

Illustrative render generated from published specifications

18 × 65 mm
46 g

PKCELL
ICR18650-
2200mAh



Live page & updates

PKCELL · released 2014

18650 NMC

2,200 mAh CAPACITY	4.4 A RATED CONTINUOUS	3.7 V NOMINAL · 3 – 4.2 V	8.14 Wh ENERGY · 176.96 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 #87 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 3.7 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.
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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	Usable for powerwalls but lower capacity means you'll need more cells to hit your target kWh.
● Ebike packs	Not enough discharge for ebike use. Voltage sag would be a problem under load.
● Car audio	Not enough discharge for car audio amplifiers. You need at least 15-20A continuous for most setups.
● 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	Not enough discharge or capacity for power tool use.

IDENTITY

Manufacturer	PKCELL
Model	ICR18650-2200mAh
Format	18650
Chemistry	NMC
Year released	2014
Wrap colour	■ Blue
Insulator	■ Black
Terminal	Flat top
Protection	Unprotected

OPERATING TEMPERATURE

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

ENERGY & POWER DENSITY

Energy	8.14 Wh
Specific energy	176.96 Wh/kg
Volumetric density	492.13 Wh/L
Power density (mass)	354 W/kg
Power density (volume)	984 W/L
Capacity ranking	#87 of 169 18650s

C-RATE CONVERSION · 2,200 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	0.44 A	5h 00m
0.5C	1.1 A	2h 00m
1C	2.2 A	1h 00m
2C	4.4 A	30m

Highlighted row is closest to the rated 4.4 A continuous discharge.

PHYSICAL

Diameter	18 mm
Length	65 mm
Weight	46 g

ELECTRICAL

Rated capacity	2,200 mAh
Nominal voltage	3.7 V
Max charge voltage	4.2 V
Discharge cutoff	3 V
Energy	8.14 Wh
Max continuous discharge	4.4 A (datasheet)
Discharge C-rate	2C
Standard charge current	1,100 mA
Typical charge time	2 h
Standard discharge	440mA
Cycle life	500 cycles

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
0.5C	1,100 mA	~2h 00m
1C	2,200 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	6.6 Ah	73 Wh
7S	25.9 V	29.4 V	21	6.6 Ah	171 Wh
10S	37 V	42 V	30	6.6 Ah	244 Wh
13S	48.1 V	54.6 V	39	6.6 Ah	317 Wh
14S	51.8 V	58.8 V	42	6.6 Ah	342 Wh

EXAMPLE PACKS

7S2P 24V ebike / small pack 14 cells · 25.9 V 4,400 mAh · 114 Wh 9 A max · ≈0.64 kg cells	13S4P 48V ebike standard 52 cells · 48.1 V 8,800 mAh · 423 Wh 18 A max · ≈2.39 kg cells	16S4P DIY powerwall 64 cells · 59.2 V 8,800 mAh · 521 Wh 18 A max · ≈2.94 kg cells	4S6P Power tool replacement 24 cells · 14.8 V 13,200 mAh · 195 Wh 26 A max · ≈1.1 kg cells
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SIMILAR CELLS

Same format and chemistry, within ± 500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
PKCELL ICR18650-2200mAh (this cell)	2,200	4.4 A	8.14	46 g	177
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	—	—
Sanyo UR18650ZTA	2,620	5.8 A	9.7	48 g	202

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/pkcell-icr18650-2200mah
Manufacturer datasheet	https://cdn-shop.adafruit.com/product-files/1781/C2253_-_ICR18...
Full cell database	cellsaviors.com/cell-database