

Illustrative render generated from published specifications

20.33 × 69.85 mm
50 g

AWT AWT 40A
4200mAh



Live page & updates

AWT · released 2017

20700

NMC

MOOCH-TESTED · 40 A

4,200 mAh CAPACITY	40 A MOOCH CONTINUOUS	3.6 V NOMINAL · 2.5 – 4.2 V	15.12 Wh ENERGY · 302.4 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

#2 of 12

Lowest in database

Highest

Top tier for both capacity and discharge. One of the best all-around 20700 cells.

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	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	AWT	Diameter	20.33 mm
Model	AWT 40A 4200mAh	Length	69.85 mm
Format	20700	Weight	50 g
Chemistry	NMC	ELECTRICAL	
Year released	2017	Rated capacity	4,200 mAh
Terminal	Flat top	Nominal voltage	3.6 V
Protection	Unprotected	Max charge voltage	4.2 V
OPERATING TEMPERATURE		Discharge cutoff	2.5 V
Charging	10°C to 45°C	Energy	15.12 Wh
Discharging	-10°C to 60°C	Max continuous discharge	40 A (mooch)
ENERGY & POWER DENSITY		Discharge C-rate	9.5C
Energy	15.12 Wh	Standard charge current	1,500 mA
Specific energy	302.4 Wh/kg	Typical charge time	2.8 h
Volumetric density	666.84 Wh/L		
Power density (mass)	2,880 W/kg		
Power density (volume)	6,351 W/L		
Capacity ranking	#2 of 12 20700s		
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	
8C	33.6 A	7m 30s	

10C

42 A

6m

Highlighted row is closest to the rated 40 A continuous discharge.

CHARGING

RATE	CURRENT	ESTIMATED TIME TO FULL
Standard	1,500 mA	~2h 48m
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 80 A max · ≈0.7 kg cells	13S4P 48V ebike standard 52 cells · 46.8 V 16,800 mAh · 786 Wh 160 A max · ≈2.6 kg cells	16S4P DIY powerwall 64 cells · 57.6 V 16,800 mAh · 968 Wh 160 A max · ≈3.2 kg cells	4S6P Power tool replacement 24 cells · 14.4 V 25,200 mAh · 363 Wh 240 A max · ≈1.2 kg cells
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SIMILAR CELLS

Same format and chemistry, within ±500 mAh.

CELL	MAH	CONTINUOUS	WH	WEIGHT	WH/KG
AWT AWT 40A 4200mAh (this cell)	4,200	40 A	15.12	50 g	302
Molicel M42A	4,000	20 A	14.4	62 g	232

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/awt-awt-40a-4200mah
Independent test (Mooch)	https://www.e-cigarette-forum.com/threads/bench-test-results-a...
Full cell database	cellsaviors.com/cell-database