

Illustrative render generated from published specifications

18.1 × 64.8 mm
47 g

Sanyo UR18650F

Sanyo · released 2007

18650

NMC



Live page & updates

2,500 mAh CAPACITY	5 A RATED CONTINUOUS	3.7 V NOMINAL · 3 – 4.2 V	9.25 Wh ENERGY · 196.81 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 #63 of 169 Lowest in databaseHighest 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 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.
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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	High capacity means more stored energy per cell. Fewer cells needed for a given kWh target.
Ebike packs	Marginal. Check your motor's peak draw first. You might get voltage sag 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	Decent runtime. Works well for most flashlights.
Power tools	Not enough discharge or capacity for power tool use.

IDENTITY

Manufacturer	Sanyo
Model	UR18650F
Format	18650
Chemistry	NMC
Year released	2007
Wrap colour	Red
Insulator	Blue (Cyan)
Terminal	Flat top
Protection	Unprotected

OPERATING TEMPERATURE

Charging	0°C to 40°C
Discharging	-20°C to 60°C

ENERGY & POWER DENSITY

Energy	9.25 Wh
Specific energy	196.81 Wh/kg
Volumetric density	554.78 Wh/L
Power density (mass)	394 W/kg
Power density (volume)	1,110 W/L
Capacity ranking	#63 of 169 18650s

PHYSICAL

Diameter	18.1 mm
Length	64.8 mm
Weight	47 g

ELECTRICAL

Rated capacity	2,500 mAh
Nominal voltage	3.7 V
Max charge voltage	4.2 V
Discharge cutoff	3 V
Energy	9.25 Wh
Internal resistance	100 mΩ
Max continuous discharge	5 A (datasheet)
Discharge C-rate	2C
Standard charge current	1,750 mA
Typical charge time	1.4 h
Standard discharge	2500mA
Cycle life	300 cycles

C-RATE CONVERSION · 2,500 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	0.5 A	5h 00m
0.5C	1.25 A	2h 00m
1C	2.5 A	1h 00m
2C	5 A	30m

Highlighted row is closest to the rated 5 A continuous discharge.

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
0.5C	1,250 mA	~2h 00m
Standard	1,750 mA	~1h 26m
1C	2,500 mA	~1h 00m

Constant-current phase only. Real charge time runs longer because of the constant-voltage taper at the end.

SERIES PACK CONFIGURATIONS

Voltagess 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	7.5 Ah	83 Wh
7S	25.9 V	29.4 V	21	7.5 Ah	194 Wh
10S	37 V	42 V	30	7.5 Ah	278 Wh
13S	48.1 V	54.6 V	39	7.5 Ah	361 Wh
14S	51.8 V	58.8 V	42	7.5 Ah	389 Wh

EXAMPLE PACKS

7S2P 24V ebike / small pack 14 cells · 25.9 V 5,000 mAh · 130 Wh 10 A max · ≈0.66 kg cells	13S4P 48V ebike standard 52 cells · 48.1 V 10,000 mAh · 481 Wh 20 A max · ≈2.44 kg cells	16S4P DIY powerwall 64 cells · 59.2 V 10,000 mAh · 592 Wh 20 A max · ≈3.01 kg cells	4S6P Power tool replacement 24 cells · 14.8 V 15,000 mAh · 222 Wh 30 A max · ≈1.13 kg cells
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SIMILAR CELLS

Same format and chemistry, within ± 500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Sanyo UR18650F (this cell)	2,500	5 A	9.25	47 g	197
LG LGABD11865	3,000	—	11.3	—	—
LG LGDBD11865	3,000	5.8 A	11.3	48.5 g	232
Samsung ICR18650-30B	2,950	5.9 A	11.2	48 g	232
Samsung ICR18650-30A	3,000	6 A	11.1	48 g	231
LG LGDBHG21865	3,000	20 A	10.8	47 g	230

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 Saviors page	cellsaviors.com/cell-database/sanyo-ur18650f
Manufacturer datasheet	http://www.batteryonestop.com/baotongusa/products/datasheets/l...
Full cell database	cellsaviors.com/cell-database