18.35 × 65.1 mm
47 g

Sony US18650V3

Sony · released 2011

18650 NCA

Live page & updates

2,150 mAh	10 A	3.6 V	7.74 Wh
CAPACITY	RATED CONTINUOUS	NOMINAL · 2.5 – 4.2 V	ENERGY · 164.68 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.

CAPACITY AMONG 18650S — #206 of 279

Lowest in database — Highest

A mid-range 18650 cell. Solid for builds that don't need extreme capacity or discharge.

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	Usable for powerwalls but lower capacity means you'll need more cells to hit your target kWh.
Ebike packs	Marginal. Check your motor's peak draw first. You might get voltage sag under load.
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	Lower capacity means shorter runtime. Better cells are available for flashlight use.
Power tools	May work for lighter-duty tools. Check your tool's current requirements.

IDENTITY

Manufacturer	**Sony**
Model	**US18650V3**
Format	**18650**
Chemistry	**NCA**
Year released	**2011**
Wrap colour	**Green**
Insulator	**Black**
Terminal	**Button top**
Protection	**Unprotected**

OPERATING TEMPERATURE

Discharging	**-20°C to 60°C**

ENERGY & POWER DENSITY

Energy	**7.74 Wh**
Specific energy	**164.68 Wh/kg**
Volumetric density	**449.57 Wh/L**
Power density (mass)	**766 W/kg**
Power density (volume)	**2,091 W/L**
Capacity ranking	**#206 of 279 18650s**

PHYSICAL

Diameter	**18.35 mm**
Length	**65.1 mm**
Weight	**47 g**

ELECTRICAL

Rated capacity	**2,150 mAh**
Nominal voltage	**3.6 V**
Max charge voltage	**4.2 V**
Discharge cutoff	**2.5 V**
Energy	**7.74 Wh**
Internal resistance	**40 mΩ**
Max continuous discharge	**10 A (datasheet)**
Discharge C-rate	**4.7C**
Standard charge current	**1,075 mA**
Typical charge time	**2 h**
Standard discharge	**1075mA**
Cycle life	**500 cycles**

C-RATE CONVERSION · 2,150 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	0.43 A	5h 00m
0.5C	1.08 A	2h 00m
1C	2.15 A	1h 00m
2C	4.3 A	30m
3C	6.45 A	20m

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

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
0.5C	1,075 mA	~2h 00m
1C	2,150 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	6.4 Ah	70 Wh
7S	25.2 V	29.4 V	21	6.4 Ah	163 Wh
10S	36 V	42 V	30	6.4 Ah	232 Wh
13S	46.8 V	54.6 V	39	6.4 Ah	302 Wh
14S	50.4 V	58.8 V	42	6.4 Ah	325 Wh

EXAMPLE PACKS

7S2P

24V ebike / small pack

14 cells · 25.2 V

4,300 mAh · 108 Wh

20 A max · ≈0.66 kg cells

13S4P

48V ebike standard

52 cells · 46.8 V

8,600 mAh · 402 Wh

40 A max · ≈2.44 kg cells

16S4P

DIY powerwall

64 cells · 57.6 V

8,600 mAh · 495 Wh

40 A max · ≈3.01 kg cells

4S6P

Power tool replacement

24 cells · 14.4 V

12,900 mAh · 186 Wh

60 A max · ≈1.13 kg cells

SIMILAR CELLS

Same format and chemistry, within ±500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Sony US18650V3 (this cell)	**2,150**	**10 A**	**7.74**	**47 g**	**165**
Sony US18650GS	2,200	4.4 A	7.9	45.5 g	174

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/sony-us18650v3
Manufacturer datasheet	https://www.batteryspace.com/prod-specs/9091_specification.pdf
Full cell database	cellsaviors.com/cell-database