SETTING UP

Connect camera and flash unit.
Screw one end of the Sync Cord SC-11 ④ into either of the flash unit's sync/multiple flash terminals ③, and the other end into the camera's sync terminal. With the Nikon F-501/N2020*, F-301/N2000*, FG or FG-20 camera, use Nikon Sensor Cord SC-13 or TTL Remote Cord SC-23.

* The Nikon N2020 and N2000 are sold exclusively in the U.S.A. and Canadian markets.

Plug in sensor unit ㉓.

Make sure the flash head ② faces straight ahead in normal shooting position.

Connect power supply.
Make sure the power supply is turned off and plug the cord from the power supply into the flash unit's external power terminal ⑬.

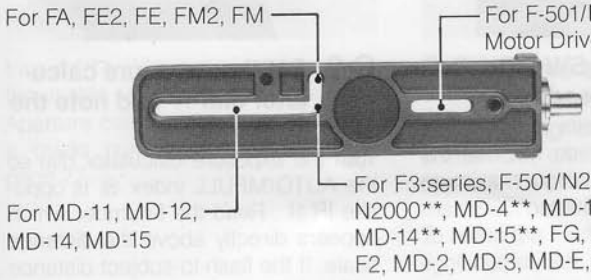
Set shutter speed on the camera to the appropriate synchronization speed.
See the table on page 25 for the proper shutter speed setting for flash synchronization of each camera.

DC-Unit SD-7

Attach the bracket SK-5 ⑤ to the camera.
Firmly screw the attachment screw ㉝ on the bracket into the camera's tripod socket.

Attach the flash unit to the camera/bracket assembly.
Insert bracket into the bracket mounting adapter ⑧ of the flash unit so the two white dots ⑮ are aligned, then rotate the camera/bracket assembly forward until the two units click-lock into place.

Camera/motor drive attachment slot ⑥ selection guide

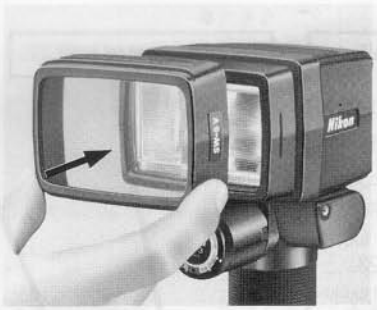


** To fit the SK-5 securely onto the Nikon F-501/N2020 or F-301/N2000 camera, use the Nikon Tripod Adapter AH-3.*
*** With AH-3.*

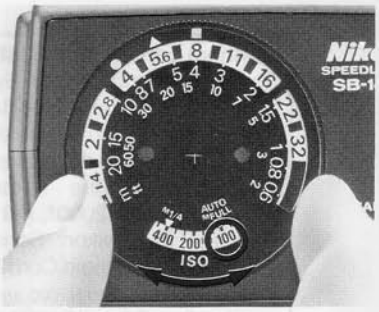
BASIC OPERATION

Steps 1 to 3 are divided into three sections, according to shooting conditions: A for normal visible light, B for UV rays and C for infrared rays.

A—For automatic flash photography in normal visible light



A-1. Attach the SW-5V Flash Adapter ⑱ to the flash head.



A-2. Set the exposure calculator dial ⑪ and choose a suitable f-stop for automatic operation.

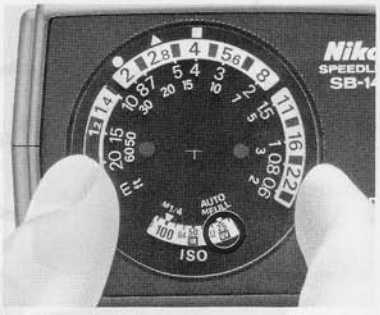
Turn dial so the AUTO/MFULL index ㉙ is opposite the speed of the film in use.

With ISO 100 film, for example, the usable f/stops are f/4, f/5.6 and f/8,

B—For flash photography in UV rays

B-1. Attach the SW-5UV ㉑ to the flash head.

The SW-5UV is made of glass, and must be handled with care. To prevent from being dropped, always attach with the screw provided.



B-2. Set the exposure calculator dial ⑪ and note the proper f/stop.

Set the exposure calculator dial so the AUTO/MFULL index ㉙ is opposite UV ㉚. Read the f-number which appears directly above the distance scale. If the flash-to-subject distance is 2m, for example, the correct aperture is f/8. With a subject 1m away,

C—For infrared flash photography

C-1. Attach the SW-5IR ⑳ to the flash head.

The SW-5IR transmits light rays of 800nm and above; do not use the SW-5IR with films having a maximum sensitivity below 800nm.

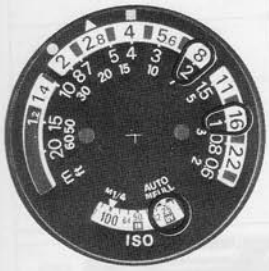
C-2. Set the exposure calculator dial ⑪ and note the proper f/stop.

Turn the exposure calculator dial so the AUTO/MFULL index ㉙ is opposite IR ㉛. Read the f-number which appears directly above the distance scale. If the flash-to-subject distance is 2m, for example, the usable aper-

with flash-to-subject distance ranges of 0.6m to 8m (2 to 26ft.) for ○, 0.6m to 5.6m (2 to 18ft.) for △, and 0.6m to 4m (2 to 13ft.) for □, respectively.
Select the proper aperture. For further details on selecting the f/stop, see "Selecting/Determing Aperture" on page 26.

A-3. Set the shooting mode selector ㉒.

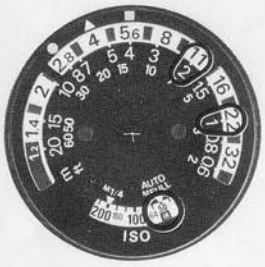
Turn the ring on the front of the sensor unit until the white index is opposite the index that corresponds to the f/stop selected (○, △ or □).



the usable aperture is f/16.
You can also determine aperture using a guide number. For details, see page 27.

B-3. Set the shooting mode selector ㉒.

Turn the ring on the front of the sensor unit until the white index is opposite FULL, so the flash fires at maximum output.
To make the flash fire at 1/4 of its full light output, set the index to 1/4. In this case, to determine the proper aperture, reset the exposure calculator dial so the M1/4 index ㉘ is opposite UV.



ture is f/11. With a subject 1m away, the usable aperture is f/22.
Aperture can also be determined by a guide number. For details, see page 27.

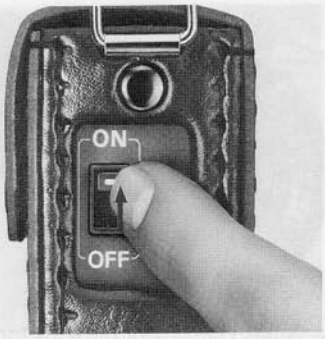
C-3. Set the shooting mode selector ㉒.

Turn the ring on the front of the sensor unit until the white index is opposite FULL, so the flash fires at maximum output.
To make the flash fire at 1/4 of its full light output, set the index to 1/4. In this case, to determine the proper aperture, reset the exposure calculator dial so the M1/4 index ㉘ is opposite IR.

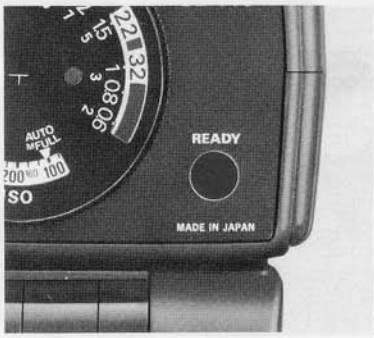
BASIC OPERATION—continued

The following operation procedures can be used for all normal visible-light photography, UV flash photography and infrared photography.

4. Set the aperture on the lens.
For UV flash photography, use the UV-Nikkor 105mm f/4.5 lens only.

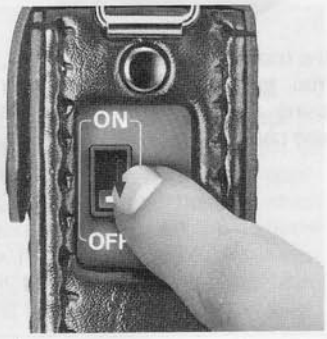


5. Turn on the power supply.



6. Watch the ready-light ⑩.
When the LED ready-light comes on, the flash unit is ready to fire.

7. Take the picture.
When the shutter is tripped, the flash unit fires and the picture is taken. The ready-light soon lights up again to indicate the flash unit is recycled and ready to fire again.
For UV flash photography, attach the UV transmitting filter (supplied with UV-Nikkor lens) to the lens.
For infrared shooting, attach an appropriate filter (such as the R60, etc.) to the lens, and refocus with infrared compensation index on the lens. When shooting in a dark room, however, it is not necessary to use a filter.



8. Turn off the power supply.

TECHNICAL INFORMATION

Setting Camera's Shutter Speed/Shooting Mode Selector Dial

For proper synchronization, set the shutter speed dial as shown in the table below.

Camera	Synchronization speed (sec.)	Camera setting	
		With SC-11 or SC-15	With SC-12*, SC-13** or SC-23**
F3-series	1/80 or slower	1/60 ~ 8 sec., X, T and B	All settings***
FA	1/250 or slower	1/250 ~ 1 sec. (in M mode), M250 and B	All settings***
FE2	1/250 or slower	1/250 ~ 8 sec., M250 and B	All settings***
F-501/N2020, F-301/N2000	1/125 or slower	Not usable	All settings***
FM2 (with 1/250 sec. sync speed)	1/250 or slower	1/250 ~ 1 sec., and B	
FG	1/90 or slower	Not usable	All settings***
FG-20	1/90 or slower	Not usable	All settings***
FM2 (with 1/200 sec. sync speed)	1/200 or slower	1/125 ~ 1 sec., X200 and B	
EM	1/90 or slower	Not usable	All settings***
FE	1/125 or slower	1/125 ~ 8 sec., M90 and B	AUTO, 1/125 ~ 8 sec., M90 and B****
F2-series	1/80 or slower	Red line between 125 and 60, 1/60 ~ 1 sec., T and B	

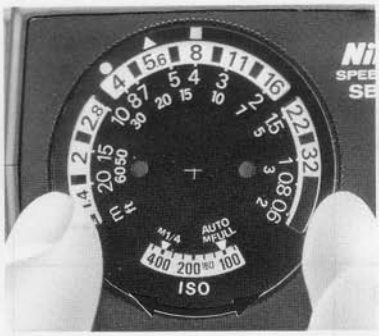
** For F3-series cameras only.*

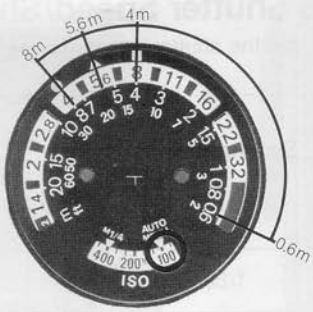
*** With F3-series cameras, Flash Unit Coupler AS-4 or AS-7 is required; with F2-series cameras, AS-1 is required.*

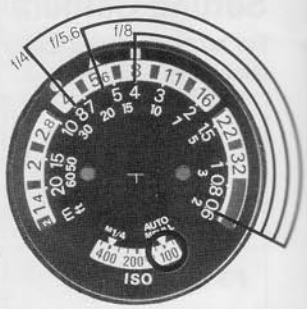
**** In the automatic exposure mode or at a manual shutter speed setting higher than the synchronization speed, the shutter speed automatically switches to the synchronization speed as soon as the power supply for SB-140 is turned on. For details, see the camera instruction manual.*

***** At AUTO, shutter speed automatically switches to 1/90 sec. as soon as the power supply for the SB-140 is turned on.*

TECHNICAL INFORMATION—continued



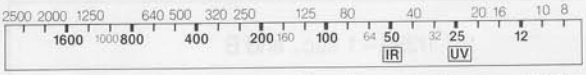




Selecting/Determining Aperture

Automatic operation—for visible light only

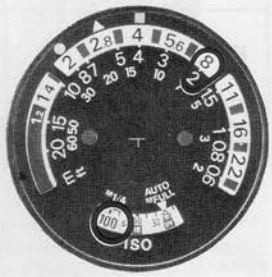
Turn the exposure calculator dial until the number corresponding to the film speed is opposite the AUTO/MFULL index and you can read three usable f/stops.
Dots between the numbers on the film speed scale represent intermediate settings.



Three factors should be considered in selecting a suitable f/stop—flash-to-subject distance, depth of field and recycling time.

Flash-to-subject distance
f/stop indicators ㉕ also indicate the range of flash-to-subject distances for automatic shooting. Distance ranges are constant, regardless of the film speed set on the dial. 0.6m to 8m (2 to 26ft.) for the ○ indicator, 0.6m to 5.6m (2 to 18ft.) for the △ indicator, and 0.6m to 4m (2 to 13ft.) for the □ indicator.
For example, to shoot a subject more than 5.6m (18ft.) away, use the f/stop indicated by the ○ indicator—f/4 when using ISO 100 film.
To shoot a subject more than 8m (26ft.) away, use the SB-140 on manual.

Recycling Time and Depth-of-Field
With a subject distance that remains constant, the wider the aperture selected, the faster will be the recycling time of the flash unit, but the less the depth of field. With ISO 100 and a subject up to 4m (13ft.) away, you can select any one of the three indicated f/stops—f/4, f/5.6 or f/8—taking into consideration recycling time or desired depth of field.



For Manual Operation

The SB-140 offers a choice of light output, full or 1/4. Depending on the amount of light desired, set the shooting mode selector of the Sensor Unit at the FULL or 1/4 position.

Visible-light flash photography
Turn the exposure calculator dial so the AUTO/MFULL index ㉙ is opposite the film speed in use for full output, or the M1/4 ㉘ index is opposite film speed in use for 1/4 output.
Read the f-number which appears directly above the flash-to-subject distance, then set this aperture on your lens.
For example, to shoot a subject 2m (7ft.) away at full output with ISO 100, use f/16. To shoot the same subject at 1/4 output, use f/8.

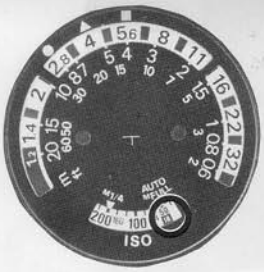
UV flash photography

Turn the exposure calculator dial so the AUTO/MFULL index is opposite UV for full output, or the M1/4 index is opposite UV for 1/4 output.

Read the f-number which appears directly above the distance scale.

To assure correct exposure, it is recommended that you take additional shots with the lens opened up or stopped down by one f/stop.

Note that the exposure calculator dial of the SB-140 is designed for use with Kodak Spectroscopic Type 103-O film as the standard. With other films, the dial should only be used as a guide.



Infrared photography

Turn the exposure calculator dial so the AUTO/MFULL index is opposite IR for full output, or the M1/4 index is opposite IR for 1/4 output.

Read the f-number which appears directly above the distance scale.

To assure correct exposure, it is recommended that you take additional shots with the lens opened up or stopped down by one f/stop.

Note that the exposure calculator dial of the SB-140 is designed for use with Kodak High-Speed Infrared Film 2481 as the standard. With other films, the dial should only be used as a guide.

Guide number

m (ft)

Shooting condition / Shooting mode selector	Visible-light*	UV**	Infrared***
FULL	32 (105)	16 (52)	22 (72)
1/4	16 (52)	8 (26)	11 (36)

* *At ISO 100*
** *With Kodak Spectroscopic Type 103-O film; see page 31 for details.*
*** *With Kodak High-Speed Infrared Film 2481 see page 31 for details.*

Without referring to the exposure calculator dial, you can also determine the f/stop by using the following equation:

$$\text{f/stop} = \frac{\text{guide number}}{\text{flash-to-subject distance}}$$

For example, to get the proper aperture for visible-light photography when using ISO 100 film and a subject 8 m away, divide 32 (guide number) by 8 to get f/4.

To calculate the correct guide number for other ISO film speeds, use the following equation:

$$\text{guide number for other ISO film speed} = \text{guide number for ISO 100} \times \sqrt{\frac{\text{desired ISO film speed}}{100}}$$

Setting Sensor Unit SU-3 ㉓

The Sensor Unit SU-3 controls the operation of the SB-140. It offers a choice of five settings.

For automatic operation

The ○, △ and □ indexes correspond to the f/stop indicators on the exposure calculator dial. Turn the ring on the front of the sensor unit to set the shooting mode selector to the index that corresponds to the f/stop selected by the exposure calculator dial. At these settings, the sensor ⑲ reads the light reflected from the subject so the SB-140 can automatically vary its light output to match the flash-to-subject distance.

Make sure that nothing comes between the sensor and light reflected from the subject.

When shooting a dark subject (one with low reflectivity), reduce the aperture selected by one-half to one full f/stop. When the subject is light in tone (has high reflectivity), reset the aperture so it is one-half to one full f/stop wider. Otherwise, your pictures might come out over- or underexposed.

When shooting a subject with very high reflectivity, such as a mirror or metallic surface, take pictures on manual to prevent underexposure.

For fill-in flash photography

Make sure the scene brightness does not exceed the exposure value determined by the combination of the shutter speed (synchronization speed) and the selected aperture.

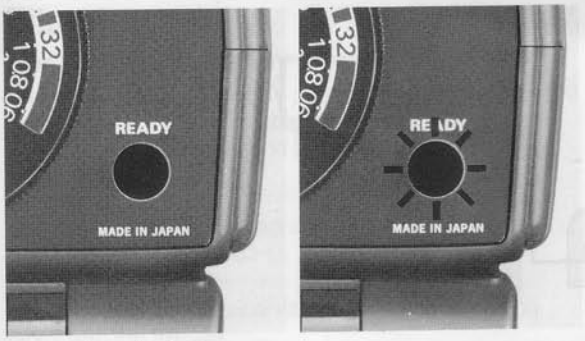
For manual operation

Set the SU-3 to FULL or 1/4, depending on the amount of light desired. The SB-140 operates manually at its maximum light output or 1/4 light output regardless of flash-to-subject distance.

The SU-3 can be attached to Nikon Speedlight SB-14 or SB-11 to enable firing of the flash unit at 1/4 of its full output.

Detaching the Sensor Unit

Push in the two protruding catches at the base of the SU-3 and pull out the SU-3 Sensor Unit.

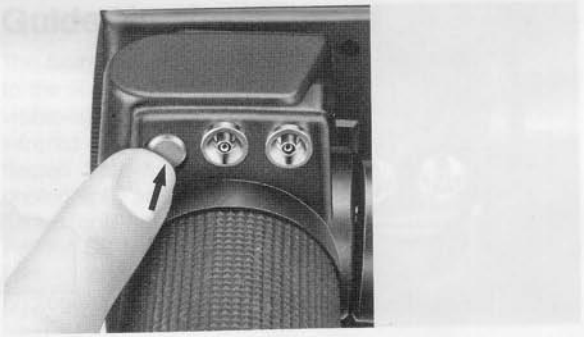


Ready-Light ⑩

When the external power is turned on, the ready-light at the back of the SB-140 lights up to indicate the SB-140 is recycled and ready to fire. The ready-light lights up when the SB-140 is recycled to approx. 80% of full capacity—wait a few extra seconds when shooting subjects located at the far limit of the auto shooting range.

In automatic operation, the ready-light blinks for a few seconds everytime the flash fires at its maximum output, showing that light *may* be insufficient and underexposure *may* occur. In this case, reset the lens to a wider aperture or move closer to the subject.

Note that when batteries are nearly exhausted, the light output of the flash unit decreases.



Open-Flash Button ⑨

The red open-flash button is used to fire the flash unit manually without having to trip the camera's shutter.

By removing the connecting cord from the camera, setting the camera to B, and pushing the open-flash button repeatedly, you can create multiple-exposure "stroboscopic" effects or paint the scene with light. The open-flash button can also be used in conjunction with the ready-light to determine the possibility of correct exposure when shooting on automatic. This is especially useful for bounce flash. After setting up the shot, push the open-flash button. If the ready-light does not blink, you can take the picture. If it does blink indicating a possibility of underexposure, use a wider aperture, or move the flash closer to the subject or bounce surface.

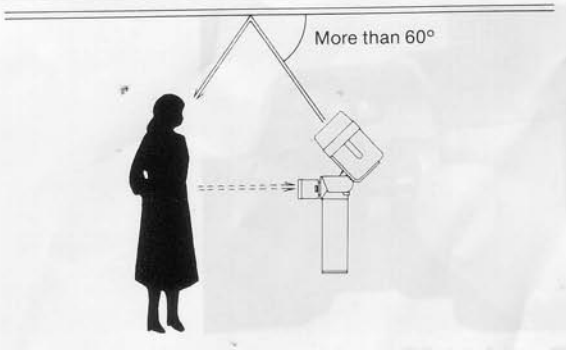
Flash Head ②

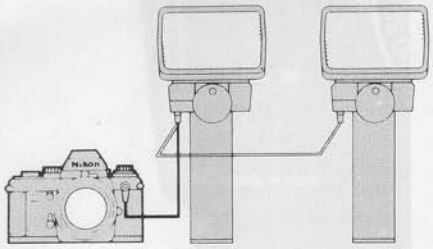
For shooting in visible light, to soften shadows and lower contrast for indoor snapshots, you can tilt the flash head up and simultaneously rotate it to the left or right to bounce light off the ceiling or walls. The SB-140's flash head can be tilted back as much as 120° and rotated 120° to the left and 120° to the right; click-stops are provided at 30°, 60°, 90°, and 120° for both tilting and rotating movements.

However, when the flash head is tilted a full 120°, it cannot be rotated to the left or right. Tilt may also be restricted, depending on the degree of rotation.

Surfaces used for bouncing light should be white or silver to prevent color photographs from coming out with an unnatural color cast.

Do not bounce the flash for UV or infrared shooting.



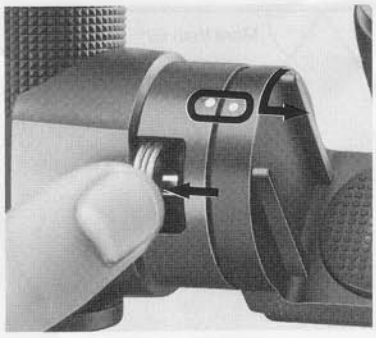


Sync/Multiple Flash Terminals ③

Two standard Nikon screw-type terminals are provided on the SB-140 Speedlight. Use either terminal to connect the SB-140 to the camera, and if necessary, use the other to connect the SB-140 with another flash unit in series for multiple flash operation.

When using the Nikon Speedlight SB-11, SB-12, SB-14, SB-15 SB-16A, SB-16B, SB-17, or another SB-140 as a secondary unit, connect the flash units together using the Sync Cord SC-11 or SC-15.

In multiple flash operation, be sure to use both flash units on manual.



Bracket Mounting Adapter ⑧

To detach the flash unit for off-camera flash operation, push the release/locking wheel ⑯ to the left and while holding it, tip the flash forward until the two white dots are aligned—then pull the flash unit away from the bracket.

To detach the bracket mounting adapter from the flash unit's handle ⑭, use a standard screwdriver to loosen the two screws ⑦ on the face of the adapter.

TIPS ON UV AND INFRARED PHOTOGRAPHY

Films

For UV photography

The wavelength range of UV photography with the SB-140 is from 300 to 400 nm. Usable films are:

- General panchromatic and regular photosensitive materials
- Color film*
- Special film for UV photography, such as Kodak Spectroscopic Type 103-O, Type 103-F, etc.

** Image will appear in a blue monochrome color.*

Note that infrared films cannot be used for UV photography with the SB-140.

For infrared photography

Usable films are:

- Kodak High-Speed Infrared Film 2481
- Sakura Infrared 750
- Kodak Echtachrome Infrared Film 2236

Film care

- UV and infrared photographic films are easily impaired by high temperatures—store below 10°C (50°F).
- Load UV and infrared films into the camera in a dark room.
- Take care not to expose them to infrared rays.

Guide Number

The flash unit's guide number relates the output of a light to the sensitivity of a film, and is generally used only for visible-light photography. It cannot be adopted for UV and infrared photography, because the amount of light reflected from subjects differs from that in visible-light photography and because film sensitivity cannot be determined for UV and infrared photography.

For the SB-140, Nikon has determined the guide number (shown on page 27) for UV photography or infrared photography as follows.

Guide number for UV photography

Correct exposure, obtained with Kodak Spectroscopic Type 103-O* film by using a Kodak D-19 developer at 20°C (68°F) for six minutes, is used to determine the guide number for UV photography.

** With other films, the guide number may differ from that shown on page 27.*

Guide number for infrared photography

Correct exposure, obtained with Kodak High-Speed Infrared Film 2481* by using a Kodak D-76 developer at 20°C (68°F) for 10 minutes, is used to determine the guide number for infrared photography.

** With other films, the guide number may differ from that shown on page 27.*

Spectrum Energy Distribution

See charts on page 36 to 37.

ACCESSORIES

DC Unit SD-7

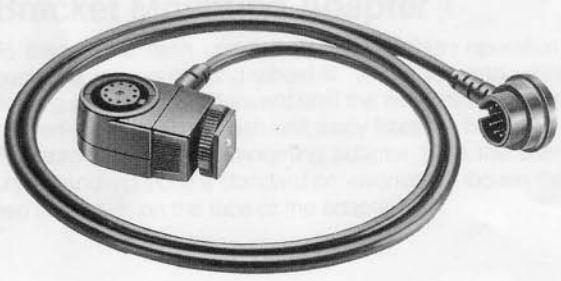
The SD-7 uses six C-type batteries, and serves as a power source for any of the Nikon Speedlights SB-140, SB-14 and SB-11. It has a neckstrap for convenient use.

TTL Remote Cords SC-12 and SC-23

The SC-12 is for Nikon F3-series cameras; the SC-23 is for the Nikon FA, FE2, F-501/N2020, F-301/N2000, FG, and Nikonos-V (via the Sync Cord, Type V). Connecting the SB-140 and an appropriate camera with SC-12 or SC-23 provides TTL control of flash exposure (for visible-light photography only). Also provided are automatic switchover of shutter speed to the proper synchronization speed and ready-light indication in the camera's viewfinder.

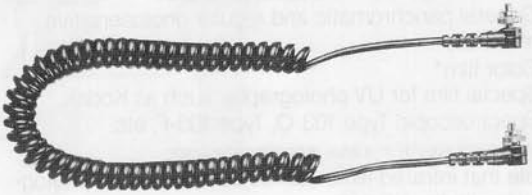
Sensor Remote Cord SC-13

The SC-13 allows mounting of the SB-140's Sensor Unit SU-3 directly on a camera's ISO-type accessory shoe for automatic (but not TTL), off-camera operation (for visible-light photography only). With a dedicated Nikon camera, such as the FA, FE2, FE, FM2, F-501/N2020, F-301/N2000, FG, FG-20, or EM, or with an F3-series camera via the AS-4 or AS-7 coupler, ready-light indication is provided in the camera's viewfinder. For all cameras except the FM2, automatic switchover of shutter speed to a proper synchronization speed is also provided.



Sync Cord SC-15

A coiled cord over one meter in length, the SC-15 enables the SB-140 to be detached from its bracket and used off-camera.



Sensor Unit SU-2

Replace the SU-3 with the SU-2, set the SU-2's mode selector to S (for slave), the SB-140 emits a modulated burst of light which can trigger a second flash unit. The remote flash unit is connected to the receiver portion of the optional Modulite Remote Control Unit ML-1 (which is set to channel 2), while the SB-140 acts as the transmitter. Slave flash operation can be performed only in visible light.

"RED EYE"

"Red eye" is a phenomenon in flash photography where the center portions of the subject's eyes appear as bright red orbs in color photographs (or white in black and white pictures). This is a result of the light from the flash illuminating the retina directly. If the subject looks straight into the lens and there is little or no ambient light, the pupil is wide open, making the retina clearly visible in the picture.

To avoid "red eye," you can take any or all of the following precautions:

1. Ask the subject not to look directly into the lens when the picture is taken.
2. Remove the flash unit from the camera and hold it as far away as possible from the camera by using a sync cord.
3. Increase the room's overall illumination to reduce the opening of the subject's pupils.

TIPS ON SPEEDLIGHT CARE

- To remove dirt or fingerprints, wipe with a dry soft or silicon-treated cloth. Never use thinner, benzine or alcohol, since they might damage the plastic parts.
- To prevent damage to the flash unit's electronic circuitry, keep the flash unit away from places where the temperature is likely to go higher than 50°C (122°F), such as inside the trunk of a car in the hot summer sun; also do not store the unit in exceptionally damp places. Use the SB-140 within the range of −10°C (14°F) ~ +50°C (122°F).
- The UV adapter SW-5UV is easily affected by humidity. Store the SW-5UV with a desiccant or in a well-ventilated place.
- If your SB-140 has not been used for a long time, its recycling time may be longer. To maintain the built-in condenser in peak condition, there by enabling you to use the SB-140 for many years, fire the flash unit a few times every month. After firing, wait until the ready-light lights, then turn off the power switch of the power supply, remove the batteries, and store the SB-140 in a suitable location. This will prevent the condenser from deteriorating.
- Keep the flash unit away from salt water and out of the rain.
- Never attempt to disassemble or rapair the flash yourself. These delicate procedures should be left to an authorized service facility.

OPTIMUM BATTERY PERFORMANCE

1. **New batteries**
   Between manufacture and first use, all batteries exhibit some drain. Therefore, care should be taken to purchase the newest (and freshest) ones possible. To help you do this, some manufacturers stamp the date of manufacture on the bottom of each battery. Ask your camera dealer for assistance in interpreting the codes.
2. **Temperature**
   Battery life ratings are based on operation at around 20°C (68°F). At other temperatures, battery life is shortened. Spare batteries should therefore be kept available if operation in low temperatures in anticipated.
3. **Continuous use**
   Batteries are drained much more quickly by continuous use then by intermittent use.
4. **Storage**
   When not in use, the batteries should be removed from the power supply to prevent leakage which may damage the unit. To minimize drain during the period of disuse, store the batteries in a cool, dry place below 20°C (68°F).
5. **Battery brands**
   Do not mix brands of batteries or use batteries with different model numbers. Also, avoid mixing new and old batteries since proper performance will not be obtained and battery leakage may occur.
6. **Disposal**
   Do not dispose of batteries by burning. Also, for safety's sake, never disassemble batteries.
7. **Polarity**
   When installing batteries, observe the voltage polarities carefully. Reversal of the positive (+) and negative (−) terminals will result in leakage. If leakage should occur, clean the SB-140 carefully or take it to an authorized Nikon dealer or service center.
8. **NiCd batteries**
   In comparison with regular batteries, NiCd batteries provide faster recycling and higher efficiency at low temperatures. However, the recycling time and the number of flashes per battery set depend upon the age of the batteries, their charges, and their capacities.
   - *Do not continue to use NiCd batteries after they are exhausted. Continued use may reduce their life span or cause leakage.*
   - *Before charging, thoroughly read the battery and battery charger instructions.*
   - *Charging should only be done for the designated number of hours on a battery charger recommended by the battery manufacturer. Excessive charging may cause battery deterioration.*
   - *Charging should only be done in temperatures between 5°C (41°F) and 35°C (95°F). Never charge batteries while they are still hot from use.*
   - *Never attempt to charge NiCd batteries that are incorrectly installed in the battery charger.*
   - *The charging capacity of NiCd batteries may be shortened after a long period of storage. If this occurs, discharge and recharge them several times.*
   - *If working time is markedly reduced even after they have been correctly charged, replace them with a fresh set.*
   - *Do not mix new and old NiCd batteries.*
   - *Do not use NiCd batteries which have been charged for different lengths of time.*

SPECIFICATIONS

All performance data are for normal-temperature operation [20°C (68°F)]

Electronic construction Automatic silicon-controlled rectifier with series circuitry

Firing spectrum Selectable

Guide number

m (ft)

Shooting condition / Shooting mode selector	Visible-light*	UV**	Infrared***
FULL	32 (105)	16 (52)	22 (72)
1/4	16 (52)	8 (26)	11 (36)

* *At ISO 100*
** *With Kodak Spectroscopic Type 103-O film*
*** *With Kodak High-Speed Infrared Film 2481*

Angle of coverage 70° horizontal and 53° vertical; 28mm or longer lenses can be used

Power source Battery Pack SD-7 holding six C-type batteries

Battery	Number of flashes (at manual full output)	Minimum recycling time (at manual full output)
1.2V rechargeable NiCd batteries	approx. 100 times	approx. 4 sec.
1.5V alkaline-manganese batteries	approx. 270 times	approx. 9.5 sec.
1.5V manganese batteries	approx. 80 times	approx. 12 sec.

Usable f/stops and automatic shooting range (for visible-light photography)

Unit: (ft.)

Position of shooting mode selector	Film sensitivity (ISO)								Auto shooting range
	12	25	50	100	200	400	800	1600	
	f/stop								
○	—	2	2.8	4	5.6	8	11	16	0.6 ~ 8 (2.0 ~ 26.2)
△	2	2.8	4	5.6	8	11	16	22	0.6 ~ 5.6 (2.0 ~ 18.4)
□	2.8	4	5.6	8	11	16	22	32	0.6 ~ 4 (2.0 ~ 13.1)

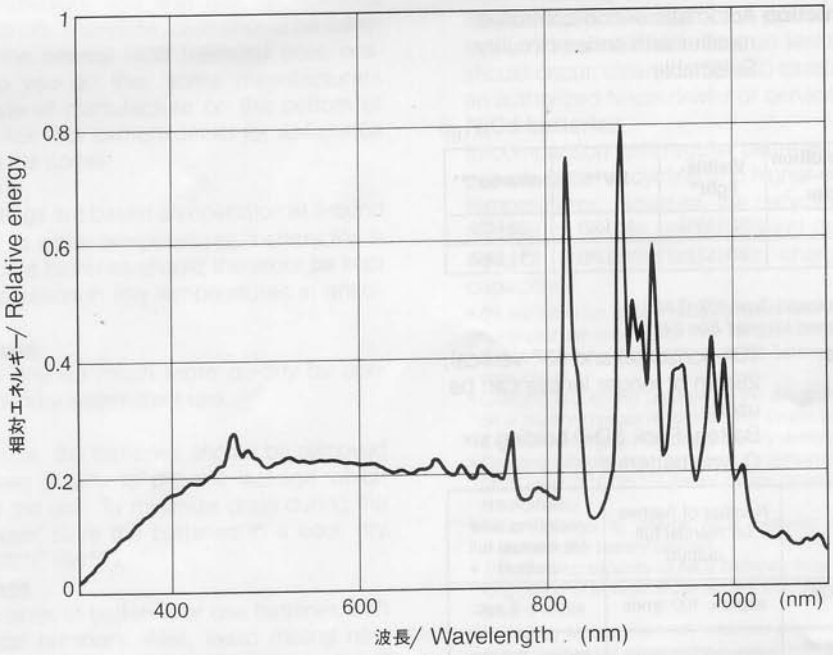
Dimensions Approx. 217mm(H)×94mm(W)×91mm(D)

Weight Approx. 515g (with the Sensor Unit SU-3)
Approx. 290g (Bracket SK-5 only)

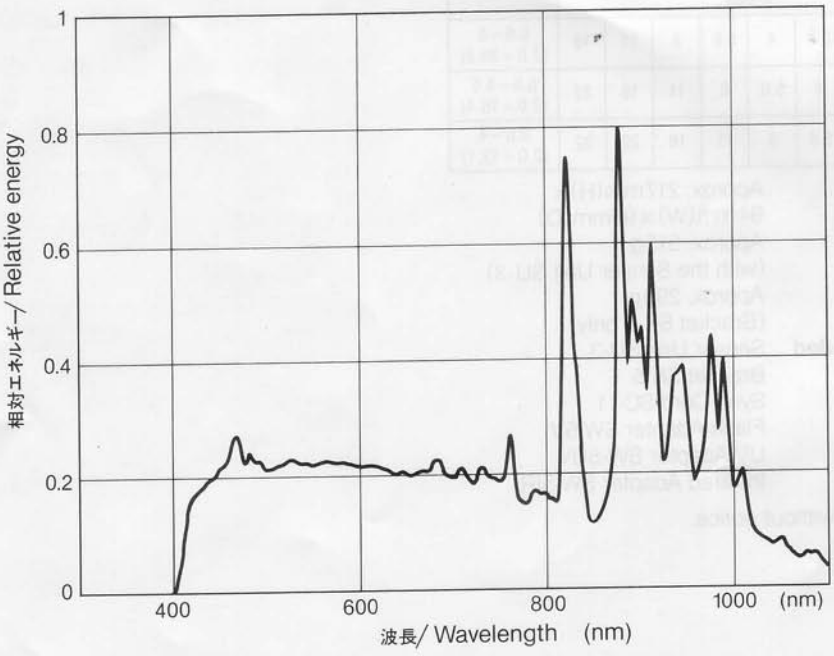
Accessories provided
Sensor Unit SU-3
Bracket SK-5
Sync Cord SC-11
Flash Adapter SW-5V
UV Adapter SW-5UV
Infrared Adapter SW-5IR

Subject to change without notice.

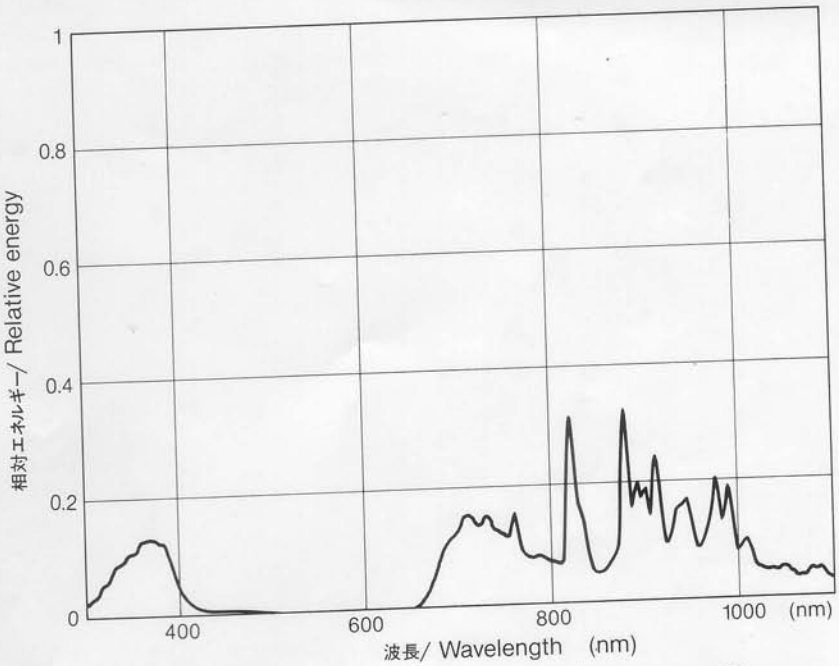
分光エネルギー分布図/SPECTRUM ENERGY DISTRIBUTION CHARTS



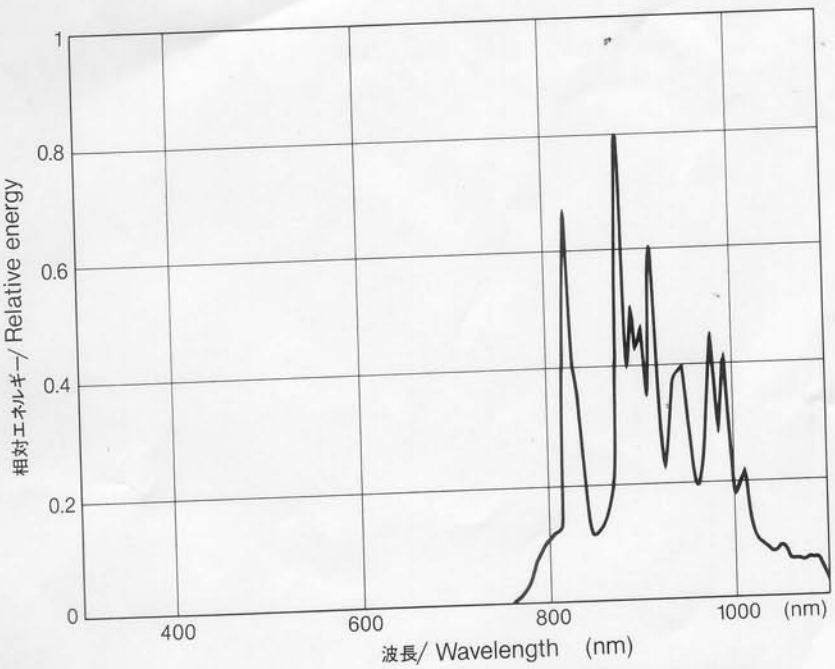
アダプターのない場合/**Without adapter**



可視光アダプターSW-5Vを装着した場合/**With SW-5V**



UVアダプターSW-5UVを装着した場合/ **With SW-5UV**



赤外アダプターSW-5IRを装着した場合/ **With SW-5IR**

撮影の手引き—紫外線・赤外線撮影について—

使用可能一般フィルムによる紫外線・赤外線撮影時のガイドナンバーについて

スピードライトSB-140の紫外線撮影、赤外線撮影時のガイドナンバーは、それぞれコダックのスペクトロスコピックタイプ103-O、および ハイスピードインフラレッドフィルム 2841を 基準に表示しており、使用説明書中では他のフィルムに対するガイドナンバーは記載しておりません。

つきましては他のフィルムを使用した場合のガイドナンバーの参考値を以下に記しますのでご利用ください。なお、それぞれのガイドナンバーの値はあくまで参考値ですので、実際の撮影に際しては段階露出を行うか、事前にテスト撮影を行うようお願いいたします。

SB-140 ガイドナンバー参考値

	フィルム	ガイドナンバー	現像液	温度	時間	備　考
紫外線	ネオパンSS	11	ミニドール	20℃	8分	
	トライX	16	D-76	20℃	7分	
	テクニカルパン 2415	5.6	テクニドールLC	20℃	18分	
		8	D-19	20℃	6分	
赤外線	さくら 赤外750	5.6	コニドール スーパー	20℃	6分	SB-140にはアダプター使用せず。レンズにはR60フィルター使用。

※上記ガイドナンバーはそれぞれ記載されている現像液を用い、指定温度で指定時間現像したときのものです。したがって上記ガイドナンバーを参考にする場合は上記指定を守って現像を行ってください。

TIPS ON UV PHOTOGRAPHY

Guide Numbers for UV Photography with Other Brand Films

Suggested guide numbers for the SB-140 in this instruction manual are based solely on specifications for Kodak Spectroscopic Type 103-O film for UV photography. Suggested guide number values for other brand films correspond with those values shown in the table below. Note however, that these values should only be considered as approximations. To ensure top photographic quality, we recommend you take additional shots using other f-stop settings determined from the table or experiment by taking pretest shots prior to the actual shooting.

Suggested Guide Numbers for Other Film Brands

	Film	Guide number	Developer solution	Temperature	Time
UV photography	NEOPAN SS	11	Minidol	20°C (68°F)	8 min.
	Tri-X	16	D-76	20°C (68°F)	7 min.
	Technical Pan 2415	5.6	Technidol LC	20°C (68°F)	18 min.
		8	D-19	20°C (68°F)	6 min.

** When developing film, follow the above specifications precisely; guide number values were obtained using specific developer solutions, temperatures, and time durations.*