

18.6 × 65.2 mm
44.5 g

Live page & updates

18650

NMC

MOOCH-TESTED · 10 A

CAPACITY

MOOCH CONTINUOUS

NOMINAL · 2.5 – 4.2 V

ENERGY · 182.02 WH/KG

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.

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Lowest in database Highest

VOLTAGE OPERATING WINDOW

- | | |
|----------------------------|---|
| ● 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 | Might work for smaller setups. Check your amp's peak current draw. |
| ● High-drain vaping | Below the 25A Mooch CDR threshold that high-drain vaping needs. Use a higher-drain cell. |
| ● Flashlights | Lower capacity means shorter runtime. Better cells are available for flashlight use. |
| ● Power tools | May work for lighter-duty tools. Check your tool's current requirements. |

IDENTITY

Manufacturer	Panasonic
Model	CGR18650CH
Format	18650
Chemistry	NMC
Year released	2011
Wrap colour	Gray
Insulator	White
Terminal	Flat top
Protection	Unprotected

OPERATING TEMPERATURE

Charging	0°C to 45°C
Discharging	-20°C to 60°C

ENERGY & POWER DENSITY

Energy	8.1 Wh
Specific energy	182.02 Wh/kg
Volumetric density	457.22 Wh/L
Power density (mass)	809 W/kg
Power density (volume)	2,032 W/L
Capacity ranking	#81 of 169 18650s

PHYSICAL

Diameter	18.6 mm
Length	65.2 mm
Weight	44.5 g

ELECTRICAL

Rated capacity	2,250 mAh
Nominal voltage	3.6 V
Max charge voltage	4.2 V
Discharge cutoff	2.5 V
Energy	8.1 Wh
Max continuous discharge	10 A (mooch)
Discharge C-rate	4.4C
Standard charge current	1,500 mA
Typical charge time	1.5 h
Standard discharge	430mA

C-RATE CONVERSION · 2,250 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	0.45 A	5h 00m
0.5C	1.13 A	2h 00m
1C	2.25 A	1h 00m
2C	4.5 A	30m
3C	6.75 A	20m

Highlighted row is closest to the rated 10 A continuous discharge.

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
0.5C	1,125 mA	~2h 00m
Standard	1,500 mA	~1h 30m
1C	2,250 mA	~1h 00m

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	6.8 Ah	73 Wh
7S	25.2 V	29.4 V	21	6.8 Ah	170 Wh
10S	36 V	42 V	30	6.8 Ah	243 Wh
13S	46.8 V	54.6 V	39	6.8 Ah	316 Wh
14S	50.4 V	58.8 V	42	6.8 Ah	340 Wh

EXAMPLE PACKS

7S2P 24V ebike / small pack 14 cells · 25.2 V 4,500 mAh · 113 Wh 20 A max · ≈0.62 kg cells	13S4P 48V ebike standard 52 cells · 46.8 V 9,000 mAh · 421 Wh 40 A max · ≈2.31 kg cells	16S4P DIY powerwall 64 cells · 57.6 V 9,000 mAh · 518 Wh 40 A max · ≈2.85 kg cells	4S6P Power tool replacement 24 cells · 14.4 V 13,500 mAh · 194 Wh 60 A max · ≈1.07 kg cells
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SIMILAR CELLS

Same format and chemistry, within ± 500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Panasonic CGR18650CH (this cell)	2,250	10 A	8.1	44.5 g	182
LG LGABC41865	2,750	5.5 A	10	48.5 g	207
Panasonic NCR18650D	2,700	5.1 A	10	—	—
Sanyo UR18650ZT	2,650	5.3 A	9.8	46 g	213
LG LGDB118650	2,600	—	9.8	—	—
LG LGDBB11865	2,600	—	9.8	—	—

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/panasonic-cgr18650ch
Manufacturer datasheet	http://www.bto.pl/pdf/04444/cgr18650ch.pdf
Independent test (Mooch)	https://www.e-cigarette-forum.com/threads/panasonic-cgr18650ch...
Full cell database	cellsaviors.com/cell-database