

Illustrative render generated from published specifications

18.25 × 65.1 mm
49.5 g

Panasonic
NCR18650BD



Live page & updates

Panasonic

18650 NMC

MOOCH-TESTED · 10 A

3,100 mAh CAPACITY	10 A MOOCH CONTINUOUS	3.6 V NOMINAL · 2.5 – 4.2 V	11.16 Wh ENERGY · 225.45 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 #14 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 3.6 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.
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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	High capacity means long runtime. Great for everyday carry and extended use.
Power tools	May work for lighter-duty tools. Check your tool's current requirements.

IDENTITY

Manufacturer	Panasonic
Model	NCR18650BD
Format	18650
Chemistry	NMC
Wrap colour	Grey
Insulator	White
Terminal	Flat top
Protection	Unprotected

OPERATING TEMPERATURE

Charging	10°C to 45°C
Discharging	-20°C to 60°C

ENERGY & POWER DENSITY

Energy	11.16 Wh
Specific energy	225.45 Wh/kg
Volumetric density	655.34 Wh/L
Power density (mass)	727 W/kg
Power density (volume)	2,114 W/L
Capacity ranking	#14 of 169 18650s

PHYSICAL

Diameter	18.25 mm
Length	65.1 mm
Weight	49.5 g

ELECTRICAL

Rated capacity	3,100 mAh
Nominal voltage	3.6 V
Max charge voltage	4.2 V
Discharge cutoff	2.5 V
Energy	11.16 Wh
Internal resistance	35 mΩ
Max continuous discharge	10 A (mooch)
Discharge C-rate	3.2C
Standard charge current	900 mA
Typical charge time	3.4 h
Standard discharge	610mA
Cycle life	1,500 cycles

C-RATE CONVERSION · 3,100 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	0.62 A	5h 00m
0.5C	1.55 A	2h 00m
1C	3.1 A	1h 00m
2C	6.2 A	30m
3C	9.3 A	20m

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

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
Standard	900 mA	~3h 27m
0.5C	1,550 mA	~2h 00m
1C	3,100 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	9.3 Ah	100 Wh
7S	25.2 V	29.4 V	21	9.3 Ah	234 Wh
10S	36 V	42 V	30	9.3 Ah	335 Wh
13S	46.8 V	54.6 V	39	9.3 Ah	435 Wh
14S	50.4 V	58.8 V	42	9.3 Ah	469 Wh

EXAMPLE PACKS

7S2P 24V ebike / small pack 14 cells · 25.2 V 6,200 mAh · 156 Wh 20 A max · ≈0.69 kg cells	13S4P 48V ebike standard 52 cells · 46.8 V 12,400 mAh · 580 Wh 40 A max · ≈2.57 kg cells	16S4P DIY powerwall 64 cells · 57.6 V 12,400 mAh · 714 Wh 40 A max · ≈3.17 kg cells	4S6P Power tool replacement 24 cells · 14.4 V 18,600 mAh · 268 Wh 60 A max · ≈1.19 kg cells
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SIMILAR CELLS

Same format and chemistry, within ± 500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Panasonic NCR18650BD (this cell)	3,100	10 A	11.16	49.5 g	225
LG LGEBMJ11865	3,500	10 A	12.7	—	—
LG LGDBMJ11865	3,500	10 A	12.7	49 g	259
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

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-ncr18650bd
Manufacturer datasheet	https://evwest.com/support/panasonic-ncr18650bd-datasheet.pdf
Independent test (Mooch)	https://www.e-cigarette-forum.com/threads/panasonic-ncr18650bd...
Full cell database	cellsaviors.com/cell-database