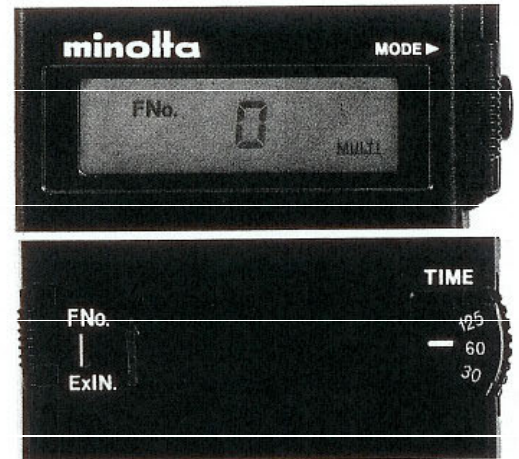
- approx. 60 sec. more by pushing the button again all the way in. This may be repeated as many times as desired.
4. Fire the flash unit, by pushing the open-flash/test button on the flash unit. The meter will display the applicable f-number indication which will be automatically canceled after approximately 60 seconds.
    - The reading is canceled and the meter armed for a further 60 sec. period by pushing the button again all the way in.
  5. Set the lens aperture on the camera as indicated by the f-number display.
  6. Make the actual exposure (maintaining the same light-to-subject relationship).

**NOTE**

Selection of "FNo." display may be done at any time after measurement is made.

**Measuring cumulative brightness with any number of electronic-flash bursts**

1. With serviceable batteries properly installed (p. 4), film speed set (p. 5), and arrangement made for incident or reflected measurement (p. 13), slide the measuring mode selector to "MULTI" position and the display-mode selector to "FNo."



2. Set measuring time corresponding to the appropriate shutter speed (p. 6) being used from 1 through 1/250 sec.
3. Push the measuring button all the way in until a click is heard and the "FNo." and "0" disappear. The display will remain blank for about 60 seconds after the button is pushed. This indicates that the meter circuit is armed to measure cumulative or incident light each time it receives an electronic-flash burst.
  - The Flash Meter III may be attached to a tripod at either subject or camera position by means of its built-in socket and the flash(es) triggered by the open-flash/test button on the flash unit(s).
4. Fire the flash unit(s), as by pushing open flash/test button(s). With each successive flash, the meter will calculate the total cumulative light value, and display the number of flashes made and the aperture indication for proper exposure. This will

- also re-arm the meter's circuit for a further 60-sec. period of readings, which will be added to the previous one(s).
- If the blinking "U" (under-range indicator) appears in the display window after a flash burst, the brightness of the flash was insufficient to trigger the meter's measuring circuit and has not been accumulated even though the flash counter recorded the burst.



2. Set measuring time corresponding to the appropriate shutter speed (p. 6) being used from 1 through 1/250 sec.
3. Push the measuring button all the way in until a click is heard and the "FNo." and "0" disappear. The display will remain blank for about 60 seconds after the button is pushed. This indicates that the meter circuit is armed to measure cumulative or coincident light each time it receives an electronic-flash burst.
  - The Flash Meter III may be attached to a tripod at either subject or camera position by means of its built-in socket and the flash(es) triggered by the open-flash/test button on the flash unit(s).
4. Fire the flash unit(s), as by pushing open flash/test button(s). With each successive flash, the meter will calculate the total cumulative light value, and display the number of flashes made and the aperture indication for proper exposure. This will

- also re-arm the meter's circuit for a further 60-sec. period of readings, which will be added to the previous one(s).
- If the blinking "U" (under-range indicator) appears in the display window after a flash burst, the brightness of the flash was insufficient to trigger the meter's measuring circuit and has not been accumulated even though the flash counter recorded the burst.



#### Measuring M-class flashbulb light

1. With serviceable batteries properly installed (p. 4), film speed set (p. 5), and arrangement made for incident or reflected measurement (p. 13), slide the measuring-mode selector to "CORD" position and the display-mode selector to "FNo."
2. Attach desired sync. cord; flash-unit cords as indicated on p. 16, Sync. Cord II as on p. 17.
3. Set measuring time corresponding to the shutter speed (p. 6) being used.
4. Push the measuring button all the way in until a click is heard. This triggers the flash and light is measured. The meter's indication will remain displayed for approx. 60 seconds after which time it is automatically canceled and "0" is displayed.
5. Set the lens aperture on the camera as indicated by the meter's f-number display (p. 9).
6. With the sync. cord properly connected with the camera for X-sync. — not M or other sync. — make your actual exposure.

#### NOTE

It should be recognized that there may be variations from flashbulb to flashbulb.

#### Measuring fill-in and ambient continuous light

The Flash Meter III can be used to determine exposure for pictures in which shadows from daylight or other bright continuous-light sources are being filled in with flash, since it can measure both the fill-in light and the ambient surrounding light. To do so:

1. With serviceable batteries properly installed (p. 4), and arrangement made for incident or reflected measurement (p. 13), set the film speed for the film in use and the display-mode selector to "FNo."
2. Set measuring time (p. 6) corresponding to camera shutter speed to be used from 1 through 1/250 sec. Remember that this must be within the synchronizing range of the camera and long enough to cover the total flash duration with X delay.
3. Set the measuring-mode selector to "AMBI" and measure only the continuous light without the flash. Then determine and set the applicable speed-aperture combination to be used.
4. Set the mode selector to "CORD" position for sync.-cord readings with electronic or M-bulb flash or "NON.C" for cordless electronic-flash readings.



5. If applicable, attach desired sync. cord, flash-unit cords as indicated on p. 16, Sync. Cord II as on p. 17.
6. Then adjust the flash-to-subject distance so that a second reading taken with flash of the flash-lit fill-in area calls for the same exposure as in 4 above. Balance between main-lighted and filled-in areas can be adjusted to personal taste and the effect desired by varying conditions to change the second reading: A flash fill-in readout numerically smaller (e.g., f/5.6) than the one for continuous light (e.g., f/8), at which the camera should be set, will produce less fill-in; a numerically larger one, more fill-in.
7. Make the actual exposure with the sync. cord properly connected with the camera for X-sync, and the camera shutter and lens set for the ambient light as determined in 4 above.

#### Determining lighting ratios

The "ExIN" readout of your Flash Meter III is a great aid in finding the brightness ratio of one light source to another. This especially useful when determining lamp-to-subject distances for a particular modeling effect. It is also useful in finding the brightness distribution of a view camera groundglass or SLR focusing screen when the meter is used in conjunction with the Minolta booster. To find the brightness ratio of one light source to another:

1. With the measuring mode selector set for light-source type and means of measurement, the display-mode selector at "ExIN," and the optional flat diffuser properly attached, point the meter's receptor directly at the light source to be measured from the subject position.
2. Push the measuring button and note the display readout.
3. Take a reading of the light source to be compared following the same procedure find the difference between the indications. Then determine the approximate lighting ratio from the following table:

Steps' difference	Approx. brightness ratio of light source to other
0.0	1 : 1
1.0	2 : 1
1.6	3 : 1
2.0	4 : 1
3.0	8 : 1
4.0	16 : 1
5.0	32 : 1

#### Measuring illuminance

To measure the brightness of a continuous light source:

1. With the film speed selector at ASA 100, measuring-mode set for "AMBI", and display indication at "ExIN", attach the optional flat diffuser.
2. Position the diffuser parallel and as close as possible to the surface where light is to be measured and push the meter's measuring button.
3. Read the value indicated and work it through the formula below:

$$\text{lux} = 2.5 \times 2^{\text{ExIN}}$$

#### Example

With a display reading of 8.7, work the equation as follows:

$$\begin{aligned} \text{lux} &= 2.5 \times 2^{8.7} \\ &= 2.5 \times 415.9 \\ &= 1039 \end{aligned}$$

#### NOTE

For precise measurement of illuminance in lux, use the Illuminance meter.

### Determining flash guide numbers

To determine the guide number for a particular electronic flash unit and film speed or to check the manufacturer's recommended guide number:

1. With the film speed set and the measuring-mode selector set for "CORD" or "NON.C" operation, move the display-mode selector to "ExIN" and attach the optional flat diffuser.
2. Position the meter at a known distance (for example, 3m or 10 ft.) from the flash unit to be measured and point the diffuser directly at the flash.
3. Push the meter's measuring button all the way in to trigger the flash for "CORD" mode or, for "NON.C" mode to arm the meter's circuit and fire the flash as by pushing the open-flash/test button on the flash unit. Then read the display indication and work it through the formula below:

$$GN = 1.14 \times L \times 2^{\frac{ExIN}{2}}$$

Where L = the flash-to-meter distance

Example:

With a display reading of 10.4 as ASA 100 and flash-to-meter distance of 3m (10 ft.), work the equation as follows:

$$\begin{aligned} GN &= 1.14 \times 3 \times 2^{\frac{10.4}{2}} \\ &= 1.14 \times 3 \times 2^{5.2} \\ &= 1.14 \times 3 \times 36.7 \\ GN &= 125.7 \end{aligned}$$

NOTE

The response time of the Flash Meter III's liquid crystal display will become longer as temperatures go below 0°C (32°F).

## OPTIONAL ACCESSORIES

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### Booster

When plugged into the socket provided on the receptor head of the Flash Meter III, this separate sensor enables making positive accurate measurement of brightness at an SLR eyepiece, on an SLR focusing screen or view camera groundglass, through the eyepiece of a microscope or at the film plane of a full-frame 35mm camera. It may also be used for ordinary direct reflected light measurement of 60° or greater.



### Viewfinder 10°

This finder attaches to the Flash Meter III for reflected-light measuring of flash and/or continuous light. The 10° circle being read is clearly indicated in the finder. The meter can thus be used to accurately spot-measure exposure on parts of a subject or within the approximate angle of view of certain telephoto lenses.



### Sync. Cord II

This special cord connects the Flash Meter III, the flash unit, and the camera's sync. terminal at the same time and makes meter-flash and camera-flash synchronization possible without changing connections. Its five-meter (16-foot) length also makes it useful in measuring incident light in "CORD" mode.





### Mini receptor

This very small remote receptor plugs into the socket provided on the receptor head of the Flash Meter III and is used to measure incident continuous and/or flash light in otherwise inaccessible positions. It is therefore particularly useful for close-ups and photomacrography.



### 4 X spherical ND diffuser

This spherical diffuser incorporates a neutral-density element and is attached to the Flash Meter III for use when light is too bright to be measured. The meter's upward range is thus effectively extended by two stops.



### Flat diffuser

With this diffuser attached, the Flash Meter III can be used to measure the ratio between main and auxiliary electronic flashes (light balancing), illuminance value of continuous light, and guide number of electronic or M-bulb flash units.



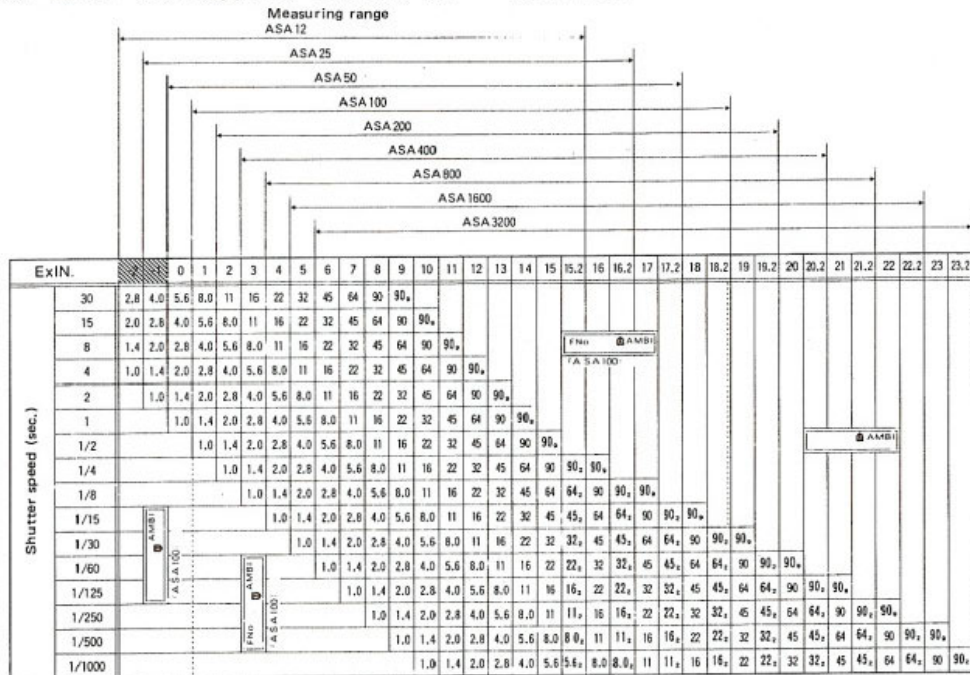
## SPECIFICATIONS

Type:	Multiple function corded/cordless meter for direct digital exposure reading with incident/reflected flash/continuous light
Receptor:	Silicon photo cell; head rotates through 270° angle
Reception method:	Incident: Spherical diffuser (or optional other diffusers) Reflected: 40°-angle reflected-light attachment (or optional Viewfinder 10° or Minolta Booster)
Measuring range:	Flash light: Incident: f/1.4 – f/90 + 0.9 (at ASA 100) Reflected: f/1.4 – f/90 + 0.9 Continuous (AMBI): Incident: EV 1 – EV 18.2 Reflected: EV 1 – EV 18.2
Accuracy:	±0.2 EV
Measuring modes:	"AMBI" for continuous light readings "CORD" for synchronized electronic flash, M-class flashbulbs, with or without surrounding continuous light, using sync. cord of flash unit or optional Sync. Cord III "NON. C" for single-burst electronic flash, with or without surrounding light, without cord "MULTI" for non-synchronized multiple or cumulative electronic electronic flashes with or without surrounding light, without cord by selector slide with click stops

## MEASURING CONTINUOUS LIGHT

As shown in the chart below, the Flash Meter III's measuring range in "AMBI" mode is greater than that of the indication display. If brightness is within the meter's measuring range but indication cannot be displayed, both the blinking "FNo." and "☉" or "☿" will be displayed. When this happens, rotating the

measuring-time selector counterclockwise for "☉" or clockwise for "☿" will display an applicable f-number. If both "ExIN" and "☉" blink when the film-speed selector is set between ASA 12 and ASA 40 in "ExIN" mode, the measurement is below the display range of the meter.



## CARE AND STORAGE

- Do not touch receptor, diffuser, and lens surfaces; keep them clean by using a soft brush from time to time. If they become soiled, remove loose matter with a blower brush, then wipe gently with a soft clean cloth, with or without first breathing on the surface to be cleaned.
- Do not subject your Flash Meter III to vibration or shocks.
- The unit should never be placed or left in the glove compartment or other places in motor vehicles or elsewhere in which it may be subject to temperatures higher than 55°C (131°F). Further, do not store it in humid places, near corrosive chemicals, temperature lower than -22°C (+7.6°F).
- Keep the power switch in its "OFF" position when the meter is not in use. If it is not to be used for two weeks or more be sure to remove the batteries.
- When the Flash Meter III is to be stored for a long time, it should ideally be placed in its original package and sealed in an air-tight container with an appropriate quantity of a dehumidifying agent such as silica gel.

Minolta Camera Co., Ltd., 30, 2-Chome, Azuchi-Machi, Higashi-Ku, Osaka 541, Japan  
 Minolta Corporation, 101 Williams Drive, Ramsey, New Jersey 07446, U.S.A.  
 Minolta Canada Inc., 1344 Fewster Drive, Mississauga, Ontario L4W 1A4, Canada  
 Minolta Camera Handelsgesellschaft m.b.H., Kurt-Fischer-Strasse 50, D-2070 Ahrensburg, West Germany  
 Minolta France S.A., 357 bis, rue d'Estienne d'Orves 92700 Colombes, France  
 Minolta Vertriebsgesellschaft m.b.H., Seidengasse 19, A-1072 Wien, Austria  
 Minolta Nederland B.V., Groen van Prinsterelaan 114 Amstelveen, Nederland  
 Minolta (Schweiz) GmbH., Riedhof V, Riedstrasse 6, 8953 Dietikon-Zurich, Switzerland  
 Minolta Hong Kong Limited, 49 Chatham Road, Kowloon, Hong Kong  
 Minolta Singapore (Pte) Ltd., Chin Swee Tower, 52-E, Chin Swee Road, Singapore 3