

Illustrative render generated from published specifications

18.6 × 65.2 mm
42.5 g

Panasonic
CGR18650AF



Live page & updates

Panasonic · released 2007

18650 NMC

2,050 mAh CAPACITY	— A RATED CONTINUOUS	3.6 V NOMINAL · 3 – 4.2 V	7.38 Wh ENERGY · 173.65 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

#126 of 169

Lowest in database

Highest

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 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.

IDENTITY

Manufacturer	Panasonic
Model	CGR18650AF
Format	18650
Chemistry	NMC
Year released	2007
Wrap colour	Green
Insulator	White
Terminal	Flat top
Protection	Unprotected

ENERGY & POWER DENSITY

Energy	7.38 Wh
Specific energy	173.65 Wh/kg
Volumetric density	416.57 Wh/L
Capacity ranking	#126 of 169 18650s

PHYSICAL

Diameter	18.6 mm
Length	65.2 mm
Weight	42.5 g

ELECTRICAL

Rated capacity	2,050 mAh
Nominal voltage	3.6 V
Max charge voltage	4.2 V
Discharge cutoff	3 V
Energy	7.38 Wh
Standard charge current	1,365 mA
Typical charge time	1.5 h
Standard discharge	390mA

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
0.5C	1,025 mA	~2h 00m
Standard	1,365 mA	~1h 30m
1C	2,050 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	6.1 Ah	66 Wh
7S	25.2 V	29.4 V	21	6.1 Ah	155 Wh
10S	36 V	42 V	30	6.1 Ah	221 Wh

13S	46.8 V	54.6 V	39	6.1 Ah	288 Wh
14S	50.4 V	58.8 V	42	6.1 Ah	310 Wh

EXAMPLE PACKS

7S2P 24V ebike / small pack 14 cells · 25.2 V 4,100 mAh · 103 Wh · ≈0.6 kg cells	13S4P 48V ebike standard 52 cells · 46.8 V 8,200 mAh · 384 Wh · ≈2.21 kg cells	16S4P DIY powerwall 64 cells · 57.6 V 8,200 mAh · 472 Wh · ≈2.72 kg cells	4S6P Power tool replacement 24 cells · 14.4 V 12,300 mAh · 177 Wh · ≈1.02 kg cells
---	---	--	---

SIMILAR CELLS

Same format and chemistry, within ±500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Panasonic CGR18650AF (this cell)	2,050	—	7.38	42.5 g	174
Panasonic CGR18650EA	2,550	4.9 A	9.4	46.5 g	203
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
EVE ICR18650-26V	2,550	7 A	9.2	—	—

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-cgr18650af
Manufacturer datasheet	https://www.megacellmonitor.com/pdf/vendor_specs/SPEC_PANASONI...
Full cell database	cellsaviors.com/cell-database