18.35 × 65.1 mm
45.5 g

Sony US18650GS

Sony

18650 NCA

Live page & updates

2,200 mAh	4.4 A	3.6 V	7.92 Wh
CAPACITY	RATED CONTINUOUS	NOMINAL · 2.5 – 4.2 V	ENERGY · 174.07 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 — #170 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	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	**Sony**
Model	**US18650GS**
Format	**18650**
Chemistry	**NCA**
Wrap colour	**Green**
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	**7.92 Wh**
Specific energy	**174.07 Wh/kg**
Volumetric density	**460.03 Wh/L**
Power density (mass)	**348 W/kg**
Power density (volume)	**920 W/L**
Capacity ranking	**#170 of 279 18650s**

PHYSICAL

Diameter	**18.35 mm**
Length	**65.1 mm**
Weight	**45.5 g**

ELECTRICAL

Rated capacity	**2,200 mAh**
Nominal voltage	**3.6 V**
Max charge voltage	**4.2 V**
Discharge cutoff	**2.5 V**
Energy	**7.92 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	**2200mA**
Cycle life	**300 cycles**

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.

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	10.8 V	12.6 V	9	6.6 Ah	71 Wh
7S	25.2 V	29.4 V	21	6.6 Ah	166 Wh
10S	36 V	42 V	30	6.6 Ah	238 Wh
13S	46.8 V	54.6 V	39	6.6 Ah	309 Wh
14S	50.4 V	58.8 V	42	6.6 Ah	333 Wh

EXAMPLE PACKS

7S2P

24V ebike / small pack

14 cells · 25.2 V

4,400 mAh · 111 Wh

9 A max · ≈0.64 kg cells

13S4P

48V ebike standard

52 cells · 46.8 V

8,800 mAh · 412 Wh

18 A max · ≈2.37 kg cells

16S4P

DIY powerwall

64 cells · 57.6 V

8,800 mAh · 507 Wh

18 A max · ≈2.91 kg cells

4S6P

Power tool replacement

24 cells · 14.4 V

13,200 mAh · 190 Wh

26 A max · ≈1.09 kg cells

SIMILAR CELLS

Same format and chemistry, within ±500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Sony US18650GS (this cell)	**2,200**	**4.4 A**	**7.92**	**45.5 g**	**174**
Sony US18650V3	2,150	10 A	7.7	47 g	165

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-us18650gs
Manufacturer datasheet	https://www.megacellmonitor.com/pdf/vendor_specs/SPEC_SONY_US1...
Full cell database	cellsaviors.com/cell-database