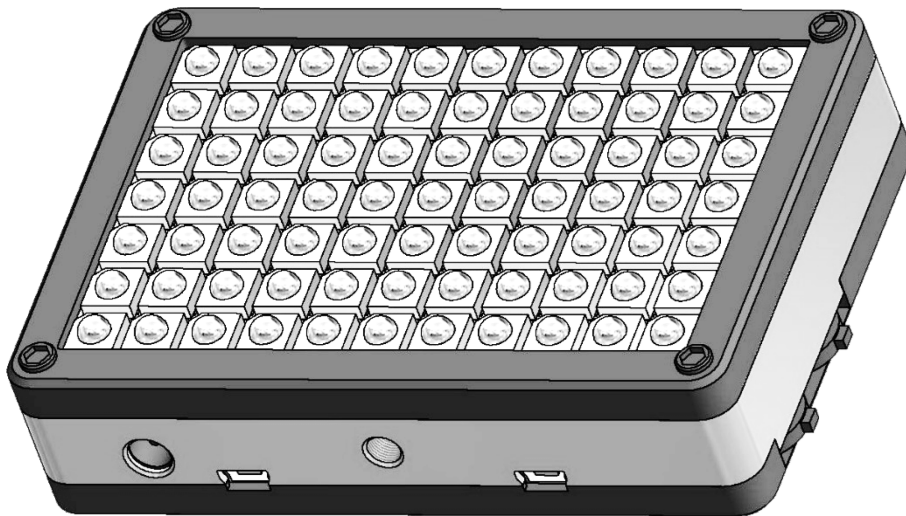


Matrix Light ML-9 LED Light

LED Light User Manual

ENGLISH



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- Before using this product carefully read this manual.
- This product is subject to change without notice in advance for improved performance.

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••• ABOUT PRODUCT

Advantages of product •••

New Matrix Light ML-9 LED Light

Matrix Light has been providing broadcasting stations and professional broadcasters with the best quality products since the release of the ML-80 LED light. Long term customers such as KBS, MBC, and NHK, and Fuji TV have demonstrated the reliability and superiority of the Matrix Light products. Accepting various inputs from professional broadcasters, the new Matrix Light ML-9 will be the ultimate light in the field.

Precision light control system

Precision dimming and coloring controllers on the ML-9 allows the user to achieve the ideal brightness and color temperature for every occasion.

- Brightness range: 150lm to 2,400lm in 240lm increments
- Color temperature range: 3,200K to 5,800K in 230K increments

The Turbo mode supports up to 2,400lm of brightness, equivalent to a 240W light bulb, for situations requiring more bright lighting.

Memory Buttons

ML-9 LED Light includes three built-in memory buttons that could restore most frequently used brightness and color temperature. This convenient feature allows the user to get the light ready efficiently.

One Source Multi Use

The highly adaptable Matrix Light ML-9 is suitable for ENG cameras to handheld cameras. Also, it is very effective for general studio lighting as well. The on-board USB connectivity port allows simultaneous control of multiple ML-9 units, maximizing its flexibility.



Solid body and precise micom control

ML-9 LED Light's aluminum body is lightweight, durable, and acts as an excellent heat sink, maximizing durability and lifetime. Also, the sophisticated micom controller promises the ML-9 LED Light to be the most advanced LED light, providing users precise light control and the best quality.

Safety and Warnings •••

Before you read the manual, check the details below.

Safety Icons

Icon	Name	Function
	Warning	This symbol indicates potentially hazardous actions and situations, which, if not avoided, could result in death or serious injury.
	Caution	This symbol indicates potentially hazardous actions and situations, which, if not avoided, could result in personal injury or property damage.

Safety tips

- 📖 Please read carefully safety tips before using the product. ▶ Page 5~9
- 📖 Product drawings on this manual and the actual product may differ slightly.
- 📖 Please refer to 'Check point before asking for service,' before requesting for service. ▶ side 23~24
- ✂ Service charges are applicable for a non-defective product received by us, even within the warranty period.
- ⓘ Injury or damage caused by violating instructions of this manual is solely the responsibility of the user.
- 🔧 Please check the performance of your light before use.
- 🔧 To maintain the performance and maximize the lifetime of your battery and light, we recommend using them at least once a month.

⚡ Safety and Warnings about battery charger

- ⚠ Avoid bending or pulling on the power cord of the charger unnecessarily, or placing heavy objects on the cord. It can cause electric shock and fire.
- ⚠ Plug the charger into the power outlet firmly. Incomplete connection can cause an electrical fire.
- ⚠ Never use a damaged power cord, a damaged plug, or a loose electrical outlet. Using them can cause an electric shock or a fire.
- ⚠ Never handle power plug with wet hands. It can cause an electric shock.
- ⚠ Do not place power cord near a heat source. Heat can damage insulation on the wires and may cause fire and electric shock.
- ⚠ Do not use multiple power plugs in one outlet at the same time. Doing

so may lead to overheating and may cause fire.

/// Safety and Warnings about battery

- ⚠ Never dismantle or short out the battery. Do not mix with other batteries. Do not charge battery improperly. Doing any of the above may cause fire and explosion.
- ⚠ When battery warning lamp is blinking, charge the battery immediately. Excessive charging and discharging can shorten the life of battery and can cause mechanical malfunctions.
- ⚠ Avoid shock and impact on the battery. It may cause breakdown leading to fire and/or explosion.
- ⚠ Do not place battery in areas with high-temperatures and/or high humidity area. It may cause mechanical malfunctions, fires and/or explosions.
- ⚠ Please use only the included charger and power connector when charging and lighting. Using non-standard parts may cause mechanical malfunctions, fire and/or explosions.
- ⚠ If you detect strange noises, burning smells or smoke during charging, unplug the power immediately and contact a service center.
- ⚠ Never put battery into fire or expose to high temperature. It may cause overheating, fire and/or explosion.
- ⚠ Please use the included charger only. Using other chargers can cause overheating, fires and/or explosions.
- ⚠ Do not store or carry a battery together with metal products such as necklaces or hairpins. Doing so may create a short and lead to overheating and/or explosion.
- ⚠ If your eyes come in contact with chemicals leaked out of the battery, wash them immediately with clean water and seek medical attention. If left

unwashed it will cause damage to the eyes.

- ⚠ If your skin or clothing comes in contact with chemicals leaked out of the battery, wash it immediately with clean water. If left unwashed it will cause damage to the skin or clothing.
- ⚠ Do not dismantle the battery case or damage any parts. Do not use the battery without case or in a broken case. It may cause overheating and/or explosion.
- ⚠ If the battery fails to completely charge after a prolonged period of time, please stop charging it immediately. If left continuing to charge, the battery may overheat and/or explode.
- ⚠ Do not wet the battery. Doing so may cause overheating and/or an explosion.
- ⚠ Separate the battery from the device after use. Neglecting to do so may result in overheating or battery fluid leakage.
- 👉 Please discard batteries in accordance with the regulations of the local government after covering the electrical contacts with tape, etc.

⚡ Safety and Warnings about Light Installation / Maintenance

- ⚠ Do not install in places with excess oil, smoke, dampness, dust, or rainwater.
- ⚠ If the inside of the device is exposed to oil or dampness, it may cause an electrical shock and/or fire.
- ⚠ Do not switch on the light close to the eyes of people or animals. Doing so can damage their vision. When filming infants, do so with caution not to point the light directly at their eyes and keep the light at least 2 meters away and always apply the diffuser(ML-DF2).
- ⚠ Do not switch on the light towards vehicle operators. Doing so may distract them and may cause an accident.

- ⚠ Do not block the front panel or vent of the light. Doing so will degrade the life of LED module by raising the internal temperature and may cause a fire.
- ⚠ Use only designated batteries as the power source. Using other power equipment can cause malfunctions and creates a risk of fires.
- ⚠ Do not put your hands on the light for a long time after using the light for five or more minutes, as you may get a low-temperature burn. Please Handle the light after it cools down in the case of overheating.
- ⚠ In case of water damage or case damage, turn off the power and unplug the light. Do not attempt to power on the light again as it may cause an electrical shock or fire. To resolve the problem, please contact a service center.
- ⚠ Do not dismantle or modify the light. Doing so can cause an electric shock and is a fire hazard. If in need of repair, please call a service center.
- ⚠ Do not store or use explosive sprays or flammable substances near the light. Doing so can create an explosion and is a fire hazard.
- ⚠ Do not insert metal or flammable substances such as chopsticks, wires, gimlets, paper, or matches into cooling vents or DC Power jack. It can cause an electric shock and a fire. If any foreign matter enters the light casing, turn off the power, unplug the light, and contact a service center.
- ⚠ Avoid places with high humidity and extreme temperature changes. Humidity and extreme temperature changes can cause mechanical malfunctions and electric shocks. Using the product outdoor in storms can cause mechanical malfunctions and electric shocks.
- ⚠ Do not clean with benzene or paint thinner as it will damage the LED light.
- ⚠ Keep small parts out of the reach of children. If they swallow any parts, please consult a doctor immediately.
- ⚠ Do not touch the LED Light with wet hands. Doing so can cause an electric shock. Store in a well-ventilated area after use.

••• Product Features

Checking product and accessories •••

Before using the product, make sure that you received all accessories. Depending on the product kit, parts and accessories may be different.



- ❶ ML-9 LED light unit
- ❷ ML-DF2 Diffusion Filter
- ❸ ML-BD2 Barn Door (optional item)
- ❹ ML-LB3 Ball-head Bracket
- ❺ ML-MSC1 Shoe Converter **
- ❻ ML-CHG1 Battery Charger *
- ❼ ML-PC1 Power Cable for Hand held Type Cameras *
- ❽ ML-PT1 2-pin Power Tab Cable for ENG Cameras **
- ❾ Velcro Ties for Power Cables
- ❿ ML-9 LED Light Carrying Pouch
- ⓫ User Manual
- ⓬ ML-AT1 Tripod Adapter *
- ⓭ ML-SL30 L Type Slide *
- ⓮ ML-BA12 12V/5200mA Li-ion Battery *
- ⓯ ML-SL10/AT1 C Type Slide / Attachment***

✍ NOTE

* : available only with Hand-held Package

** : available only with ENG Package

*** : available only with DSLR Package

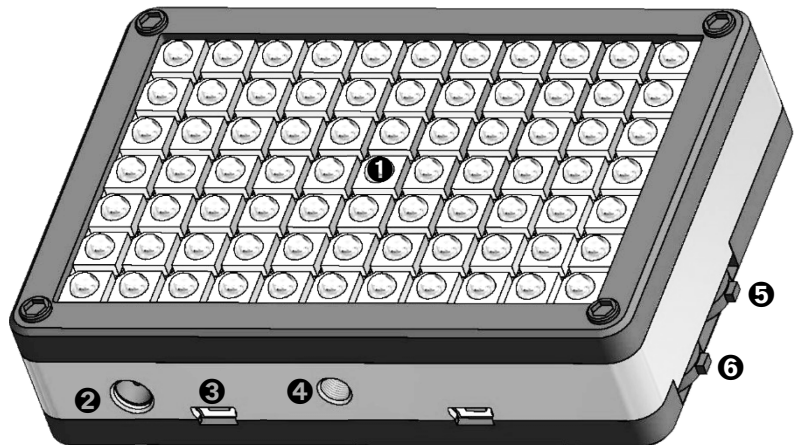
- You can purchase all accessories at dealer shop or Matrix Light website (www.matrixlight.com).
- Revision of the manual is available for download from our website (www.matrixlight.com).
- Please use only accessories (batteries, power supplies, etc.) designated by Matrix Light.
- Matrix Light is not responsible for malfunction or reduced life of the light from using unauthorized accessories.

... THE NAME AND FUNCTION OF EACH PART

LED LIGHT ...

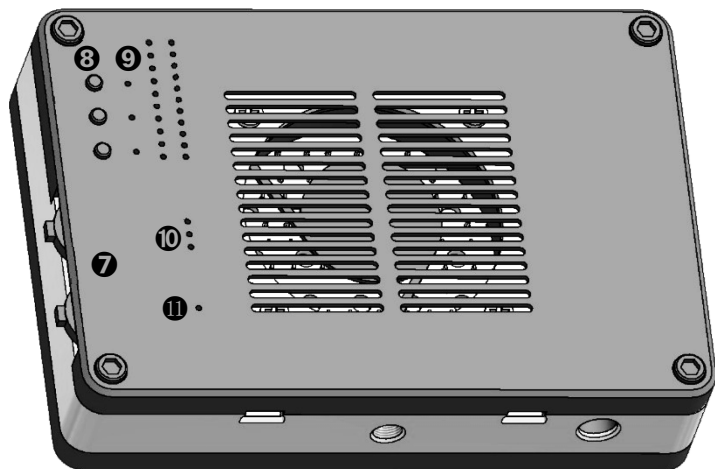
[Front, Bottom]

- ❶ LED light
- ❷ 12V DC connector
- ❸ USB Link connector
- ❹ Bracket attachment nut
- ❺ Power and brightness switch
- ❻ Turbo mode and
Color temperature switch



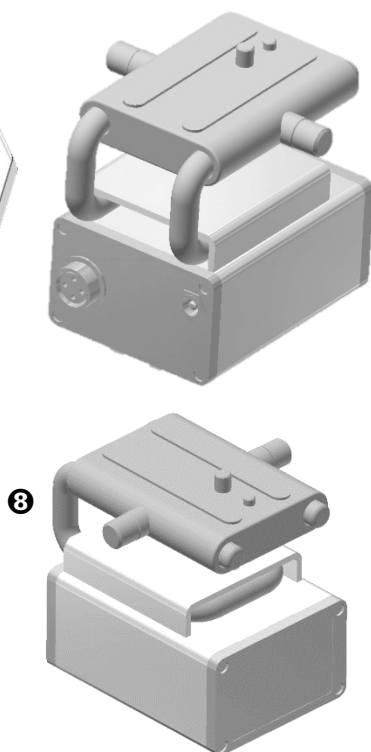
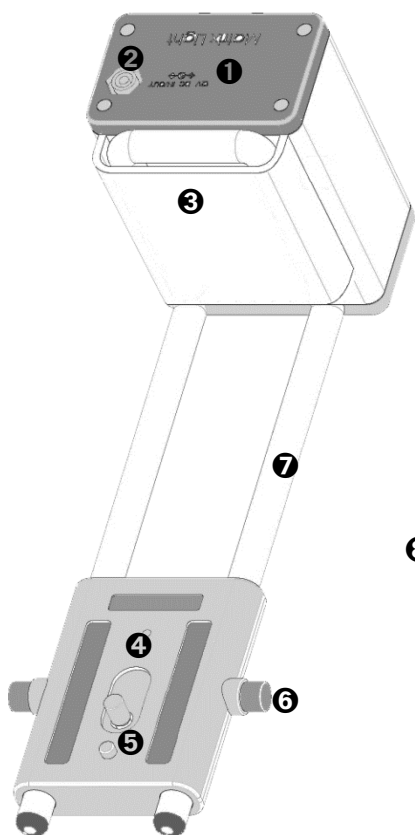
[Back]

- ❼ Brightness and
Color temperature indicators
- ❸ Memory Buttons
- ❹ Memory Indicators
- ❷ - Power On /Off indicator
- Battery Low warning indicator
- Turbo Mode On/Off indicators
- ❺ Auto Mode On/Off indicators
- ❻ Cooling Fan vent



Battery, L type slide and Tripod Attachment ...

[Top & Side]

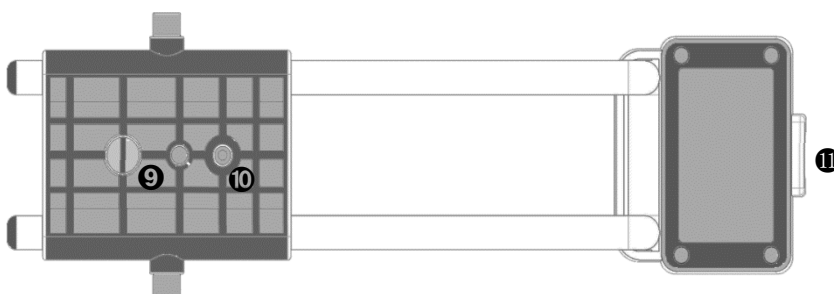


- ❶ Battery
- ❷ 12V DC connector
- ❸ Through hall for L-slide
- ❹ ML-AT1 attachment
- ❺ Camera attachment bolt
- ❻ Fastening screw
- ❼ ML-SL30 L Type Slide
- ❽ ML-SLC10 C Type Slide

* L Type Slide used mainly to handheld video camera.

* C Type Slide used mainly to DSLR camera.

[Bottom]



- ❹ Camera attachment bolt
- ❺ Tripod adapter nut
- ❻ Shoe for Wireless Microphone

... INSTALLATION AND USE OF LIGHT

Light Installation and Usage •••

1. Power and brightness switch

- Press once for power on, press again for power off
- Press and hold for more 3 seconds to enter remote operation mode.
(Doing so makes the LED light's power switch synchronized with Que/Cut button of camera.)
- Push up the switch to increase brightness by 10%, down to decrease by 10%.
- Keep pushing up or down to adjust brightness quickly.

2. Turbo mode and color temperature switch

- Press once to activate Turbo Mode, press again to deactivate
- Push up once to increase color temperature by 300K. Push down once to decrease color temperature by 300K.
- Hold the switch up or down to rapidly change the color temperature.

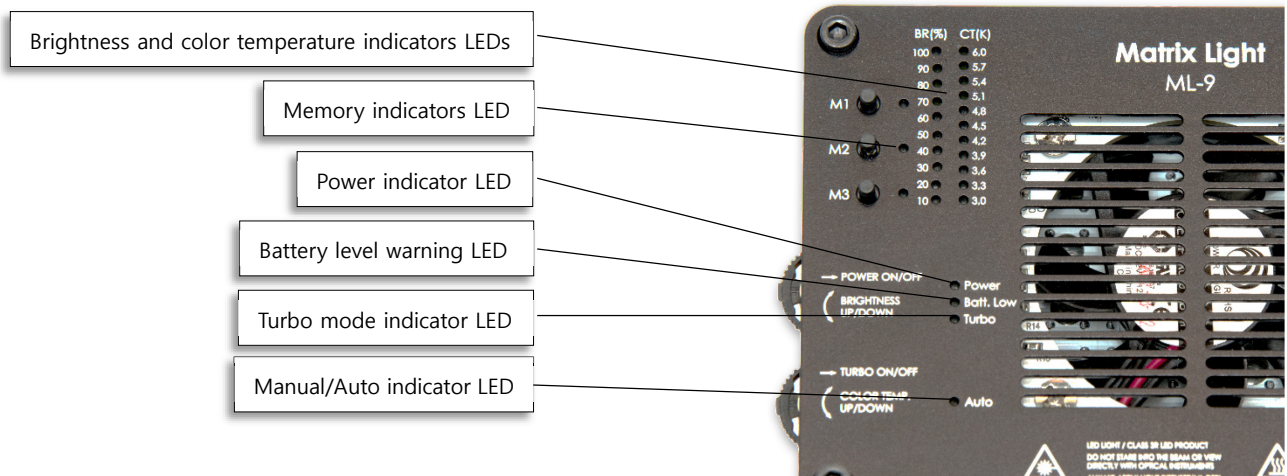
3. Memory buttons

- Three most frequently used brightness and color temperature can be stored in the three memory buttons.
- First, set the light to the color temperature and brightness you want to store.
- After setting, choose one button from the 3 memory buttons and press for 3 seconds to store the current value. When it is stored, the indicator LED beside the memory button will blink.

- If you want to get the stored value, press the button in which the settings are stored. Then the light's settings will be changed to the stored value, and the indicator LED beside the memory button will turns on.

4. LED indicators

There are indicators that display the color temperature, brightness, and the operating condition at the back of ML-9 LED Light. The features of each indicators are shown below.



- Brightness and color temperature indicators

Consists of 10 brightness LED indicators and 11 color temperature LED indicators showing current brightness and color temperature.

Color temperature LED indicators light up as the color temperature is altered by using the color temperature switch.

Brightness LED indicators light up as the brightness is altered by controlling the brightness switch.

- Memory indicators LED

Shows that current values have been stored successfully (blink three times

when you store current values) and which memory was used.

- Battery level warning LED

When the battery level drops below 15%, the battery warning indicator lights up. In this case, recharge the battery as soon as possible. Matrix Light's ML-BA12 Li-ion battery does not suffer from a memory effect, so frequent charging is recommended. In fact, completely discharging the battery will drastically reduce the capacity of the battery and should be avoided.

- Manual/Auto indicator LED (Camera Cue/Cut synchronization)

When the light is connected to an ENG Camera power source, its operation can be synchronized with the Cue/Cut button operation of the ENG camera utilizing the ENG camera's Power Remote function. When the Auto mode indicator LED becomes active, the LED light's power switch function will be disabled (The LED light always turns on).

To turn on the Auto mode, press and hold the power and brightness switch for three or more seconds. Repeat the procedure to switch off the Auto mode.

- Power indicator LED

Shows the power on/off state of the ML-9 LED Light

- Turbo mode indicator LED

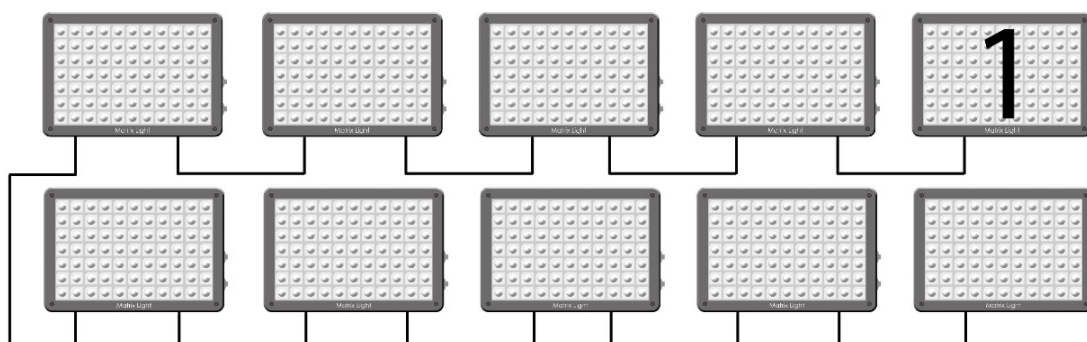
Indicates that Turbo mode is now active.

In Turbo mode, the color temperature controls are disabled. (Always set on 4,500K color temperature)

⚠ Caution: Using turbo mode reduces the battery life by half and may increase the fan noise.

5. Mini-USB connector

The two mini USB connectors located at the bottom of the light are communication ports that receive or send synchronization signals. This allows convenient control over multiple units in light stand or studio settings. When the lights are connected by ML-CX1 mini 5-pin cables, each of the lights are synchronized, so changes in brightness or color temperature settings on one unit is applied to the rest of the lights in the chain. Also, if one unit is turned off, the other units will also turn off. For example, in the multiple units connected by USB cable as shown below, when you change no. 1 light's brightness, and color temperature, the rest units operate the same as no.1 light.



6. Cooling fan control

The cooling fan on the ML-9 only comes on when the internal temperature reaches a certain point, except when Turbo Mode is activated, in which case the fan operates continuously.

⚠ Turbo Mode provides high light output but also increases the noise from continued cooling fan operation.

⚠ Turbo Mode decreases battery life to approximately 1.5 hours. Prolonged use in Turbo Mode may reduce the life of the LED elements.

Installation on an ENG Camera •••

1. Mount the ML-9 light unit to the female shoe of the camera utilizing the ML-LB3 bracket.

2. If the camera is equipped with a male shoe, please use the appropriate converter (ML-MSC1) or the screw (ML-SCR1) which are sold separately.



3. Use the power cable (ML-PC1) to connect the light to the battery pack or 12V DC output port in V Mount Adaptor. Please ensure the polarity of the power cable is correct. If the polarity is switched, the light might not come on or have malfunctions.





4. Tighten the screw on the ML-LB2 Ball-head Bracket once the light is adjusted correctly.

5. To synchronize the light and the ENG camera's Cue/Cut button, turn the light on, and set the ENG camera to Auto mode. Then set the light to the Auto mode pressing the light's Power switch for 3 seconds. To switch to the Manual mode, press Power switch for 3 seconds again.

Installation on a Camera using supplied Battery •••

1. For use with cameras without a 12V DC output, such as SONY's PMW-EX1R or Canon's 5D Mark III, the supplied battery (ML-BA12) must be used.

2. To use supplied battery, fasten the battery to the camera using the Tripod Adapter (ML-AT1) and the L-bracket Slide (ML-SL30). Start by installing the Tripod Adapter (ML-AT1) to the camera using the screw at the bottom of the adapter.



3. Insert the L-bracket slide (ML-SL30 or ML-SL15) into the hole of the Tripod Adapter and tighten the fastening screw. Hook the battery on to the slide and connect it to the light with the power cable (ML-PC1).



4. If required, extra attachments can be used with the Tripod Adapter and the Slide in place utilizing the threaded nut at the bottom of the Adapter.



••• How to use Accessories

Using the Tripod Adapter(ML-AT1) & L type Slide(ML-SL30) •••

Tripod Adapter (ML-AT1) and L type Slide (ML-SL30) will help you film more conveniently.

1. Adjusting the length of the L-bracket Slide (ML-SL30)

- a. Loosen the fastening screw.
- b. Slide the bracket to the desired length
- c. Tighten the fastening screw

⚠ CAUTION: It is possible to damage the attachment points on the camera as well as the adapter when excessive load is placed on the slide. To reduce this risk always adjust the slide as short as possible.

2. To use a Tripod with the Tripod Adapter (ML-AT1) Installed

- a. Attach the Tripod Adapter to the bottom of the camera
- b. Make sure the Adapter is fixed securely to the camera
- c. Attach the assembly on to a tripod

⚠ CAUTION: Always minimize the slide length before attaching it on to a tripod

⚠ CAUTION: When you move camera attached on the tripod with ML-AT1, please hold the tripod's legs, not holding camera. Or the ML-AT1 may get damaged by the weight of the heavy tripod.

••• USING AND CHARGING THE BATTERY

How to use and charge the battery •••

1. Connecting ML-9 LED Light to Battery

- a. Connect the power cable (ML-PC1) to the battery's DC power jack.
- b. Connect the other end of the power cable (ML-PC1) to the LED Light's power connector.
- c. Turn on the ML-9 LED Light.

2. Charging the battery

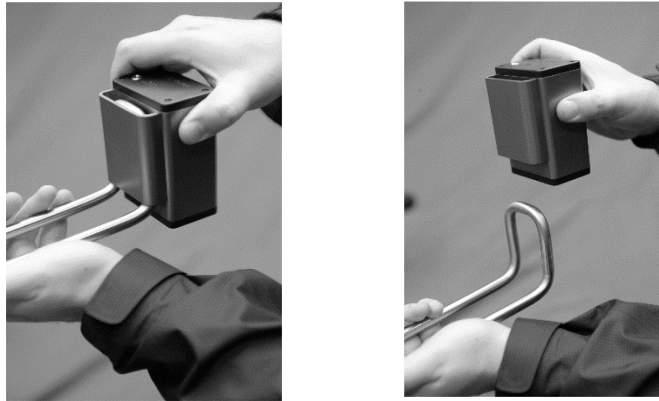
- a. Unplug the power cable (ML-PC1) from the battery's DC power jack.
- b. Plug the battery charger (ML-CHG1) into an AC outlet. Connect the charger plug to the battery's DC power jack. When charging the battery the charger's indicator LED turns red.
- c. When the battery is fully charged the charger's indicator LED turns from red to green. Unplug the battery charger (ML-CHG1) from the battery fully charged.

⚠ Warning: Only use the designated battery charger (ML-CHG1). Using other chargers can damage the battery and create explosion hazard.

⚠ Caution: If the battery's DC terminals are shorted out by a metallic object, the battery's short circuit protection system cuts off the battery's power immediately. To reactivate the battery, simply charge the battery for a few seconds.

3. To replace the battery during filming

- a. Unplug the power cable (ML-PC1) from the battery's DC power jack.
- b. Release the attachment screw and pull out the L-Slide and battery.




- c. Hold and grip the L-Slide then lift up the battery.
- d. Hold the L-Slide and install new battery.
- e. Reinstall the L-Slide and battery on the camera.
- f. Plug in the power cable (ML-PC1) to the battery's DC power jack.

* When you pull out the battery from "L" type slide, grip each side of the slide firmly to pull the battery out easily.

••• TROUBLESHOOTING

Points to check •••

If the Light or battery is not working properly, check the trouble shooting points first. When the problem is not solved, contact the nearest dealer or Matrix Light service center.

Symptoms	Check your symptoms
I cannot turn on the power.	<ul style="list-style-type: none"> ☑ Is the battery pack connected securely? Check connection to the fully charged battery pack. ☑ Is the battery fully charged? Fully charge the battery or replace with a charged battery ☑ Is the battery connected properly? Make sure that the power cable (ML-PC1) is connected to the battery's DC power jack and the light properly.  <p>17-19 Page</p>
Light doesn't work even when connected to the charged battery.	<ul style="list-style-type: none"> ☑ Make sure the switch is turned on. ☑ Check if light's internal temperature is too high. Turn it off and let it cool down.
Fan noise is loud	<ul style="list-style-type: none"> ☑ Light's front and rear panels are not blocked? ☑ Is there too much dust or debris on the surface of the light? ☑ Blow dust by using compressed air and clean it with soft cloth. ☑ Ensure the light was not operating in high temperature or small, enclosed environment for a long period of time. ☑ Avoid operating the light in high temperature, high humidity environment or a sealed case.
Battery life is very short	<ul style="list-style-type: none"> ☑ It may occur if the operating temperature is too low. It is not defective. ☑ Battery may not be fully charged. Recharge the battery. If the problem persists, replace the battery with a new one. ☑ Battery's useful life is finished? Replace the battery with new one.

••• WARRANTY & STORAGE INSTRUCTIONS

Warranty •••

- * Warranty is valid for 1 year after purchase.
- * The warranty does not cover theft, loss, damage from and not limited to accidents, natural disasters, abuse, tampering, normal wear, misuse, or modified products.
- * Please submit the defective product with a receipt showing purchase date to an approved service center or Matrix Light for warranty repair.

Storage Instructions •••

- * Keep in a well-ventilated and dry place.
- * Do not place near naphthalene or magnetic source.
- * Do not place in high temperature (in a car in summer, near a stove, etc.)
- * Disconnect and detach the battery from the light after using.
- * When exposed to moisture, wipe it thoroughly with dry towel before use.
- * Rapid change in temperature can cause condensation inside the LED Light Module. To prevent this, carry the equipment in a bag and use them after they are adjusted to temperature.

Specifications ...

- ❖ Type: Current regulated power LED light
- ❖ Light projection range: 0.6 ~ 6M (Effective light projection range)
(depends on shutter speed, aperture levels, and gain control)
- ❖ Light projection angle Horizontal: 110 ° vertical: 90 °
- ❖ Color Temperature: 3200K~5800K (240K/1Step)
- ❖ Brightness: 10% ~ 100% (230lm/1Step)
- ❖ Luminance Flux: 1,100lm MAX (in Normal Mode)
2,200lm MAX (in Turbo Mode)
- ❖ Illuminance in 1M distance: 1,100lux MAX (in Normal Mode)
2,200lux MAX (in Turbo Mode)
- ❖ Power supply: 12V DC
- ❖ Current consumption: Normal mode: 1.5A/18W(Max)
Turbo mode: 3A/36W(Max)
- ❖ Luminance efficiency: 66lm/W
- ❖ Battery: 12V DC / 5,200mA (Li-ion)
- ❖ Battery running time: 2h 30min (Maximum Brightness in Normal Mode)
1h 15min (Maximum Brightness in Turbo Mode)

☎ Telephone service representatives (+82-2-782-2888 / National and Worldwide)

☺ Please help us serve you better by providing us with the model number and exact mode of failure.

🌐 If you have any questions or suggestions, please visit our website (www.matrixlight.com).

Thank you