Illustrative render generated from published specifications

Panasonic NCR18650PD

Panasonic · released 2013

18650 NMC

Live page & updates

2,900 mAh	10 A	3.7 V	10.73 Wh
CAPACITY	RATED CONTINUOUS	NOMINAL · 2.5 – 4.2 V	ENERGY · 241.12 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

#25 of 169

Lowest in database — Highest

Top tier for both capacity and discharge. One of the best all-around 18650 cells.

VOLTAGE OPERATING WINDOW

1.7 V usable

Cutoff 2.5 V — Nominal 3.7 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	Good balance of capacity for range and discharge for hills. Works well in most ebike packs.
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	Decent runtime. Works well for most flashlights.
Power tools	May work for lighter-duty tools. Check your tool's current requirements.

IDENTITY

Manufacturer	**Panasonic**
Model	**NCR18650PD**
Format	**18650**
Chemistry	**NMC**
Year released	**2013**
Wrap colour	**Green (Light)**
Insulator	**White**
Terminal	**Flat top**
Protection	**Unprotected**

OPERATING TEMPERATURE

Discharging	**-20°C to 60°C**

ENERGY & POWER DENSITY

Energy	**10.73 Wh**
Specific energy	**241.12 Wh/kg**
Power density (mass)	**831 W/kg**
Capacity ranking	**#25 of 169 18650s**

PHYSICAL

Weight	**44.5 g**

ELECTRICAL

Rated capacity	**2,900 mAh**
Nominal voltage	**3.7 V**
Max charge voltage	**4.2 V**
Discharge cutoff	**2.5 V**
Energy	**10.73 Wh**
Max continuous discharge	**10 A (datasheet)**
Discharge C-rate	**3.4C**
Standard charge current	**825 mA**
Typical charge time	**3.5 h**
Standard discharge	**550mA**

C-RATE CONVERSION · 2,900 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	0.58 A	5h 00m
0.5C	1.45 A	2h 00m
1C	2.9 A	1h 00m
2C	5.8 A	30m
3C	8.7 A	20m

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

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL

Standard	825 mA	~3h 31m
0.5C	1,450 mA	~2h 00m
1C	2,900 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	11.1 V	12.6 V	9	8.7 Ah	97 Wh
7S	25.9 V	29.4 V	21	8.7 Ah	225 Wh
10S	37 V	42 V	30	8.7 Ah	322 Wh
13S	48.1 V	54.6 V	39	8.7 Ah	418 Wh
14S	51.8 V	58.8 V	42	8.7 Ah	451 Wh

EXAMPLE PACKS

7S2P
24V ebike / small pack

14 cells · 25.9 V

5,800 mAh · 150 Wh

20 A max · ≈0.62 kg cells

13S4P
48V ebike standard

52 cells · 48.1 V

11,600 mAh · 558 Wh

40 A max · ≈2.31 kg cells

16S4P
DIY powerwall

64 cells · 59.2 V

11,600 mAh · 687 Wh

40 A max · ≈2.85 kg cells

4S6P
Power tool replacement

24 cells · 14.8 V

17,400 mAh · 258 Wh

60 A max · ≈1.07 kg cells

SIMILAR CELLS

Same format and chemistry, within ±500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Panasonic NCR18650PD (this cell)	**2,900**	**10 A**	**10.73**	**44.5 g**	**241**
LG LGABF1L1865	3,350	4.9 A	12.2	49 g	248
LG LGGBF1L1865	3,350	4.9 A	12.2	—	—
Panasonic NCR18650B	3,350	4 A	12.1	47.5 g	254
LG LGABE11865	3,200	9 A	12	49 g	245
LG LGEBE11865	3,200	4.9 A	12	—	—

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/panasonic-ncr18650pd
Full cell database	cellsaviors.com/cell-database