

Battery Pack Requirement Sheet

Template with example values

Template with example values. The figures are not a live enquiry. Replace them with your own and send this sheet with your drawing.

Battery Pack Requirement Sheet

Item	Requirement
Warranty / reliability	2 years
Estimated annual volume	20,000 units
Sales region	China, domestic
Sample date / quantity	5 sets
Pilot date / quantity	not stated
Production release date / quantity	not stated
End customer type	industry customer (B2B)
Sample stage	product upgrade

2 · Application

Item	Requirement
Description	Replaceable battery pack installed inside roadside equipment
Usage pattern	Removed for recharging about once every six months
Trickle source	Small solar panel, 0.02C
Startup from battery	Small-load start and large-load start both noted
Operation mode	Built-in backup power; remains installed while equipment draws current; removable for charging
Enclosure	Reuse of existing enclosure tooling preferred
Cell strategy	Lowest-cost cell combination to reach the required capacity

3 · Cells and configuration

Item	Requirement
Chemistry	NCM lithium
Cell format	cylindrical
Configuration	1S xP
Minimum capacity	30 Ah
Maximum size (L x W x H)	no requirement yet
Weight limit	not stated
Life requirement	not stated

4 · Electrical

Item	Requirement
Charging method	managed by the host equipment
Maximum charge voltage	4.2 V
Charge current	3.5 A
Charge time to full	per cell design
Operating voltage range	3.1 V to 4.2 V
Maximum instantaneous discharge current	not stated
Maximum continuous discharge current	5 A
Average continuous discharge current	not stated
Charging temperature range	0 to 45 °C, plus solar trickle charging outside this range at 0.02C
Discharging temperature range	-20 to 60 °C
Storage temperature range	not stated

5 · Protection and monitoring

Item	Requirement
Protection functions	over-charge, over-discharge, over-current, short circuit
Cell balancing	requested; note on the form asks to confirm whether it is needed given the high parallel count, and its cost
Secondary protection	required
Fuel gauge	required
Communication	none selected (CAN, I2C and SMBUS all unchecked)

6 · Interfaces

Item	Requirement
Output	flying lead
Connector	2.0 mm pitch, 6 pins
Pin assignment	1-2 VBAT, 3-4 GND, 5-6 NTC
Cable length	not decided

7 · Mechanical and environment

Item	Requirement
Installation	replaceable
Installation location	outdoors, roadside
Ingress protection	IP65

Item	Requirement
Corrosion	protection board and metal contacts to be waterproof and corrosion resistant
ESD / EMC	not stated
Customer-side tests	not stated

8 · Certification

Item	Requirement
Whole-device certification	not stated
Material safety certification	not stated
Material environmental certification	not stated
Transport certification	not stated

Derived values

Item	Value
Nominal energy	$30 \text{ Ah} \times 3.6 \text{ V} = 108 \text{ Wh}$
Continuous discharge rate	$5 \text{ A} / 30 \text{ Ah} = 0.17\text{C}$
Solar trickle current	$0.02\text{C} \times 30 \text{ Ah} = 0.6 \text{ A}$
Standby duration	6 months = 4,380 h

Open items to confirm

- 1 Life requirement: calendar life, cycle count, and retained capacity at end of warranty
- 2 Maximum instantaneous discharge current and duration
- 3 Size envelope in mm, or the internal dimensions of the existing enclosure tooling
- 4 Operation mode: which of the three stated modes applies
- 5 Fuel gauge output: add bus lanes, or voltage indication only
- 6 Charging behavior below 0 °C: cutoff temperature and behavior at -10 °C
- 7 Certification list, including transport