

11.1V, 4.5Ah LITHIUM BATTERY

RELIABLE POWER. STABLE CONNECTION.

USED FOR ALL TELECOM
AND IT APPLICATIONS



HIGH PERFORMANCE

Consistent & Reliable Power



LIGHTWEIGHT & COMPACT

Slim Design, Easy to Install



LONG CYCLE LIFE

≥2000 Cycles



BUILT-IN PROTECTION

Overcharge, Overdischarge,
Overcurrent & Short Circuit



WIDE TEMPERATURE RANGE

Reliable Performance
in All Conditions



WIDE APPLICATION

Used for All Telecom
and IT Applications

OUTPUT CONNECTOR



1 PIN CONNECTOR



NOMINAL
VOLTAGE

11.1V



CAPACITY

4.5Ah



CONFIGURATION

3S-1P



CHEMISTRY

NMC



CELL TYPE

NMC
CELL



ENERGY

49.95Wh



CYCLE LIFE
≥2000 Cycles



OPERATING TEMP.
-20°C to 60°C



APPLICATION

All Telecom
& IT Applications

NMC Battery

Technical Data Sheet

Battery Rating: 11.1V, 4.5Ah

Battery Model: AS-NMC-01110045

Prepared By	Checked By	Approved By

1. Scope:

This specification describes the technical parameters, testing standard, storage, handling and caution for the **Lithium Rechargeable Battery** manufactured and supplied by **Ascend Powerpacks Pvt Ltd**.

2. Cell Details:

Cell chemistry	NMC
Cell Type	Cylindrical
Cell nominal voltage	3.7V
Cell minimum voltage range	2.7V
Cell maximum voltage range	4.2V
Stranded discharging current	1C
Max discharging current	3C
Stranded Charging current	0.5C
Max charging current	1C
Cell capacity	4500mAh
Cell physical dimensions	21700
Cell Internal Resistance	≤50mΩ
Cell Manufacture Name	DMEGC

3. Basic Characteristics:

Battery nominal Voltage	11.1V
Battery nominal Capacity	4.5Ah
Total Energy	49.95Wh
Operating life/ Life cycles projected	≤800 cycles
Operating temperature range	-10°C to 60°C
Storage temperature range	-20 to 25°C
Weight of the battery	Approx 250g
Battery Output Connector & wire length	Open wire with 150mm External length

4. Battery Pack Dimensions:

Battery pack dimensions (LXWXH)	65Lx25Wx73H in mm (± 2 mm tolerance)
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5. Charger Details:

Recommended Charger voltage (VDC)	12.6V
Recommended charging current of charger (A)	3A

6. BMS Details:

Battery Configuration	3S 1P
Single cell volt-high protection	4.2V $\pm$ 0.1V
Single cell volt-high protection release	4.2V $\pm$ 0.1V
Single cell volt-high protection delay	1sec
Single cell volt -low protection	2.8V $\pm$ 0.1V
Single cell volt- low protection release	3V $\pm$ 0.1V
Single cell volt -low protection delay	1sec
Total over charge volt-protection	12.6V $\pm$ 0.1V
Total over charge volt-protection release	12.5V $\pm$ 0.1V
Total over voltage volt-protection delay	1sec
Total over discharge volt-protection	8.4V $\pm$ 0.1V
Total over discharge volt-protection release	9V $\pm$ 0.1V
Total over discharge volt-protection delay	1sec
Standard charging current	3A
Over current protection in charging	18A $\pm$ 5A
Over current protection in charging delay	1sec
Standard discharging current	6A
Over current protection in discharging	18A $\pm$ 5A
Over current protection in discharging delay	1sec
Short circuit delay	200-800us
Charging high temperature protection	55°C
Charging high temperature protection release	50°C
Charging high temperature protection delay	1sec

Discharging high temperature protection	60°C
Discharging high temperature protection release	55°C
Discharge high-temperature protection delay	1sec
Current consumption	≤100uA
Balance function	Passive
Buzzer	NA
NTC	1No

7. Communication:

Bluetooth	NA
Communication method	NA
Burd rate	NA
IoT Integrated	NA

8. Safety Performance:

Test Name	Test Procedure	Requirements
Short circuit test	The battery is to be short-circuited by connecting the positive and negative terminals of the battery pack directly.	No fire, no explosion.
Overcharge protection test	The Battery is permitted to charge until the BMS ends the charge.	The charging is successfully terminated by BMS when any one of the cells reaches its upper limit of 4.25V
Over-current protection test	The Battery is made to discharge more than the rated current	BMS terminates excessive charging or discharging current.
Over-discharge protection test	The Battery is permitted to discharge until the BMS stops the discharge.	The discharge is successfully terminated by BMS when any one of the cells reaches its lower limit of 2.8V
Over -temperature test (Applicable only for BMS with NTC)	During charging/discharging mode, When the temperature reaches to more than 60°C, the BMS will terminate from charge/discharge condition.	The BMS terminates from the charge/discharge condition. When temperature more than 60°C.
Vibration test (based on application)	As per AIS 156 NORMS PHASE II	NA

IP (Leakage test)	As per AIS 156 NORMS PHASE II	NA
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CAUTION!**1. Charging the Battery:**

- Always use the dedicated charger supplied by Ascend and adhere to the specified charging conditions.
- Do not connect the battery directly to an electric outlet or cigarette lighter charger.
- Avoid charging or discharging the battery in environments with temperatures exceeding 60°C.

2. Proper Usage:

- Use the battery only for the application it is meant for.
- Do not incorrectly place the battery in a device, ensure the (+) and (-) terminals are properly aligned.
- Avoid using a battery that shows scratches, swelling, or damage.

3. Environmental Precautions:

- Do not expose the battery to extreme temperatures. Keep it away from fire, direct sunlight, or environments above 60°C.
- Do not immerse, throw, or wet the battery in water.
- Store the battery in a cool, dry place with low humidity when not in use for extended periods.

4. Physical Handling:

- Do not disassemble, modify, or solder the battery.
- Avoid piercing the battery with sharp objects, hitting it with a hammer, stepping on it, or dropping it to prevent strong shocks.
- Do not short-circuit the (+) and (-) terminals with metal objects like hairpins, coins, or screws.

5. Storage and Disposal:

- Store batteries out of reach of children to prevent accidents.
- When disposing of a battery, ensure it is non-conducting by applying insulation tape to the (+) and (-) terminals.

6. Transportation:

- Do not subject the battery to violent shaking, bumps, rain, and direct sunlight during transport. Keep the battery half-charged (i.e., SOC should be 50%).

7. Temperature Guidelines:

- Use the battery within the following temperature ranges:
 1. Charge temperature range: 0°C to 60°C
 2. Discharge temperature range: -20°C to 60°C
- Avoid exceeding these ranges to prevent damage or hazardous conditions.

8. General Safety:

- Keep the battery away from objects or materials with static electric charges during charging, usage, and storage.
- If the battery terminals become dirty, wipe them with a dry cloth before use.
- Before using the battery or charger, thoroughly read the caution and handling instructions.
- If younger children use the battery, ensure their guardians explain proper handling and safety precautions.

9. Long-term Storage:

- A Fully charged Battery should not be stored for longer periods as it may deteriorate Battery Capacity. If the user doesn't want to use Battery for a long time always charge the Battery pack to 50% for better performance. As a matter of caution, never leave the fully discharged battery pack for more than a day.

By following these guidelines, you can ensure the safe and effective use of your battery while minimizing risks of damage or injury.

Important!

* We recommend charging the battery to 50% of its total capacity every 15 days after receiving it. Keep the voltage between 11V and 12V. Failure to do so may result in reduced battery performance and **Ascend Powerpacks Pvt Ltd** will not be responsible for any issues related to this battery.