Li-Ion Battery Pack

NINA M

IDR

LOW CAPACITY LCA ALARM

HIGH LOAD

HECBOX

User Manual

EN English

Operating Instructions

Before operating the unit, please read this manual thoroughly and save it for future reference.
• Please consult the store where you purchased this battery pack or your sales representative before using the battery pack in a product whose Operation Manual/Operating Instruction does not explicitly state that the battery pack can be used, or before using the battery pack in conjunction with another power supply. Inappropriate use of the battery pack may result in unit misoperation.
• Use the battery pack only with equipment whose operating instructions recommend its use.

Important Safety Instructions

• If the battery pack is mishandled, the battery pack can burst and cause a fire.
• Do not disassemble and never attempt to open the battery pack.
• Do not crush and do not expose the battery pack to any shock or force such as hammering, dropping or stepping on it, avoid mechanical shock.
• Do not short circuit and do not allow metal objects to come into contact with the battery terminals.
• Do not expose to temperatures higher than 60°C (140°F) direct sunlight or in car parked in the sun.
• Do not incinerate or dispose of in fire.
• Be sure to charge the battery pack using a genuine Hedbox battery charger or a device that can charge the Li-Ion battery pack.
• Keep the battery pack out of the reach of small children.
• Keep the battery pack dry and clean only with a dry cloth.
• Do not use this battery pack near water, or expose the battery pack to rain or moisture.
• Do not install near any heat sources such as radiators, heat registers, or appliances that produce heat.
• Unplug this battery from the supply unit during thunderstorms or when unused for long periods.
• Refer all servicing to qualified service personnel only.
• Servicing is required when the battery pack has been damaged in any way, such as power plug damage, IDR Puch Button damage, the battery has been exposed to rain or high moisture, does not operate normally, or has been dropped, and the battery housing damaged significantly.
• This battery pack uses Lithium-Ion battery cells.
• A large discharge amount may accelerate the deterioration of the battery pack's internal cells.
To prevent this, use the battery pack with a discharger amount of about 3 A or less.
Continuous use at levels beyond the maximum discharge level may cause the protection circuit to shut off the current to protect the internal cells.

Charging the battery pack

• You don't have to discharge the battery pack before recharging.
• Charging while some capacity remains does not affect the original battery capacity.
• To charge the battery efficiently, fully charge it in an ambient temperature of 10°C - 30°C (50°F - 86°F).
• The battery pack discharges naturally over time. To extend battery life, it is recommended that you fully charge the battery pack before using it.
• The battery pack may become warm while used or being charged. This is normal.
• Battery pack performance decreases in low-temperature surroundings.
• To conserve battery power, we recommend that you keep the battery pack dry and warm, and only insert it in your electronic device just before use.
• If the power goes off even though the remaining battery time shows that it has enough power to operate, charge the battery pack fully again so that the correct remaining battery time is shown.
• Note that the remaining battery time is sometimes not restored if used in high temperatures for a long time or left in a fully charged state, or if the battery pack is frequently used.
• Remaining battery time is shown as the approximate recording time.

Important Information

Battery life
• Battery life may be shortened due to storage or operation in high temperatures.
• The performance and operating time of the battery may drop under cold conditions.
• Replace the battery pack when the operating time with a completely charged battery pack becomes noticeably short, or the IDR LED Ring flash because the BMS self-diagnostics function has detected the end of battery life.
• The battery life is limited and varies in each battery pack according to the storage, operating conditions, and working operational environment.

Self-diagnostic function
• When an abnormality is detected, the IDR LED Ring will flash a RED Color (Protection Circuit Activated)
• If this happens, further use of the battery must be with maximum caution or stop using the battery.
• The battery cannot be charged when the protection circuit is activated (IDR LED ring flashes)
• When the Protection Circuit is activated, in addition to the IDR Ring flasing indication, an error code will also be displayed on the OLED screen indicating the reason for activation and the type of activated status.
• When the battery exits the active protection status, and normal conditions arise, the battery will operate unhindered. After 60 seconds, the protective circuit releases the protection and returns the battery to normal.

If you can't charge the battery pack
• If the charging process encounters no response under the following conditions:
- During the initial attempt to recharge the battery.
- After the battery has been idle for an extended period.
- When the battery has been left inside the camera for an extended duration.
- Right after the purchase.
In such instances, disconnect the battery from the charger and then reconnect it.
• If the second attempt at charging proves unsuccessful, there could be a potential issue with either the battery or the charger. Stop using them and reach out to your authorized Hedbox dealer, or contact us at support@hedbox.com for assistance.
• If the battery pack terminals become dirty or dusty, clean them with a soft cloth.

How to store the battery pack
• Store the battery pack in environment that is dry at temperatures between 0°C to 23°C (32°F to 73°F).
• If the battery pack is to be stored for a short period (approximately more than 24 hours and a month or less), discharge or charge it to 90% of its total capacity to prevent deterioration of its internal cells.
• When storing the battery pack for an extended period (more than a month) it is recommended to discharge or charge it to about 60% of its full capacity. The 60% capacity provide the best number of cycles-to-usage ratio. In this case charge it until the capacity reaches 60% once every six months.

How to transport the battery pack by Airplane
When traveling by airplane and intending to carry Hedbox batteries, it is essential to adhere to specific air transportation regulations. To ensure compliance with safety guidelines, travelers must take special precautions.These include

• Ensure the battery is discharged to less than 30% of its total capacity.
• Purchasee the IATA Li-Ion Battery Transportation Safe Bag (Page #10).
• Insert the battery into the IATA transport bag and securely close the lid.
• Store the battery in your carry-on baggage during check-in.
• Inform the airport security officer about the battery in your baggage.
• You are allowed to carry a maximum of two (2) batteries per trip.

Compliance Statements

EUROPEAN UNION COMPLIANCE STATEMENTS

Hedbox declares that the radio equipment described in this document comply with the EMC Directive 2041/30/EU & RoHS 2011/65/EU and the amendment directive (EU) 2015/863

European standards:
• EN 55032:2015: Electromagnetic Interference (Emission)
• EN 55035:2017: Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environments:
E1 (residential),
E2 (commercial and light industrial),
E3 (urban outdoors),
E4 (controlled EMC environment, ex. TV studio).

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

The Waste Electrical and Electronic Equipment (WEEE) mark applies only to countries within the European Union (EU). This symbol on the product means that used electrical and electronic products should not be mixed with general household waste. For proper treatment recovery and recycling, please take this product to designated collection points where it will be accepted.

Ensuring that these batteries are disposed of correctly will help prevent potentially negative consequences for the environment and human health, which could otherwise be caused by inappropriate battery waste handling.
The recycling of the materials will help to conserve natural resources.
To ensure that the battery will be treated properly, hand over the product at the end of its life to the applicable collection point to recycle electrical and electronic equipment.

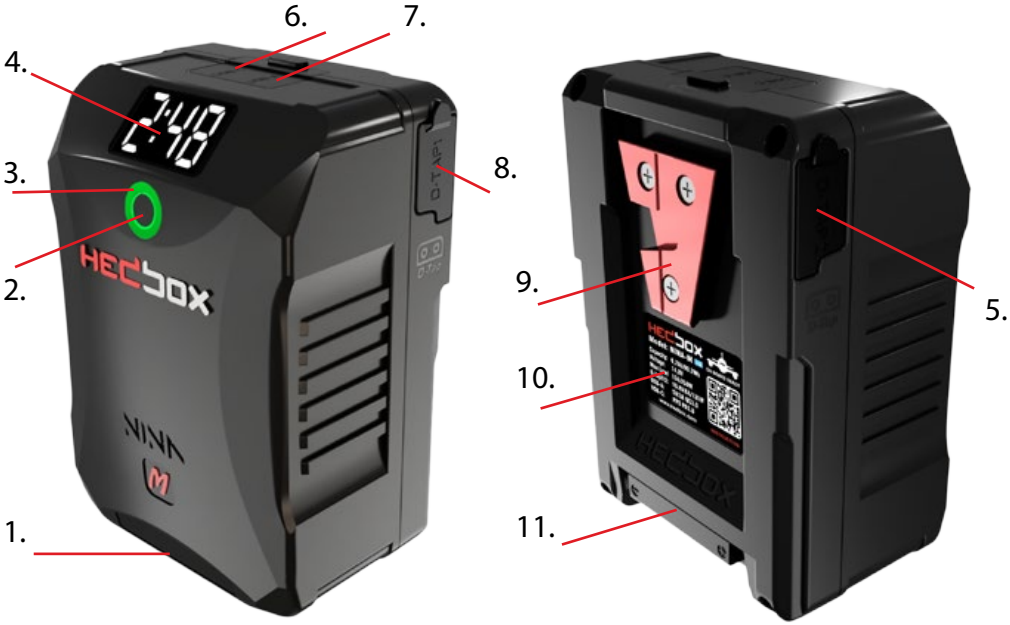
• Hand the battery to the applicable collection point to recycle waste batteries.
• For more detailed information about recycling this product or battery, please contact your local Civic Office, your household waste disposal service, or the shop where you purchased the product.

UN38.3 CERTIFICATION FOR SAFE BATTERY TRANSPORTATION

The Li-ion Battery Pack had passed the UN 38.3 test and is classified as non-dangerous goods and also complies with the UN Recommendations on the Transport of Dangerous Goods; IATA Dangerous Goods regulations, and applicable U.S. DOT regulations for the safe transport of Li-ion Battery Pack. The Li-ion Battery Pack is transported according to the PACKING INSTRUCTION 965 Section B of IATA DGR 65rd edition (Proper shipping name and UN ID number: LITHIUM ION BATTERIES, UN No.: UN3480).

Related laws and regulations are, however, subject to change. For detailed conditions regarding the transport of battery packs, please consult your chosen shipping transport company.

Overview



Product Components:

1. Hologram Security QR Serial Number label
2. IDR Push button
3. IDR LED Ilumination ring
4. OLED Display Screen Monitor (28mm / 1.1 Inch)
5. D-Tap 1 ... Power In / Out 16.8V
6. USB-C ... Power In / Out 3A PD 3.0
7. USB-A ... Power Out 3A /5V QC 2.0 (Power out only)
8. D-Tap 2 ... Power In / Out 16.8V
9. Dur-Aluminium Conection Holder
10. Info label with QR Code User manual
11. Main Battery Power socket

OLED Display overview

Total Capacity percentage Display
Upon pressing the IDR push button (Overview: Product Component: **2.**)
The OLED Display shows the battery capacity status in percentage “%”.

A.

Total Capacity OLED Display in percentage (%)

• Press the **IDR** push button until the capacity readout displays in percentage “%”.
• The current battery capacity will be displayed in the percentage on the OLED display. (photo A.)
• The **IDR** LED Ring will illuminate a **GREEN** color (photo A.)
• After 5 seconds of pressing the IDR push button, the IDR LED Ring will turn off. After 10 seconds, the OLED Display will follow.

Remaining Capacity Time Display
Upon pressing the IDR push button (Overview: Product Component: **2.**)
The OLED Display shows the battery capacity remaining time in minutes

B.

Total Capacity OLED Display in remaining Time (h:min)

• Press the **IDR** push button until the capacity readout displays in Time (h:min).
• The current battery capacity will be displayed on the OLED in the remaining operational Time. (photo B.)
• The **IDR** LED Ring will illuminate a **GREEN** color (photo B.)
• After 5 seconds of pressing the IDR push button, the IDR LED Ring will turn off. After 10 seconds, the OLED Display will follow.

Total Battery usage Display
Upon pressing the IDR push button (Overview: Product Component: **2.**)
The OLED Display shows the total usage of the battery lifetime.

C.

Total Battery Usage OLED Display per one battery circle

• Press the IDR push button until the total battery usage readout appears
• The current battery usage count will be displayed on the OLED in the total usage counts per circle. (photo C.)
• The **IDR** LED Ring will illuminate a **GREEN** color (photo C.)
• After 5 seconds of pressing the IDR push button, the IDR LED Ring will turn off. After 10 seconds, the OLED Display will follow.

Note: Usage is measured per battery cycle, where one cycle encompasses a overall energy supplied by the battery while operating the device from its full capacity to complete discharge. (Tech. spec. page #13)

Battery Charging Display
Upon connecting the battery to the battery charger through the charging port, the OLED display indicates the progress of the battery charging process.

D.

F.

Battery Charging OLED Display in percentage (%) and charging readout

• When the battery is conected to charging port (USB-C / USB-A / D-Tap / Power Pins)
the OLED Display will automatically showcase the battery charging status.
• The OLED display will present the battery charging process in percentage " **%**" (see photo D).
• The IDR LED Ring will flash in a **RED** color when charging starts (see photo D).
• Upon reaching full charge, the IDR Ring will emit a **GREEN** light, indicating ready for use (see photo F).
• Disconnecting the battery from the charging port will result in the OLED Display and IDR Ring turning off.

Charging on analog Battery Charger

• Within the NINA battery BMS (Battery Management System), a unique system for monitoring the battery's state has been implemented. This system enables a revolutionary approach to battery safety, constantly monitoring the battery's capacity, temperature, and integrity.

• This system allows for precise measurement of the battery's capacity down to hundredths of a percent, providing an accurate representation on the OLED Display (Photo A).

• When charged using chargers that rely on analog readings of the state of charge, there is a possibility that batteries may not reach a full charge of 100%. Consequently, it becomes impossible to set the specified charger to continue charging the battery.

• To achieve a complete 100% charge, we recommend utilizing a USB-C charger port that communicates digitally with chargers.

• The USB-C port with QC 3.0 protocol establishes direct communication with the battery BMS, ensuring chargers can effectively charge batteries to 100%.

• For optimal and thorough charging, we suggest using the HED-DC10 battery charger from Hedbox.

Low Capacity Battery Alarm

NINA has a revolutionary early warning system for low battery capacity.

The Low-Capacity Alarm (LCA) operates consistently within the battery, keeping a constant watch on the battery capacity status around the clock. When activated, the alarm exclusively provides visual signals (without any sound) through the IDR LED ring. This fully automated capability enables the battery operator to confidently use the power supply without worrying about it depleting unexpectedly.

G.

Automatic Battery low capacity ALARM

- When the Battery capacity drops below 20%.
The IDR emergency ALARM lights up (photo G.)
- The IDR ring starts fleshing out the **RED** color (silent mode) no buzzer, and warns that the battery capacity has fallen below 20%.
- This warning continues until the battery capacity drops below 10%.
- When the battery capacity falls below 10%, the alarm will turn off and no longer warn of low capacity.

H.

Battery low capacity ALARM Confirmation

- To confirm the low-capacity alarm and stop its warning, press the IDR push button (Component 2.)
- The current battery capacity readout will appear on the **OLED** screen (photo **H**.)
- The **IDR** Ring will stop flashing and change to a constant **RED** light illumination. (photo **H**.)

The OLED display will consistently show the battery capacity. Once the battery capacity reaches below 10%, the energy in the battery to conserve the remaining energy essential for optimizing the battery's safe operation.

NOTE:
- If the battery is in the Percentage Display Mode, the capacity will be displayed as a percentage “%”.
- If the battery is in the Time Display Mode, the capacity will be displayed in the remaining usage time.
- After 10 seconds upon showing the readout, the OLED Display and the IDR LED Ring will turn off.

BMS OLED Display warning code

OP Code / Battery system OVER POWER
When the battery is overpowered during the discharging/draining.
The automatic BMS protection system activates the OP Code on the OLED.

I.

- The **OLED** display shows a flashing **OP** code (Photo I.)
- The **IDR** LED Ring will flash and illuminate a **RED** color.
- The battery will still supply power; however, the BMS system advises against extensive use at this point, as it could potentially jeopardize the safety integrity of the battery.

Power	8 Amp	9 Amp	10 Amp	11 Amp	12 Amp
Status	✓	OP ±5%	OP	OP	✗ Battery OFF

- If the battery is overloaded more than the maximum power out, the BMS will shoot down the battery to protect its integrity.

OT Code / Battery system OVER TEMPERATURE
When the battery hase reach high temperature during operation.
The automatic BMS protection system activates the OT Code on the OLED.

J.

- The **OLED** display shows a flashing **OT** code (Photo J.)
- The **IDR** LED Ring will flash and illuminate a **RED** color.

Battery Charging Proccess
- Battery's BMS protection system will automatically deactivate the battery to safeguard its integrity if the temperature exceeds 45°C

Battery Discharging / Draining Process
- Battery's BMS protection system will automatically deactivate the battery to safeguard its integrity if the temperature exceeds 60°C

UT Code / Battery system UNDER TEMPERATURE
When the battery hase reach low temperature during operation.
The automatic BMS protection system activates the UT Code on the OLED.

K.

- The **OLED** display shows a flashing **UT** code (Photo K.)
- The **IDR** LED Ring will flash and illuminate a **RED** color.

Battery Charging Proccess
- Battery's BMS protection system will automatically deactivate the battery to safeguard its integrity if the temperature falls below 0°C.

Battery Discharging / Draining Process
- Battery's BMS protection system will automatically deactivate the battery to safeguard its integrity if the temperature falls below -10°C.

Note: When are the batteries returned to their standard operating conditions? The battery's automatic BMS system will reset and revert to factory default settings, ensuring the smooth operation and energy supply of the battery.

External Battery Power Output

Battery Dual D-Tap Power In / Out

- The Battery is equipped with dual DC D-Tap Power In/Out, one on each side of the Battery.
- Both D-tap power ports are bidirectional and can be used as Power Out supply and Battery charging
- Both D-Tap Power outputs provides contstant DC 16.8V, 135W / 8A of power.
- To use the D-Tap power port, please remove the protective rubber cover with the D-TAP sign on.
- Please use only original or premium D-Tap connectors, the low-quality ones can damage the Battery.

Battery USB-A Power Out

- The Battery is also equipped with USB-A Power Out on the top of the Battery.
- Power port output sustain constant 5V/3A、9V/2A、12V/2A of power out, and support QC2.0/QC3.0 AFC/FCP/SCP/DCP-1.5A/APPLE-2.4A etc. protocols
- To use the USB-A Power Port, please remove the protective rubber cover with the USB-A sign on.

- The USB-A power port is intended exclusively for power out and can't be used for battery charging.

Battery USB-C Power In / Out

- Battery is also equipped with USB-C Power In / Out on the top of the Battery.
- Power port is bidirectional and can be used as a Power Out supply and Battery charging
- Power port output sustain contstant 5V/3A、9V/3A、12V/3A、15V/3A、20V/3.25A (65W) of power out, and support PD3.0/QC2.0/QC3.0/PPS/AFC/FCP/SCP/DCP-1.5A/APPLE-2.4A protocols.
- To use the USB-C Power Port, please remove the protective rubber cover with the USB-C sign on.

NOTE:
We recommend using the supplied USB-C cable model RPC-D65W for maximum battery safety.

Supplied USB-C LCD power cable

USB-C LCD Power Cable

- For best USB-C battery charging and power supplay capabilities, please use supplied RPC-D65W USB-C / USB-C power cable
- The cable has an LED display that in real-time show charging power, charging status.
- Built-in smart chips monitor the charging power and adjust current and voltage automatically, avoiding damage to the battery in case of an unstable current.

– Cable Lenght: 1.2m / 3.93 ft
– Cable Type: USB-C to USB-C
– Power Delivery 3.0, Qualcomm Quick Charge 5.0 protocol (2.0/3.0/4+)
– Super fast charging 2.0 and PPS 65W/45W/25W

NOTE:
Display module just show charging power, it neither increases nor decrease charging current

Recommended Accessories

HED-DC10 USB-C Fast Battery Charger

• For the best battery charging performance, we highly recommend using the Hedbox HED-DC10 Fast Li-Ion Battery Charger. The supplied cable model RPC-D65W makes battery charging extremely fast and secure. With PD 3.0 quick charge, the recommended charger HED-DC10 fully charged battery:

- NINA M / Mg for approximately 2h and 20minutes (2:20h)
- NINA L / Lg for about 3h and 50minutes (3:50h)

HED-DC10
Super Fast
Battery Charger

IATA Li-Ion Battery Transportation Safe Bag

• For safe and secure battery transportation, we recommend purchasing the specially designed transportation safe bag for NINA battery the FIREBAG.

NOTE: All recommended products need to be purchased separately.

Security QR Holo Serial Number Label

Multy level High Security QR Hologram product authentication Label

- The product is marked with the Security QR Holo serial number label on the bottom of the battery.
- The QR Holo Label serves as the primary means for confirming the product's authenticity and originality.
- The label incorporates multi-layer high-definition protection including 365 Nm mark.
- It features a distinctive security holographic protection.
- The product has a unique serialization linked to the global Hedbox database.
- Durable, robust, self-adhesive label material; kindly refrain from attempting to peel off the label.

NOTE:
Attempting to remove the security label will cause it to self-destruct, resulting in the forfeiture of the product warranty in this particular case.

Product registration and verification

To verify your product and proceed with registration, please follow the next steps

- Go and visit the verification section on the Hedbox web page at **www.hedbox.com/verification**.

- Follow the verification procedure

Specification

Model:	**NINA-M** (Li-Ion)
Mount Type:	V-Lock / V-Mount
Battery Capacity:	**6700 mAh** / 6,7Ah / 99.2 Wh
Maximum Load:	Up to **12A / 175W** (Max)
Nominal Voltage:	**14.8V** (16.8V DC Max)
Info Display:	**OLED** / 1.1 Inch / 28mm
USB-A Output Only :	5V/3A,9V/2A,12V/2A (QC3.0/AFC/FCP/SCP)
USB-C In / Output:	5V/3A,9V/3A,12V/3A,15V/3A,20V/3.25A PD3.0
D-Tap 1/2 In / Output:	Charge:**16.8V/8A/135W**, Output: **16.8V/8A/135W**
Maximum Charging:	**16.8V / 8.0A / 135W**
IATA Transportation:	**UN38.3 / UN3480, Class 9**
Internal Protection:	**Cells Framing Construction System**
Recomend Charging On:	**HED-DC10** Battery Charger
Operating Temperature:	**–20°C to +45°C (–4°F to +113°F)**
Dimensions (W/H/D)	105 x 75 x 52 mm | 4.13 x 2.95 x 2.04"
Net Weight:	540 g | 1.19 lb

Battery usage Circle:	**6700 mAh** / 6,7Ah / 99.2 Wh **±10%**

No reimbursement for the recorded content.

• Compensation for the recording content is not feasible in the event of a malfunction in the battery pack on other devices, preventing shooting or reproduction.
• Please note that design and specifications may change without prior notice.

If you want to know more about HEDBOX Products please visit our website: **www.hedbox.com**

DISCLAIMER

Hedbox has made every effort to provide clear and accurate information in these User's Manual. All the data of this User's Manual (e.g. illustrations, text, specifications and data) are based on the latest information available and every care has been taken in compilation of the contents herein and in verification of its accuracy at the time of printing. As the aim of Hedbox is to give customers the most updated and state-of-the-art products, it may operate some technical modifications and improvements in time. Hedbox may consequently alter the information contained in this User's Manual without notice.

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If you find that some technical features or external appearance of your product differ from the ones inserted in this User's Manual, please send a detailed e-mail to support@hedbox.com.

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Note:
Always ensure that the unit is operating properly before use.
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NERO Series

BATTERY CHARGERS

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UNIX

HOLD II

4CH CHARGER