Illustrative render generated from published specifications

18.3 × 65 mm
48 g

Vapcell BLACK 38A 2000mAh

Live page & updates

Vapcell · released 2017

18650 | NMC

MOOCH-TESTED · 38 A

2,000 mAh	38 A	3.6 V	7.2 Wh
CAPACITY	MOOCH CONTINUOUS	NOMINAL · 2.5 – 4.2 V	ENERGY · 150 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

#221 of 279

Lowest in database — Highest

Higher discharge than 96% of 18650 cells in our database. Great for high-drain builds.

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	Usable for powerwalls but lower capacity means you'll need more cells to hit your target kWh.
Ebike packs	Marginal. Check your motor's peak draw first. You might get voltage sag under load.
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	Lower capacity means shorter runtime. Better cells are available for flashlight use.
Power tools	Sufficient discharge and capacity for most power tool packs.

IDENTITY

Manufacturer	**Vapcell**
Model	**BLACK 38A 2000mAh**
Format	**18650**
Chemistry	**NMC**
Year released	**2017**
Wrap colour	**Black**
Terminal	**Flat top**
Protection	**Unprotected**

OPERATING TEMPERATURE

Charging	**0°C to 45°C**
Discharging	**-20°C to 75°C**

ENERGY & POWER DENSITY

Energy	**7.2 Wh**
Specific energy	**150 Wh/kg**
Volumetric density	**421.14 Wh/L**
Power density (mass)	**2,850 W/kg**
Power density (volume)	**8,002 W/L**
Capacity ranking	**#221 of 279 18650s**

PHYSICAL

Diameter	**18.3 mm**
Length	**65 mm**
Weight	**48 g**

ELECTRICAL

Rated capacity	**2,000 mAh**
Nominal voltage	**3.6 V**
Max charge voltage	**4.2 V**
Discharge cutoff	**2.5 V**
Energy	**7.2 Wh**
Internal resistance	**8 mΩ**
Max continuous discharge	**38 A (mooch)**
Discharge C-rate	**19C**
Standard charge current	**1,000 mA**
Typical charge time	**2 h**

C-RATE CONVERSION · 2,000 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	0.4 A	5h 00m
0.5C	1 A	2h 00m
1C	2 A	1h 00m
2C	4 A	30m
3C	6 A	20m
5C	10 A	12m

8C	16 A	7m 30s
10C	20 A	6m
15C	30 A	4m

Highlighted row is closest to the rated 38 A continuous discharge.

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
0.5C	1,000 mA	~2h 00m
1C	2,000 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	6 Ah	65 Wh
7S	25.2 V	29.4 V	21	6 Ah	151 Wh
10S	36 V	42 V	30	6 Ah	216 Wh
13S	46.8 V	54.6 V	39	6 Ah	281 Wh
14S	50.4 V	58.8 V	42	6 Ah	302 Wh

EXAMPLE PACKS

7S2P
24V ebike / small pack

14 cells · 25.2 V
4,000 mAh · 101 Wh
76 A max · ≈0.67 kg cells

13S4P
48V ebike standard

52 cells · 46.8 V
8,000 mAh · 374 Wh
152 A max · ≈2.5 kg cells

16S4P
DIY powerwall

64 cells · 57.6 V
8,000 mAh · 461 Wh
152 A max · ≈3.07 kg cells

4S6P
Power tool replacement

24 cells · 14.4 V
12,000 mAh · 173 Wh
228 A max · ≈1.15 kg cells

SIMILAR CELLS

Same format and chemistry, within ±500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Vapcell BLACK 38A 2000mAh (this cell)	**2,000**	**38 A**	**7.2**	**48 g**	**150**
LG LGDBHE21865	2,500	20 A	9.3	48 g	193
Sanyo UR18650F	2,500	5 A	9.3	47 g	197
Sanyo UR18650FM	2,500	5 A	9.3	47 g	197
BAK N18650COP	2,500	30 A	9	47 g	191
BAK N18650NCP	2,500	30 A	9	47 g	191

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/vapcell-black-38a-2000mah
Independent test (Mooch)	https://www.e-cigarette-forum.com/threads/bench-test-results-v...
Full cell database	cellsaviors.com/cell-database