

VML9062

DESCRIPTION	Lithium Ion Battery	EDITION	0	PAGE	1/5

1. Applicability

The specification is applicable to Lithium Ion Rechargeable batteries

2. Ratings

2.1 Cell

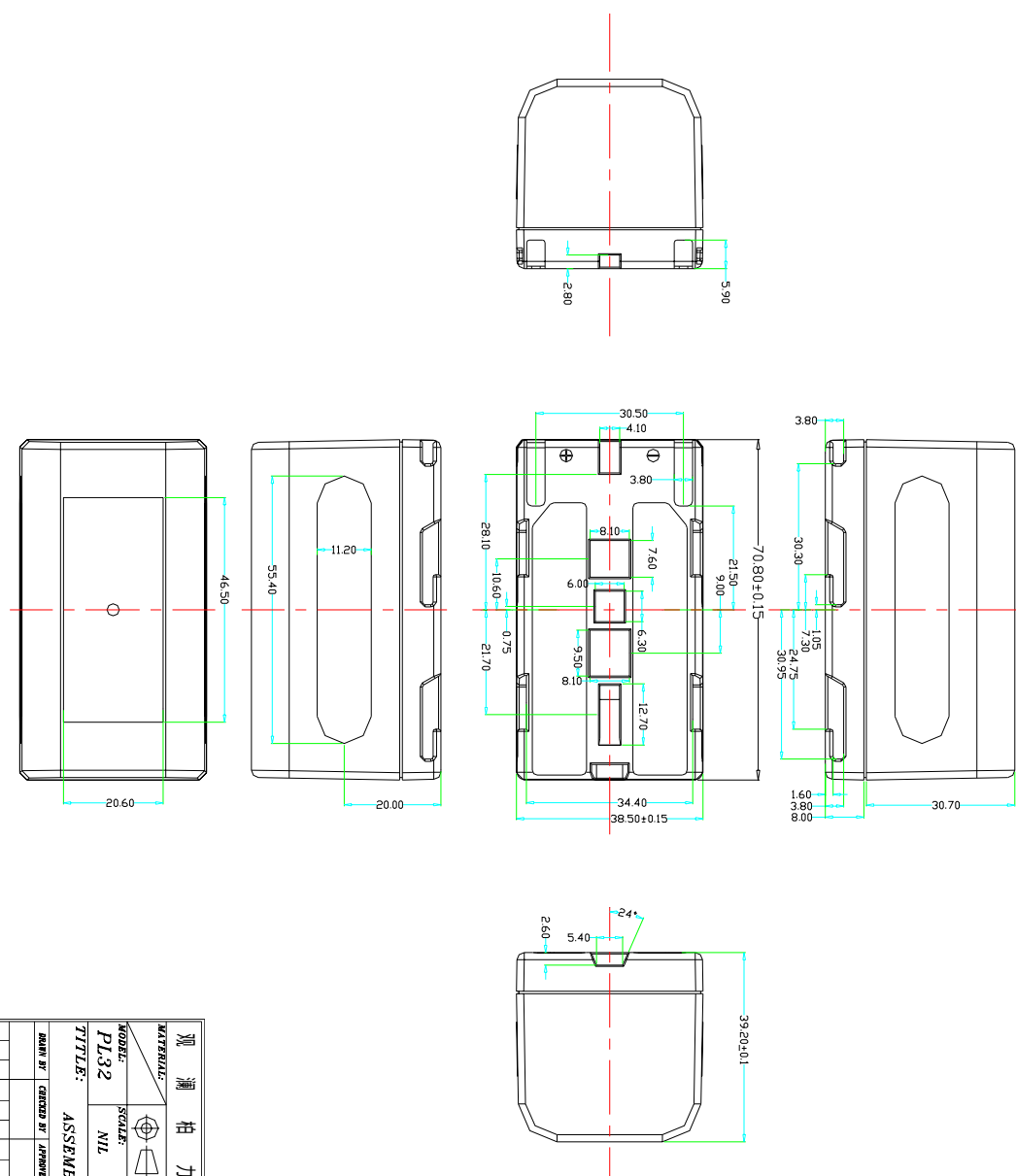
- 2.1.1 Type of Cell : Sealed Lithium-ion cylindrical Recharge battery
- 2.1.2 Cell Model : Panasonic CGR-B/T33SE (CGR18650CF)
- 2.1.3 Cell Size : 18650
- 2.1.4 Cell Minimum capacity : 2250mAh
- 2.1.5 Number of cell used : 2P2S (4PCS)
- 2.1.6 Cell UL Number : MH12210

2.2 Pack

- 2.2.1 Rated voltage : 7.2V
- 2.2.2 Typical capacity : 4500 mAh (32.4Wh)
- 2.2.3 Minimum capacity : 4300 mAh (31Wh) (0.2C charging & 0.2C discharging)
- 2.2.4 Standard charge : 860mA x 8hours to 8.4V
- 2.2.5 Quick charge current : 3000mA to 8.4V (200mA end)
- 2.2.6 Maximum charging voltage : 8.4V
- 2.2.7 Standard discharge : 860mA (discharge end of 6.0V)
- 2.2.8 Maximum discharge current : 3500mA
- 2.2.9 Replace No. : Samsung SB-L110A, SB-L160, SB-L320
- 2.2.10 Battery Pack Color : Grey
- 2.2.11 Operating temperature :
 - 0 - 45 (standard charge)
 - 10 - 45 (quick charge)
 - 20 - 60 (standard discharge)
- 2.2.12 Storage temperature :
 - 20 - 50 (1 week)
 - 20 - 35 (6 months)

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3. Configuration and dimensions



观澜拍力电子二厂		DRAWN BY: CHENGYI		PART NO.:	
DRAWN BY: CHENGYI		APPROVED BY: CHENGYI		PART NO.:	
TITLE: ASSEMBLY DRAWING (NUMBER)		DRAWING NO.:		PAGE: 7 OF 7	
SCALE: NIL		DATE: 09		SHEET: 7 OF 7	
MODEL: PL32		SPECIFICATION:		MATERIAL:	
KODER: PL32		SERIAL NO.:		CLASSIFICATION:	
SCALE: NIL		DRAWING NO.:		MATERIAL:	
TITLE: ASSEMBLY DRAWING (NUMBER)		DRAWING NO.:		MATERIAL:	
SCALE: NIL		DATE: 09		SHEET: 7 OF 7	

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4. Test conditions

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 4300mAh	Standard charge and standard discharge
Internal impedance	Less than 260mohm	Measure AC impedance at 1kHz
Cycle life **	Above 3000mAh	300 cycles charging/discharging is repeated in the below condition. <ul style="list-style-type: none"> ● Charging: 2000mA to 8.4V ● Rest time: 20min ● Discharging: 2000mA up to 6V ● 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 bakelife floor from a height of 75 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 for 1 minute in each direction.
Short circuit test	No fire, no explosion, cell temperature shall not exceed 150 °C	External short circuit
Dimensions	Refer to drawing of PL32	Measured by calipers
Battery weight	Approx. 181g	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 Limited rechargeable lithium ion batteries.

Never charge the battery above 8.5V.

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

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to recover capacity.

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 3.5A the over discharge current protection should engage interrupting the discharge current.

Over Current Protection

When battery load current exceeds 5.2A at 20 , the Polyswitch (PTC) shall trip abruptly to a highly resistive state limiting current to milliamps. The device shall remain in the tripped state until the fault is corrected or removed.