Illustrative render generated from published specifications

18.35 × 70.05 mm
49.1 g

Epoch PROTECTED

Live page & updates

Epoch

18650 | NMC | MOOCH-TESTED · 8 A

3,500 mAh	8 A	3.6 V	12.6 Wh
CAPACITY	MOOCH CONTINUOUS	NOMINAL · 2.5 – 4.2 V	ENERGY · 256.62 WH/KG

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 18650S — #6 of 279

Lowest in database — Highest

More capacity than 98% of 18650 cells in our database, but lower discharge than average.

VOLTAGE OPERATING WINDOW — 1.7 V usable

Cutoff 2.5 V — Nominal 3.6 V — Max 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.

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	Marginal. Check your motor's peak draw first. You might get voltage sag under load.
Car audio	Not enough discharge for car audio amplifiers. You need at least 15-20A continuous for most setups.
High-drain vaping	Below the 25A Mooch CDR threshold that high-drain vaping needs. Use a higher-drain cell.
Flashlights	High capacity means long runtime. Great for everyday carry and extended use.
Power tools	Not enough discharge or capacity for power tool use.

IDENTITY

Manufacturer	**Epoch**
Model	**PROTECTED**
Format	**18650**
Chemistry	**NMC**
Wrap colour	**Black**
Terminal	**Button top**
Protection	**Protected**

OPERATING TEMPERATURE

Charging	**10°C to 45°C**
Discharging	**-20°C to 60°C**

ENERGY & POWER DENSITY

Energy	**12.6 Wh**
Specific energy	**256.62 Wh/kg**
Volumetric density	**680.14 Wh/L**
Power density (mass)	**587 W/kg**
Power density (volume)	**1,555 W/L**
Capacity ranking	**#6 of 279 18650s**

PHYSICAL

Diameter	**18.35 mm**
Length	**70.05 mm**
Weight	**49.1 g**

ELECTRICAL

Rated capacity	**3,500 mAh**
Nominal voltage	**3.6 V**
Max charge voltage	**4.2 V**
Discharge cutoff	**2.5 V**
Energy	**12.6 Wh**
Max continuous discharge	**8 A (mooch)**
Discharge C-rate	**2.3C**
Standard charge current	**1,475 mA**
Typical charge time	**2.4 h**
Standard discharge	**670mA**

C-RATE CONVERSION · 3,500 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	0.7 A	5h 00m
0.5C	1.75 A	2h 00m
1C	3.5 A	1h 00m
2C	7 A	30m

Highlighted row is closest to the rated 8 A continuous discharge.

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL

Standard	1,475 mA	~2h 22m
0.5C	1,750 mA	~2h 00m
1C	3,500 mA	~1h 00m

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

SERIES PACK CONFIGURATIONS

Voltages 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	10.5 Ah	113 Wh
7S	25.2 V	29.4 V	21	10.5 Ah	265 Wh
10S	36 V	42 V	30	10.5 Ah	378 Wh
13S	46.8 V	54.6 V	39	10.5 Ah	491 Wh
14S	50.4 V	58.8 V	42	10.5 Ah	529 Wh

EXAMPLE PACKS

7S2P
24V ebike / small pack

14 cells · 25.2 V

7,000 mAh · 176 Wh

16 A max · ≈0.69 kg cells

13S4P
48V ebike standard

52 cells · 46.8 V

14,000 mAh · 655 Wh

32 A max · ≈2.55 kg cells

16S4P
DIY powerwall

64 cells · 57.6 V

14,000 mAh · 806 Wh

32 A max · ≈3.14 kg cells

4S6P
Power tool replacement

24 cells · 14.4 V

21,000 mAh · 302 Wh

48 A max · ≈1.18 kg cells

SIMILAR CELLS

Same format and chemistry, within ±500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Epoch PROTECTED (this cell)	**3,500**	**8 A**	**12.6**	**49.1 g**	**257**
Amprius INR18650/40	4,000	12 A	14.4	48 g	300
Vapcell N40	4,000	10 A	14.4	48 g	300
Vapcell F38	3,800	10 A	13.7	48 g	285
Vapcell N36	3,650	8 A	13.1	48 g	274
LG LGEBMJ11865	3,500	10 A	12.7	49 g	260

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 Saviors page	cellsaviors.com/cell-database/epoch-protected
Independent test (Mooch)	https://www.e-cigarette-forum.com/threads/bench-test-results-e...
Full cell database	cellsaviors.com/cell-database