

Illustrative render generated from published specifications

20.39 × 70.3 mm  
60 g

Energig EC-27HC

Energig · released 2017

20700 NMC

MOOCH-TESTED · 35 A



Live page & updates

|                                          |                                             |                                                   |                                                   |
|------------------------------------------|---------------------------------------------|---------------------------------------------------|---------------------------------------------------|
| <div>2,950 mAh</div> <div>CAPACITY</div> | <div>35 A</div> <div>MOOCH CONTINUOUS</div> | <div>3.6 V</div> <div>NOMINAL · 2.5 – 4.2 V</div> | <div>10.62 Wh</div> <div>ENERGY · 177 WH/KG</div> |
|------------------------------------------|---------------------------------------------|---------------------------------------------------|---------------------------------------------------|

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.

|                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>CAPACITY AMONG 20700S</div> <div>#11 of 12</div> <div><div></div></div> <div>Lowest in databaseHighest</div> <div>Higher discharge than 92% of 20700 cells in our database.</div> <div>Great for high-drain builds.</div> | <div>VOLTAGE OPERATING WINDOW</div> <div>1.7 V usable</div> <div><div></div></div> <div>Cutoff 2.5 VNominal 3.6 VMax 4.2 V</div> <div>Below nominal the cell sags fast under load; above it, the last of the capacity fills slowly on the constant-voltage taper.</div> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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       | Decent runtime. Works well for most flashlights.                                            |
| Power tools       | Sufficient discharge and capacity for most power tool packs.                                |

IDENTITY

|               |             |
|---------------|-------------|
| Manufacturer  | Energig     |
| Model         | EC-27HC     |
| Format        | 20700       |
| Chemistry     | NMC         |
| Year released | 2017        |
| Terminal      | Flat top    |
| Protection    | Unprotected |

OPERATING TEMPERATURE

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

ENERGY & POWER DENSITY

|                        |                  |
|------------------------|------------------|
| Energy                 | 10.62 Wh         |
| Specific energy        | 177 Wh/kg        |
| Volumetric density     | 462.64 Wh/L      |
| Power density (mass)   | 2,100 W/kg       |
| Power density (volume) | 5,489 W/L        |
| Capacity ranking       | #11 of 12 20700s |

PHYSICAL

|          |          |
|----------|----------|
| Diameter | 20.39 mm |
| Length   | 70.3 mm  |
| Weight   | 60 g     |

ELECTRICAL

|                          |              |
|--------------------------|--------------|
| Rated capacity           | 2,950 mAh    |
| Nominal voltage          | 3.6 V        |
| Max charge voltage       | 4.2 V        |
| Discharge cutoff         | 2.5 V        |
| Energy                   | 10.62 Wh     |
| Internal resistance      | 18.6 mΩ      |
| Max continuous discharge | 35 A (mooch) |
| Discharge C-rate         | 11.9C        |
| Standard charge current  | 3,000 mA     |
| Typical charge time      | 1 h          |

C-RATE CONVERSION · 2,950 MAH

| C-RATE | CURRENT | THEORETICAL RUNTIME |
|--------|---------|---------------------|
| 0.2C   | 0.59 A  | 5h 00m              |
| 0.5C   | 1.48 A  | 2h 00m              |
| 1C     | 2.95 A  | 1h 00m              |
| 2C     | 5.9 A   | 30m                 |
| 3C     | 8.85 A  | 20m                 |
| 5C     | 14.75 A | 12m                 |
| 8C     | 23.6 A  | 7m 30s              |

10C

29.5 A

6m

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

CHARGING

| RATE | CURRENT  | ESTIMATED TIME TO FULL |
|------|----------|------------------------|
| 0.5C | 1,475 mA | ~2h 00m                |
| 1C   | 2,950 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           | 8.9 Ah   | 96 Wh  |
| 7S     | 25.2 V  | 29.4 V        | 21          | 8.9 Ah   | 223 Wh |
| 10S    | 36 V    | 42 V          | 30          | 8.9 Ah   | 319 Wh |
| 13S    | 46.8 V  | 54.6 V        | 39          | 8.9 Ah   | 414 Wh |
| 14S    | 50.4 V  | 58.8 V        | 42          | 8.9 Ah   | 446 Wh |

EXAMPLE PACKS

|                                                                                                                                                   |                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>7S2P</div> <div>24V ebike / small pack</div> <div>14 cells · 25.2 V</div> <div>5,900 mAh · 149 Wh</div> <div>70 A max · ≈0.84 kg cells</div> | <div>13S4P</div> <div>48V ebike standard</div> <div>52 cells · 46.8 V</div> <div>11,800 mAh · 552 Wh</div> <div>140 A max · ≈3.12 kg cells</div> | <div>16S4P</div> <div>DIY powerwall</div> <div>64 cells · 57.6 V</div> <div>11,800 mAh · 680 Wh</div> <div>140 A max · ≈3.84 kg cells</div> | <div>4S6P</div> <div>Power tool replacement</div> <div>24 cells · 14.4 V</div> <div>17,700 mAh · 255 Wh</div> <div>210 A max · ≈1.44 kg cells</div> |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|

## SIMILAR CELLS

Same format and chemistry, within  $\pm 500$  mAh.

| CELL                               | MAH          | CONTINUOUS  | WH           | WEIGHT      | WH/KG      |
|------------------------------------|--------------|-------------|--------------|-------------|------------|
| <b>Energig EC-27HC (this cell)</b> | <b>2,950</b> | <b>35 A</b> | <b>10.62</b> | <b>60 g</b> | <b>177</b> |
| 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        |
| Xtar 20700 3000mAh 35A             | 3,000        | 35 A        | 10.8         | 57.8 g      | 187        |
| 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         | <a href="https://cellsaviors.com/cell-database/energig-ec-27hc">cellsaviors.com/cell-database/energig-ec-27hc</a>                                 |
| Independent test (Mooch) | <a href="https://www.e-cigarette-forum.com/threads/bench-test-results-e...">https://www.e-cigarette-forum.com/threads/bench-test-results-e...</a> |
| Full cell database       | <a href="https://cellsaviors.com/cell-database">cellsaviors.com/cell-database</a>                                                                 |