Illustrative render generated from published specifications

18.6 × 69.08 mm

Nitecore NL1831

Nitecore · released 2017

18650 NMC

MOOCH-TESTED · 35 A

Live page & updates

3,100 mAh	35 A	3.6 V	11.16 Wh
CAPACITY	MOOCH CONTINUOUS	NOMINAL · 2.5 – 4.2 V	ENERGY

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 — #31 of 279

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.

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	Enough discharge to handle amplifier bursts without voltage sag.
High-drain vaping	Above the 25A Mooch CDR threshold. Suitable for regulated and mechanical mods.
Flashlights	High capacity means long runtime. Great for everyday carry and extended use.
Power tools	Sufficient discharge and capacity for most power tool packs.

IDENTITY

Manufacturer	**Nitecore**
Model	**NL1831**
Format	**18650**
Chemistry	**NMC**
Year released	**2017**
Wrap colour	**Blue**
Terminal	**Button top**
Protection	**Protected**

OPERATING TEMPERATURE

Charging	**0°C to 50°C**
Discharging	**-20°C to 75°C**

ENERGY & POWER DENSITY

Energy	**11.16 Wh**
Volumetric density	**594.56 Wh/L**
Power density (volume)	**6,713 W/L**
Capacity ranking	**#31 of 279 18650s**

PHYSICAL

Diameter	**18.6 mm**
Length	**69.08 mm**

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	**22 mΩ**
Max continuous discharge	**35 A (mooch)**
Discharge C-rate	**11.3C**
Standard charge current	**1,500 mA**
Typical charge time	**2.1 h**
Standard discharge	**600mA**
Cycle life	**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
5C	15.5 A	12m
8C	24.8 A	7m 30s
10C	31 A	6m

Highlighted row is closest to the rated 35 A continuous discharge.

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
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

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	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

70 A max

13S4P

48V ebike standard

52 cells · 46.8 V

12,400 mAh · 580 Wh

140 A max

16S4P

DIY powerwall

64 cells · 57.6 V

12,400 mAh · 714 Wh

140 A max

4S6P

Power tool replacement

24 cells · 14.4 V

18,600 mAh · 268 Wh

210 A max

SIMILAR CELLS

Same format and chemistry, within ±500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Nitecore NL1831 (this cell)	**3,100**	**35 A**	**11.16**	**—**	**—**
LG LGEBMJ11865	3,500	10 A	12.7	49 g	260
LG LGDBMJ11865	3,500	10 A	12.7	49 g	259
AWT AWT 35A 3500mAh	3,500	35 A	12.6	50 g	252
Epoch PROTECTED	3,500	8 A	12.6	49.1 g	257
EVE INR18650-35V	3,500	10 A	12.6	47 g	268

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/nitecore-nl1831
Independent test (Mooch)	https://www.e-cigarette-forum.com/threads/nitecore-35a-3100mah...
Full cell database	cellsaviors.com/cell-database