

Illustrative render generated from published specifications

18.6 × 65.2 mm  
46 g

Molicel P28A

Molicel · released 2021

18650   NMC

MOOCH-TESTED · 35 A



Live page & updates

|                                          |                                             |                                                   |                                                      |
|------------------------------------------|---------------------------------------------|---------------------------------------------------|------------------------------------------------------|
| <div>2,800 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>10.08 Wh</div> <div>ENERGY · 219.13 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 18650S</div> <div>#77 of 279</div> <div><div></div></div> <div>Lowest in databaseHighest</div> <div>Higher discharge than 94% of 18650 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  | Molicel                     |
| Model         | P28A                        |
| Format        | 18650                       |
| Chemistry     | NMC                         |
| Year released | 2021                        |
| Wrap colour   | <div><div></div> Gray</div> |
| Terminal      | Flat top                    |
| Protection    | Unprotected                 |

OPERATING TEMPERATURE

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

ENERGY & POWER DENSITY

|                        |                   |
|------------------------|-------------------|
| Energy                 | 10.08 Wh          |
| Specific energy        | 219.13 Wh/kg      |
| Volumetric density     | 568.98 Wh/L       |
| Power density (mass)   | 2,739 W/kg        |
| Power density (volume) | 7,112 W/L         |
| Capacity ranking       | #77 of 279 18650s |

PHYSICAL

|          |         |
|----------|---------|
| Diameter | 18.6 mm |
| Length   | 65.2 mm |
| Weight   | 46 g    |

ELECTRICAL

|                          |              |
|--------------------------|--------------|
| Rated capacity           | 2,800 mAh    |
| Nominal voltage          | 3.6 V        |
| Max charge voltage       | 4.2 V        |
| Discharge cutoff         | 2.5 V        |
| Energy                   | 10.08 Wh     |
| Internal resistance      | 20 mΩ        |
| Max continuous discharge | 35 A (mooch) |
| Discharge C-rate         | 12.5C        |
| Standard charge current  | 2,800 mA     |
| Typical charge time      | 1 h          |
| Standard discharge       | 560mA        |
| Cycle life               | 500 cycles   |

C-RATE CONVERSION · 2,800 MAH

| C-RATE | CURRENT | THEORETICAL RUNTIME |
|--------|---------|---------------------|
| 0.2C   | 0.56 A  | 5h 00m              |
| 0.5C   | 1.4 A   | 2h 00m              |
| 1C     | 2.8 A   | 1h 00m              |
| 2C     | 5.6 A   | 30m                 |
| 3C     | 8.4 A   | 20m                 |
| 5C     | 14 A    | 12m                 |

|     |        |        |
|-----|--------|--------|
| 8C  | 22.4 A | 7m 30s |
| 10C | 28 A   | 6m     |

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

CHARGING

| RATE | CURRENT  | ESTIMATED TIME TO FULL |
|------|----------|------------------------|
| 0.5C | 1,400 mA | ~2h 00m                |
| 1C   | 2,800 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           | 8.4 Ah   | 91 Wh  |
| 7S     | 25.2 V  | 29.4 V        | 21          | 8.4 Ah   | 212 Wh |
| 10S    | 36 V    | 42 V          | 30          | 8.4 Ah   | 302 Wh |
| 13S    | 46.8 V  | 54.6 V        | 39          | 8.4 Ah   | 393 Wh |
| 14S    | 50.4 V  | 58.8 V        | 42          | 8.4 Ah   | 423 Wh |

EXAMPLE PACKS

|                                                                                                                                                   |                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>7S2P</div> <div>24V ebike / small pack</div> <div>14 cells · 25.2 V</div> <div>5,600 mAh · 141 Wh</div> <div>70 A max · ≈0.64 kg cells</div> | <div>13S4P</div> <div>48V ebike standard</div> <div>52 cells · 46.8 V</div> <div>11,200 mAh · 524 Wh</div> <div>140 A max · ≈2.39 kg cells</div> | <div>16S4P</div> <div>DIY powerwall</div> <div>64 cells · 57.6 V</div> <div>11,200 mAh · 645 Wh</div> <div>140 A max · ≈2.94 kg cells</div> | <div>4S6P</div> <div>Power tool replacement</div> <div>24 cells · 14.4 V</div> <div>16,800 mAh · 242 Wh</div> <div>210 A max · ≈1.1 kg cells</div> |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|

## SIMILAR CELLS

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

| CELL                     | MAH   | CONTINUOUS | WH    | WEIGHT | WH/KG |
|--------------------------|-------|------------|-------|--------|-------|
| Molicel P28A (this cell) | 2,800 | 35 A       | 10.08 | 46 g   | 219   |
| LG LGABE11865            | 3,200 | 9 A        | 12    | 49 g   | 245   |
| LG LGEBE11865            | 3,200 | 4.9 A      | 12    | 49 g   | 245   |
| Samsung ICR18650-32A     | 3,200 | 6.4 A      | 12    | 50 g   | 240   |
| Sanyo NCR18650GA         | 3,300 | 10 A       | 11.9  | 48 g   | 248   |
| EVE EVE-INR18650/33V     | 3,200 | 10 A       | 11.5  | 48 g   | 240   |

## 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        | <a href="https://cellsaviors.com/cell-database/molice1-p28a">cellsaviors.com/cell-database/molice1-p28a</a>                                       |
| Manufacturer datasheet   | <a href="https://www.molicel.com/wp-content/uploads/INR18650P28A-V1-800...">https://www.molicel.com/wp-content/uploads/INR18650P28A-V1-800...</a> |
| Independent test (Mooch) | <a href="https://www.e-cigarette-forum.com/threads/bench-test-results-m...">https://www.e-cigarette-forum.com/threads/bench-test-results-m...</a> |
| Full cell database       | <a href="https://cellsaviors.com/cell-database">cellsaviors.com/cell-database</a>                                                                 |