ENDURA-HL9
Li-ion V-Mount Battery

Instruction Manual

Thank you for purchasing the ENDURA-HL9 Li-ion V-Mount Battery. Prior to using the E-HL9, recommend to read this Instruction Manual on how to best use the E-HL9 and recommend to keep this manual for your reference. If you have any additional questions, please contact the appropriate IDX office.

⚠ DANGER

May cause sudden serious injury and death.

- Charge with IDX battery charger only.
- Use with professional video cameras or professional video equipment. Do not use with any other equipment. Please contact IDX for more information.
- Do not short the contact pins with any metal object. Do not carry or store with metal equipment.
- Do not expose to heat and never throw the battery in a fire.
- Do not immerse in water. Keep the battery away from excessively dry or humid environments.
- Do not leave the battery exposed to excessive heat such as in a car or directly under the sun. Do not charge, discharge or store in an environment which is above or below IDX's specified temperature.
- Do not solder on the contact pins directly.
- Do not attempt to open the outer casing or break apart the ENDURA-HL9.
- Do not subject the unit to extreme physical impact or pressure, or place any object across the terminals that could cause it to short.
- Do not pierce or drill into the outer casing of the unit.
- Do not attempt to use if damaged.

⚠ WARNING

May cause serious injury and death.

- Please handle and use with care if the temperature climbs to 45°C when discharged at a high load.
- Stop charging immediately if the battery fails to fully charge within the designated time limit.
- Do not use if the battery displays an unusual appearance (smell, heat, discolour etc.) when in use, during charge or in storage.
- Keep away from fire if the battery leaks fluid or has an unusual smell. In case of a leak, wash your hands and face thoroughly with clean water immediately. Check with your doctor if fluid gets into contact with your eyes.

⚠ CAUTION

May cause injury or damage other equipment.

- Follow instructions on charging and discharging.
- Store in cool and dry conditions.
- Do not leave the battery attached to the camera unused for long periods of time.
- Do not use, store or place in an electrostatic area.
- Always keep the data terminals and connectors clean.

Features

- Light weight, compact, high performance Li-ion battery.
- Five-step LED power status indicator accurately displays remaining power capacity.
- Unique PowerLink capability (refer to PowerLink).
- Accurate capacity indication (refer to Digi-View).
- Battery Management System (refer to Digital).

Charging

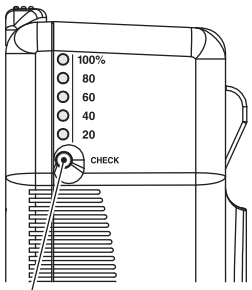
- The E-HL9 should be charged with IDX Li-ion chargers only. Refer to the instruction manual of the IDX charger.
- Estimated charging times may vary depending on the charger. Refer to the IDX website or brochure for details.
- The battery can be charged in an ambient temperature range of 0°C～40°C. For optimum charger performance 10°C～30°C is recommended.
- If the ambient temperature is below 0°C, it will not fully charge even if the designated charging time has passed. The battery should be charged within the recommended temperature range.
- The battery will exhibit a small amount of self discharge. IDX recommend charging before use.

Discharging

- When using the E-HL9, the total power consumption must be 120W or below. To protect the battery, a load of 120W or more may activate the internal protection circuit and stop the supply of power. If the operating temperature is too high, the thermal protection fuse will activate and not reset, which may cause damage to the battery.
- In general, the battery discharge time will be shortened if the load/power consumption is higher.
- Discharge capabilities are reduced when the battery is used in extreme low/high temperature environments. Operating times may also shorten depending on the load and power consumption of the equipment used. This is most noticeable with older, more frequently used battery packs. Discharging at an ambient temperature of 10°C～40°C is recommended.
- The voltage range during discharge is a stable 13～15V. If discharged below 13V the voltage drops sharply. For optimum use, IDX recommend that the alarm voltage is set at approximately 13V in the video camera menu. Refer to the specific camera manual for alarm setting.
- If discharged below 12V, the excessively low discharge accelerates the deterioration of the battery life. To extend the battery life, it is recommended to stop discharging at 12V or above.
- Transmitter equipment with a power output above 5W should be kept as far away from the battery as possible, as it may disrupt, or even stop, the discharging.

Capacity display LEDs

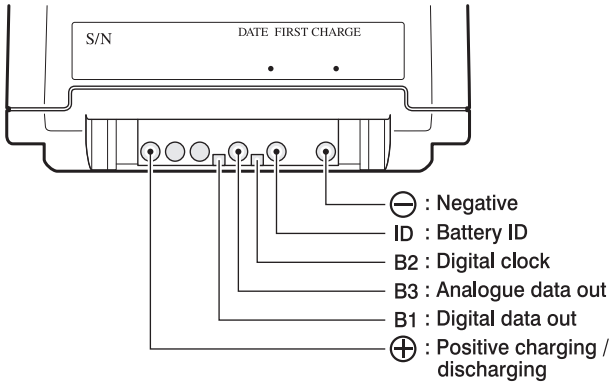
- Remaining capacity is shown by five LEDs. This is displayed as 20%, 40%, 60%, 80% and 100% as indicated below.
- When capacity reached less than 9%, the bottom LED starts flashing.
- When the check button is pressed, the LEDs will light for approximately 2.5 seconds.
- When the battery charged first time, the middle LED blinks. After the battery is fully charged, all the LEDs are lit.



Battery capacity display LEDs check button

Capacity	20	40	60	80	100
100～80%	on	on	on	on	on
79～60%	on	on	on	on	–
59～40%	on	on	on	–	–
39～20%	on	on	–	–	–
19～10%	on	–	–	–	–
9～ 0%	Blinking	–	–	–	–
Factory setup	–	–	Blinking	–	–

Terminals



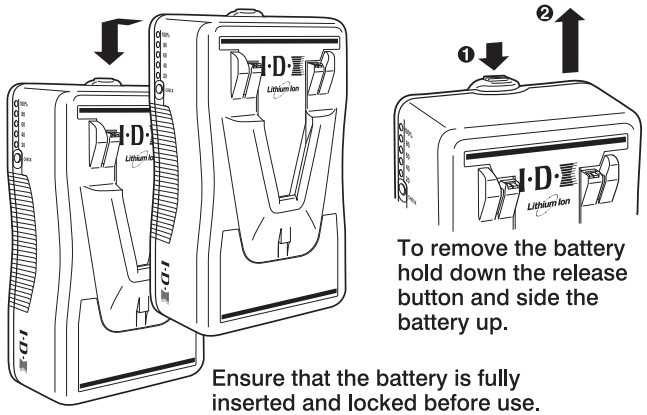
Protection circuitry

There are four in-built protection circuits to ensure the E-HL9 is protected from common causes of misuse with Over-charge, Over-discharge, Over-current and Thermal protection. If the thermal fuse is blown when it detects use at high temperature or high load, charging and discharging will not function.

[PowerLink]

- Two E-HL9 can be docked together and enable for doubling the capacity.
- Even in PowerLink mode, the maximum current is 10A and maximum load is 120W.
- When using in PowerLink mode, both batteries should be equally charged and capacity condition should be the same.
- When in PowerLink mode, both batteries are discharged in parallel.
- Third battery can be physically connected however the discharge will be prevented.
- If docked batteries are connected to the charger, only inside battery will be charged.
- When using PowerLink mode, please ensure that both batteries are completely docked.
- To release the battery, depress the release button on the top of battery.
- When the batteries are docked, do not drop or subject the batteries to extreme impact.
- Do not pack or transport with docking condition. This may cause damage or break the connector and terminals.

[PowerLink]Connection



[Digi-View]

- The E-HL9 has analogue voltage data output of remaining capacity.
- The remaining capacity data can be shown in camera EVF. Cameras which designed to accept Digi-View data will show the remaining capacity in percentages.
- When in PowerLink mode, the data output for each battery is measured simultaneously. The two sets of data are analyzed together then combined data is shown in the EVF.

[Digital]

- The E-HL9 has a built-in microprocessor which allows to monitor and record data such as remaining capacity and charge/discharge cycles. This data can be read by using specific charger and/or Battery Management System.(BMS)
- The BMS data will be used for maintain the battery in good condition.

Storing

- Deterioration of performance is accelerated if stored in a higher ambient temperature, and also if the battery is stored for long period of time without use. IDX recommend 20˚C or below when stored for longer than one month.
- Do not store or leave in temperatures of 60˚C or above.
- To store the battery for more than five months, IDX strongly recommended for charged up to 20% of capacity and left in this condition. This should be repeated every five months.

Specifications

- Cell chemistry : Li-ion
- Maximum voltage : 16.8V DC
- Nominal voltage : 14.4V DC
- Capacity : 6.15Ah / 88Wh*
- Maximum discharge load : 10A /120W
- End voltage : 12.0V
- Battery protection circuit
  : Over-charge, Over-discharge,Over-current, Thermal protection
- Ambient temperature
  To charge : 0˚C～40˚C (10˚C～30˚C recommended)
  To discharge : -20˚C～45˚C (10˚C～40˚C recommended)
  To store : -20˚C～60˚C (0˚C～20˚C recommended)
- Dimensions / Weignt
  : 85(W) × 140(H) × 58(D)㎜ / approx. 740 g
  3.35(W) × 5.51(H) × 2.28(D) inchs / approx. 1.63 lbs

*** IDX measures capacity of Lithium Ion batteries as a minimum capacity.**

Life cycle

- Life may vary depending on usage, storage and frequency of use.
- Life will be reduced if frequently used to support high loads.
- Life is also reduced if used and stored under high temperatures, or if stored in a fully charged condition for extended periods.

Recycle of battery

This Li-ion battery can be recycled. Please follow the regulations in your country or contact your local IDX office for further details.

Li-ion Battery Air Transport Compliance

(as of Jan 1st, 2009)

IDX E-HL9s are suitable for transport by air as not-restricted articles under the regulations of the International Air Transport Association (IATA), the International Civil Aviation Organization (ICAO). The test for United Nations Recommendations on the Transport of Dangerous Goods have also passed the product. Consequently, this battery may be brought as carry-on baggage. It may not be brought as checked baggage. IDX products can be transported in accordance with the above regulations, but IDX recommends that customers confirm with their carrier of choice to determine any local rules and policies before traveling.

For carry-on baggage

Extract from 2.3.5.9.1 for IATA Dangerous Goods Regulations (Produced in consultation with ICAO). Consumer electronic devices (watches, calculating machines, cameras, cellular phones, lap-top computers, camcorders, etc.) containing lithium metal or lithium ion cells or batteries when carried by passengers or crew for personal use, which should be carried in carry-on baggage. Spare batteries must be individually protected to prevent short circuits by placement in the original retail packaging or by otherwise insulating terminals, e.g. by taping over exposed terminals or placing each battery in a separate plastic bag or protective pouch, and carried in carry-on baggage only. In addition, each installed or spare battery must not exceed the following:
(b) for lithium ion batteries, a watt-hour rating of not more than 100Wh.

For cargo

1. Following the requirement in Part 1 of the PACKING INSTRUCTION 965 for IATA Dangerous Goods Regulations (Produced in consultation with ICAO). This applies to lithium ion or lithium polymer cells batteries (UN 3480) on passenger and Cargo Aircraft Only.
2. Fill in the air way bill as below:
   - Lithium ion battery, NOT RESTRICTED as per PI 965 Part 1.
   - Considering the package must be handled with care and flammability hazard exists, if the package is damaged, indicate as in the following statement.
     e.g.) "The package must be handled with care and flammability hazard exists, if the package is damaged."
   - Write handling procedures, etc. in case the package is damaged, according to applicable Packing Instruction
     e.g.) "Do not damage or mishandle this package. If package is damaged, batteries must be protected so as to prevent short circuit."
   - Write a telephone number for additional information.
     e.g.) Contact TEL Number : +1-800-xxx-xxxx (US) / +44-xx-xxxx-xxxx (UK) etc.
3. Each package must be labeled with a lithium ion battery handling label indicating "Lithium ion battery". When affixing Lithium Battery Labels with IATA DGR7.4.8 FIGURE 7.4.I specifications, they must not be folded or affixed in such a manner that parts of the same label appear on different faces of the package.
4. As for lithium ion battery (100Wh and below), it is necessary to indicate Watt-hour rating on the battery case exterior. However, for lithium ion batteries manufactured before December 31st, 2008, indication is exempted until December 31st, 2010.
5. Each package must be 10kg and below.
6. Use packaging that has passed the drop test (1.2m). Retain the results of the test. If there is a trouble or if an incident/accident occurs, you may be asked to submit the test results by the carrier or the competent authority.

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Li-ion

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