

Illustrative render generated from published specifications

20.6 × 70.2 mm
57.8 g

Xtar 20700

3000mAh 35A



Live page & updates

Xtar

20700NMC

MOOCH-TESTED · 35 A

3,000 mAh CAPACITY	35 A MOOCH CONTINUOUS	3.6 v NOMINAL · 2.5 – 4.2 V	10.8 Wh ENERGY · 186.85 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 20700S

#8 of 12

Lowest in databaseHighest

Higher discharge than 92% of 20700 cells in our database.

Great for high-drain builds.

VOLTAGE OPERATING WINDOW

1.7 V usable

Cutoff 2.5 VNominal 3.6 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	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	20.6 mm
Model	20700 3000mAh 35A	Length	70.2 mm
Format	20700	Weight	57.8 g
Chemistry	NMC	ELECTRICAL	
Terminal	Flat top		
Protection	Unprotected		
OPERATING TEMPERATURE		Rated capacity	3,000 mAh
		Nominal voltage	3.6 V
		Max charge voltage	4.2 V
Charging	0°C to 60°C	Discharge cutoff	2.5 V
Discharging	-40°C to 60°C	Energy	10.8 Wh
ENERGY & POWER DENSITY		Internal resistance	19 mΩ
		Max continuous discharge	35 A (mooch)
		Discharge C-rate	11.7C
		Standard charge current	3,000 mA
		Typical charge time	1 h
		Standard discharge	560mA
		Cycle life	500 cycles
Energy	10.8 Wh		
Specific energy	186.85 Wh/kg		
Volumetric density	461.6 Wh/L		
Power density (mass)	2,180 W/kg		
Power density (volume)	5,385 W/L		
Capacity ranking	#8 of 12 20700s		

C-RATE CONVERSION · 3,000 MAH

C-RATE	CURRENT	THEORETICAL RUNTIME
0.2C	0.6 A	5h 00m
0.5C	1.5 A	2h 00m
1C	3 A	1h 00m
2C	6 A	30m
3C	9 A	20m
5C	15 A	12m
8C	24 A	7m 30s
10C	30 A	6m

Highlighted row is closest to the rated 35 A continuous discharge.

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
0.5C	1,500 mA	~2h 00m
1C	3,000 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	9 Ah	97 Wh
7S	25.2 V	29.4 V	21	9 Ah	227 Wh
10S	36 V	42 V	30	9 Ah	324 Wh
13S	46.8 V	54.6 V	39	9 Ah	421 Wh
14S	50.4 V	58.8 V	42	9 Ah	454 Wh

EXAMPLE PACKS

7S2P 24V ebike / small pack 14 cells · 25.2 V 6,000 mAh · 151 Wh 70 A max · ≈0.81 kg cells	13S4P 48V ebike standard 52 cells · 46.8 V 12,000 mAh · 562 Wh 140 A max · ≈3.01 kg cells	16S4P DIY powerwall 64 cells · 57.6 V 12,000 mAh · 691 Wh 140 A max · ≈3.7 kg cells	4S6P Power tool replacement 24 cells · 14.4 V 18,000 mAh · 259 Wh 210 A max · ≈1.39 kg cells
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SIMILAR CELLS

Same format and chemistry, within ± 500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
Xtar 20700 3000mAh 35A (this cell)	3,000	35 A	10.8	57.8 g	187
Vapcell GOLD 30A 3200mAh	3,200	30 A	11.5	60 g	192
Dyson INR-20700A	3,000	35 A	10.8	57.8 g	187
Efest INR20700	3,000	30 A	10.8	57.8 g	187
Energig EC-27HC	2,950	35 A	10.6	60 g	177
Molicel INR20700A	2,800	35 A	10.1	57.8 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 Savors page	cellsaviors.com/cell-database/xtar-20700-3000mah-35a
Independent test (Mooch)	https://www.e-cigarette-forum.com/threads/bench-test-results-x...
Full cell database	cellsaviors.com/cell-database