22.2V 11.6Ah M58T pack

1 Features

- 22.2V nominal; 11.6Ah capacity
- 257.52Wh calculated nominal energy
- 6S2P / 12 cylindrical cells
- Short-circuit and overcurrent protection
- Bluetooth device control
- Black 3D-printed enclosure
- 25.2V CC-CV charge target

2 Applications

- Portable equipment
- Prototype systems with a compatible voltage range

3 Description

The AHL-M58T-6S2P is a 6S2P cylindrical-cell pack design based on LG INR21700M58T cells. The enclosure contains the cell assembly, protection electronics and Bluetooth device control.

The tables distinguish catalogue nominal figures, calculated design targets and physical estimates. Current and thermal targets require validation on the finished assembly.

4 Pack Information

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Nominal voltage	Catalogue value		22.2		V
Nominal capacity	Catalogue value		11.6		Ah
Nominal energy	Calculated		257.52		Wh
Charge voltage	CC-CV setting		25.2		V
Charge current	Design target		2.24	2.24	A
Continuous discharge	25 °C; unvalidated			12.5	A
Nominal power	At current target		277.5		W
Finished mass	Estimated +/-20%	1.048	1.31	1.572	kg

Data status

Typ identifies nominal values or calculated design targets. Min and Max are the stated design limits or planning ranges. Blank cells mean no limit is specified. These are not finished-pack test results.

Connector options

Standard: XT60. Options: XT30, XT60, JST-XH, Anderson Powerpole, Radlok, Bare leads. Each build needs appropriately rated contacts, wiring and interconnects.

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5 Electrical operation and protection

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Charge current	Proposed setting		2.24	2.24	A
Charge termination	CV phase		0.224		A
Charge time	Capacity / current; excludes taper		5.18		h
Load shutdown	Pack equivalent; per-cell sensing		18		V
Discharge current	Continuous, 25 °C			12.5	A
Charge ambient	Proposed envelope	10		40	°C
Discharge ambient	Proposed envelope	0		40	°C
Charge thermal trip	Cell temperature target		45		°C
Discharge thermal trip	Cell temperature target		55		°C
Storage temperature	Dry, non-condensing	15		25	°C
Storage charge	State of charge	40		50	%

5.1 Protection and control

6S Li-ion protection; Daly-class 40A / 20A reference. Short-circuit, overcurrent and per-cell voltage protection are required. Cell balancing is required. Bluetooth device control is included. Trip settings must protect the cells and conductors and account for sensor error.

5.2 Controller compatibility

The 6S pack needs a 6S-compatible BMS and 25.2V charger. The Daly 7S/24V/40A reference is a 29.4V design and is not specified as fitted.

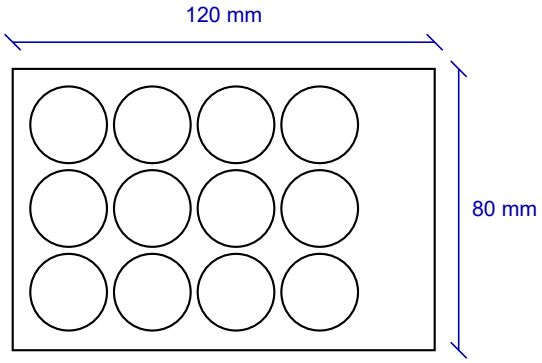
5.3 Interpretation and unassigned ratings

Min / Max are design limits, not guaranteed production limits. Blank cells are unspecified. No higher pulse rating or external pack series/parallel rating is assigned. Cycle life, impedance, self-discharge, ingress protection and certification have no pack test data.

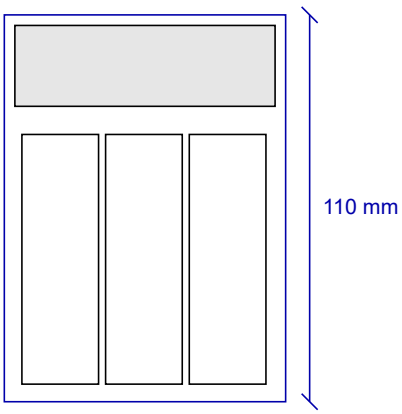
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6 Mechanical dimensions and calculations

TOP / CELL LAYOUT



SIDE / COMPARTMENTS



Shaded area: insulated BMS bay

mm. Indicative geometry; no wiring or connector placement shown.

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Enclosure length	Estimated; excludes leads		120		mm
Enclosure width	Estimated; excludes leads		80		mm
Enclosure height	Estimated; excludes leads		110		mm
Cell diameter	Design envelope		21.8		mm
Cell height	Design envelope		71		mm
Cell gap / shell wall	Design dimensions		2 / 3		mm
Cell mass	Cell-only subtotal		860.4		g

Calculation method

Shell: solid volume x 1.04 g/cm³ ABS density, plus 15% for features. Discharge target: half the parallel-cell current basis, capped at 20 A. Charge target: parallel-cell standard-charge current, capped at 20 A. These allowances require validation.

Cell reference: LG INR21700M58T, rev1.5

BMS reference: Daly DL-J10C-L7S40ATJ A0

M58T catalogue convention retained: 22.2V, 11.6Ah and 257.52Wh for 6S2P. LG lists 3.59V nominal and 5.57Ah minimum per cell. Cell-only mass uses the supplied 860.40g per 12 cells.