

# INON

## Safety Precautions

- Before using your flashlight, please ensure that you have read and understood the safety precautions described below and separate 「user manual」 / 「Measures to Prevent Accidental Flooding」. Please keep these documents handy for easy reference.
- The safety precautions are intended to instruct you in the safe and correct operation of the strobe to prevent injuries or damage to yourself, other persons and equipment.
- The symbols and their significance are described below.



### DANGER

Failure to observe the precautions indicated by this symbol may lead to high possibility of serious injury or death.



### WARNING

Failure to observe the precautions indicated by this symbol may lead to possibility of serious injury or death.



### CAUTION

Failure to observe the precautions indicated by this symbol may have the possibility of resulting in possibility of injury or property damage.



### WARNING

#### **DO NOT turn on the flashlight in front of person's eye (particularly an infant).**

The flashlight may cause irreparable injury to the eyes or cause temporary visual impairment.

DO NOT use FULL mode on land (except for brief function check less than 5 minutes in total)

**Always use heat-safe gloves when using the light on land** to avoid burns including low temperature burns where you do not feel so hot.

#### **DO NOT use the flashlight in a place where it may be exposed to flammable or explosive gas.**

Otherwise fire ignition or explosion may result.

#### **Turn OFF the flashlight when not in use. (Never leave the product being ON)**

##### **Remove batteries immediately after exhaustion.**

Batteries could produce flammable gas causing the flashlight to explode. Storing the flashlight with batteries for extended periods of time could cause batteries to leak, overheat or explode which may result in fire, injury or damage to other property.

#### **When turn OFF the light, lock the switch at OFF position.**

##### **Remove batteries when not in use.**

Unexpected activation of the light by vibration etc. could cause fire or injury. Storing the light with batteries for extended periods of time may cause batteries to leak, overheat or explode which may result in fire, injury or damage to other property.



### WARNING

#### **Never leave or carry battery loaded battery cartridge as it is.**

**Make sure to store in insulated container like a ziplock** to avoid short-circuit which could generate flammable gas from batteries and possibly cause accidental explosion or battery to explode, or lead to fire/injury/property damage due to battery leakage or generated heat.

**Never attempt to modify the flashlight or disassemble the light head** to avoid malfunction, damage or flooding, which could lead to injury.

**Prevent water from entering the flashlight** to avoid malfunction, damage or flooding, which could lead to injury.

**Always check O-rings, batteries and flashlight operation before using** to avoid flooding, malfunction and unexpected deactivation of the product due to battery exhaustion, which could lead to an accident.

**Stop operating and turn off the flashlight immediately if any water is observed inside flashlight or flashlight operates improperly.**

Flammable gas may build up and cause explosion of the product, which may result in serious injury. Remove batteries being careful to avoid electrical shocks or burns. Contact your local dealer for repair.

**DO NOT use flammable solvent containing alcohol, benzene or thinners, oil and fat containing/chemical material like organic solvent, rust inhibitor, lubricant, polish, or alkaline detergent to clean the flashlight.**

The use of these substances may lead to fire, explosion or damage to the flashlight.

**Keep the flashlight out of reach of children.**

Their inability to read and understand warnings may lead to serious injury. They may swallow parts of the strobe or batteries. See a doctor immediately if a child swallow parts or batteries.



**CAUTION**

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**DO NOT apply strong vibration or shock to the flashlight by dropping or hitting it against something.**

Damage to the flashlight could cause malfunction or flooding possibly leading to injury or fire. Strong vibration/shock could deform batteries or damage battery case causing battery to leak or to generate heat resulting in fire or injury.

**DO NOT “jump” into the water with the flashlight or other photographic equipment** to avoid injury which may be caused by malfunction, flooding or unexpected movement of equipment.

**DO NOT leave/store the flashlight in a place subject to strong sunlight or high temperatures, such as a beach, the deck of a boat, dashboard or trunk/boot of a vehicle.**

Otherwise damage to the flashlight may result in injury, fire or malfunction.

**Partially unscrew the Light Head or remove it for flying or traveling to other areas with lower air pressure than sea level (traveling across mountains for example)** to avoid damage to waterproof integrity which may result in flooding or injury.

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**DANGER**

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**DO NOT use batteries other than batteries specified in user manual.**

[Compatible batteries]

- Panasonic AA “eneloop” rechargeable battery (BK-3MCC) [recommended] , Panasonic AA “eneloop pro” rechargeable battery (BK-3HCC) [recommended] , and (“eneloop” type) “new generation” NiMH battery with same performance
- “Conventional” NiMH battery (1.2V) other than above [good quality]
- AA Alkaline (1.2V)

**DO NOT use any battery which you observe irregularity including leakage, deformation, discoloration or damage on battery jacket etc.**

**DO NOT throw a battery in a fire or heat it. Never attempt to disassemble or short-circuit a battery.**

**DO NOT immerse battery in water or allow it to get wet.**

**DO NOT mix old and new batteries, recharged and discharged batteries or batteries of different capacities, types, brand or manufacturer.**

**DO NOT attempt to recharge non-rechargeable batteries.**

**Be sure to recharge rechargeable batteries with specified battery charger. Follow battery and battery charger instruction manual.**

**DO NOT load batteries with the +/- battery terminal reversed**

**Follow any other instructions indicated in the battery/battery charger user manual.**

**Dispose batteries in accordance with all applicable federal, state and local regulations.**

**If the battery should leak • • •**

- Keep away from fire to avoid ignition/explosion.
- Should inner liquid contact skin or eyes, or get into mouth, immediately wash with a lot of fresh water and seek medical advice.

# INON

## INON LF1000-S


Thank you for purchasing INON product.

The INON LF1000-S is a watertight LED flashlight equipped with high-intensity power LED producing powerful 1000 lumen intensity/30° coverage, and two power setting in its compact body. **Before using, please read through this user manual and separate leaflets [Safety precautions]/[Measures to Prevent Accidental Flooding] to ensure proper operation of the product. FULL mode is not usable on land except functional check not exceeding 5 minutes operation time in total. Refer to [Handling precaution] section in this manual for detail.**

### Features

- Usable for various purposes even as lighting source for photography/videography with its color temperature 5,000K in addition to a diving light carrying 120m depth rating by its durable corrosion-resistant aluminum alloy and double O-ring construction for moving parts.
- Simple yet durable and user-friendly rotary switch assures you reliable ON/OFF and power setting operation. Operated by easily obtainable 3 x AA batteries. Compatible batteries including “eneloop” / “eneloop pro” etc. support approx. 50 minutes (FULL) or approx. 235 minutes/3hrs 55min (LOW) continuous operation (※) at minimal running cost.  
※Average time to get half brightness comparing to initial performance when using “eneloop pro” batteries [Model code : BK-3HCC].
- Three different filters come with the product as standard package. The “Wide Filter LF-S” and “Wide Red Filter LF-S” increases native beam coverage at 33% (from 30 degree to 40 degree). The “Red Filter LF-S” only changes color not to stimulate marine lives. These filters are interchangeable underwater.
- Wide varieties of optional accessories are available including “Light Holder” products to attach this product on your camera/video system.
- Light Head is interchangeable with other compatible model to provide flexible usages.



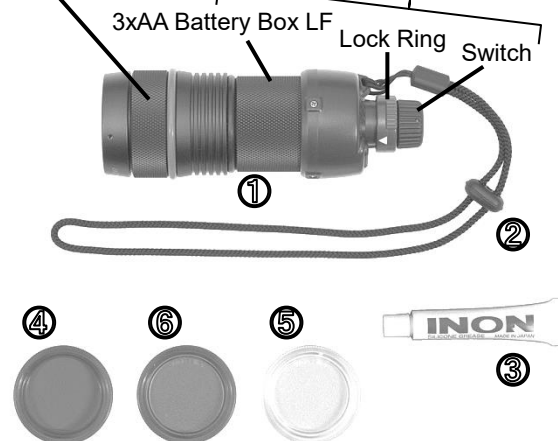
Waterproof LED flashlight  
MODEL : LF1000-S  
BATTERY : 1.5V  x 3  
INON Inc. MADE IN JAPAN

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

- Package contents :**
- LF1000-S ① x1
  - LF1000-S Light Head x1
  - LF1000-S Battery Box Unit x1
    - 3xAA Battery Box LF
    - Switch
    - Lock Ring
  - 3xAA Battery Cartridge LF (preinstalled in the battery box) x1
  - Hand Strap ② (preinstalled on ①) x1
  - INON Grease ③ x1
  - Red Filter LF-S ④ x1
  - Wide Filter LF-S ⑤ x1
  - Wide Red Filter LF-S ⑥ x1
  - This user manual x1
  - Safety Precautions x1
  - Measures to Prevent Accidental Flooding x1
  - Maintenance on battery terminals/contacts x1
  - User manual of filters x1

LF1000-S Light Head      LF1000-S Battery Box Unit



### Preparation

#### **Prepare compatible batteries**

Following 3 types are compatible with this product (\*1). Prepare [three] batteries (same type/model) from same battery manufacture.

- 1) **Panasonic AA “eneloop” rechargeable battery (BK-3MCC) [recommended] , Panasonic AA “eneloop pro” rechargeable battery (BK-3HCC) [recommended] , Sanyo AA “eneloop” rechargeable battery (HR-3UTG/HR-3UTGA/HR-3UTGB) [recommended] , Sanyo AA “eneloop pro” rechargeable battery (HR-3UWX) [recommended] and equivalent (“eneloop” type) “new generation” NiMH battery (\*2)**
- 2) **AA “conventional” NiMH rechargeable battery other than above (1.2V) [good quality] (\*3)**
- 3) **AA Alkaline battery (1.5V)**

\*1 Other batteries are not usable such as AA Manganese battery, AA Oxyride battery or AA Lithium (1.5V) battery etc. Make sure to follow precautions of handling batteries described in separate [Safety Precautions].

\*2 Including “new generation” NiMH batteries (“eneloop” type) carrying less self-discharging and heat generating characteristic comparing to “conventional” or “high-capacity” NiMH, below listed NiMH batteries have been confirmed compatible so far as “new generation” NiMH battery.

--Panasonic	“eneloop” [recommended]	[Model code :BK-3MCC]
--Panasonic	“eneloop pro” [recommended]	[Model code :BK-3HCC]
--Sanyo	“eneloop” [recommended]	[Model code : HR-3UTG /HR-3UTGA/HR-3UTGB]
--Sanyo	“eneloop pro” [recommended]	[Model code : HR-3UWX]
--Sony	“CycleEnergy Blue”	[Model code : NH-AA-2BKA / NH-AA-4BKA]
--Panasonic	“NiMH battery”	[Model code : HHR-3MPS]
--Maha Energy	“IMEDION”	[Model code : MHRAA14]
--GP Batteries	“ReCyko+”	[Model code : 210AAHCBE]
--ANSMANN	“maxE”	[Model code : 5030991 / 5030992 / 5035052]
--Electrochem Automation	“NEXcell energyON”	[Model code : n/a (AA 2000mAh)]

(continued)

- \*3 Some “conventional” or “high-capacity” NiMH rechargeable batteries have significant self-discharge and heat-generating characteristic resulting difficulty to keep their performance during usage. We recommend using recommended batteries.

#### **Turn OFF, lock, remove LF1000-S Light Head**

Turn OFF the LF1000-S by rotating the “switch” counterclockwise until it has been stopped. Pull up the Lock Ring (①) and rotate it counterclockwise(②) to match its ▽ mark with “LOCK” position on “3xAA Battery Box LF” (③). Then screw in the switch (④) until it stopped to lock the switch position at OFF.



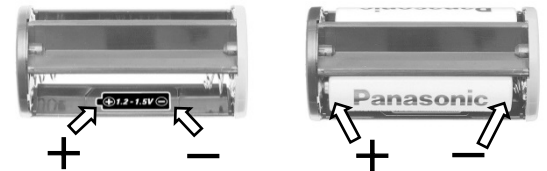
Next, with holding the “3xAA Battery Box LF” firmly, slowly turn the “LF1000-S Light Head” counterclockwise to separate the Light Head from the battery box unit.

To keep waterproof property, make sure slowly turn the switch/LF1000-S Light Head to prevent O-ring from being damaged/twisted.

#### **Load Batteries in 3xAA Battery Cartridge LF**

Take out “3xAA Battery Cartridge LF” from “3xAA Battery Box LF”. Conduct maintenance of “3xAA Battery Cartridge LF” in reference to [Terminals/Contacts Maintenance] section of this user manual.

Then install batteries in the “3xAA Battery Cartridge LF” with correct orientation as shown on stickers inside of the “3xAA Battery Cartridge LF” [Negative terminals must touch spring contacts]



Also make sure to follow any handling precautions on battery mentioned in separate [Safety Precautions].

Once batteries are loaded in “3xAA Battery Cartridge LF”, put it immediately in “3xAA Battery Box LF” with the LF1000-S being OFF or in an insulated container such as ziplock.

**NEVER leave or carry battery loaded “3xAA Battery Cartridge LF” as its battery contacts being exposed.**

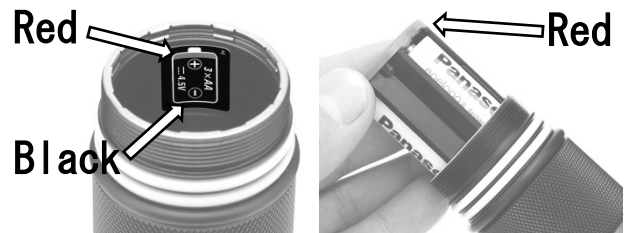
Doing so may have short circuit causing batteries to produce heat/explode/leak battery fluid resulting in fire/injury/property damage

#### **Install 3xAA Battery Cartridge LF after Checking O-ring etc.**

Check conditions of O-rings etc. and conduct leak test if necessary to ensure waterproof property in accordance with separate paper [Measures to Prevent Accidental Flooding].

Next, conduct maintenance in reference to [Terminals/Contacts Maintenance] section of this user manual, then install the 3xAA Battery Cartridge LF with correct orientation as shown in image right and indicated on a sticker inside of the “3xAA Battery Box LF”.

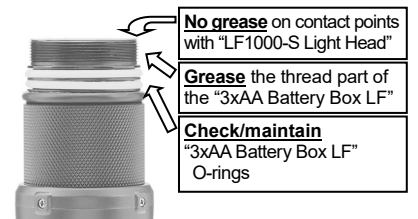
[positive [Red] terminal facing up]



#### **Attach the LF1000-S Light Head**

**Apply thin film of INON grease on the thread part** of the “3xAA Battery Box LF” to prevent [salt build-up] or [electric corrosion] causing anchoring between the “LF1000-S Light Head” and the “3xAA Battery Box LF”. Do not put grease on electrical contacts to avoid bad connection.

**Make sure the LF1000-S is OFF once again at this stage, then slowly screw the LF1000-S Light Head onto the 3xAA Battery Box LF until it has been stopped** with holding the 3xAA Battery Box LF firmly.



To keep waterproof property, make sure slowly turn the switch/LF1000-S Light Head to prevent O-ring from being damaged/twisted.

#### **Attach an accessory as necessary**

Attach [Red Filter LF-S], [Wide Filter LF-S] or [Wide Red Filter LF-S] if necessary. Refer to respective user manual for detail.

[Red Filter LF-S]/[Wide Red Filter LF-S] are dedicated for underwater use and not usable on land.

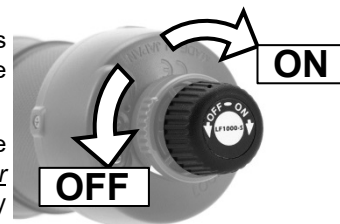
**Operation** : **Unlock the switch** \*Reverse procedure of previous "Turn OFF, lock, remove LF1000-S Light Head" section  
Rotate the switch counterclockwise until lightly stopped, turn the Lock Ring clockwise to match ▽ mark with △ mark on the "3xAA Battery Box LF", then hold it down to unlock the switch.

Always lock the switch at OFF position except for activating the light.  
**NEVER leave or carry the product with being the switch unlocked.**  
Doing so may cause unexpected operation of the product resulting in fire/injury/property damage.

#### **ON/OFF , Selecting Power**

To turn OFF the LF1000-S, slowly turn the switch counterclockwise until it has been lightly stopped. Slowly turn the switch clockwise for LOW mode and rotate further until it has been lightly stopped for FULL mode.

**Make sure to turn all the way to the either end** to turn ON(FULL)/OFF the LF1000-S. **When using LOW mode, make sure to turn 1/4 rotation further after activating the light.** Any position except OFF/LOW/FULL may possibly cause unstable operation like unexpected ON/OFF or flicking of the LF1000-S.



To keep waterproof property, make sure slowly turn the switch/LF1000-S Light Head to prevent O-ring from being damaged/twisted.

#### **Change/Remove Batteries**

**The LF1000-S must be dry** to change/remove batteries in accordance with previous 「Preparation」section. If even a small amount of water contacts inside "LF1000-S Light Head" or contacts/terminals for short period of time, there will be corrosion of contact points or cause short circuit, and the LF1000-S may become inoperable.

**Changing/removing batteries is not recommended if the LF1000-S is not completely dry. However if you have to change/remove battery before drying the LF1000-S, follow procedure below:**

- 1) Thoroughly wash the LF1000-S in fresh water and wipe off water drops with an air blower etc. in reference to "Maintenance" section.
- 2) Hold the LF1000-S with facing up so that no water droplets can enter inside the "LF1000-S Light Head" or drip on contacts/terminals.
- 3) Slowly unscrew the "LF1000-S Light Head" with facing it up to prevent water from getting in to take out batteries.

#### **Maintenance** : **Rinse and Dry Completely**

After dive soak the LF1000-S in fresh water for several hours (water temperature should be 0°C ~ +30°C/32°F ~ 86°F) **without any filter** to remove salt etc. Slowly turn the switch to remove trapped salt etc. but DO NOT turn the "LF1000-S Light Head" underwater.

Then wipe off water droplets by an air blower etc. and dry the product completely in shaded and well ventilated area (it may take several days completely dry).

#### **Remove Batteries and Check/Clean/Grease Thread Part/O-rings etc.**

**Make sure that the LF1000-S is completely dry,** remove batteries in reverse procedure to loading batteries explained in「Preparation」section. Check/clean/grease O-rings, O-ring grooves, O-ring contact surfaces and thread parts of the "LF1000-S Light Head"/"3xAA Battery Box LF" in reference to separate leaflet 「**Measures to Prevent Accidental Flooding**」.

#### **Storage**

**Make sure to remove all batteries,** then store in shaded and well-ventilated area within temperature range of [0°C ~ 30°C/32°F ~ 86°F].

Avoid storing near chemicals, high ozone, large temperature and humidity fluctuations (even in the temperature range described above) and magnetic fields (TV sets etc.) to prevent the product from possible malfunction and flooding.

- Handling precautions:**
- DO NOT disassemble the "LF1000-S Light Head" to avoid malfunction/flooding.
  - Protect from impact shock and vibration, such as vibrating boat deck to avoid accidental damage not only on this product but also on batteries.
  - Prevent sands or foreign substances from entering between the 3xAA Battery Box LF and the switch to avoid malfunction/flooding etc.
  - DO NOT leave the product to extreme heat, such as inside of a sun-heated car or in front of a heater, or in hot direct sunlight, such as a beach or boat deck to avoid malfunction/flooding etc.
  - This product is designed to withstand external pressure (water pressure), but not internal pressure (when ambient air pressure decreases). When traveling to or from high altitudes, including travel on an aircraft, always remove or loosen the "LF1000-S Light Head".
  - Always hold the "3xAA Battery Box LF" instead holding the "LF1000-S Light Head" to prevent accidental loosening of the "LF1000-S Light Head" leading to flooding.
  - **FULL mode is not usable on land except function check for short period of time(※).** Even for a short period of time to check FULL mode function or using LOW mode on land, be sure to use heat-safe gloves etc. The "LF1000-S" surface and "3xAA Battery Box LF" surface could have heat more than 50°C/122°F causing personal injury like burn/low temperature burn.

(continued)






※The function check of FULL mode on land can be conducted only when outer surface of the LF1000-S is below air temperature and **test time should be limited within 5 minutes**. If you need to do consecutive function check, make sure to cool down the unit until its surface gets below air temperature. Working/storage temperature of this product is 0~30°C/32~86°F.

- Follow any other handling instructions/precautions explained in separate paper *[Safety precautions]*.
- When turns OFF this product, **always lock the switch at OFF position**. **Unload all batteries** when not in use including during transportation to avoid accidental malfunction/fire/personal injury resulting from unexpected activation of this product by vibration etc.

## Battery

- As batteries have been used, battery voltage gradually decreases making the LF1000-S intensity gets dark little by little. The rated continuous operable time is the duration to get half brightness comparing to initial performance.
- In general, battery performance will decrease as temperature lowers, voltage will recover when not in use and batteries will slowly discharge over time when not used. And, usable time can greatly vary depending on water temperature and how the batteries are used etc. **We recommend replacing with sufficiently charged batteries even before they have been fully drained or carrying spare LF1000-S to avoid battery run out in the middle of a dive especially for night dive.**
- Some NiMH batteries have high self-discharge rates and will begin to decrease their performance (intensity/continuous operable time etc.) immediately after charging. So we recommend using those NiMH batteries within one day after charging.
- Also battery performance will decrease gradually with repeated charging and discharging, even within the possible number of charge-discharge cycles stated on the product package. When you observe less intensity/continuous operable time even with fully-charged (or refreshed) batteries, we recommend to change all batteries.
- Together with these guidelines, be sure to read and understand **[Safety Precautions]** and any instructions that come with your batteries(rechargeable batteries/battery charger) and comply with any battery manufacturer requirements to ensure proper operation.

## Options

- Single Light Holder LF  
Optional product to attach single INON LF series LED flashlight including this product on “[YS Adapter] compatible arm”. Especially for handy and compact camera system set-up with INON [Shoe Base] or [Grip Base D4].
- Strobe Light Holder LF  
Optional product to attach one or two INON LF series LED flashlight on compatible lighting arm together with INON [S-2000], [D-2000] or [Z-240] etc. This product is attached on “[YS Adapter] compatible arm” including [Shoe Base]/[Grip Base D4] etc. through [Z Joint]. Combination with the [Z Adapter II]/[Z Adapter] enables to attach on INON “Arm II System” or “Float Arm System” with [Clamp III].
- Z Joint  
Optional product to attach [Strobe Light Holder LF] on “[YS Adapter] compatible arm”.
- Z Adapter II  
Optional product to attach [Strobe Light Holder LF] on INON “Arm II System” or “Float Arm System” with [Clamp III]. The ball-joint is made from metal to firmly fix strobe position by lightly clamp the [Clamp III].
- Spare O-ring Set (LF)  
Set of two yellow oil-bearing O-rings. Refer to [Measures to Prevent Accidental Flooding] for detail.
- INON Grease  
③ in the product image.
- Wide Filter LF-S
- Red Filter LF-S
- Wide Red Filter LF-S  
④~⑥ in the product image. Refer to respective user manual for detail.

(continued)

- LF1000-S Light Head
- LF1100-W Light Head  
Optional Light Head for INON LF series 「LF1100-W」 which produces powerful 1100 lumen with 85 degree coverage designed as serious lighting device for underwater imaging. This Light Head is interchangeable with the original 「LF1000-S Light Head」 for other application.
- LF800-N Light Head  
Optional Light Head for INON LF series 「LF800-N」 which produces powerful 800 lumen with super narrow 5 degree coverage designed for dual use on land/underwater. This Light Head is interchangeable with the original 「LF1000-S Light Head」 for other application.
- 3xAA Battery Cartridge LF

**Terminals/Contacts:  
Maintenance**

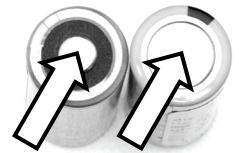
With the increased capacity, improved performance, and longer lifespan of different types of rechargeable batteries, it is possible for the performance of the LF1000-S to become unstable (the LF1000-S doesn't turn ON or flickers) due to bad contacts, caused by dirt or oxidation of the terminal surface of the rechargeable battery itself in addition to 【"LF1000-S Light Head" terminal/contact】 / 【"3xAA Battery Cartridge LF" terminal/contact】 / 【"3xAA Battery Box LF" terminal/contact】 .

For rechargeable battery terminals, it is difficult to distinguish through visual inspection of the terminal surface. As some rechargeable batteries can cause the above problems immediately after purchase because the terminal surface has already been oxidized, it is recommended to inspect and conduct maintenance periodically on the rechargeable battery terminals and LF1000-S terminals/contacts, by following the procedures described below.

● **Battery Terminals**

Conduct following maintenance within limitations/precautions described in battery instructions etc. if maintenance is necessary considering terminal conditions/performance of this product.

- 1) Wipe each terminal surface with a dry soft cloth/clean cotton swab (or similar) to remove any oil or similar residue.
- 2) If above step does not fully clean the terminal, dap a small amount of 『silver polish』 on a cotton swab (or similar) and wipe terminal surface until fully clean. Then clean off any 『silver polish』 residue with a clean swab.



● **"3xAA Battery Cartridge LF" Positive(+) Terminal**

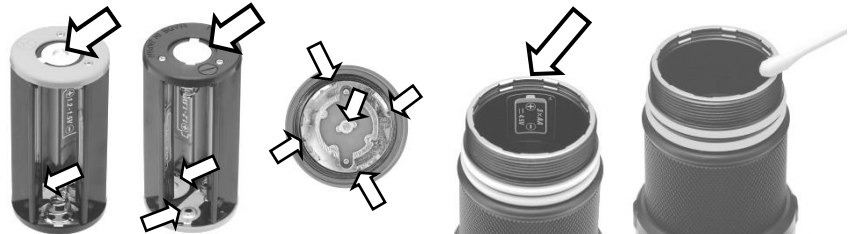
● **"3xAA Battery Cartridge LF" Contacts**

● **"LF1000-S Light Head" Terminal/Contacts**

● **"3xAA Battery Box LF" Contacts**

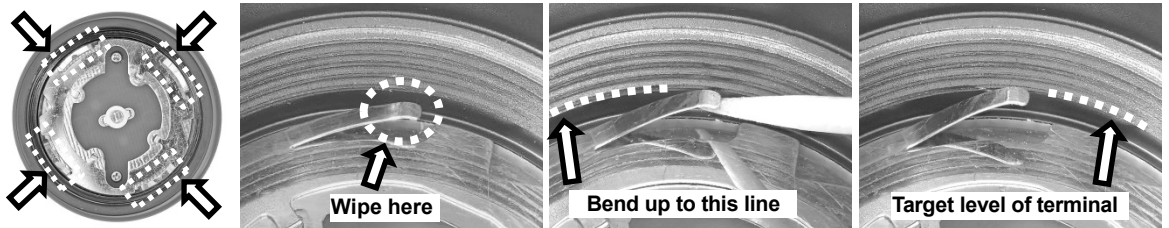
Clean up surface of contacts/terminals with clean cotton swab to wipe off any dirt/residual oil considering contacts/terminals condition/performance of this product.

"3xAA Battery Box LF" contact has gold coating so maintenance should not be necessary under normal circumstances. If you observe foreign substances or water droplet etc. clean the contact with clean cotton swab as in the right image



If above step fails to recover expected performance, conduct following maintenance on terminals (4 points) of the "LF1000-S Light Head".

- Dap a small amount of 『silver polish』 on a cotton swab (or similar) and wipe terminal surfaces until fully clean. Then clean off any 『silver polish』 residue with a clean swab.
- Slowly bend up all terminals by a bamboo stick etc. as shown in below images.



● **"Switch" Contact (Not mandatory)**

Maintenance of the switch contact may be necessary only for high frequent users when significant blinking is observed during switch operation. In this case contact your purchasing dealer for servicing.

### INON Waterproof LED Light LF1000-S Specifications (\*1)

LED	High-intensity Power LED (Cree XM-L2™T6™)
Max.Luminous flux (*2)(*3)	FULL mode: approx. 1,000 lumen ["eneloop pro" battery]
	LOW mode: approx. 250 lumen ["eneloop pro" battery]
Coverage	approx. 30° [without a filter and with packaged Red Filter LF-S]
	approx. 40° [with packaged Wide Filter LF-S / Wide Red Filter LF-S]
Color Temp.(*3)	approx. 5,000K
Operable Duration [air] (*4)(*6)	approx. 180 minutes ["eneloop" battery at LOW]
	approx. 225 minutes ["eneloop pro" battery at LOW]
	approx. 215 minutes [Alkaline battery at LOW]
Operable Duration 【Underwater】 (*5)(*6)	approx. 40 minutes ["eneloop" battery at FULL]
	approx. 185 minutes ["eneloop" battery at LOW]
	approx. 50 minutes ["eneloop pro" battery at FULL]
	approx. 235 minutes ["eneloop pro" battery at LOW]
	approx. 60 minutes [Alkaline battery at FULL]
	approx. 205 minutes [Alkaline battery at LOW]

Compatible Battery	AA "eneloop" / "eneloop pro" battery x 3 (*7)
	AA NiMH [good quality] x 3 (*8)
	AA Alkaline battery x 3
Depth rating	120m / 394'(*9)
Size	Max. diameter 46.7mm/1.8" x 132.1mm/5.2"
Weight (*10)	Air: 258.0g/9.1oz, Underwater: approx. 105g/3.7oz
Working/Storage Temperature	0°C~30°C / 32°F~86°F
LED life time	approx. 10,000 hours
Material/ Finishing	Corrosion resistant aluminum alloy/rigid alumite,
	PBT, PC, Optical glass etc.
Standard accessory	Red Filter LF-S, Wide Filter LF-S,
	Wide Red Filter LF-S, Hand Strap, INON Grease
EMC standards	EN 55015:2006 + A1:2007, EN 61547:1995 + A1:2000,
	CRF 47 FCC Part 15 [incidental radiator], AS/NZS CISPER 15:2006

\*1) Subject to change without prior notice

\*2) Nominal value calculated from LED manufacture specification sheet.

\*3) Due to individual variability of LED, drive circuit or battery etc., luminous flux, color temperature or intensity may vary within rated specification.

\*4) Average time to get half brightness when continuously turn ON the product with below listed batteries on land (approx. 20°C/68°F).

- "eneloop" battery : Panasonic "eneloop", BK-3MCC, 1.2V, Min.1,900mAh
- "eneloop pro" battery : Panasonic "eneloop pro", BK-3HCC, 1.2V, Min.2,450mAh
- Alkaline battery : Panasonic"EVOLTA"LR6(EJ), 1.5V

\*5) Average time to get half brightness when continuously turn ON the product with below listed batteries underwater (approx. 25°C/77°F).

- "eneloop" battery : Panasonic "eneloop", BK-3MCC, 1.2V, Min.1,900mAh
- "eneloop pro" battery : Panasonic "eneloop pro", BK-3HCC, 1.2V, Min.2,450mAh
- Alkaline battery : Panasonic"EVOLTA"LR6(EJ), 1.5V

\*6) Actual measured data by INON. The value may vary depending on product individual variability, battery manufacture/model, test condition.

\*7) "New generation" NiMH batteries carrying less self-discharging and heat generating characteristic comparing to "conventional" or "high-capacity" NiMH including below listed batteries in right confirmed compatible by INON INC. as same as recommended ["Panasonic "eneloop"/"eneloop pro" battery (BK-3MCC, BK-3HCC)] .

- Panasonic Corporation Model name: eneloop [recommended] /Model code: BK-3MCC
- Panasonic Corporation Model name: eneloop pro [recommended] /Model code: BK-3HCC
- SANYO Electric Co.,Ltd Model name: eneloop [recommended] /Model code:HR-3UTG/HR-3UTG/HR-3UTGB
- SANYO Electric Co.,Ltd Model name: eneloop pro [recommended] /Model code: HR-3UM/X
- Sony Corp. Model name: Cycle Energy Blue/Model cod : NH-AA-2BKA, NH-AA-4BKA
- Panasonic Corporation Model name: Rechargeable Ni-MH (AA)/Model code : HHR-3MPS
- Maha Energy Corporation Model name: IMEDION/Model code : MHRAA4
- GP Batteries International Ltd Model name: ReCyko+/Model code : 210AAHCBE
- ANSMANNAG Model name: maxE/Model code : 5030991, 5030992, 5035052
- Electrochem Automation Inc. Model name: NEXcel energy/ON/Model code : n/a (AA2000mAh)

\*8) Some "conventional" or "high-capacity" NiMH rechargeable batteries have significant self-discharge and heat-generating characteristic resulting difficulty to keep their performance during usage. We recommend using recommended batteries.

\*9) Without operating the "Switch". INON has confirmed depth rating 70m/230' including switch operation

\*10)Including 3 x AA "eneloop" batteries.

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# Measures to Prevent Accidental Flooding

Thank you for purchasing INON product.

The INON LF series LED flashlight is waterproof by rubber O-rings enabling underwater use. These O-rings must be inspected each time before using LED flashlight to ensure waterproof integrity. Equally important are O-ring contact surfaces. Always check/maintain O-ring contact surfaces for contaminants or scratches.

## O-ring Inspection Locations

User serviceable O-rings/O-ring contact surfaces are O-rings on a "Battery Box" (Light Head side) and O-ring contact surfaces on a "Light Head" indicated in image right. Be sure to check condition of each O-ring including dust/foreign substances and condition of O-ring in accordance with next section.

Factory overhaul of an O-ring for switch part may be necessary depending on frequency of use/condition of product like when you feel too tight to turn the switch or foreign substances have been trapped between the "Switch" and the "Battery Box". Refer to 「Maintenance of O-ring」 section for detail.



## O-ring Inspection Method

These are the essential factors ensuring waterproof property:

- O-ring itself
- O-ring contact surface
- O-ring groove
- If O-ring is properly seated in groove
- Grease

*If any of the following are evident, there is a high chance that the product will flood if placed in water. Be very careful about checking these points when you exercise following inspection.*

### If hair, sand, lint or other debris is attached to the O-ring

Remove O-ring and wipe-off the debris in reference to next section 「Installing/Removing O-ring」.

### If the O-ring is cut or cracked

The O-ring must be replaced with a new O-ring. See 「Installing/Removing O-ring」 for replacement.

### If the O-ring is twisted

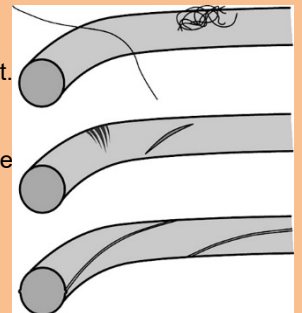
The O-ring must be removed and reinstalled uniformly with no twists or other irregularities. See next section 「Installing/Removing O-ring」 for reinstallation.

### If there is hair, sand, lint or other debris on the O-ring contact surfaces

Wipe off any debris.

### If there is a scratch, blemish on the O-ring contact surfaces

The product must be inspected at manufacture, and repaired if possible. Contact your purchasing dealer for advice.



## O-ring Maintenance Method

INON yellow O-rings are compounded with a special type of oil which naturally migrates to the O-ring surface, but which is not compatible with all grease types while benefit you with less frequent maintenance. **DO NOT use any other grease or other oil/fat containing material, which may cause the O-rings to swell or deform, causing poor seal and water leakage.** Use 「INON Grease」 only. Use of non-INON grease will void warranty.

### “Battery Box” O-ring (Light Head side) / “Light Head” O-ring Contact Surface

First, clean O-ring contact surface of the “Light Head” with a cotton swab (or similar) to wipe off old grease and residue then **periodically apply thin film of supplied INON grease** both on “Battery Box” O-rings (Light Head side)/“Light Head” O-ring contact surface ensuring waterproof integrity with oil film to prevent damage/twist caused by friction during removing/installing the “Light Head”. Also put a little amount of grease between two yellow O-rings.

Never put grease on any terminals/contacts of “batteries”, “Light Head”, “Battery Box”.

Always slowly turn the “Light Head” whenever remove/attach it to prevent excessive load on O-rings.

If O-rings are heavily stained or debris are attached, conduct necessary maintenance in accordance with next section 「Installing/Removing O-ring」.

### “Battery Box” O-ring Contact Surface (switch side) / “Switch” O-ring (Non user-serviceable)

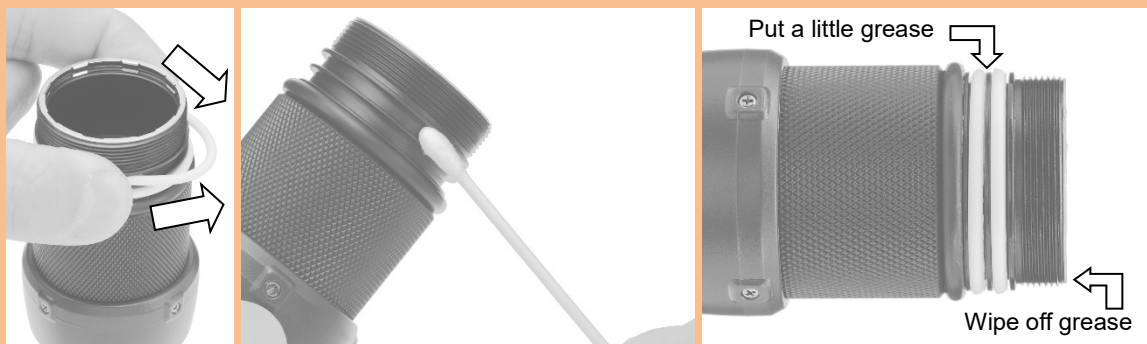
Maintenance is not necessary under normal condition and frequency of usage. However if you observe problem to turn the “Switch” due to heavy usage/salt build-up or any foreign substances have been trapped between the “Switch” and the “Battery Box”, “Switch” O-ring maintenance is necessary. Contact your purchasing dealer for overhaul

## Installing and Removing O-ring

Your LF series LED flashlight has been pressure tested, inspected and passed before shipping. It is now your responsibility to prevent any water leakage by properly maintaining O-rings. It may be necessary to remove O-ring(s), for cleaning or replacement. *Accordingly, please follow the next steps carefully.*

To remove each O-ring, lightly squeeze from the sides so it bulges out from one side, grasp and pull off, as in figure below. Clean any residual grease or debris from O-ring, O-ring grooves and contact surfaces, and check their condition. If you need to replace O-ring, optional O-ring set is available to purchase. Refer to LF series user manual for detail of options and prepare optional */Spare O-ring Set (LF)/*.

Using your fingertips, apply a thin uniform film of INON grease on the O-ring. Gently install the O-ring in the O-ring groove, not stretching it too much, and making sure it is seated uniformly and not twisted nor damaged by the thread part of the "Battery Box". If you see any twists, take off and re-install. Then put a little amount of INON grease between two O-rings and wipe off any grease on the "Battery Box" contact



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As of April 2014

# INON

## INON Red Filter LF-S

## INON Wide Filter LF-S

## INON Wide Red Filter LF-S

Thank you for purchasing INON product.

INON Filter LF-S series provides additional features for compatible INON LED flashlight.

- Function** :
- **Red Filter LF-S ①**
    - 1) Suppress influence of light on shy subjects.
    - 2) Prevents LED light influence during S-TTL auto exposure in ultra macro shooting (shooting distance is 5cm/2" or less and distance between a strobe and subject is 10cm/4" or less) to support precise and accurate S-TTL auto exposure control. Refer to user manual of strobe for detail of S-TTL auto.
      - ※ 『Light Filter Sticker・Red』 supplied with S-TTL compatible strobe provides same benefit above.

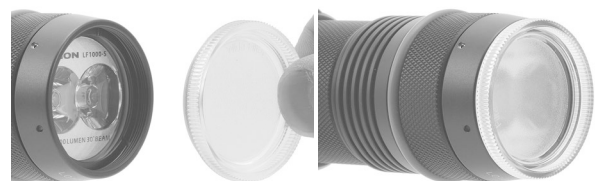
**The 『Red Filter LF-S』 is underwater use ONLY. Not usable on land.**
  - **Wide Filter LF-S ②**
    - 3) Soften and effectively diffuse LED light to provide natural and seamless wide LED light (approx. 40°).
  - **Wide Red Filter LF-S ③**
    - 4) Changing LED light color to red and effectively diffuse LED light to provide natural and seamless wide LED light (approx. 40°) to suppress influence of light on shy subjects.
    - 5) Prevents LED light influence during S-TTL auto exposure in ultra macro shooting (shooting distance is 5cm/2" or less and distance between a strobe and subject is 10cm/4" or less) to support precise and accurate S-TTL auto exposure control. Refer to user manual of strobe for detail of S-TTL auto.
      - ※ 『Light Filter Sticker・Red』 supplied with S-TTL compatible strobe provides same benefit above.

**The 『Wide Red Filter LF-S』 is underwater use ONLY. Not usable on land.**

- Compatible product:**
- 『LF1400-S』 (\*1)
  - 『LF1000-S』 (\*1)
- \*1) 『Red Filter LF-S』/『Wide Filter LF-S』/  
『Wide Red Filter LF-S』 are packaged.



- How to Attach** :
- Screw a Filter straight in the 『Filter Screw』 on a "Light Head" of compatible LED Light.  
Make sure to screw in straight to prevent accidental damage on thread part of a Filter.



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As of August 2014

## Maintenance on Terminals/Contacts

If you observe any unstable operation (the flashlight doesn't turn ON or flickers), check and make sure that;

- ① If all batteries have been properly loaded (orientation of batteries)
- ② If the battery cartridge has been loaded properly (orientation of the battery cartridge)
- ③ If batteries are fully charged and are not degraded
- ④ If battery terminals, terminals/contacts of this product are not corroded or do not have dirt.

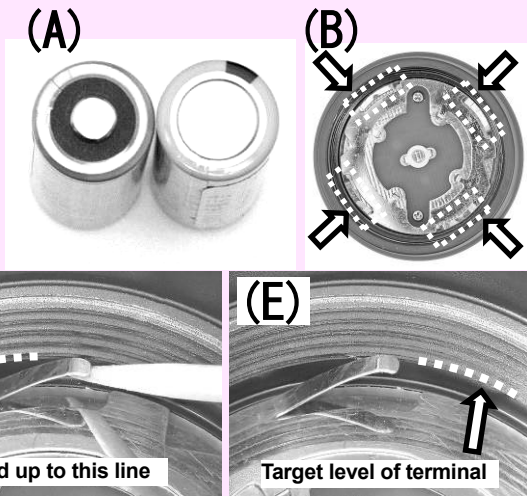
If you observe significant corrosion/dirt on terminals/contacts, conduct following maintenance.

- Dap a small amount of 『silver polish』 on a cotton swab (or similar) and wipe terminal surfaces (battery → positive/negative terminals (A), Light Head terminals → four terminals (B)) until fully clean. Then clean off any 『silver polish』 residue with a clean swab (C).
- Slowly bend up all Light Head terminals by a bamboo stick etc. as shown in below images(D)(E).

Refer to the instruction manual of this product for detail

- ① → 「Preparation---Load Batteries in Battery Cartridge LF」 (Page 2)
- ② → 「Preparation  
--- Install Battery Cartridge LF after Checking O-ring etc.」(Page 2)
- ③ → 「Battery」(Page 4)
- ④ → 「Terminals/Contacts maintenance」 (Page 5)

If above does not improve situation, please consult with your purchasing dealer for servicing.



## Maintenance on Terminals/Contacts

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- ⑥ If the battery cartridge has been loaded properly (orientation of the battery cartridge)
- ⑦ If batteries are fully charged and are not degraded
- ⑧ If battery terminals, terminals/contacts of this product are not corroded or do not have dirt.

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