

Illustrative render generated from published specifications

18.1 × 64.8 mm
44.3 g

Sanyo

UR18650SA



Live page & updates

Sanyo

18650

NMC

1,200 mAh CAPACITY	10 A RATED CONTINUOUS	3.7 V NOMINAL · 2.5 – 4.2 V	4.44 Wh ENERGY · 100.23 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 #166 of 169 Lowest in databaseHighest Higher discharge than 80% of 18650 cells in our database. Great for high-drain builds. VOLTAGE OPERATING WINDOW 1.7 V usable Cutoff 2.5 VNominal 3.7 VMax 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	Too low capacity for practical powerwall use. You'd need too many cells.
Ebike packs	Not enough discharge for ebike use. Voltage sag would be a problem 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	Sanyo
Model	UR18650SA
Format	18650
Chemistry	NMC
Wrap colour	Red
Insulator	Brown
Terminal	Flat top
Protection	Unprotected

OPERATING TEMPERATURE

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

ENERGY & POWER DENSITY

Energy	4.44 Wh
Specific energy	100.23 Wh/kg
Volumetric density	266.29 Wh/L
Power density (mass)	835 W/kg
Power density (volume)	2,219 W/L
Capacity ranking	#166 of 169 18650s

C-RATE CONVERSION · 1,200 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	0.24 A	5h 00m
0.5C	0.6 A	2h 00m
1C	1.2 A	1h 00m
2C	2.4 A	30m
3C	3.6 A	20m
5C	6 A	12m

PHYSICAL

Diameter	18.1 mm
Length	64.8 mm
Weight	44.3 g

ELECTRICAL

Rated capacity	1,200 mAh
Nominal voltage	3.7 V
Max charge voltage	4.2 V
Discharge cutoff	2.5 V
Energy	4.44 Wh
Max continuous discharge	10 A (datasheet)
Discharge C-rate	8.3C
Standard charge current	840 mA
Typical charge time	1.4 h
Standard discharge	240mA

8C	9.6 A	7m 30s
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Highlighted row is closest to the rated 10 A continuous discharge.

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
0.5C	600 mA	~2h 00m
Standard	840 mA	~1h 26m
1C	1,200 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	3.6 Ah	40 Wh
7S	25.9 V	29.4 V	21	3.6 Ah	93 Wh
10S	37 V	42 V	30	3.6 Ah	133 Wh
13S	48.1 V	54.6 V	39	3.6 Ah	173 Wh
14S	51.8 V	58.8 V	42	3.6 Ah	186 Wh

EXAMPLE PACKS

7S2P 24V ebike / small pack 14 cells · 25.9 V 2,400 mAh · 62 Wh 20 A max · ≈0.62 kg cells	13S4P 48V ebike standard 52 cells · 48.1 V 4,800 mAh · 231 Wh 40 A max · ≈2.3 kg cells	16S4P DIY powerwall 64 cells · 59.2 V 4,800 mAh · 284 Wh 40 A max · ≈2.84 kg cells	4S6P Power tool replacement 24 cells · 14.8 V 7,200 mAh · 107 Wh 60 A max · ≈1.06 kg cells
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SIMILAR CELLS

Same format and chemistry, within ± 500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Sanyo UR18650SA (this cell)	1,200	10 A	4.44	44.3 g	100
Sanyo UR18650P	1,700	—	6.3	—	—
Panasonic CGR18650HM	1,630	3.2 A	6	—	—
LG LGDAHB21865	1,500	30 A	5.6	48 g	117
Panasonic CGR18650H	1,500	—	5.6	25 g	222
Samsung INR18650-15R	1,500	—	5.6	—	—

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/sanyo-ur18650sa
Manufacturer datasheet	https://www.hkforceful.com/pdf/4/UR18650SA.pdf
Full cell database	cellsaviors.com/cell-database