Matrix Light ML-115R LED Ring Light

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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.

•• ABOUT PRODUCT

Advantages ••

One Source, Multi Uses

Matrix Light ML-115R LED Ring Light is distinguishable in function and performance from other typical Ring Lights in the market. ML-115R LED Ring Light is a multi-purpose product with superior quality that can be used for VR 360° shooting, high-speed camera shooting, digital microscopes, chroma key light, and infrared ray lighting.

Since its establishment in 2007, Matrix Light has been providing broadcasting stations and professional broadcasters with the best products. Through constant research and development, Matrix Light unveils ML-115R LED Ring Light that allows the user to be more creative and to adapt to ever-changing digital media environment.

Uncomparable Quality, Compact Design

Precise brightness and color temperature controllers on the ML-115R allows the user to achieve the perfect brightness and color temperature for every occasion. Brightness can be controlled in 10 steps(each step 10%), from 150lm to 2,300lm, and color temperature can be controlled in 11 steps (230k for each step), from 3,200k to 5,800k. The brightness and color temperature LED indicators on the back side let the user check the current brightness and color temperature. Also, the Turbo mode supports up to 2,300lm of brightness, equivalent to a 240W light bulb, for urgent situations with no light.

Memory Buttons

The ML-115R Ring Light includes three built-in memory buttons that can restore most frequently used brightness and color temperature settings. This convenient feature allows the user to get the light ready promptly saving set-up time.

Adaptable Lighting System

Matrix Light's ML-115R LED Ring Light is designed to fit various camera systems. Using additional adaptable accessories provided, it is suitable for ENG cameras, DSLR cameras, and Action Cams. The ML-115R LED Ring Light also has a USB communication port, which allows simultaneous control of multiple units, making it especially useful for VR 360 shooting.

Solid Body and Precise Micom Control

ML-115R LED Ring Light's aluminum body is lightweight yet robust, and acts as an excellent heat sink, maximizing durability and lifetime. Also, the sophisticated micom controller promises the ML-115R LED Ring Light to be the most advanced LED light, providing users precise lighting control and the best quality.

Safety and Warnings ᐧᐧ•

Before you read the manual, please check the details below.

Safety Icons

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

Safety Tips

📖 Please carefully read the safety tips before using the product. ▶ Page 6~10

📖 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. ▶ Page 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 an important filming.

🎥 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. Doing so can cause electric shock and/or a fire.

⚠ Plug the charger into the power outlet firmly. Incomplete connections can cause an electrical fire.

⚠ Never use a damaged power cord, a damaged plug, or a loose electrical outlet. Using any of the above can cause an electric shock and/or a fire.

⚠ Never handle power plug with wet hands. Doing so can cause an electric shock.

⚠ Do not place the power cord near a heat source. Heat can damage insulation on the wire may cause fire and/or an electric shock.

⚠ Do not use multiple power plugs on one outlet at the simultaneously. Doing so may lead to overheating which may cause a fire.

◢ Safety and Warnings About the Battery

⚠ Never dismantle or short out the battery. Do not mix this battery with other batteries. Do not charge battery improperly. Doing so may cause a fire and/or explosion.

⚠ When battery warning lamp is blinking, charge the battery immediately. Excessive charging and/or discharging can shorten the life of battery and can cause mechanical malfunctions.

⚠ Avoid shock and/or impact on the battery. Neglecting to do so may cause a breakdown leading to fire and/or an explosion.

⚠ Do not place battery in areas with high-temperature and/or high humidity. Placing the battery in such and area may cause mechanical malfunctions, fire and/or explosions.

⚠ Please use only the included charger and power connector when charging and lighting. Using non-standard parts may cause mechanical malfunctions, fires, and/or explosions.

⚠ If you detect strange noise, burning smells or smoke during charging, unplug the power immediately and contact a service center. Neglecting to do so may cause a fire and/or an explosion.

⚠ Never put battery into a fire or expose to high temperature. Doing so may cause overheating, fires, and/or explosions.

⚠ Please exclusively use the included charger. Using other chargers can cause overheating and/or an explosion.

⚠ Do not store or carry a battery together with metal objects such as necklaces and/or hairpins. Doing so may create a short and lead to overheating and/or an explosion.

⚠ If your eyes come into contact with chemicals leaked out of the battery, wash them immediately with clean water and seek medical attention. If left unwashed it will cause and injury to the eyes.

⚠ If your skin and/or clothing comes into contact with chemicals leaked out of the battery, wash it immediately with clean water. If left unwashed it will cause an injury to the skin and/or damage the clothing.

⚠ Do not dismantle the battery case nor damage any parts. Do not use the battery without case or in a broken case. Doing any of the action stated above may cause overheating and/or an explosion.

⚠ If the battery does not completely charge after a prolonged period of time, unplug it immediately. Neglecting to do so may cause overheating and/or an explosion.

⚠ 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 and/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 the places with excess oil, smoke, dampness, dust, or rainwater.

⚠ If the inside of the device is exposed to oil and/or dampness, it may cause an electrical shock and/or a fire.

⚠ Do not switch on the light close to the eyes on people or animals. Doing so can damage their vision. Be especially careful when filming infants. Do not 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 can distract them and may cause an accident.

⚠ Do not block the front panel or vent of the light. It 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 fire.

⚠ After using the light for five or more minutes, do not put your hands on the light for a long time. If you do, you may get a low-temperature burn. Please handle the light after cool down in 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 a fire. Please contact a service center immediately.

⚠ Do not dismantle or modify the light. Doing so can cause an electric shock and is a fire hazard. If in need of repair, call a service center.

⚠ Do not store or use explosive spray or flammable substances near the light. Doing so can create an explosion and fire hazard.

⚠ Do not insert metal or flammable substances such as chopsticks, wires, gimlets, paper, or matches into cooling vents or DC Power jack. Doing so

can cause an electric shock and/or a fire. If any foreign matter enters the light casing, turn off power, unplug the light, and contact a service center.

⚠ Avoid places with high humidity and extreme temperature changes. High humidity and extreme temperature changes can cause mechanical malfunctions and electric shocks. Using the product outdoor in a storm can cause mechanical malfunctions and electric shock as well.

⚠ Do not clean with benzene or paint thinner. Doing so 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 Products 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-115R LED Ring light unit

❷ ML-DF3 Diffusion Filter

❸ ML-CHG1 Battery Charger *, ***

❹ ML-PC1 Power Cable for Hand held Type Cameras *

❺ ML-PT1 2-pin Power Tab Cable for ENG Cameras **

❻ Velcro Ties for Power Cables

❼ ML-AT1 Tripod Adapter & C Type Slide ***

❽ User Manual

❾ ML-AT1 Tripod Adapter *

❿ ML-SL30 L Type Slide *

⓫ ML-BA12 12V/5200mA Li-ion Battery *, ***

✍ 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 3 Points attachment screw

❹ Bracket attachment nut

❺ Power and brightness switch

❻ Turbo mode and

   Color temperature switch
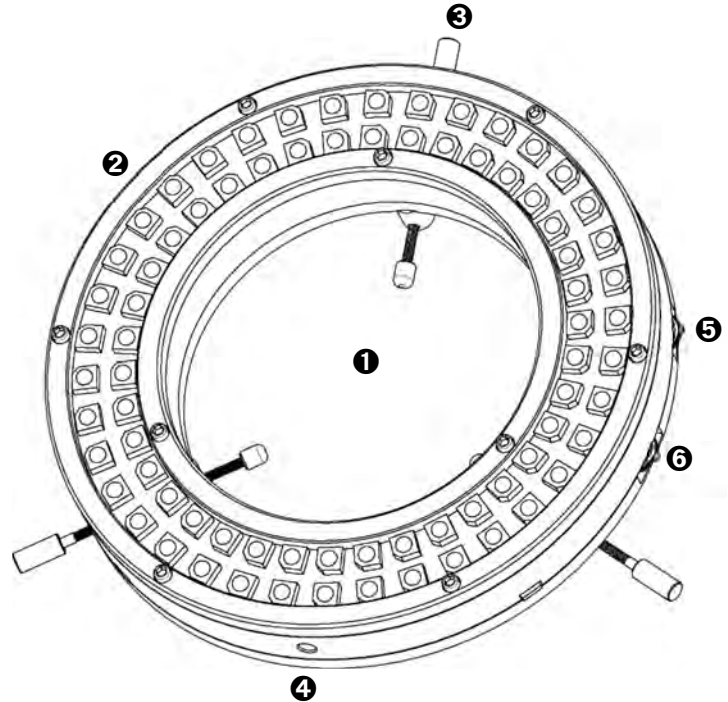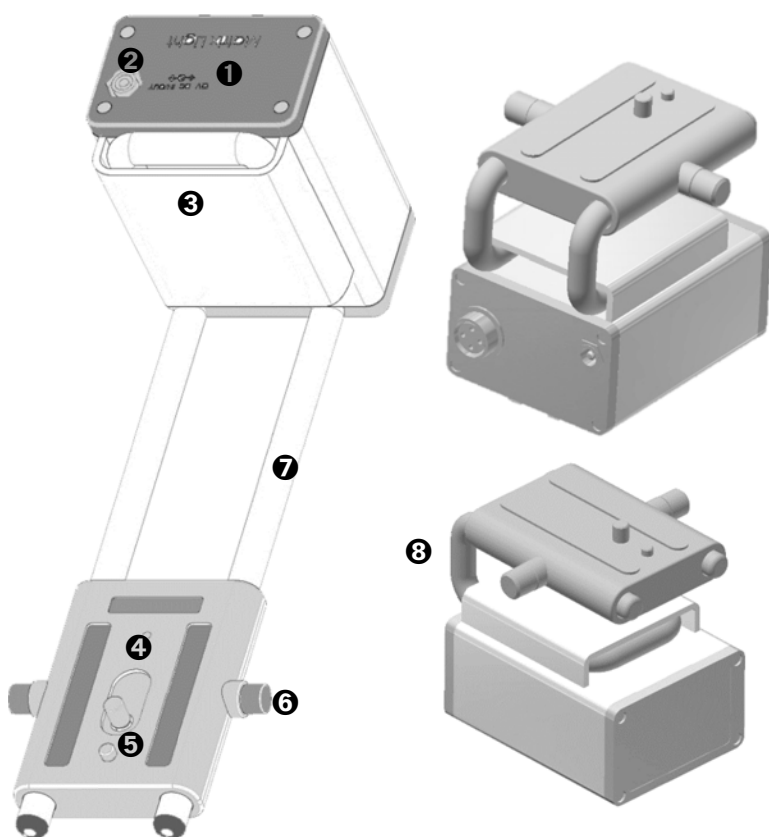
[Back]

❼ Brightness and Color temperature indicators

❽ Memory Buttons

❾ Memory Indicators

❿ - Power On /Off indicator

   - Battery Low warning indicator

   - Turbo Mode On/Off indicators

⓫ Auto Mode On/Off indicators

⓬ USB Link connector
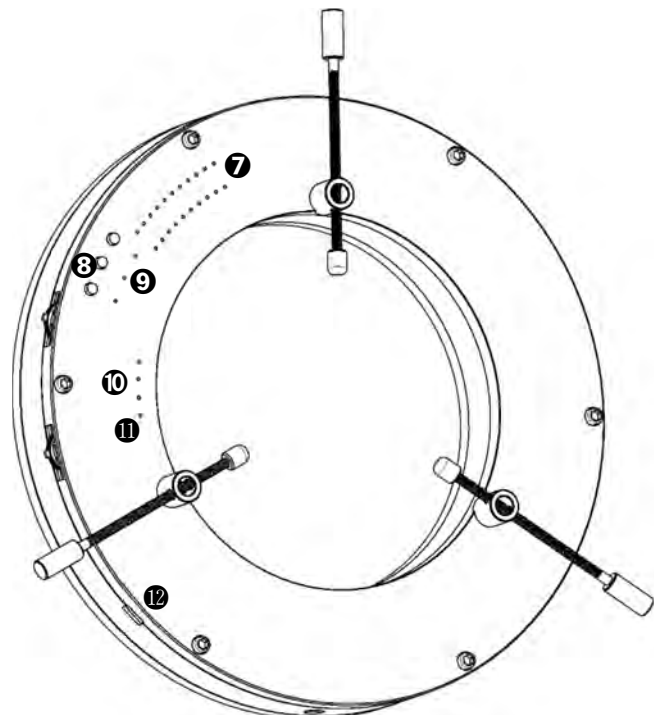
Battery, L type, C type slide and Camera Tripod Attachment •••

[Top & Side]
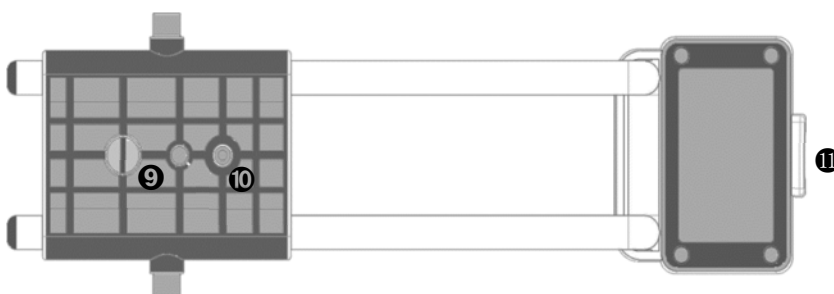

❶ Battery

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]

❾ Camera attachment bolt

❿ Tripod adapter nut

⓫ Shoe for Wireless Microphone

•• CONTROLLING AND USAGE OF LIGHT

Control and Usage ••

1. Power and Brightness Switch

  - Press once to turn product on, press again to turn off

  - Press and hold for more 3 seconds to enter remote operation mode.

   (Doing so makes the LED light power switch synchronize 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 quickly change the color temperature.

3. Memory Buttons

  - Three most frequently used brightness and color temperature can be stored and retrieved using 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 three memory buttons and hold the button down 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 turn on.

4. LED Indicators

There are indicators that display the color temperature, brightness, and the operating condition at the back of ML-115R LED Ring Light. The features of each indicators are shown below.
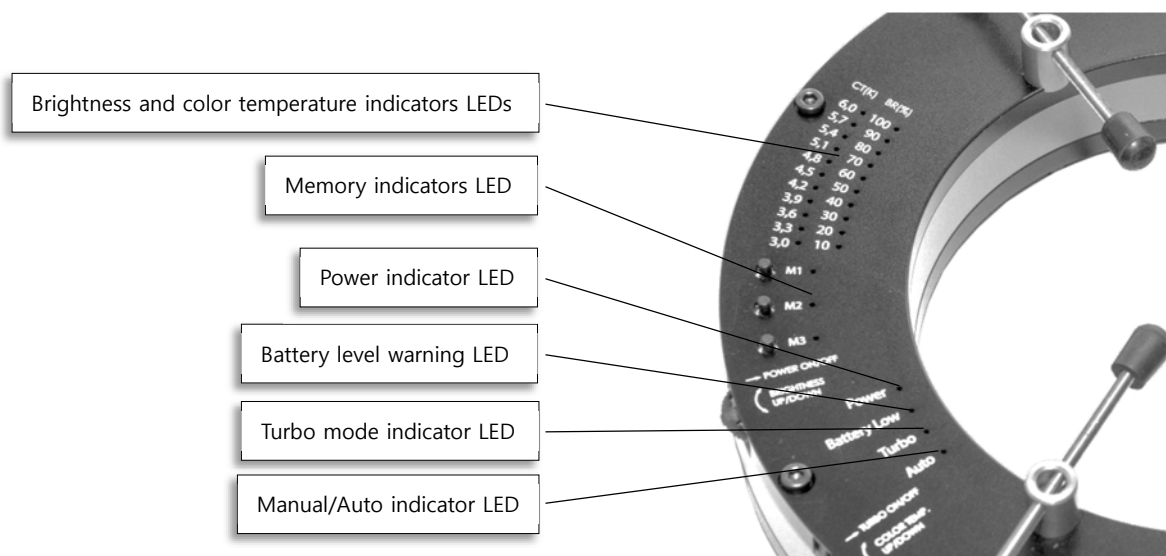
- Brightness and color temperature indicator LEDs

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 controlling the color temperature switch.

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

- Memory indicators LED

  Shows current value stored successfully (blink three times when you store current value) and which memory currently used.

- Battery level warning LED

  When the battery level drops below 15%, the battery warning indicators light 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. 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, it's 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 is on, 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 3 or more seconds. Repeat the procedure to turn off Auto mode.

- Power indicator LED

  Shows whether the ML-115R LED Ring Light is on or off.

- Turbo mode indicator LED

  Indicates that Turbo mode is functioning.

  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.

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 the whether a unit is on or off, the brightness or color temperature settings applied to the rest of the light in the chain. For example, in the multiple units connected by USB cable as shown below, when you change any of unit one's settings, all the units in the chain will be altered in the same way.

ML-CX1 Sync. Cable
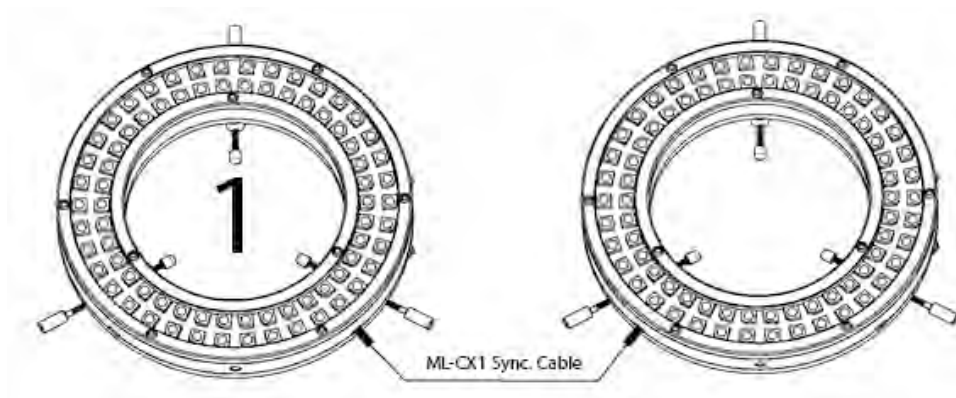
Installation on an ENG Camera ᐧᐧᐧ

1. First, detach the hood of the ENG camera lens, and install the light on to the lens using the three point screws.
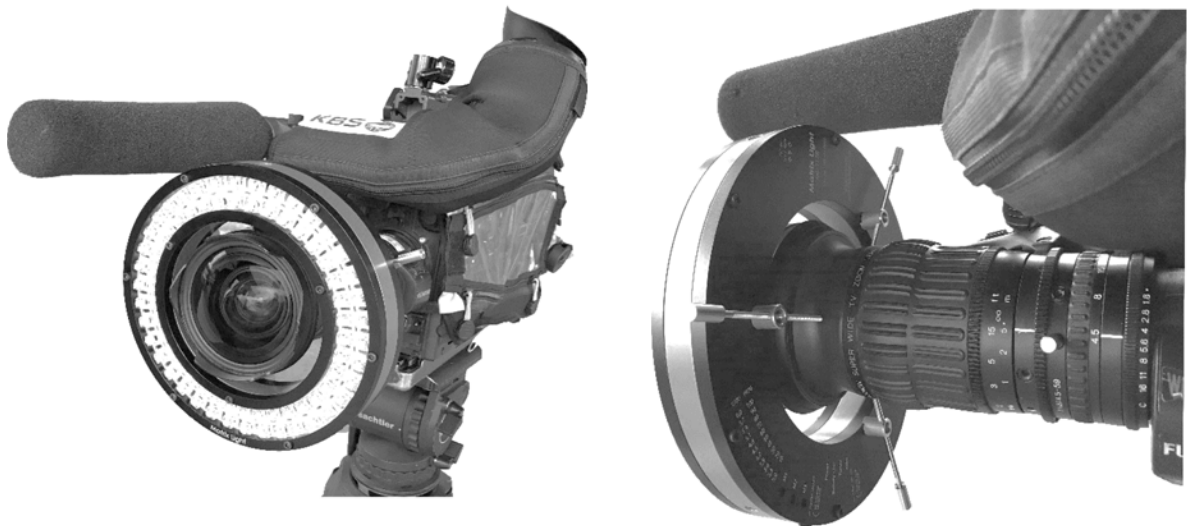
2. If installing the lens is difficult, install the light to the camera shoe using ML-LB3 ball-head bracket, and ML-EB1 extension bar as shown as below. If the camera's shoe is a male type, please use the shoe converter(ML-MSC1), or the screw (ML-SCR1).

3. Use the ML-PT1 power cable to connect the light to the 12V DC output on the camera, or use Power Tap Connecter (ML-PT3) 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. When the polarity is switched, the light might not come on, or it causes malfunction.


4. 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.

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 On/Off 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.
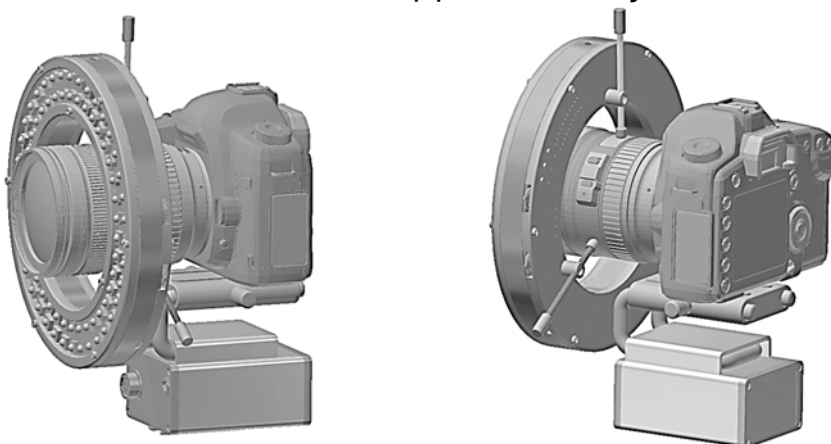
2. To use the supplied battery, fasten the battery to the camera using the Tripod Adapter (ML-AT1) and the L-Type(ML-SL30) or C Type(ML-SL10) Slide. Start by installing the Tripod Adapter (ML-AT1) to the camera using the screw at the bottom of the adapter.

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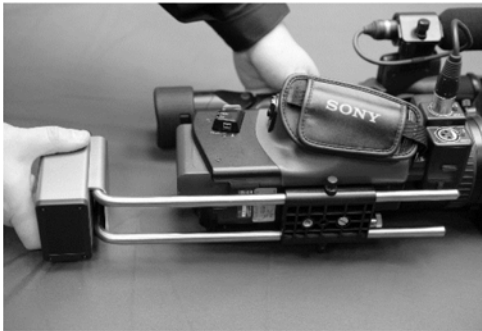
4. If required, extra attachments can be used with the Tripod Adapter and the Slide in place, utilizing the threaded nut at the bottom of the Adapter.

⚠ 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.

⚠ 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.

•• OTHER USES

Using ML-115R as VR VR 360° Camera's Lighting Source •••

By using special VR 360° Camera bracket you can convert ML-115R LED Ring Light to VR Camera's wonderful lighting source. If you have VR camera like the one in the image or a different type and want use ML-115R as VR camera's perfect lighting source, please contact Matrix Light customer center (+82-2-782-2888 / cs@matrixlight.com / www.matrixlight.com) for more detailed information.

Using ML-115R as Chroma key Light •••
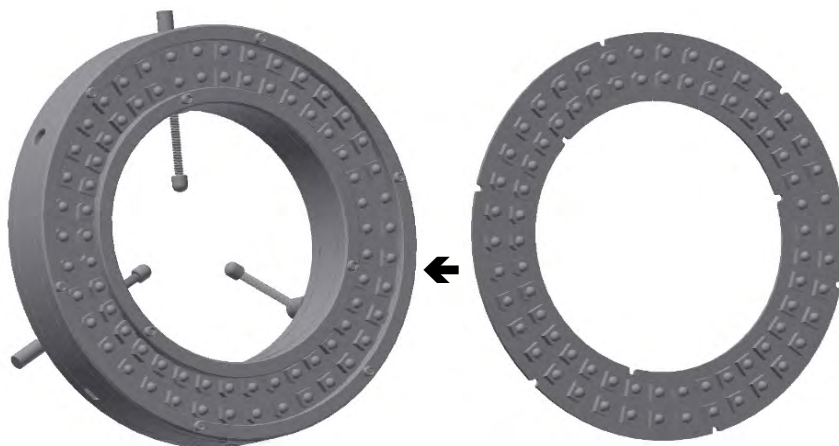
Just by changing the Green or Blue LED Module, ML-115R can be used as a Chroma Key light. For more information, please contact Matrix Light.

⦁⦁⦁ USING AND CHARGING THE BATTERY

How to Use and Charge the Battery ⦁⦁⦁

1. Connecting the ML-115R LED Ring 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-115R LED Ring 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 will turn red.

   c. When the battery is fully charged, the charger's indicator LED turns green from red. Unplug the fully charged battery from the charger (ML-CHG1).

⚠ Warning: Only use the designated battery charger (ML-CHG1). Using other chargers can damage the battery and create an 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 Type(ML-SL30) or C Type(ML-SL10) Slide and battery.

    c. Hold and grip the L-Slide then lift up the battery.

    d. Hold the L Type(ML-SL30) or C Type(ML-SL10) and install new battery.

    e. Reinstall the L Type(ML-SL30) or C Type(ML-SL10) 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 easily pull out the battery.

••• TROUBLESHOOTING

Check Points ••••

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

Symptoms	Check your symptoms
I cannot turn on the power.	☑ 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. ☞ 18-20 Page
Light doesn't work even when connected to the charged battery.	☑ Make sure the switch is turned on. ☑ Check if light's internal temperature is too high. Turn it off and let it cool down.
Battery life is very short	☑ 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 sources.

❋ 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 tower 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: 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 (National and Worldwide)
  +82-10-7232-2888

☎ 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