Qvia/Lukas Dashcam Battery Pack with After-Blow Technology

LK-590 6Ah

Quality Assurance

Model Name		Product S/N	
Customer Name		Date of Purchase	MM / DD / YY
Customer Phone No.		Place of Purchase	

1. This product, a battery pack for a dash camera, is a consumable item, and the manufacturer provides a period of one (1) year warranty from the date of purchase. Out-of-warranty fees may be charged depending on the type of service. Please be careful when handling the product.
2. During the one (1) year warranty period, if the manufacturer determines the product malfunctions under normal use conditions, there will be no repair cost.
3. This product has undergone strict quality control and inspection procedures.
4. This Quality Assurance is a proof of purchase and will not be reissued. Please retain this for warranty claim.
5. The manufacturer shall not be liable for any incidental damage or loss in relation to this product.

Certified Company Info.

1. Certified Company : Qrontech Co., Ltd.
2. Product Name (Model Name) : LK-590 6Ah
3. Certificate No. : R-REM-QRN-BAT02
4. Manufacturer / Country of Origin : Qrontech Co., Ltd. / S.Korea

This product is for business use and meets the electromagnetic compatibility requirements. The seller and the user must note this point and use the product in a place except for home.

Conformity European Marking
ES Joint Specification Certificate

U.S Federal Communications Commission / Electromagnetic Wave Compatibility Certificate

1. Safety Instructions

Please observe the following directions since incorrect use of LK-590 (6Ah) Battery Pack can lead to poor performance and may cause overheating, ignition, explosion, etc.

1. LK-590 (6Ah) Battery Pack must only be used to power a dashcam.
2. Only use genuine cables provided by the manufacturer, Qrontech Co., Ltd.
3. Do not use third-party accessories and peripherals which are not certified to be compatible.
   The manufacturer shall not be liable for any damage to the product, performance issues or incompatibilities caused by using uncertified third-party accessories and peripherals.
4. Do not expose the product to direct sunlight, and during hot weather, avoid putting the product in locations where the inside temperature of the car can quickly soar.
5. Do not put the product in a microwave oven or anywhere near a high-pressure environment such as near a fire or heating appliances.
6. During hot and cold weather, leaving the product in extreme temperatures may lead to poor performance and may cause damage to the product.
7. Ensure the product does not come into contact with water or other liquids. This may damage the product and can be the cause of a fire or electric shock.
8. Do not touch the power cables with wet hands since the product is not water-proof. Doing so may damage the product and can be the cause of a fire or electric shock. When cleaning the product, do not use water, volatile chemical products or liquid detergent. Instead use a soft and dry cloth.
9. Do not place a heavy object on top of the product and avoid dropping and throwing the product which can cause a strong physical shock to the product. Doing so may damage the product.
10. Do not disassemble, repair or modify the product. If disassembled or modified by the user or anyone unauthorized, warranty cover will be void. For repair or inspection of the product, please contact customer support or your local distributor.
11. Do not modify or cut the cables of the product. This may damage the product or your vehicle. The manufacturer shall not be liable for any loss or damage arising from your failure to follow this instruction.
12. Do not disassemble, compress or puncture the product.
13. Keep the product away from children and pets.
14. If the product emits an unusual odor during use, discontinue using the product immediately.
15. If the product swells up during use, discontinue using the product immediately.
16. Do not use the product in an electrostatic environment since static electricity can affect the operation of the battery protection circuitry.
17. When using this product with a dashcam, change the power-related configuration settings to external voltage 10V.
    If this setting is not adjusted or if your dashcam does not have this setting, the dashcam power may continue to turn on and off when the battery pack is discharged.
18. If any problem is detected, immediately stop using the product and store it in a safe place before contacting customer support or your local distributor.
19. The installation location of the product should not interfere with driving.
20. Do not operate the product while driving. If any operation of the product is needed, park your vehicle safely before doing so.
21. Do not disconnect the power of the product while in use. Doing so may damage the product.
22. Do not pull on the cables too hard when disconnecting them.
23. Ensure the connector of the battery charging cable does not come into contact with conduction materials like metals.
24. Routing the After-Blow cable in a glove box may cause cable compression, contact resistance due to opening and closing the glove box which may lead to rise in temperature inside the glove box.
25. Using a cable tie to arrange the cables may cause cable deformation or a fire due to the heat generated by the area where the cables are tied together.

2. Main Features

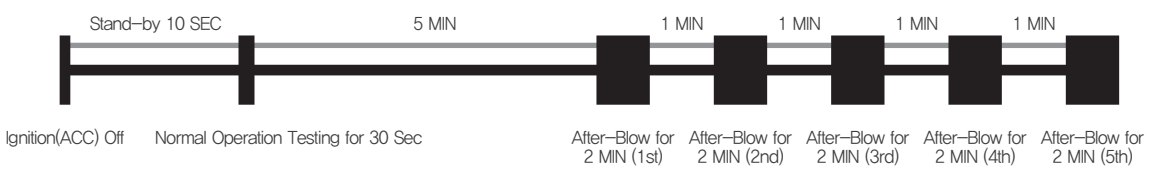
- LiFePO4 Battery Technology known for its high-safety characteristics.
- After-Blow technology prevents the growth and proliferation of bacteria and fungi which cause bad odors by draining the remaining moisture in car air conditioner.
- 60-minute fast charging time with up to 20 hours of use. (Based on power consumption 330mA / 6.6Ah -12V)
- CC-CV Charging circuit using Buck-Boost IC with up to 35V input voltage and more than 98% charge efficiency.
- Three LED indicators on the battery pack each shows operation status of After-Blow, battery charging status and dashcam connection status.
- Beeping sounds to indicate the driver of input power status.
- When the battery pack's voltage drops low, it automatically cuts power supply to your dashcam and the built-in MCU also turns off the power of the battery pack itself to prevent battery pack damage due to over-discharge.

3. After-Blow

What is After-Blow?

When using your vehicle air conditioner, it's important that you do not immediately turn your vehicle off upon arriving at your destination, but leave the fan on at an intermediate speed to work to dry out the AC's evaporator.
If you do not dry out the AC's evaporator, fungus and bacteria will begin to grow which then causes a moldy odor when turning on the AC. After-Blow powers the vehicle AC's blower motor and the fan after ignition is turned off to dry out the moisture left in the AC which effectively prevents the moldy odor by preventing the build-up of bacteria and fungus.

After-Blow Operation Scenario

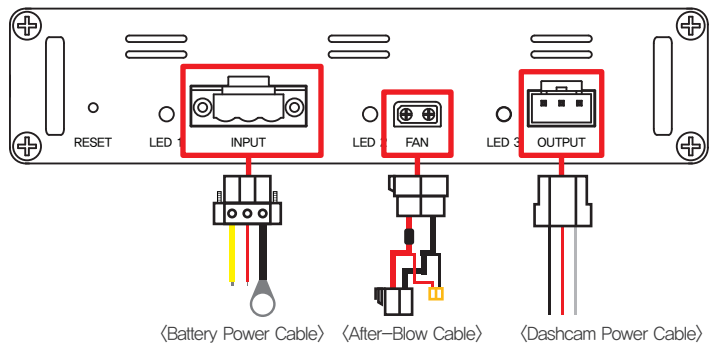


※ After-Blow does not work if the battery pack has not be charged for at least 5 minutes during your drive before turning off the ignition. If charged for under 5 minutes, After-Blow will only work for Normal Operation Testing for 30 Seconds.
※ For some vehicles depending on car makes and models, ACC power remains ON for a certain period of time after turning off the ignition. Normal Operation Testing of After-Blow will start to work only after 10 seconds from the time ACC power is perfectly cut off after turning off the ignition.
※ If the ignition(ACC power) is turned on during After-Blow operation, After-Blow operation stops immediately.
※ When After-Blow starts to work, LED 2 will turn green.

4. Installation

Safety Precautions Before Installation

※ Check output and input fuses and make sure to connect to the minimum 15A output fuse.
※ Firmly attach the GND wire to a car metal component (vehicle body where the components are metal such as a steel uncoated screw.)
※ Before installation, turn off the ignition and locate the AC's blower motor and its genuine power connector under the glove box. (For some vehicles, it is located at the driver's seat)
※ Professional installation service is recommended since mis-installation by anyone unskilled may lead to a fire during installation.
※ Make sure to use a fuse less than 3A for connecting the Dashcam Power Cable.

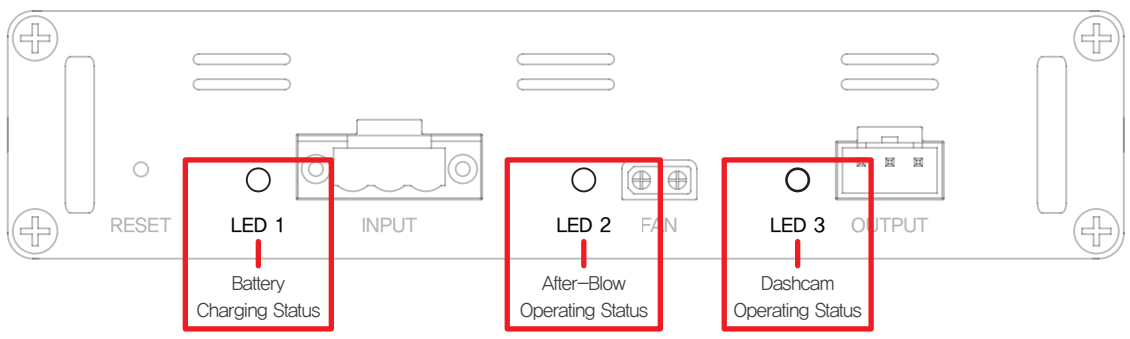


INPUT	Battery Input Connector (Use Battery Power Cable)
FAN	After-Blow Output Connector (Use After-Blow Power Cable)
OUTPUT	Dashcam Output Connector (Use Dashcam Power Cable)

Installing the Battery Pack LK-590 6Ah

Connecting Battery Power Cable	Connecting After-Blow Power Cable	Connecting Dashcam Power Cable
1. Connect Battery Power Cable to the car battery 2. Connect the other end of Battery Power Cable to INPUT.	1. Disconnect the blower motor power cable from the blower motor. 2. Connect the After-Blow Power Cable and the blower motor cable 3. Connect the other end of After-Blow Cable to FAN	1. Connect Dashcam Power Cable to OUTPUT 2. Connect the other end of Battery Power Cable with a Hardwire Power Cable of a Dashcam

5. LED & BEEP



BEEP

Tididing	Powered on (ACC on)
Tiding	Powered off (ACC off)
Tin tin tin	Cut off abnormal charging (sound repeats every 7 sec.)
Tidi	ACC wiring error (sound repeats for 8 seconds and powers off)

LED 1

RED ON	ACC Connected(Ignition ON) - Approx. 5 seconds after the ignition on
RED BLINK	Low Voltage of Car Battery warning
GREEN ON	Fully Charged
GREEN BLINK	Charging

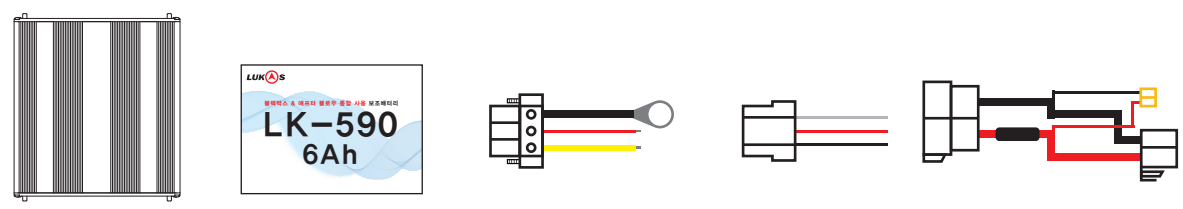
LED 2

RED ON	After-Blow ON

LED 3

RED ON	Output Power in Use
RED BLINK	Indicates Battery Pack Low Voltage after ACC is off
GREEN ON	After-Blow Operation Scenario in process
GREEN BLINK	After-Blow in operation

6. Product Package & Specifications



Battery Pack | User Manual | Battery Power Cable | Dashcam Power Cable | After-Blow Cable

Item	Specifications	Item	Specifications
Charging Voltage	14.7V, 6A, Constant Current and Constant Voltage (CC-CV) Charging	Battery Cell Type / Capacity	LiFePo4, 84Wh (12.8V, 6.6Ah)
Input Voltage	DC 11.0V ~ 24V 20A	Discharge Voltage	DC 11.0V ~ 14.6V
Charging Time	Approx. 60 mins	Hours of Use	Approx. 20 hours (Based on power consumption 4W -12V / 0.33A)
Operating Temperature	-20℃ ~ 60℃ (-4℉ ~ 140℉)	Battery Charge Cycle	Approx. 2,500 times
Size	155(W) x 34.4(H) x 175(L)mm	Weight	1.2Kg