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Sold as auto 433AF/NE in U.S.A and Canada and B3600AF/NE in all other countries.

Das Modell auto 433AF/NE wird in den U.S.A. und Kanada unter der bezeichnung B3600AF/NE angeboten.

Ce modèle est vendu, aux U.S.A. et au Canada sous la référence auto 433AF/NE, sous la référence B3600AF/NE dans tous les autres pays.

Vendido como auto 433AF/NE in U.S.A y Canada y B3600AF/NE en los otros países.

In de U.S.A. en Canada verkocht onder de naam auto 433AF/NE en in alle andere landen onder de naam B3600AF/NE.

Säljs i U.S.A och Canada som auto 433AF/NE och som B3600AF/NE i alla andra länder.

商品名は、アメリカ、カナダでは、auto 433AF/NE, 日本及びその他の国では B3600 AF/NEとなります。
IMPORTANT SAFEGUARDS

WHEN USING YOUR PHOTOGRAPHIC EQUPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING.

1. READ AND UNDERSTAND ALL INSTRUCTIONS.

2. CLOSE SUPERVISION IS NECESSARY WHEN ANY APPLIANCE IS USED BY OR NEAR CHILDREN. DO NOT LEAVE THIS APPLIANCE UNATTENDED WHILE IN USE.

3. DO NOT OPERATE APPLIANCE IF IT HAS BEEN DROPPED OR DAMAGED UNTIL IT HAS BEEN EXAMINED BY A QUALIFIED SERVICEMAN.

4. TO PROTECT AGAINST ELECTRICAL SHOCK HAZARDS, DO NOT IMMERS THIS APPLIANCE IN WATER OR OTHER LIQUIDS.

5. TO AVOID ELECTRIC SHOCK HAZARD, DO NOT DISASSEMBLE THIS APPLIANCE, BUT TAKE IT TO A QUALIFIED SERVICEMAN WHEN SOME SERVICE OR REPAIR WORK IS REQUIRED. INCORRECT REASSEMBLY CAN CAUSE ELECTRIC SHOCK HAZARD WHEN THE APPLIANCE IS USED SUBSEQUENTLY.

6. DO NOT OPERATE APPLIANCE WITH A DAMAGED CORD.

7. DO NOT LET CORD HANG OVER EDGE OF TABLE OR COUNTER OR TOUCH HOT SURFACES.

8. IF AN EXTENSION CORD IS NECESSARY, CARE SHOULD BE TAKEN TO ARRANGE THE CORD SO THAT IT WILL NOT BE TRIPPED OVER OR PULLED.

9. ALWAYS UNPLUG APPLIANCES FROM ELECTRICAL OUTLET WHEN NOT IN USE. NEVER YANK CORD TO PULL PLUG FROM OUTLET. GRASP PLUG AND PULL TO DISCONNECT.

SAVE THESE INSTRUCTIONS
INTRODUCTION

WELCOME to the world-wide family of Sunpak owners. Your Sunpak auto 433AF is one of the most advanced electronic flash units in the world. It is the product of extensive research and development and has been designed to give you many enjoyable years of service. Because many of the fine features of your new auto 433AF are so unique, please take a few minutes to read this owner’s manual carefully with your auto 433AF in front of you. The more you know about your new electronic flash, the better you can use it for maximum creativity in your pictures.

All pictures, illustrations and charts will be available from page 68. Figures bracketed at the end of each instruction sentence are coupled with the numbers supplied on the pictures, illustrations and charts.

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Description of Parts (Page 68)

1. Flashtube Housing
2. Accessory (optional) Mounting Guide
3. Bounce Flash Control Base
4. Battery Compartment Cover
5. Auto Sensor
6. Secondary infrared-rays flash
7. Knurled Lock Ring
8. Dedicated/Hot Shoe Contact
9. Auto/Manual Mode Window
10. Auto/Manual Selector Switch
11. AC/510 V Outlet
12. Battery/AC.HV Selector (On/Off) Switch
13. Auto-power saving lamp
14. Bounce Flash Head
15. Vertical Bounce Control Scale
16. Bounce Angle Indicator
17. Film Speed Selector
18. Film Speed Indicator Window (ISO)
19. F/Stop Scale
20. Distance Scale
21. Feet/Meter Selector Hole
22. Power Ratio Control Scale
23. Power Ratio Control Selector
24. Ready Light/Test (Open Flash) Button
25. Auto OK Indicator

OPERATION

Power Sources (1)

Your Sunpak auto 433AF may be used with five different power sources:
1. Four AA alkaline batteries (not included)
2. Four AA rechargeable nickel-cadmium batteries (optional)
3. The Sunpak Multi-Voltage AC Adapter AD-27 (optional)
4. The Sunpak Powerpak for 510-Volt High Voltage Batteries (optional)
5. The Sunpak 510V rechargeable battery NC510 for use with Sunpak Powerpak (optional)
6. TR-PAK II (Optional)
To Install Batteries

Selecting Alkaline or Nickel-Cadmium Batteries

The major advantage of alkaline batteries is that they provide more flashes per set. While nickel-cadmium batteries will provide fewer flashes per set, they will recycle your auto 433AF slightly faster and can be recharged hundreds of times for more economical operation over the long run.

1. Slide the battery compartment cover toward the bottom of the unit. Now gently fold up the cover in direction shown. (2)
2. Insert four AA size batteries (alkaline or nickel-cadmium) as shown. The battery compartment has a guide showing the correct positioning of the batteries for proper polarity (+, − contacts). (3)
3. Press the cover until it snaps into place.

CAUTION: When using your auto 433AF with external power sources, always keep batteries inside the unit to maintain the dedicated function. Your auto 433AF will not interface with the camera without internal batteries.

Using the Multi-Voltage AC Adapter or the Sunpak Powerpak for 510-Volt Batteries (Both Optional)

For AC operation, be sure to check that the voltage selector on your AC Adapter is set to the appropriate voltage. Your AC Adapter has been factory set for 220 V. For use in other countries where 117 V, 127 V and 240 V are standard, you may adjust the setting as illustrated. Remove the small Phillips head screw located next to voltage window and rotate the selector switch with a screw driver to the proper voltage setting. After the voltage setting has been made, the screw must be reinstalled to prevent accidental movement of the selector switch. (4)

When using Multi-Voltage AC Adapter or Sunpak Powerpak for 510-Volt Batteries, always set Battery/AC HV Selector Switch to AC/HV position.

Plug into the AC/High Voltage socket on the flash and into a standard wall outlet as illustrated. The AC Adapter will supply virtually unlimited flashes and is ideal for indoor use. (5)

When you use the optional accessory Sunpak Powerpak for 510-Volt Battery, first attach the supplied plug adapter to the end of Powerpak cord and plug it into the auto 433AF in the same manner as you would with the Multi-Voltage AC Adapter. The Sunpak Powerpak for 510-Volt Battery allows extremely rapid recycle times and the greatest number of flashes. (6)(7)

CAUTION: Even when your auto 433AF is used with external power sources, always store batteries inside the battery compartment for dedicated function. Your auto 433AF is not interfaced to the camera without internal batteries.

Note: If the Multi-Voltage AC Adapter is incorrectly set, the adapter will not function properly and may damage your auto 433AF.
• For auto 433AF:
  Do not use the AC Adapter other than the AD-27.

Mounting the Flash to the Camera

CAUTION: For mounting or detaching the auto 433AF on or from the camera, always make sure the On/Off Switch is at “OFF” position or the camera may be damaged.

1. Slip the unit onto the camera’s hot shoe. Turn the knurled lock ring clockwise to insure secure mounting to your camera’s shoe. (8)
2. Set the camera shutter to the fastest shutter speed synchronized for electronic flash. For SLR cameras, the highest usable speed is generally 1/60th second; however, some permit flash synchronization of up to 1/125th second. To be sure, refer to your camera’s instruction manual. (9)
Automatic Power Saving Capacity(10)(11)

- When flash is not used for more than one minute with the power switch on (BATT), the power saving lamp will automatically go off and stop charging to conserve energy. (The ready lamp will stay on for a short while.)
- While the ready lamp is on, the flash is ready to use. In order to re-start charging, just press the shutter-button halfway down, (Nikon FA, FE2, FG, N2000/F-301, N2020/F-501. Or this can also be done by turning off the switch once and turning it back on (BATT), or by pressing the test button.
- If the shutter is not used for a long time, please turn off the power switch.

Automatic Operation

The sensitive Silicon Photo Transistor of your auto 433AF Sensor measures the light reflected by your subject and automatically controls the flash duration to assure correct exposure within a wide range of distances. It's easy to use:

A. Slide the ISO Film Speed Scale till the ISO of film in use is visible in the ISO speed window. (Example: ISO 100)
B. For the maximum distance range in automatic operation, move the Auto/Manual Selector Switch to the green “A’’ position so that the green “A” is visible in the Auto/Manual Mode Window and f/2 will appear. Then set your camera lens opening (for ISO 100 film, the lens opening is f/2). Your flash and lens are now set for correct exposure at any distance between 8 feet and 60 feet (2.3 m and 18 m). (12)
C. For an intermediate distance range in automatic operation, move the Selector Switch to the yellow “A” position so that the yellow line and f/4 appear. Then set the same aperture on your camera (for ISO 100 film, the lens opening is f/4). Your flash and lens are now set for correct exposure at any distance between 4 feet and 30 feet (1.2 m and 9 m). (13)
D. For maximum depth-of-field (area of sharpness in front of and in back of the subject), move the Selector Switch to the red “A” position so that the red “A”, red line and f/8 appear. Then set your camera lens opening (for ISO 100 film the lens opening is f/8). Your flash and lens are now adjusted for correct exposure at any distance between 2 feet and 15 feet (0.6 m and 4.5 m). (14)

TTL Direct auto-picture taking (for Nikon FA, FE2, FG, N2000/F-301, N2020/F-501)

1. Adjust the ISO sensitivity of the film (EXP. 100, 200, ETC.) to the white line. (15)
2. Set the mode selector at the blue “●” (TTL) position. (16)
3. Set the lens aperture you want to use.
4. When using TTL automatic flash adjustment by selecting aperture with N2000/F-501 model or N2000/F-301 model, set exposure mode at A (priority to automatic aperture) or use manual mode.

TTL Program Flash-picture taking (Nikon N2000/F-301, N2020/F-501 only)

1. Set the shutter speed dial of N2000/F-301 or N2020/F-501 to P DUAL N2020/F-501 only), P or P HI. (17)
2. Adjust the ISO sensitivity of the film to the white line.
3. Set the mode selector at the blue “●” (TTL) position. (18)
4. Set the aperture at minimum (highest number).

Note: When the 433AF is used with N2000/F-301 or N2020/F-501 and with an S-type lens (including lens series F), and the shutter dial of the camera is in P DUAL (N2020/F-501 only).P-.P HI mode, then TTL program flash becomes available. TTL program flash is one of the TTL automatic flash adjustment systems, and if the aperture of the camera is set at minimum (largest number), the camera will automatically adjust the aperture according to the film's sensitivity (ex., about f5.6 when ISO is 100), and then TTL automatic flash adjustment will engage.
• When the combination of an S-type tele-converter and an S-type lens (including series E) is used with N2000/F-301 model, the flash range of TTL program flash will be considerably shortened by the exposure ratio of the tele-converter. When the tele-converter is used, set the camera’s exposure mode to (A) or manual mode in order to use TTL automatic flash adjustment, and set the aperture with the consideration of exposure ratio.
• When the combination of an S-type lens and an S-type tele-converter (including TC-164S) is used with N2020/F-501 model, it is possible to use TTL program flash. However, please be aware that even when the effective F-figure with tele-converter’s exposure ratio added to it is in exposure, the flash range will be shortened if it is darker than the programmed aperture in the camera.
• For details of TTL program flash, refer to the camera instruction manual.

Taking the Picture

1. Move the Batt/AC HV Switch to the appropriate position for your power source.
2. In a few seconds, the Ready/Test Button on the back of the flash unit will glow. This confirms that your flash is ready to fire.
3. Take the picture!
   Your flash will automatically provide the correct amount of light for proper exposure within the distance range indicated.

For succeeding exposures...
   Wait until the Ready/Test light glows again. Make sure you are within the indicated auto distance range for the lens opening in use and...Shoot!

To Verify Correct Auto Exposure

To verify the correct automatic exposure, just aim your flash directly towards your subject and press the Ready/Test Button. This will cause the flash to fire without actually exposing any film. If the automatic exposure is correct for your subject, the green “Auto OK” lamp will glow immediately after the “test” exposure. If the lamp does not glow, move closer to your subject (or, if you are shooting in yellow or red auto mode, switch to green and adjust the aperture accordingly). The “Auto OK” provides positive verification in automatic operation that your picture will be correctly exposed.

AF secondary flash
(matches only with N2020/F501) (24)

When the Auto 433AF is used with N2020/F-501 and is used for auto-focus picture taking, the AF secondary flash (infrared sensor) of Auto 433AF will light automatically by pressing the shutter button of the camera halfway down, and any picture of the subject will be taken with the flashing of the focus patterns. Also, autofocus picture taking with the AF secondary flash is possible only when the AF mode of N2020/F-501 is set at “S” (Single).

When the AF secondary flash (infrared sensor) turns on and the auto-focus function starts to work, the ▲ mark in the finder will light up and the lens begins to zoom. The shutter button can be pressed when the green ● lights up. Also, since the camera is set at single AF servo mode, if the shutter button is pressed halfway down after the green ● lights up, the lens will stop and the active secondary flash will also stop. When you want to change the composition of the picture, lift your finger from the shutter button, then press it halfway down. Also, remember the following points at the time active secondary flash is used.

A. Picture taking without using TTL program flash

When used with AF lens alone
   • When the maximum (largest) aperture of the lens is F1.2—2.8, set the lens at F2.8 or smaller (F2.8, 4, 5.6 ...)
   • When the maximum aperture of the lens is F2.8 or larger, set the lens at F5.6 or smaller (F5.6, 8, 11...)

When used with AF tele-converter TC-16AS with lens
   • When the maximum aperture of the lens is F1.2 or F1.4, set the lens at F2 or smaller (F2, 2.8, 4...)
   • When the maximum aperture of the lens is F1.8—F2.8, set the lens at F4 or smaller (f4, 5.6, 8...)
B. Picture taking with N2020/F501 in combination with TTL program flash [When N2020/F-501 mode is in P\_DUAL.P\_P\_H and the Auto 433AF's mode is in "○" (TTL)].

- Set the lens aperture at smallest F-Stop.
- Pay special attention to the following points

When only the AF lens is used.

- When the maximum aperture of the lens is F1.2—2.8, please use film (ISO 50, 64, 100...)
- When the maximum aperture of the lens is larger than F2.8, use film that is ISO 100 or higher. (100, 200, 400...)

When used with AF tele-converter TC-16AS is also used with lens.

- When the aperture of the lens is F1.2 or F1.4 max. use film that is ISO 50 or higher (ISO 50, 64, 100...)
- When the aperture of the lens is F1.8—2.8, maximum use film that is ISO 100 or higher (ISO 100, 200, 400...)
- TTL program flash cannot be used with the combination of AF tele-converter TC-16AS and AI lens.
- Auto-focus picture taking is not possible when a lens with a max. aperture of F2.8 or larger and TC-16AS are combined.
- A secondary flash will not occur unless the 433AF's "ready" light is on. If the "ready" light glows considerably dim, re-cycle irregularly or blinks after active secondary flash lights up, it indicates the power of 433AF is almost depleted. Replace old batteries.
- The effective focal range available for autofocusing by AF lens with active secondary flash is 35—105 mm (when TC-16AS is not used). The effective focal range available will become 24—58 mm if an AF tele-converter TC-16AS is added.

If the focus display does not light even when focus is made by using AF secondary flash, lift your finger from the shutter button and then press it halfway down. (Also, please re-check all the conditions such as distance at this point.) If the focus mark display in the finder does not light no matter how long you wait and x stays lit, it means that measurement of the distance is impossible. Follow the manual instructions to focus.

- It is necessary that AF secondary flash is used correctly in the measurable distance zone of N2020/F-501 model. Especially at the time of auto-focus picture taking with AF secondary flash, the installation of 433AF to hot shoe has to be made very secure by inserting it all the way in and firmly tightening the lock-ring. If the patterns of LED are out of the camera's measurable distance zone, the measurement of distance may not be possible.
- If the lens used cannot provide autofocus picture taking under regular light, it will be impossible to provide auto-focus picture taking even when active secondary flash is utilized.
- If there is enough light that the subject does not need AF secondary flash, it will not go off.

Power Ratio Control (Manual)

With Sunpak's unique Power Ratio Control you can adjust the light output over a five stop range (from full to 1/16 power). This feature gives you greater depth-of-field control, the ability to control battery life and recycle times, precise fill-flash capability, macro/close-up capability and the ability to control flash duration.

OPERATING INSTRUCTION FOR STANDARD CAMERAS

1. Set the Auto/Manual Selector Switch (on the back of the flash body) to the top so that the white "M" appears.
2. Set the Film Speed Scale to the desired ISO setting. (Example: ISO 100) (21)
3. Adjust the Power Ratio Control to full power by sliding the Selector Switch to "FULL".

The measurable distance range of AF secondary flash is about 3—17 feet (1—5 m) when combined with AI Nikon AF 50 mm/F1.8S. (When 20°C with standard subject and 35% refraction rate).

The measurable distance range may vary with different lenses. Also, if the refraction rate of the subject is low, or in a state of high temperature, it may be impossible to measure the distance.
4. The scales for distance and f/stop now show the exposure combination. Find the flash-to-subject distance. (Example: 15'14.5 m) (22)

5. Set your lens to the lens opening shown for this distance. (Example: with ISO 100 film, the correct lens opening at 15'14.5 m is f/8)

Using Power Ratio (23)

1. When using the Power Ratio at full power, set the Film Speed Scale to the appropriate ISO setting and be sure the Auto/Manual Selector is at "M".

2. Determine the distance of the subject from the flash. When the auto 433AF is mounted to the camera, you can easily do so by focusing the lens and reading the distance indicated by the distance scale on the lens barrel.

3. Slide the Power Ratio Control Switch until the desired f/stop appears opposite this distance.

   ALWAYS SLIDE THE POWER RATIO CONTROL SWITCH TO A MARKED POSITION. DO NOT SET THE POWER RATIO BETWEEN MARKED POSITION OR THE UNIT WILL NOT OPERATE PROPERLY.

   (Example: 11 feet/3.2 m with ISO 100 film, you may choose f/11, 8, 5.6, 4 and 2.8)

4. Be sure the distance scale indicates proper f/stop for the correct exposure of your subject. If not, increase or decrease the power as needed.

5. You are now ready to take a picture. Remember to adjust the aperture on the lens to match the aperture indicated on the calculator scale.

Operating Adjustable Bounce Flash Head (25) (26)

The auto 433AF has a unique flash head assembly which allows you to aim the light in virtually any direction.

For more pleasing and more creative lighting effects, for added convenience and repeatability, the Adjustable Bounce Flash Head has convenient reference marks for determining the exact angle of the bounce.

1. To rotate the Adjustable Bounce Flash Head, grip with thumb and forefinger and gently turn to desired setting. DO NOT FORCE HEAD.

2. To adjust the flash Base, simply twist as illustrated with thumb and forefinger.

   • The effectiveness of the bounce flash feature depends on the condition of reflecting surface. The angle of the flash must be set properly to achieve best lighting effect. When the flash is bounced against a wall, it usually loses 2—3 apertures of light even if it is a white wall. Therefore, when the picture is taken in TTL light adjustment mode or in external light mode, it is recommended that the smallest aperture is used.

   • The relationship between the aperture of automatic flash adjusted pictures and the adjustable distance range changes according to the refracting surface. It is impossible to calculate these relationships from the exposure calculation panel. Therefore, it is recommended that you confirm the amount of light by pressing the test button in external automatic light mode.

   • Use as white surface as possible for best refraction rate.

   In color photography, a colored surface will reflect its color on the subject.

Total Bounce Control System

In addition to its bounce flash head, your auto 433AF has other unique optional accessories for better bounce lighting.

Bounce Flap: The bounce flap provides multiple lighting effects. A predetermined portion of light directly illuminates subject while the rest of the light goes to the ceiling for bounce illumination. (The optional accessory, Sunpak Tele-Fil Kit TL-8 Cat. No. 651-842). (27)

Bounce Lighting Kit: For more extensive bounce lighting effects, Sunpak Bounce Reflector (to be attached to the Sunpak Tele-Fil Kit TL-8 or Filter Holder) is an available option. (28)
Optional Accessories for the SUNPAK Auto 433AF (29)

For maximum creativity and ease of operation, many optional accessories are available for your auto 433AF. Just like today’s system cameras, you can customize your auto 433AF to suit your exact photographic requirements.

1. Sunpak Filter Kit FK-1
   (Cat. No. 651-738)
2. Sunpak Bounce Lighting Kit
   (Cat. No. 651-795)
3. Tele-Fil Kit TL-8 (Cat. No. 651-842)
4. Sunpak Basic Grip
   (Cat. No. 651-772)
5. Sunpak QBC-3 Nicad 3-Hour Charger (Cat. No. 651-731)
6. Sunpak Multi-Voltage AC Adapter
   (Cat. No. 651-740)
7. Sunpak Powerpak for 510 V Battery
   (Cat. No. 651-723)
8. Sunpak NC510 Rechargeable Battery
   for Sunpak Powerpak
   (Cat. No. 651-727)
9. Sunpak QBC-5 Charger
   (Cat. No. 651-809)

Care of Your auto 433AF

Your Sunpak electronic flash has been engineered to require almost no “maintenance”. Still to insure best performance year-in and year-out, follow these basic pointers:

1. Storage: If you don’t use your auto 433AF for several weeks, or if you plan to take it on a trip, the accessory compartment case is recommended. This case will not only hold your auto 433AF but its many accessories. Also be sure to remove the batteries before storage to prevent possible damage due to battery leakage.

2. Inspect Batteries Frequently: Check for reasonable recycling time (the length of time it takes the ready light to come on between flashes): If it’s more than 20 or 30 seconds, a fresh set of alkaline batteries should be obtained (or if nickel cadmium batteries are used, they must be recharged).
   It’s also wise to check your batteries for appearance. Sometimes even the best of batteries discharge or leak some chemical material through the jacket and leave a whitish-powder on the battery which passes onto your Sunpak flash unit’s electrical contacts. (If this has happened, replace the batteries after cleaning the Sunpak’s internal battery contacts with an eraser).
   Finally, it’s a good idea to remove the batteries once in a while and wipe them with a handkerchief. The cleaner the battery surface, the easier it is for the energy to pass through your flashgun’s electrical system.

3. Remove Batteries: If for some reason you do not intend to use your flash unit for a period of several weeks or more, remove the batteries and store them separately. Inside a plastic bag is one good way.

4. Maintenance: If your auto 433AF’s reflector window becomes dirty, use one drop of lens cleaner on a lens cleaning tissue. A small amount of lens cleaner and lens tissue or a slightly moist cloth can be used to clean the rest of the unit. BE SURE TO THOROUGHLY DRY THE UNIT IMMEDIATELY AFTER CLEANING.

5. Service: In the unlikely event that your Sunpak electronic flash requires service, return it to your dealer or the address shown on Sunpak world wide network. Do not, under any conditions, attempt to disassemble and/or adjust it by yourself: electronic flash operates on high voltage, and should not be taken apart. However, keep in mind that flash failure is more likely to result from weak batteries than any other single cause: if the flash doesn’t fire, check batteries and contacts carefully.
# Specifications

Guide Numbers:

Angle of Illumination IN DIRECT FLASH:

Automatic Aperture Setting:

Automatic Distance Range:

Variable Power Ratio Range:

Sensor Acceptance Angle:

Bounce Flash:

Flash Speed:

## Number of Flashes and Recycling Time:

<table>
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<th>Maximum Power</th>
<th>Minimum Power</th>
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<tr>
<td>55</td>
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## Color Temperature:

Most suitable for daylight color films.

## AF auxiliary flash photometric distance range:

Approx. 3.3'—16.5'/1—5 m (When unit is combined with AIAF NIKKOR 50 mm/f1.8S and aimed at standard subject of 35% reflectivity at ambient temperature of 20°C)

## Dimensions (H x W x D):

5.7" x 3" x 2.8"/144 x 75 x 72 mm (without shoe)

## Weight:

320 g/11 oz. (less batteries)

Features and specifications are subject to change without prior notice.
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