

Illustrative render generated from published specifications

21.35 × 70.45 mm
72 g

Ampace JP50P1

Ampace · released 2025

21700 NMC

MOOCH-TESTED · 40 A



Live page & updates

5,000 mAh CAPACITY	40 A MOOCH CONTINUOUS	3.6 V NOMINAL · 2.5 – 4.2 V	18 Wh ENERGY · 250 WH/KG
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REFERENCE ONLY — NOT AN OFFICIAL DOCUMENT

This information is gathered from multiple sources, including manufacturer datasheets, independent third-party testing, and community contributions. Cell specifications vary between production batches and change over time, and no figure here is guaranteed to be correct or current. **Always consult the manufacturer's spec sheet directly.** Use this sheet for reference only — never as the sole basis for a safety-critical decision about charging, discharging, or assembling cells. The cell image is an illustrative render generated from published specifications, not a photograph.

CAPACITY AMONG 21700S #19 of 72 Lowest in databaseHighest Top tier for both capacity and discharge. One of the best all-around 21700 cells.	VOLTAGE OPERATING WINDOW 1.7 V usable Cutoff 2.5 VNominal 3.6 VMax 4.2 V Below nominal the cell sags fast under load; above it, the last of the capacity fills slowly on the constant-voltage taper.
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APPLICATION SUITABILITY

Rule-of-thumb ratings from this cell's capacity and continuous discharge. Check your own load before committing.

Powerwalls	High capacity means more stored energy per cell. Fewer cells needed for a given kWh target.
Ebike packs	Good balance of capacity for range and discharge for hills. Works well in most ebike packs.
Car audio	Enough discharge to handle amplifier bursts without voltage sag.
High-drain vaping	Above the 25A Mooch CDR threshold. Suitable for regulated and mechanical mods.
Flashlights	High capacity means long runtime. Great for everyday carry and extended use.
Power tools	Sufficient discharge and capacity for most power tool packs.

IDENTITY

Manufacturer	Ampace
Model	JP50P1
Format	21700
Chemistry	NMC
Year released	2025
Terminal	Flat top
Protection	Unprotected

OPERATING TEMPERATURE

Charging	-10°C to 60°C
Discharging	-20°C to 80°C

ENERGY & POWER DENSITY

Energy	18 Wh
Specific energy	250 Wh/kg
Volumetric density	713.68 Wh/L
Power density (mass)	2,000 W/kg
Power density (volume)	5,709 W/L
Capacity ranking	#19 of 72 21700s

PHYSICAL

Diameter	21.35 mm
Length	70.45 mm
Weight	72 g

ELECTRICAL

Rated capacity	5,000 mAh
Nominal voltage	3.6 V
Max charge voltage	4.2 V
Discharge cutoff	2.5 V
Energy	18 Wh
Max continuous discharge	40 A (mooch)
Discharge C-rate	8C
Standard charge current	15,000 mA
Typical charge time	0.3 h
Cycle life	600 cycles

C-RATE CONVERSION · 5,000 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	1 A	5h 00m
0.5C	2.5 A	2h 00m
1C	5 A	1h 00m
2C	10 A	30m
3C	15 A	20m
5C	25 A	12m
8C	40 A	7m 30s

Highlighted row is closest to the rated 40 A continuous discharge.

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
0.5C	2,500 mA	~2h 00m
1C	5,000 mA	~1h 00m
Standard	15,000 mA	~0h 20m

Constant-current phase only. Real charge time runs longer because of the constant-voltage taper at the end.

SERIES PACK CONFIGURATIONS

Voltagess calculated from this cell's own nominal and maximum charge voltage. The 3P columns show one common parallel count as a worked example — scale the parallel group to the capacity you need.

SERIES	NOMINAL	FULLY CHARGED	CELLS AT 3P	CAPACITY	ENERGY
3S	10.8 V	12.6 V	9	15 Ah	162 Wh
7S	25.2 V	29.4 V	21	15 Ah	378 Wh
10S	36 V	42 V	30	15 Ah	540 Wh
13S	46.8 V	54.6 V	39	15 Ah	702 Wh
14S	50.4 V	58.8 V	42	15 Ah	756 Wh

EXAMPLE PACKS

7S2P 24V ebike / small pack 14 cells · 25.2 V 10,000 mAh · 252 Wh 80 A max · ~1.01 kg cells	13S4P 48V ebike standard 52 cells · 46.8 V 20,000 mAh · 936 Wh 160 A max · ~3.74 kg cells	16S4P DIY powerwall 64 cells · 57.6 V 20,000 mAh · 1,152 Wh 160 A max · ~4.61 kg cells	4S6P Power tool replacement 24 cells · 14.4 V 30,000 mAh · 432 Wh 240 A max · ~1.73 kg cells
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SIMILAR CELLS

Same format and chemistry, within ± 500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Ampace JP50P1 (this cell)	5,000	40 A	18	72 g	250
Linkdata 55P	5,500	40 A	19.8	—	—
Samsung INR21700-55E	5,490	10 A	19.8	—	—
BAK 53E	5,300	10 A	19.1	69 g	277
Samsung INR21700-53G	5,300	10 A	19.1	72 g	265
LG M50T	5,014	14 A	18.1	70 g	258

HANDLING & SAFETY

- Never charge above 4.2V or discharge below 2.5V.
- Store cells at around 3.6-3.8V (roughly 40-60% charge) for long-term storage.
- Don't mix cells with different capacities, chemistries, or states of charge in a pack.
- Inspect wraps before use. A torn wrap can cause a short circuit.
- Always use a BMS or balance charger appropriate for your pack configuration.
- Keep cells away from metal objects, keys, and coins. A short across the terminals can cause fire.

SOURCES & FURTHER READING

Cell Savors page	cellsaviors.com/cell-database/ampace-jp50p1
Manufacturer datasheet	https://www.dnkpowers.com/wp-content/uploads/2025/09/Full-Tab-B...
Independent test (Mooch)	https://www.e-cigarette-forum.com/threads/bench-test-results-a...
Full cell database	cellsaviors.com/cell-database