

PORTAPOWER (HK) LIMITED

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SPEC. NO.	KL3691B.082	ISSUE DATE	2008-4-18		
DESCRIPTION	Lithium Ion Battery (model No. KL3691B.082)	EDITION	0	PAGE	1/5

1. Applicability

The specification is applicable to PortaPower Lithium Ion Rechargeable batteries (PortaPower model no. : KL3691B.082).

2. Ratings

2.1 Cell

- 2.1.1 Type of Cell : Sealed Lithium-ion cylindrical Rechargeable battery
- 2.1.2 Cell Model : Panasonic CGR-B/T46SE(CGR18650CG)
- 2.1.3 Cell Size : 18650
- 2.1.4 Cell Rated capacity : 2150mAh(minimum)
- 2.1.5 Number of cell used : 40PCS
- 2.1.6 Cell UL Number : MH12210

2.2 Pack

- 2.2.1 Rated voltage : 36V
- 2.2.2 Typical capacity : 9000 mAh
- 2.2.3 Minimum capacity : 8600 mAh (0.5C charging & 0.2C discharging)
- 2.2.4 Standard charge : 1720mA x 8hours to 42V
- 2.2.5 Quick charge current : 6000mA to 42V(440mA end)
- 2.2.6 Standard discharge current : 1720mA (discharge end of 30V)
- 2.2.7 Maximum discharge current : 10000mA
- 2.2.8 Maximum charging voltage : 42.5V
- 2.2.9 Battery Pack Color : Black
- 2.2.10 Fit Model : 36V E-Bike
- 2.2.11 PCB feature : Overcharge, overdischarge, over current protection, cell balancing, Current consumption temperature protection
- 2.2.12 Operating temperature : 0 - 45° (standard charge)
10 - 45° (quick charge)
-20 - 60° (standard discharge)
- 2.2.13 Storage temperature : -20 - 50° (1 week)
-20 - 45° (1 month)
-20 - 40° (6 months)
-20 - 35° (1 year)

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3. Configuration and dimensions

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REV.	CHANGE	APPROVED	DATE

观澜柏力电子二厂

MATERIAL:	FINISH:	ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED
MODEL:	SHRINKAGE:	
KL3691	NIL	NO DIMEN. PLO ±0.15 X ±0.30 DIMEN. PLO ±0.10 Y ±0.30 DIMEN. PLO ±0.10 Z ±0.30 DIMEN. PLO ±0.10
DRAWING NO. KL3691-39		
TITLE: ASSEMBLY DRAWING		
DRAWN BY:	CHECKED BY:	APPROVED BY:
PART NO.		A
SHEET 1 OF 1 REV		

4. Test conditions

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Unless otherwise specified, all tests should be conducted within one month of delivery under the following conditions :

Ambient temperature : 20 +/- 5°C.
Relative humidity : 65 +/- 20%.

5. Performance

Item	Criteria	Test conditions
Capacity	Above 8600mAh	Standard charge and standard discharge
Internal impedance	Less than 250mohm	Measure AC impedance at 1kHz
Cycle life **	Above 6000mAh	300 cycles charging/discharging is repeated in the below condition. <ul style="list-style-type: none">● Charging: 6000mA to 42V● Rest time: 20min● Discharging: 8600mA to 30V● Temperature: 25±2 °C
Leakage resistance	No leakage	Visually inspect battery pack after standard charge and storage at 25°C for 14 days.
Drop test	No fire, no explosion, no leakage (max. weight loss 0.1%)	Drop battery pack after standard charged onto a bakelite floor from a height of 50 cm for 6 times.
Vibration test	No fire, no explosion, no leakage (max. weight loss 0.1%)	The battery pack is vibrated in triaxial direction with 4 mm amplitude of frequency 30 Hz (1 Hz per minute) for 1 minute in triaxial direction.
Short circuit test	No fire, no explosion, cell temperature shall not exceed 150 °C	External short circuit
Dimensions	Refer to drawing of KL3691	Measured by calipers
Battery weight	Approx. 2331g	Measured by balance
Appearance	No crack, no leakage, no deformation	Visual inspection

Note: ** Data provided under "Cycle Life" in this document is our best estimate based on the technical data supplied by battery cell manufacturer in the Product Specification Form.

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6. Material of Case

A non-inflammable material from GE injects the plastic casing, model CYCOLOY C2950-111. It is listed UL94 V-0VA.

7. Warranty

One year limited warranty against workmanship and material defects.
Manufacturer reserves the right to alter, amend the design, model and specification without prior notice.

8. Charge state of cell before shipment

Charge from 10% to 50% according to delivery condition.

9. Safety precaution

Please follow the safety precaution carefully as improper handling of lithium ion batteries may result in injury or damage from electrolyte leakage, heating ignition or explosion. To ensure safety, consult with PortaPower (HK) Limited regarding the charge and discharge specifications, equipment structure, warning labels and other important details when designing equipment to use PortaPower (HK) Limited rechargeable lithium ion batteries.

Never charge the battery above 43.5V.

Never reverse charge the battery.

Never heat or incinerate the battery.

Never pierce, crush or cause mechanical damage to the battery.

Never charge a battery at high temperature condition, such as at or near a fire.

Never short circuit the battery.

Never discharge a battery to below 3.0V per cell.

Never allow the battery to get wet or be immersed in water.

For long period of storage, temperature should be below 45°C.

After long period of storage, battery may required some cycling to recover capacity.

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10. SAFETY DEVICE AND ABUSE REQUIREMENT

Circuitry protection as described below has been presented inside the battery pack to insure safety in case of misuse.

Overcharge Voltage Protection

At a charge voltage greater than $4.3 \pm 0.1V$ per cell, the overcharge protection should engage interrupting the charge current.

Over Discharge Protection

When a voltage less than $2.25 \pm 0.25V$ per cell is reached upon discharge, the over discharge protection device should engage. The resulting discharge current should be below $1\mu A$.

Over Discharge/Short Circuit Protection

When discharge current exceeds 21.3A the over discharge current protection should engage interrupting the discharge current.

Cell-balancing

During charging, cells are monitored individually. When cell's voltage reaches $4.18V \pm 25mV$, charging current is removed. Cycle life will be improved.

Over Temperature

When battery internal temperature exceeds $70^\circ C$, the thermal interrupter shall trip creating an open circuit that prevents further charging or discharging of the battery.

Current consumption

Less than 100uA current is drawn from battery for the protection and cell-balancing circuitry.