

Illustrative render generated from published specifications

18.6 × 65.2 mm
45 g

Panasonic
CGR18650CG



Live page & updates

Panasonic · released 2008

18650 NMC

2,250 mAh CAPACITY	— A RATED CONTINUOUS	3.6 V NOMINAL · 3 – 4.2 V	8.1 Wh ENERGY · 180 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 18650S

#81 of 169

Lowest in databaseHighest

A mid-range 18650 cell. Solid for builds that don't need extreme capacity or discharge.

VOLTAGE OPERATING WINDOW

1.2 V usable

Cutoff 3 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.

IDENTITY

Manufacturer	Panasonic
Model	CGR18650CG
Format	18650
Chemistry	NMC
Year released	2008
Wrap colour	Green (Light)
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	180 Wh/kg
Volumetric density	457.22 Wh/L
Capacity ranking	#81 of 169 18650s

PHYSICAL

Diameter	18.6 mm
Length	65.2 mm
Weight	45 g

ELECTRICAL

Rated capacity	2,250 mAh
Nominal voltage	3.6 V
Max charge voltage	4.2 V
Discharge cutoff	3 V
Energy	8.1 Wh
Standard charge current	1,500 mA
Typical charge time	1.5 h
Standard discharge	430mA
Cycle life	500 cycles

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

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
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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 · ≈0.63 kg cells	13S4P 48V ebike standard 52 cells · 46.8 V 9,000 mAh · 421 Wh · ≈2.34 kg cells	16S4P DIY powerwall 64 cells · 57.6 V 9,000 mAh · 518 Wh · ≈2.88 kg cells	4S6P Power tool replacement 24 cells · 14.4 V 13,500 mAh · 194 Wh · ≈1.08 kg cells
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SIMILAR CELLS

Same format and chemistry, within ±500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Panasonic CGR18650CG (this cell)	2,250	—	8.1	45 g	180
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 3V.
- 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-cgr18650cg
Manufacturer datasheet	https://www.master-instruments.com.au/file/59576/1/Panasonic-C...
Full cell database	cellsaviors.com/cell-database