

Illustrative render generated from published specifications

21.7 × 70.2 mm
70 g

Xtar XTAR 30A
4200mAh



Live page & updates

Xtar

21700

NMC

MOOCH-TESTED · 30 A

4,200 mAh CAPACITY	30 A MOOCH CONTINUOUS	3.6 V NOMINAL · 2.5 – 4.2 V	15.12 Wh ENERGY · 216 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 21700S #47 of 72 Lowest in database Highest A mid-range 21700 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.
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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	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		PHYSICAL	
Manufacturer	Xtar	Diameter	21.7 mm
Model	XTAR 30A 4200mAh	Length	70.2 mm
Format	21700	Weight	70 g
Chemistry	NMC	ELECTRICAL	
Terminal	Flat top	Rated capacity	4,200 mAh
Protection	Unprotected	Nominal voltage	3.6 V
OPERATING TEMPERATURE		Max charge voltage	4.2 V
Charging	0°C to 45°C	Discharge cutoff	2.5 V
Discharging	-40°C to 60°C	Energy	15.12 Wh
ENERGY & POWER DENSITY		Internal resistance	10 mΩ
Energy	15.12 Wh	Max continuous discharge	30 A (mooch)
Specific energy	216 Wh/kg	Discharge C-rate	7.1C
Volumetric density	582.38 Wh/L	Standard charge current	4,200 mA
Power density (mass)	1,543 W/kg	Typical charge time	1 h
Power density (volume)	4,160 W/L	Cycle life	500 cycles
Capacity ranking	#47 of 72 21700s		

C-RATE CONVERSION · 4,200 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	0.84 A	5h 00m
0.5C	2.1 A	2h 00m
1C	4.2 A	1h 00m
2C	8.4 A	30m
3C	12.6 A	20m
5C	21 A	12m

Highlighted row is closest to the rated 30 A continuous discharge.

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
0.5C	2,100 mA	~2h 00m
1C	4,200 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	12.6 Ah	136 Wh
7S	25.2 V	29.4 V	21	12.6 Ah	318 Wh
10S	36 V	42 V	30	12.6 Ah	454 Wh
13S	46.8 V	54.6 V	39	12.6 Ah	590 Wh
14S	50.4 V	58.8 V	42	12.6 Ah	635 Wh

EXAMPLE PACKS

7S2P 24V ebike / small pack 14 cells · 25.2 V 8,400 mAh · 212 Wh 60 A max · ≈0.98 kg cells	13S4P 48V ebike standard 52 cells · 46.8 V 16,800 mAh · 786 Wh 120 A max · ≈3.64 kg cells	16S4P DIY powerwall 64 cells · 57.6 V 16,800 mAh · 968 Wh 120 A max · ≈4.48 kg cells	4S6P Power tool replacement 24 cells · 14.4 V 25,200 mAh · 363 Wh 180 A max · ≈1.68 kg cells
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SIMILAR CELLS

Same format and chemistry, within ± 500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Xtar XTAR 30A 4200mAh (this cell)	4,200	30 A	15.12	70 g	216
BAK 45D	4,500	30 A	16.2	69 g	235
Dmegc 45E	4,500	13 A	16.2	70 g	231
Epoch P45B	4,500	45 A	16.2	70 g	231
Molicel P45B	4,500	45 A	16.2	70 g	231
Samsung INR21700-45T	4,500	35 A	16.2	72 g	225

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/xtar-xtar-30a-4200mah
Independent test (Mooch)	https://www.e-cigarette-forum.com/threads/bench-test-results-x...
Full cell database	cellsaviors.com/cell-database