

SIGMA

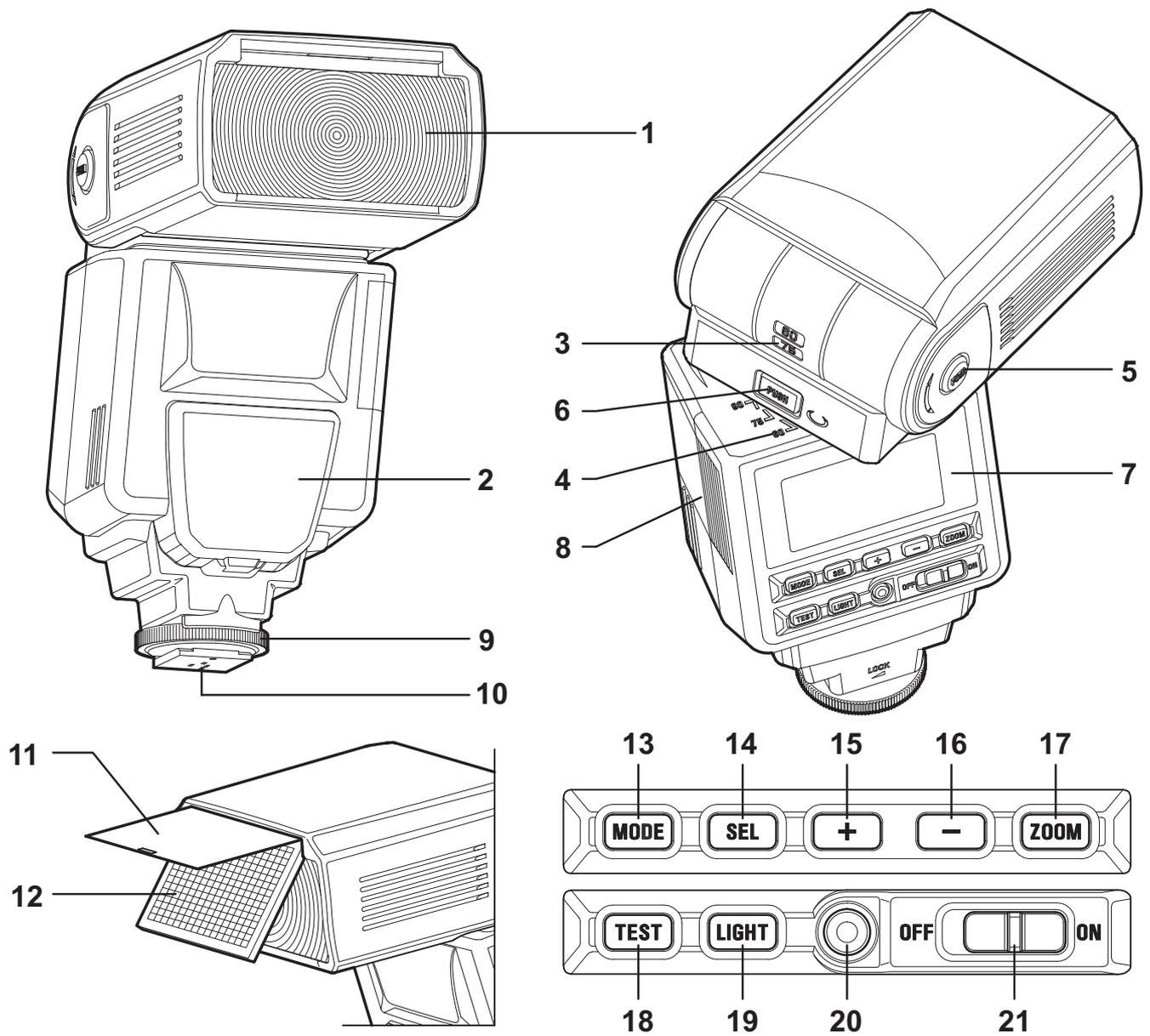
ELECTRONIC FLASH

EF-610 DG SUPER

INSTRUCTIONS



NA-iTTL



ENGLISH

The CE Mark is a Directive conformity mark of the European Community (EC).

ENGLISH

Thank you very much for purchasing the Sigma EF-610 DG SUPER NA-iTTL Electronic Flash. This product is specifically developed for the Nikon SLR series cameras. Depending on the camera model, functions and operation may vary. Please read this instruction booklet carefully. To add to your enjoyment of photography, this flash has a variety of features. To make the most of all these features and to get the maximum performance and enjoyment from your flash, please read this instruction booklet together with your camera's instruction manual, before using the flash and also keep it handy for your future reference.

PRECAUTIONS

In order to avoid causing any damage or injury, please read this instruction manual very carefully, paying attention to the cautionary signs below, before using the flash. Please take special note of the two cautionary signs below.

 **Warning !!** Using the product disregarding this warning sign might cause serious injury or other dangerous results.

 **Caution !!** Using the product disregarding this caution sign might cause injury or damage.

 Symbol denotes the important points, where warning and caution are required.

 Symbol contains information regarding the actions that must be avoided.

Warning !!

-  This flash contains high voltage circuits. To avoid electric shock or burns, do not attempt to disassemble the flash. If the outside shell of the unit is broken or cracked, do not touch the mechanism inside.
-  Do not fire the flash close to eyes. Otherwise the bright light could damage the eyes. Keep at least 1m/3feet distance between face and the flash unit when taking a picture with flash.
-  Do not touch the synchro terminal of your camera when the flash is attached to a hot shoe. High voltage circuitry could cause an electric shock.
-  Never use your camera in an environment where flammable, burnable, gas, liquids or chemicals, etc, exist. Otherwise it might cause fire or explosion.

Caution !!

-  Do not use this flash unit on any camera other than the Nikon NA series cameras, otherwise the flash may damage the circuitry of these cameras.
-  This flash unit is not waterproof. When using the flash and camera in the rain or snow or near water, keep it from getting wet. It is often impractical to repair internal electrical components damaged by water.
-  Never subject the flash and camera to shock, dust, high temperature or humidity. These factors might cause fire or malfunctioning of your equipment.
-  When the flash is subjected to sudden temperature change, as when the flash unit is brought from a cold exterior to warm interior, condensation might form inside. In such a case, place your equipment in a sealed plastic bag before such a change, and do not use the flash unit until it reaches room temperature.
-  Do not store your flash in a drawer or cupboard etc. containing naphthalene, camphor or other insecticides. These chemicals will have a negative effects on the flash unit.
-  Do not use a thinner, Benzene or other cleaning agents to remove dirt or finger prints from the component. Clean with a soft, moistened cloth.
-  For extended storage, choose a cool dry place, preferably with good ventilation. It is recommended that the flash be charged and fired several times a month to maintain proper capacitor functioning.

DESCRIPTION OF THE PARTS

- EXTERNAL PARTS**
- 1. Flash Head
 - 2. AF Auxiliary Light
 - 3. Bounce Angle; Up and Down
 - 4. Bounce Angle; Right and Left
 - 5. Bounce Lock and Release Button; Up and Down
 - 6. Swivel Lock and Release Button; Right and Left
 - 7. LCD Panel
 - 8. Battery Cover
 - 9. Shoe Ring
 - 10. Shoe
 - 11. Catch Light Panel
 - 12. Wide Panel
- CONTROLS**
- 13. **MODE** Button
 - 14. **SEL** SELECT Button
 - 15. **+** Increment Button
 - 16. **-** Decrement Button
 - 17. **ZOOM** Button
 - 18. **TEST** Button
 - 19. **LIGHT** Button
 - 20. Ready Light
 - 21. Power Switch

CAMERA MODELS AND FUNCTIONS

This flash can be used with cameras, which are given below.

Digital SLR, F6, F5, F4 Series, F3 Series(*), F100, F90X/N90S Series, F90/N90 Series, F80 Series, F75/N75, F70D/N70, U/F65/N65, F60D/N60, F55/N55, F50D/N50, F-801S/N8008S, F-801/N8008, F601M, F-601/N6006, F501/N2020, F401X, F401S/N4004S, F-401/N4004, F-301, N2000, FA, FE10, FE-2, FG, FM10, New FM2, FM3, Nikonos V(*), Pronea 600i

(*) It is necessary to use adapter for connection.

This instruction book is used for the following lens types. (Please check your lens.)

With Built-in CPU Nikon Lenses	D Type Lenses, G Type Lenses, IX Nikor Lenses, Except D type AF lens (does not include F3AF), Ai-P type lens
Without Built-in CPU Nikon Lenses	Ai-S, Ai, Series E lens

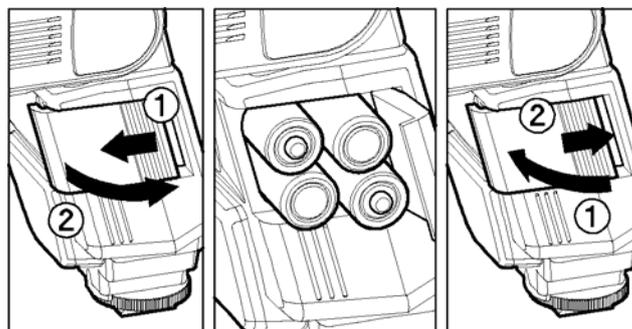
ABOUT THE BATTERY

This flash unit uses four “AA” type Alkaline dry cell batteries or Ni-Cad, Ni-MH rechargeable batteries. Manganese batteries can also be used but as they have a shorter life than Alkaline batteries, we do not recommend using them. Please replace batteries if it takes more than 30seconds to light the Ready Lamp.

- ♦ To assure proper electrical contact, clean the battery terminals before installing the batteries.
- ♦ NiCad batteries do not have standardized contacts. If you use NiCad batteries, please confirm that the battery contacts touch the battery compartment properly.
- ♦ To prevent battery explosion, leakage or overheating, use four new AA batteries of the same type and brand. Do not mix the type or new and used batteries.
- ♦ Do not disassemble or short-circuit the batteries, or expose them fire or water; they may explode. Do not recharge the batteries other than Ni-Cd or Ni-MH rechargeable batteries.
- ♦ When the flash will not be used for an extended period of time, remove the batteries from the flash to avoid the possibility of damage from leakage.
- ♦ Battery performance decreases at low temperatures. Keep batteries insulated when using the flash in cold weather.
- ♦ As with any flash, it is recommended you carry spare batteries when on a long trip or when photographing outdoors in cold weather.

BATTERY LOADING

1. Be sure to set the Power Switch to the off position then slide the battery cover in the direction of the arrow to open.
2. Insert four AA size batteries into the battery chamber. Be sure the + and – ends of the batteries are aligned according to the diagram in the chamber.



3. Close the cover.
4. Slide the Power Switch to the ON position. After few seconds the Ready Lamp will light, indicating that the flash unit can be fired.
5. Please press the “Test Button” to be sure that the flash is working properly.

AUTO POWER OFF

To conserve battery power, the flash unit automatically turns itself off when the flash is not used within approximately 80 seconds. To turn the flash on again, depress the **TEST** button or the camera shutter button halfway. Please note that the “Auto Power Off” mechanism does not work with wireless TTL flash mode, normal slave flash, and designated slave flash modes.

Please Note; However, “Auto Power Off” mechanism does not work with slave flash mode.

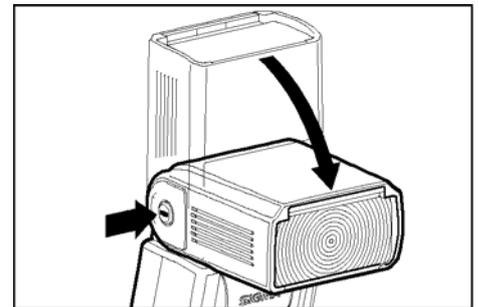
ERROR INDICATION

If the battery power is not sufficient, or if there is an electric information error between the camera and flash unit, the “Er” icon will blink on the LCD panel. When this occurs, turn the power switch off and on. If it still blinks, after this procedure, check the battery power.

ADJUSTING THE FLASH HEAD

Depress the Bounce “Up and Down” Lock and Release Button and adjust the flash head to the desired position.

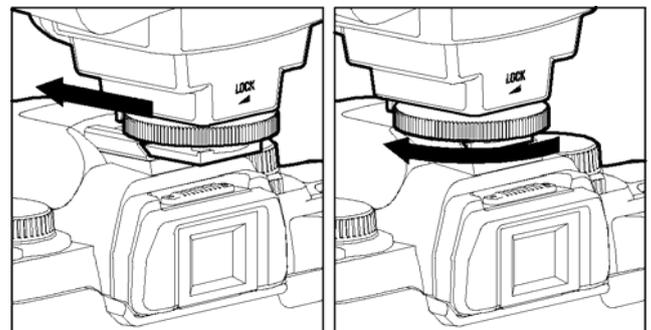
- ◆ If  appears on the LCD panel when you turn on the flash, and if this mark blinks, then the flash head is adjusted to an incorrect position.



ATTACHING AND REMOVING THE FLASH TO AND FROM THE CAMERA

Be sure to turn off the Power Switch, then insert the Shoe Base into the hot shoe on the camera and turn the Shoe Locking Ring until it is tight.

- ◆ When you attach or remove the flash, grasp the bottom of the flash to prevent damage to the shoe foot and the camera’s hot shoe.
- ◆ If the camera’s built-in flash is set in up position, please close it before you attach the flash unit.
- ◆ To remove the flash, rotate the shoe-locking ring in the opposite direction of **◀LOCK** mark, until it stops.



SETTING OF FLASH COVERAGE ANGLE

When you press the **ZOOM** button, the **M** symbol appears. Each time you press the **ZOOM** button, the LCD panel display will change and indicate the zoom position in sequence as follows.

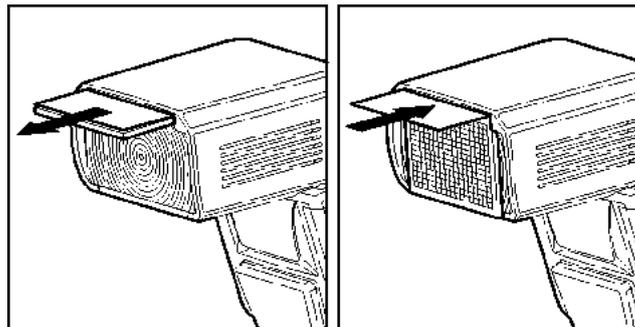
24mm → 28mm → 35mm → 50mm → 70mm → 85mm → 105mm → (Auto)

Please confirm the distance from **<<CHART A>>** page 18. If the setting is possible with 1 then depending on the focal length of the lens, the flash coverage angle will be set automatically, when TTL mode is chosen.

- ◆ When you turn on the main switch, the flash will memorize and set the zoom head position to the last setting used.
- ◆ If you use a lens wider than the flash head setting, there may be under exposed areas around the edges of the picture.
- ◆ Depending on the flash head setting, the flash’s Guide Number will change.

WIDE PANEL

This flashgun is equipped with a built-in wide panel, which can provide an ultra wide 17mm angle of coverage. Slide out the wide panel and catch light panel and flip it down to cover the flash's head. (Be careful to slide the panels out smoothly.) Then put the catch light panel back in its place. The coverage angle setting of the flash will be set to 17mm automatically.



- ♦ If the built-in wide panel comes off accidentally, the **ZOOM** button will not function. In this case please contact the store where the flash was purchased, or an authorized .Sigma service station.

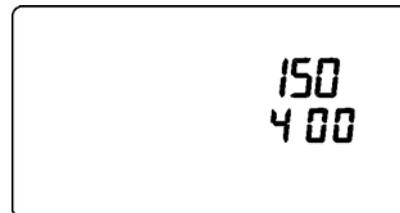
LCD PANEL ILLUMINATION

When you press the **LIGHT** button, the LCD panel will illuminate for about 8 seconds. The illumination stays on longer than 8 seconds if you press the **LIGHT** button once again.

SETTING THE ISO FILM SPEED

The ISO film speed is automatically set for the combination of EF-610 DG SUPER NA-iTTL with Digital SLR Cameras, or the F6, F5, F4 series, F100, F90X/F90/F80 (N90S/N90/N80) series, F75D/N75, F65/N65, F70/N70, F810S/N8008S, F801/N8008 and Pronea600i. To confirm ISO film speed, press the **MODE** button. If your camera is not one of the models listed above, please follow the procedure below.

1. Press the **MODE** button until ISO is selected.
2. Press the **SEL** button. The ISO value will blink.
3. Press **+** or **-** to set ISO film speed.
4. Press the **SEL** button and make the indicator stop blinking.



TTL MODE

TTL mode can provide the correct exposure for the subject and will control the amount of flash.

- ♦ Please refer to <<CHART **A**>> which shows the combinations of camera and lens types, exposure mode, and flash modes.
- ♦ TTL function does not work when using the following cameras: F3 series, FM10, New FM2, FE10, Nikonos V.

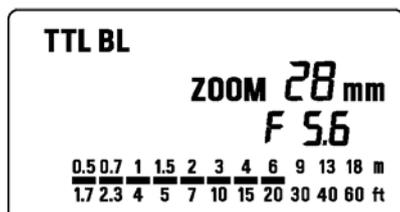
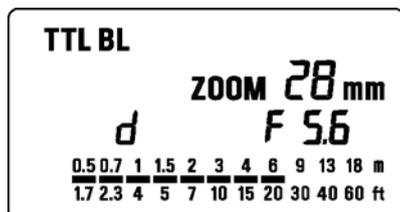
1. Set the desired exposure mode on your camera. Please refer to Camera's Instruction manual.
2. Slide the Flash's power switch to the ON position.
3. Select TTL/BL or TTL by pressing the **MODE** button.

- ♦ When using Digital SLR Cameras, please select TTL/BL. Depending on the camera model, i-TTL or D-TTL system will be used. The "d" mark will be displayed on the LCD panel for both systems.

- ♦ For the following cameras; F5, F4 series, F100, F90X/F90/F80 (N90S/N90/N80) series, F70D/N70, F810S/N8008S, F801/ N8008S and Pronea 600i, TTL/BL or TTL can be selected. However, cameras other than those listed above, only TTL can be selected.

4. Focus on the subject.

5. Confirm that the subject is located within the effective distance range, indicated on the LCD panel.



- Depending on the combination of the camera, lens and selected exposure mode, the method for shooting the subject with flash may be different. Please see chart “A” and set the “F”-number by referring to the manual for your camera.

6. Confirm the Ready Light is on and press the shutter release button.

- When the camera does not receive the appropriate exposure for the subject, the TTL/BL or TTL mark on the LCD panel will appear for 5 seconds after shooting, which shows that the flash power is not sufficient for this situation. Please re-take at a closer distance or use a wider aperture. In the case of F5, F100, F90X/F90/F80 (N90S/N90/N80) series and F70D/N70 cameras, the underexposure indicator appears for 5 seconds. If you want to see the display for underexposure again, please depress the **LIGHT** button.
- When the flash is fully charged, the ready light in the camera’s viewfinder will appear. If it does not appear, the shutter of the camera may operate at a slow shutter speed without triggering the flash.
- If you use the AF camera with an AF lens, the AF Auxiliary Light will turn on automatically as you focus on a subject in a dark area. However the AF Auxiliary Light will not light up if central focus area is not selected.

<< **CHART A** >>

Camera	Lens Type	Exp. Mode	Metering	TTL System	Note	Conf Dist
F5 F100 F90X/N90ser. F80/N80ser. F70D/N70 F75/N75	D, G Type	All Modes	All Modes	3-D Multi-Sensor BL	Can switch to TTL Mode. With F5, F100, F80, series Cameras spot metering system is always TTL.	1
	AF lens other than D, G type	All Modes	All Modes	Multi-Sensor BL		
	Without Built in CPU	A/M Modes	Center-weighted, Spot Metering	Center Weighted / Spot Fill-Flash		2
F4 Series F-801S/N8008S F-801/N8008 F65/N65 Pronea 600i	With Built-in CPU	All Modes	Matrix Pattern Center-weighted, Spot Metering	TTL BL Center Weighted / Spot Fill-Flash	Can switch to TTL Mode. TTL BL can work with only F4 series, AF F3, Ai-S, Ai, Series E lens. Spot metering system of F4 is always TTL. Pronea 600i will be TTL, when exposure mode is “M”. Center Weighted BL cannot work.	1
	Without Built-in CPU	A/M Modes	Center-weighted, Spot Metering	Center Weighted / Spot Fill-Flash		2
F601/N6006 F-601M	With Built-in CPU	All Modes	Matrix Pattern Center-weighted, Spot Metering	TTL BL Center Weighted / Spot Fill-Flash	Spot Metering cannot use with F-601M	2
	Without Built-in CPU	A/M Modes	Center-weighted, Spot Metering	Center Weighted / Spot Fill-Flash		
F60D/N60 F50D/N50 F-401X/4004S	With Built-in CPU	P/S A/M	/	TTL BL	If exposure mode is “M”, it will be Center Weighted / Spot Fill-Flash	2
	Without Built-in CPU	M		Center Weighted / Spot Fill-Flash		
F501/N2020 F301/N2000	Built-in CPU lens, Ai-S, Ai, Series E, AF F3 Lens	P	/	TTL Programmed		2
		A/M		TTL		
	Except above lenses	A/M		TTL		
F401S/N4004S F401/N4004	With Built-in CPU	P/S	/	TTL Programmed		2
		A/M		TTL		
	Without Built-in CPU	M		TTL		
FA, FE2 FG, F3, FM3	With Built-in CPU; Without Built-in CPU	A/M	/	TTL		2

Confirm Distance:

- 1** : Flash’s LCD panel will show the F-number and working distance of flash automatically.
- 2** : Set the F-number on the flash to be the same as camera, and check the available working distance range on the LCD panel. To set the F-number on the Flash, push the **SEL** button until the F-number blinks, and use **+** or **-** button to set the F-number. Then press the **SEL** button again. The F-number will stop blinking.

- When using Digital SLR cameras, functions will vary depending on the lens type and combinations of exposure modes, same as F5 and F100 group (in chart A), however, they will use D-TTL (i-TTL).

LIMITS OF CONTINUOUS SHOOTING

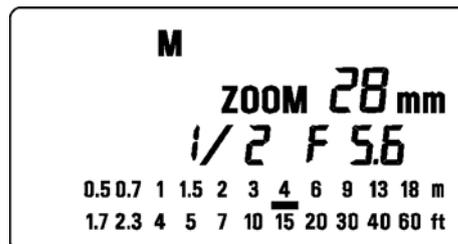
To prevent overheating of the flash's circuitry, do not use your Flash unit for at least 10 minutes after continuously using the flash as shown in the table below.

Mode	Number of Flash Exposures
TTL, M(1/1, 1/2)	20 Continuous Flash Shots
M(1/4, 1/8)	25 Continuous Flash Shots
M(1/16-1/32)	40 Continuous Flash Shots
Multi	10 Cycle

MANUAL FLASH OPERATION

Manual flash is provided for shooting subjects when the correct exposure is difficult to obtain in the TTL mode. In the manual flash mode, you can set the flash power level from 1/1 to 1/64 power in 1/3 stop increments.

1. Set the camera's exposure mode (A, M modes).
2. Press the **MODE** button on the flash unit to select M.
3. Press the **SEL** button to make the guide number value blink.
4. Press **+** or **-** button to set the desired flash power output.
5. To stop the manual flash output display blinking, Press the **SEL** button again.
6. When the Ready Light of the flash is illuminated, the unit is ready for use.



How to set the correct flash power level

Page 18 <<CHART A>> combination of 1

Focus on the subject and note the subject distance on the lens' focus ring. Adjust the lens' aperture until the distance indicated on the LCD panel of the flash is equal to the camera to subject distance.

When you use with cameras other than the above

Focus on the subject and note the subject distance on the lens' focus ring. Adjust either the flash power level or the flash's F stop display. Please refer to the following on how to change the flash's F-stop.

1. Press the **SEL** button several times and make the F-stop indicator blink.
2. Press the **+** button or **-** button to set the F-stop display.
3. Press the **SEL** button to make F-stop indicator stop blinking.

Set the distance indicated on the LCD panel of the flash so that it is about equal to the actual camera-to-subject distance become about equal.

Then set the aperture value of the lens via lens' aperture ring or cameras command dial.

- ◆ You can calculate the correct exposure by using this formula.

$$\text{Guide Number "GN"} / \text{Flash to Subject Distance} = \text{F-stop}$$

This flash unit will calculate and indicate the Subject Distance by following the above formula. (Please refer to table1 on the last page).

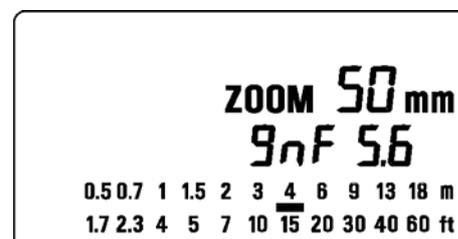
DISTANCE PRIORITY MANUAL FLASH

With this flash operation system, EF-610 DG SUPER NA i-TTL automatically controls the light output according to the selected distance and aperture value.

- ◆ Distance-priority manual flash is not possible with D1X and D1H digital cameras.

Page 18 <<CHART A>> combination of 1

1. Set the camera's exposure mode to either A or M mode.
2. Press **MODE** on the flash unit so **9n** (GN) is displayed.
3. Press the **SEL** button to make the distance display blink.
4. Press the **+** button or **-** button to set the distance.
5. Press the **SEL** button several times to stop blinking.
6. Set the aperture value on the lens or camera.
7. When the Ready Light of the flash is illuminated, the unit is ready for use.



When using with cameras other than the above

1. Please follow the first 2 steps as above and press the **SEL** button several times to make the aperture display blink.
 2. Press the **+** button or **-** button to set the F-stop display.
 3. Press the **SEL** button to stop the display blinking.
 4. Set the aperture value on the lens or camera, make sure that the flashgun is charged before firing.
- ◆ Distance-priority manual can be used together with exposure compensation.
1. Press the **SEL** button several times to make the compensation amount indicator  blink.
 2. Press the **+** or **-** button to set the compensation amount.
 3. Press the **SEL** button several times to make the display stop blinking.

FV LOCK

“FV” lock mode allows you to choose and lock the exposure for part of the image before taking the picture.

- ◆ This function is available with CLS compatible camera models only.
- ◆ You cannot set this function on the flashgun directly. For details please refer to your camera’s instruction manual.

AUTO FP HIGH-SPEED SYNC (FP FLASH)

When you take a picture with an ordinary flash, you cannot use a shutter speed faster than the camera’s synchronized speed because the flash must fire when the shutter curtain is fully open. The FP flash keeps firing while the shutter curtain is running. Thus you can use a shutter speed faster than the synchronized speed.

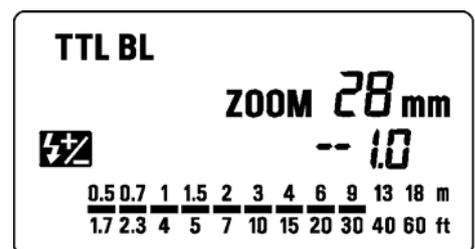
- ◆ This function is available with CLS compatible cameras only.
- ◆ You cannot set this function on the flashgun directly. For details please refer to your camera’s instruction manual.
- ◆ When you set this function on the camera, **FP** will be displayed on Flash’s LCD display.
- ◆ Depending on the shutter speed, the Guide Number will change. (Please refer to table2 on the last page)

EXPOSURE COMPENSATION

You can compensate the exposure by changing the flash power level.

Exposure compensation of the EF-610 DG SUPER NA-iTTL Super flash’s power level

- ◆ Dedicated exclusively for Digital SLR Cameras and F6, F5, F4 series, F100, F90/N90, F90X/N90S, F80/F80 series, F70D, F75/N75, U/F65/N65, F801S/N800S, F801/ N8008, F601M, F601/N6006 and Pronea 600i only.
 - ◆ Cameras with EV compensation capability allow you to make exposure compensation on either the EF-610 DG SUPER NA-iTTL or the camera (or both). If you use both controls, exposure is modified by the sum total of both exposure compensation values, and will affect the background exposure.
 - ◆ If your camera is an F601 / N6006 series camera, set the exposure compensation by operating the camera’s synchronization mode.
 - ◆ It can be set at 1/3 stop increments from +1.0 stops to –3.0 stops.
1. Press the **MODE** button to select the TTL/BL (TTL) mode.
 2. Press the **SEL** button to make the compensation amount indicator  blink.
 3. Press the **+** and **-** button to set the compensation amount.
 4. Press the **SEL** button several times to stop the display blinking.



Exposure compensation of the EF-610 DG SUPER NA-iTTL flash’s power level and background

- ◆ This function can be used on all Nikon cameras except F3 series, FM10, New FM2 and FE10.

Use your camera's exposure compensation control button or dial to make exposure compensation to both foreground and background. (Please refer to your camera's instruction)

Exposure compensation on M mode

When using the camera on M mode, you can change the aperture value on the camera, or change the flash power level, after setting the exposure compensation.

REAR-CURTAIN SYNCHRONIZATION

When you photograph a moving subject with slow synchronization, usually the furrow of the subject will be exposed in front of the subject. The ordinary flash light will fire when the first shutter curtain is fully opened, thus the subject will be exposed from the time flash is fired to the time the shutter is closed (This is front curtain synchronization). When you use rear curtain synchronization, the flash will fire just before the rear curtain begins to close, and the subject will be exposed by ambient light from the time the shutter opens until the flash fires. As a result, the furrow of the subject will therefore be recorded behind the subject, creating a more natural effect.

- ◆ It can be used with cameras providing rear-curtain sync. only.
- ◆ You cannot set this function on the flashgun directly. For details please refer to your camera's instruction manual.
- ◆ The LCD panel on the flash will indicate  mark, when the "Second-curtain synchronization" function is set.

RED-EYE REDUCTION

When you take a picture with flash, sometimes the person's eyes reflect the flash light and appear as "red-eyes", in the picture. If you use the function of "Red-eye reduction", the flash will blink approximately 1 second, before the shutter is released, and reduce the "red-eye".

- ◆ Available with cameras providing red-eye reduction control only.
- ◆ You cannot set this function on the flashgun directly. For details please refer to your camera's instruction manual.
- ◆ The LCD panel on the flash will indicate  mark, when the "Red-eye reduction" function is set.

MODELING FLASH

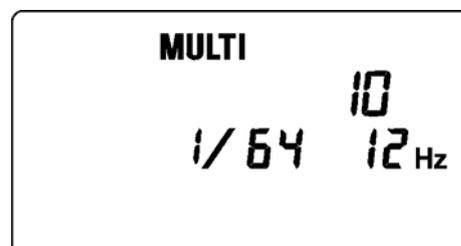
If you use the Modeling flash, you can check the lighting and shadow effects, before you take the picture.

1. Press the **MODE** button and select the mode you want to use.
2. Press the **+** button or **-** button several times to make the **MODEL** icon on the LCD panel appear.
3. Confirm that the flash is charged, then press the **TEST** button to fire.

MULTI FLASH MODE

When a slow shutter speed is used, the flash will fire repeatedly while the shutter is open. By doing so a series of images of the subject will be exposed in one frame. A dark background with a bright subject shows the result more effectively in this mode. It is possible to set the firing frequency between 1Hz and 100Hz. Up to 90 flashes can be fired continuously. The maximum number of flashes varies, depending on the flash guide number and firing frequency settings. (Please refer to table3 on the last page).

1. Set the camera's exposure mode to M and set the desired aperture.
2. Press the **MODE** button until the multi-flash mode appears.
3. Press the **SEL** button until the flash firing frequency starts to blink.
4. Press the **+** or **-** button to set the desired flash frequency value.
5. After pressing the **SEL** button again, the flash power level will blink.
6. Press the **+** or **-** button to set the desired power level.
7. Press the **SEL** button again, the number of flashes will blink.



8. Press the $\boxed{+}$ or $\boxed{-}$ button to set the desired number of flashes.
9. Press the $\boxed{\text{SEL}}$ button until the display stops blinking.
10. When the ready light of the flash is illuminated, the unit is ready to use.

Note: Please set the shutter speed longer than; $\text{Number of Flashes you want} \div \text{Firing Frequency}$

How to set the correct flash power level

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Read out the subject distance from the focus ring on the lens. Then adjust the aperture ring on the lens until the distance indicated on the LCD panel of the flash and the subject distance become about equal.

When using with cameras other than the above

Read-out the subject distance from the focus ring on the lens. Either change the flash power level or the flash's F-stop. Please refer following on how to change the flash's F-stop.

1. Press the $\boxed{\text{SEL}}$ button several times to make the F-stop indicator blink.

2. Press the $\boxed{+}$ or $\boxed{-}$ button and set the F-stop.

3. Press the $\boxed{\text{SEL}}$ button and make the indicator of F-stop stop blinking.

Please set the distance indicated on the LCD panel of the flash and the actual subject distance so that they are about equal.

Then set that F-stop on the lens aperture ring.

* You can calculate the correct exposure by using this formula:

Guide Number "GN" / Flash to Subject Distance = F-stop

This flash unit will calculate and indicate the Subject Distance by following the above formula. (Please refer to table 1 on the last page)

BOUNCE FLASH

When you take a photo with flash in a room, sometimes a strong shadow will appear behind the subject. If you point the flash head upwards or sideways to reflect the light off the ceiling, wall etc, the subject will be illuminated softly. Press the lock button and adjust the flash head to set the bounce angle.

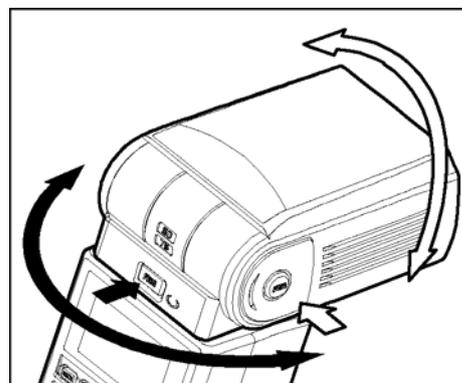
UP: 0°, 60°, 75°, 90°

DOWN: 0°, 7°

RIGHT: 0°, 60°, 75°, 90° LEFT: 0°, 60°, 75°, 90°, 120°, 150°, 180°

When the bounce flash mode is activated, a bounce indicator  will appear on the LCD panel.

Choose a white surface for bouncing the flash, otherwise the image's colour may be incorrect. Depending on the reflecting surface, the subject distance and other factors, the effective distance range for the TTL AUTO may change. Please check for correct exposure confirmation (TTL BL or TTL mark on the LCD panel) after releasing the shutter.

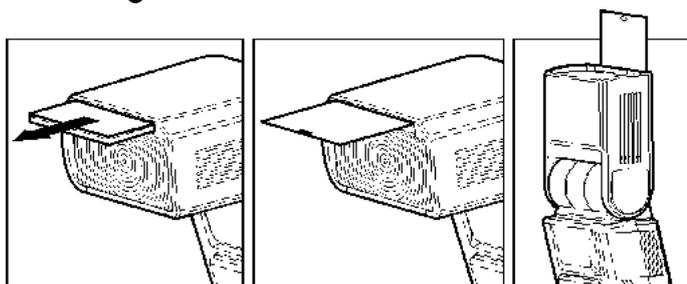


CLOSE-UP EXPOSURES

Bounce flash can be tilted 7° downward for close-ups. The Flash will be effective only for the subjects 0.5 meter to 2 meters. When the flash head is tilted 7°  will blink.

CATCH LIGHT PANEL

This flash is equipped with a built-in catch light panel, which can create a catch light in eyes of the subject when the bounce flash mode is activated. Slide out the wide panel and catch light panel, and then put wide panel back in its place. (Be careful to slide the panels out smoothly.)



the

- ◆ To create a catch light effectively, tilt the flash head upward 90 degrees and take pictures at a close distance.

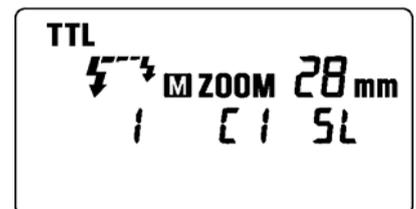
WIRELESS FLASH

When using the “Wireless Flash” mode, you can take pictures with a more three-dimensional feeling with shadow, or you can produce natural images with shadow depending on the flash position without any extension cord connecting the camera body to the flash. In case of the EF-610 DG SUPER NA-iTTL, communication between the camera body and the flash will be achieved by the light of the flash. In the “Wireless Flash” mode, the camera will calculate the correct exposure automatically.

- ◆ This function is available with CLS compatible cameras only.
- ◆ If the camera body incorporates Commander mode, it is possible to use its own built-in flash for wireless photography.
- ◆ In these instructions, we call a flash unit, which is attached to the camera body the “Master unit”, and we call a flash unit at a remote position a “Slave unit”.
- ◆ When setting a slave unit at the desired position, you can use a mini-stand. This mini-stand has a screw hole for a tripod.
- ◆ Place the slave flash unit at the desired location. Do not place the slave unit within the picture area.
- ◆ Set the flash unit within the range of 0.5m/1.5ft~5m/16ft from the subject and set the camera body within the range of 1m/3ft~5m/16ft from the subject.
- ◆ Two or more sets of Slaves can be divided into groups and different flash conditions can be set for each group (1~3). The Master Flash should be set at 0.
- ◆ Channel and group number settings can be input on the master unit and slave units. Other settings can be input on the master flash unit only.

Setting the slave unit

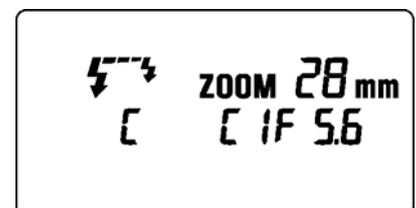
1. Attach the flashgun to the camera body and switch “ON” the flash unit. Press the **[MODE]** button to select the TTL /  / **SL** icon.
- ◆ Setting cannot be done if camera’s exposure display turns off. In such a case, press the camera’s shutter button half-way to re-activate the setting.
2. Press the **[SEL]** button to make the channel indicator blink and press the **[+]** or **[-]** button to set the channel number (from C1- C4).
3. Press the **[SEL]** button to make the group number blink and press the **[+]** or **[-]** button to set the group number. Press the **[SEL]** button to confirm.
4. Detach the slave unit from the camera body and place it in the desired position.
- ◆ In the case of using the built-in flash of a camera body with Commander mode for wireless photography, Group A cameras correspond to Group 1 flashguns and Group B corresponds to Group 2 flashguns. When using the built-in flash unit of the D70 for wireless photography, set the channel number to C3 and group number to 1. For the rest of the settings, refer to your camera’s instruction manual. Please also note that it cannot be used with camera’s command mode **AA** and **M1/128**.



Setting the Master Unit

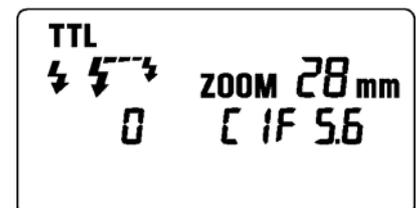
Setting the channel number on the master flash unit

1. Attach the flashgun to the camera body, and switch “ON” the flash unit. Press the **[MODE]** button to select the  icon. Confirm the **[C]** icon is shown in the display.
2. Press the **[SEL]** button to make the channel indicator blink on the display.
3. Press the **[+]** or **[-]** button to set the desired channel number. (Choose the same channel number as set on the slave flash unit.)
4. Press the **[SEL]** button several times until the display stops blinking.



Setting the flash mode on the master flash unit

5. Press the **[+]** or **[-]** button and select  (Master)
6. Press the **[SEL]** button and confirm  icon is blinking.
(If you do not want to fire master unit, press the **[+]** or **[-]** button and select  icon. Press the **[SEL]** button to confirm this setting).
7. Press the **[SEL]** button again.
8. Press the **[MODE]** button and select TTL, M or MULTI and then press the **[SEL]** button to confirm.
9. If TTL is selected,  icon will blink and you can set the exposure compensation. If no compensation is required press the **[SEL]** button to complete the setup. If compensation is required press the **[+]** or **[-]** button to

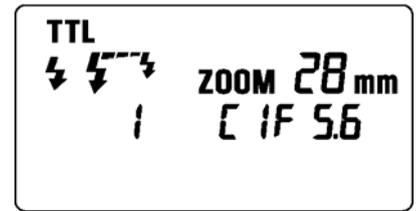


set the required amount, then press the **[SEL]** button to set compensation. If M mode is selected, press the **[+]** or **[−]** button to set the flash output amount. If MULTI is selected, exposure will switch to Multi Flash Mode.

Setting the Flash Mode on the slave flash unit

The following has to be programmed into the master unit. This will set the mode for the slave unit.

10. Press the **[+]** or **[−]** button and select a slave group number.
11. Press the **[SEL]** button so the flash symbol blinks and press the **[+]** or **[−]** button to select **⚡** icon.
12. Continue from step 7 above.
 - ◆ If you wish to fire two or more sets of slaves in different flash modes, use desired settings for each group number.
 - ◆ If you set the Master or Slave to MULTI, all groups must be set to MULTI. Combinations with other flash modes are not possible.
 - ◆ If the Master or Slave is changed from MULTI to TTL or M, other groups will be changed to TTL or M. However, if the exposure compensation or flash output level returns to the initial value, it will be necessary to set them up again.
13. Check that all flashguns are fully charged.
 - ◆ Confirm that the Master unit's "Ready Light" is on and the Slave unit's "AF Auxiliary Light" is blinking.
 - ◆ Standard TTL will be displayed regardless of the selected flash mode.



Modeling flash when Wireless flash is used

[If master unit is used for modeling flash]

After wireless flash has been set, modeling flash can be used by pressing the **[TEST]** button.

[If slave unit is used for modeling flash]

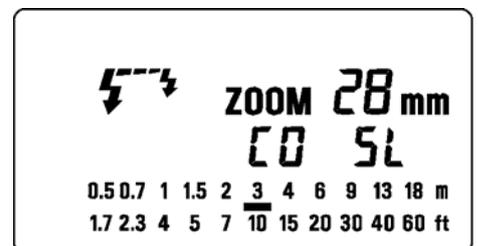
1. When Wireless Flash setup is complete, press the **[+]** or **[−]** button on the master to select **[]** icon.
2. Press the **[SEL]** button several times to display **MODEL** (blinking) on the LCD display.
3. Press the **[+]** or **[−]** button to select **ON** and press the **[SEL]** button to confirm.
4. By pressing the **[TEST]** button only the selected flashgun will fire in modeling mode.
- ◆ If you wish to select the master unit as the modeling flash, follow the above steps, but in step 3 select **OFF** and erase **MODEL** from display.

SLAVE FLASH

NORMAL SLAVE FLASH

Even if the EF-610 DG SUPER is not attached to the camera body, you can fire the flash by using the camera's built-in flash or another flash unit.

1. Attach the flash unit to the camera's hot shoe.
2. Set the camera's exposure mode to the desired mode. If you use A or M mode, also set the desired aperture value.
3. Turn on the flash unit and press the shutter button half way.
 - ◆ Now, the aperture value and film speed are automatically transmitted to the flash unit.
4. Remove the flash unit from the camera.
5. Press the **[MODE]** button and select the **⚡ / SL** (Slave) mode.
6. Press the **[SEL]** button several times to make the flash output value indicator blink.
7. Press the **[+]** or **[−]** button to set the flash output amount.
 - ◆ Determine the appropriate flash output by setting the distance indicator on the LCD panel to coincide as closely as possible with the actual distance from the slave flash to the subject. If the actual distance is out of range, you will need to change the aperture value or film speed.
 1. To change the aperture value: When the flash unit is set to the Slave mode, press the **[SEL]** button until the aperture value blinks, then press the **[+]** or **[−]** button to set the desired aperture value. Then press the **[SEL]** button to stop the display blinking.
 2. To change the film speed: Press **[MODE]** to select **ISO**, then press **[SEL]** to make the aperture value blink. Press the **[+]** or **[−]** button and set the desired film speed, then press the **[SEL]** button once again. You will need to press the **[MODE]** button several times to return to the slave mode.
8. Press the **[SEL]** button several times to make the display stop blinking.



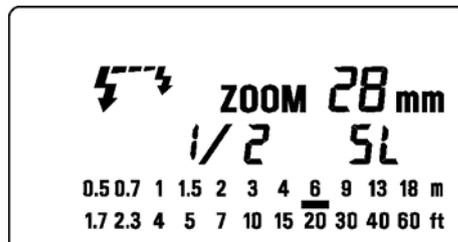
9. Place the slave unit in the desired location. Do not place the slave unit within the picture area.
10. After confirming that all flash units are fully charged, press the shutter button to take the picture.
 - ◆ When the EF-610 DG SUPER NA-iTTL is fully charged, the AF Auxiliary Light will blink.
 - ◆ The flash will not fire if the EF-610 DG SUPER is attached to the camera body whilst in Slave Mode setting.
 - ◆ If you are using a Nikon brand flash unit with (3-D) Multi-Sensor BL function on your camera, and the EF-610 DG SUPER NA-iTTL flash unit as a slave unit, please do not use (3-D) Multi-Sensor BL function, as the monitor pre-flash may cause the slave to fire prematurely.

DESIGNATED SLAVE FLASH

If using two or more EF-610 DG Super flash units, you can designate which flash will fire together by using the channel settings. In this mode, one flash unit will be used as the Slave Controller and the others for firing as Slaves.

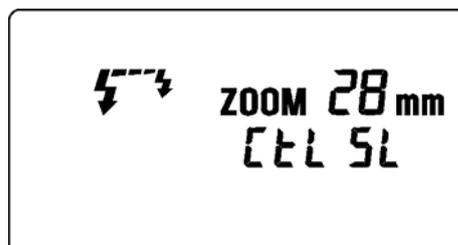
Setting the Slave Flash unit(s) for firing

1. Attach the slave unit to the camera body.
2. Set the camera's exposure mode to S or M.
3. Set the shutter speed to 1/30 or slower. (The slave controller unit (Master Flash) will transmit the designated signal before the others fire. Thus if you use a shutter speed faster than 1/30, the firing flash units will not be synchronized.)
4. Switch "ON" the flash unit and press the camera's shutter button halfway. (The aperture value and film speed are now automatically transmitted to the slave flash unit.)
5. Remove the slave flash unit from the camera.
6. Press the **MODE** button and select the  / **SL**. (Slave Mode)
7. Press the **SEL** button to make the channel display indicator blink.
8. Press the **+** or **-** button to set the channel number. (C1 or C2)
9. Press the **SEL** button to make the output amount display indicator of the flash blink.
10. Press the **+** or **-** button to set the flash output amount.
 - ◆ Set the flash power by setting the distance indicator on the LCD panel to coincide as closely as possible with the actual distance from the slave flash to the subject. If the actual distance is out of range, you need to change the aperture value.
11. Press the **SEL** button several times to make the display stop blinking.
12. Place the slave unit in the desired location. Do not place the slave unit within the picture area.



Setting for Slave Controller unit

13. Attach the Slave Controller flash unit to the camera body.
14. Press the **MODE** button and select the  / **SL** (Slave Mode).
15. Press the **SEL** button to make the channel display indicator blink.
16. Press the **+** or **-** button to set the same channel number as that set on the firing flash unit.
17. Press the **SEL** button to make the flash output amount display indicator blink.
18. Press the **+** button so the **[TL SL]** mark is displayed and blinking.
19. Press the **SEL** button twice to make the display stop blinking.
20. After confirming that all flash units are fully charged, press the shutter button to take the picture.
 - ◆ When the firing flash unit of EF-610 DG Super is fully charged, the AF Auxiliary Light will blink.
 - ◆ As the slave control using is in **[TL SL]** mode, the aperture on the slave control unit can not be changed.
 - ◆ The Slave Controller unit functions only to control the slave unit.



SPECIFICATIONS

TYPE : Clip-on type serial-controlled TTL auto zoom electric flash
GUIDE NUMBER : 61 (ISO 100/m, 105mm head position)
POWER SOURCE : Four AA type alkaline batteries or, Four AA type Ni-Cd batteries or,
Four AA type Ni-MH Nickel-Metal Hydride
RECYCLING TIME : about 7.0 sec. (Alkaline batteries)
: about 5.0 sec. (Ni-Cd, Ni-MH Nickel-Metal Hydride)
NUMBER OF FLASHES : about 120 flashes (Alkaline batteries)
: about 160 flashes (Ni-Cd, Ni-MH Nickel-Metal Hydride)
FLASH DURATION : about 1 / 700 sec. (full power firing)
FLASH ILLUMINATE ANGLE : 24mm-105mm motor powered control (17mm with Built-in Wide Panel)
AUTO POWER OFF : Available
WEIGHT : 330 g / 11.6oz. DIMENSIONS : 77mm(W) / 3.0in. x 139mm(H) / 5.5in. x 117mm(L) / 4.6in.



Disposal of Electric and Electronic Equipment in Private Households

Disposal of used Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product, in the manual/warranty, and/or on the packaging indicates that this product must not be treated as household waste. Instead it should be handed over to the appropriate collection point for the recycling of electrical and electronic equipment. If your equipment contains easy removable batteries, please dispose of these separately according to your local legislation. It is your responsibility to ensure that this product is recycled correctly. In doing so you will help conserve natural resources, protect the environment and human health. For more detailed information about recycling this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

[Table1] GN (ISO100· m)

	17mm	24mm	28mm	35mm	50mm	70mm	85mm	105mm
1/1	23.0	34.0	35.0	36.0	46.0	52.0	56.0	61.0
1/2	16.3	24.0	24.7	25.5	32.5	36.8	39.6	43.1
1/4	11.5	17.0	17.5	18.0	23.0	26.0	28.0	30.5
1/8	8.1	12.0	12.4	12.7	16.3	18.4	19.8	21.6
1/16	5.8	8.5	8.8	9.0	11.5	13.0	14.0	15.3
1/32	4.1	6.0	6.2	6.4	8.1	9.2	9.9	10.8
1/64	2.9	4.3	4.4	4.5	5.8	6.5	7.0	7.6
1/128	2.1	3.0	3.1	3.2	4.1	4.7	5.0	5.5

[Table2] GN (ISO100· m)

	17mm	24mm	28mm	35mm	50mm	70mm	85mm	105mm
1/125	16.3	24.0	24.7	25.5	32.5	36.8	39.6	43.1
1/160	14.4	21.3	21.9	22.5	28.8	32.5	35.0	38.1
1/180	13.6	20.0	20.6	21.2	27.1	30.6	33.0	35.9
1/250	11.5	17.0	17.5	18.0	23.0	26.0	28.0	30.5
1/320	10.2	15.0	15.5	15.9	20.3	23.0	24.7	27.0
1/350	9.1	13.4	13.8	14.2	18.2	20.6	22.1	24.1
1/400	9.7	14.4	14.8	15.2	19.4	22.0	23.7	25.8
1/500	8.1	12.0	12.4	12.7	16.3	18.4	19.8	21.6
1/640	7.2	10.6	10.9	11.3	14.4	16.3	17.5	19.1
1/750	6.6	9.8	10.1	10.4	13.3	15.0	16.2	17.6
1/800	6.4	9.5	9.8	10.1	12.9	14.5	15.7	17.1
1/1000	5.8	8.5	8.8	9.0	11.5	13.0	14.0	15.3
1/1250	5.1	7.6	7.8	8.0	10.3	11.6	12.5	13.6
1/1500	4.7	6.9	7.1	7.3	9.4	10.6	11.4	12.5
1/1600	4.5	6.7	6.9	7.1	9.1	10.3	11.1	12.1
1/2000	4.1	6.0	6.2	6.4	8.1	9.2	9.9	10.8
1/2500	3.6	5.4	5.5	5.7	7.3	8.2	8.9	9.6
1/3000	3.3	4.9	5.1	5.2	6.6	7.5	8.1	8.8
1/3200	3.2	4.8	4.9	5.0	6.4	7.3	7.8	8.5
1/4000	2.9	4.3	4.4	4.5	5.8	6.5	7.0	7.6
1/5000	2.6	3.8	3.9	4.0	5.1	5.8	6.3	6.8
1/6000	2.3	3.5	3.6	3.7	4.7	5.3	5.7	6.2
1/6400	2.3	3.4	3.5	3.6	4.5	5.1	5.5	6.0
1/8000	2.0	3.0	3.1	3.2	4.1	4.6	4.9	5.4

[Table 3] MULTI FLASH MODE

1/64	1 ~ 3 Hz	1 ~ 90
	4 ~ 5 Hz	1 ~ 80
	6 ~ 7 Hz	1 ~ 70
	8 ~ 9 Hz	1 ~ 50
	10 Hz	1 ~ 45
	11 ~ 14 Hz	1 ~ 35
	15 ~ 19 Hz	1 ~ 30
	20 ~ 50 Hz	1 ~ 25
	60 ~ 100 Hz	1 ~ 20

1/32	1 ~ 3 Hz	1 ~ 60
	4 ~ 5 Hz	1 ~ 50
	6 Hz	1 ~ 30
	7 ~ 9 Hz	1 ~ 20
	10 ~ 19 Hz	1 ~ 15
	20 ~ 100 Hz	1 ~ 12
1/16	1 Hz	1 ~ 30
	2 Hz	1 ~ 20
	3 Hz	1 ~ 10
	4 ~ 100 Hz	1 ~ 6

1/8	1 Hz	1 ~ 14
	2 Hz	1 ~ 7
	3 Hz	1 ~ 6
	4 ~ 7 Hz	1 ~ 5
	8 ~ 9 Hz	1 ~ 4
	10 ~ 100 Hz	1 ~ 3
1/4	1 Hz	1 ~ 4
	2 Hz	1 ~ 3
	3 ~ 100 Hz	1 ~ 2