



nyobolt

AUTOMOTIVE

Light Commercial Vehicle



Nyobolt ULTRA modules deliver unprecedented power density with symmetrical charge and discharge capability, raising the bar on operational performance and lifestyle convenience. The module has a continuous fast charge capability of up to 12C with 4,000 full charge cycles to 80% state of health (SOH).



Key Features

- Excellent temperature performance by maintaining very low temperature increase via low internal resistance over full SOC range.
- The module has integrated cell voltage and temperature monitoring with passive balancing and isolated SPI communication allowing it to be daisy chained.
- Up to 64 modules can be connected together in series and parallel to form a high power battery up to 1000V.
- The module is liquid cooled via a coldplate that can be supplied as an integrated assembly.

Use in commercial fleet applications:



Maximize fleet productivity by **recharging in less time** than it takes to reload a vehicle



Simplify fleet charging queues by recharging in minutes with a central charge point



Decrease costs for multishift operations by reducing the fleet size



Facilitate just-in-time pick-up/delivery logistics

Specification

HPMOD-ULTRA-390-7S3P

| | |
|---|--|
| Cell Type | 52Ah Pouch |
| Cell Dimensions | 350mm x 104mm x 11.7mm |
| Cell Weight | 820g |
| Module Configuration | 7S3P |
| Rated Capacity / Energy | 156 Ah / 4.1 kWh |
| Nominal Voltage | 25.9 V |
| Max Voltage | 29.4 V |
| Min Voltage | 18.9 V |
| Peak 2 second charge / discharge power | 32kW / 32kW |
| Peak 10 second charge / discharge power | 28kW / 28kW |
| Continuous charge / discharge power | 21kW / 21kW |
| Cycle Life | > 4000 fast charge cycles to 80% SOH |
| Weight (excluding coldplate) | 21.5 kg |
| Dimensions | L390 x W304 x H106 mm (12.6L) |
| Cooling | Coldplate water-glycol (optionally integrated) |
| Operating Temperature | -10 to +40 °C |
| Protection | IP40 |
| Certification | Certified and tested to ECE R100.2 and UN38.3 |

Example Applications

The ULTRA module is scalable in series and parallel to support a range of batteries from 48V to 1000V. This supports application areas such as factory robots and forklift trucks through to electric vehicles for commercial, off-highway and marine.

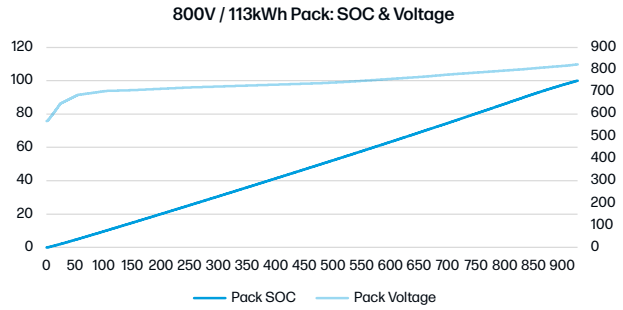
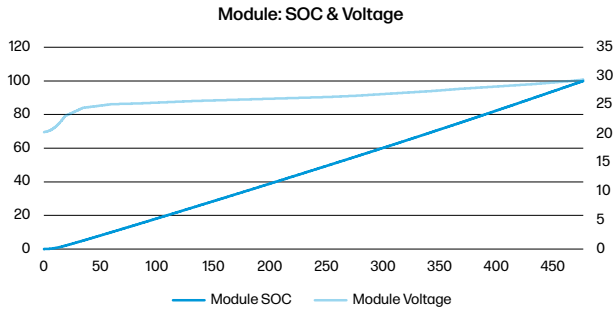
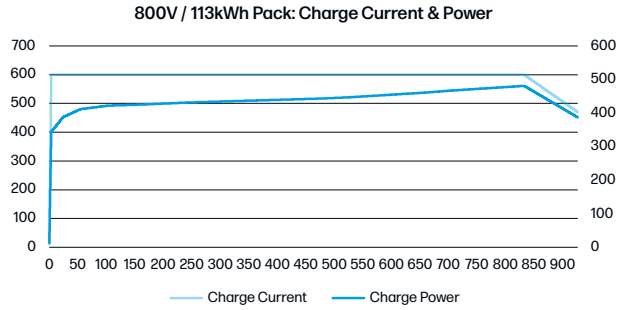
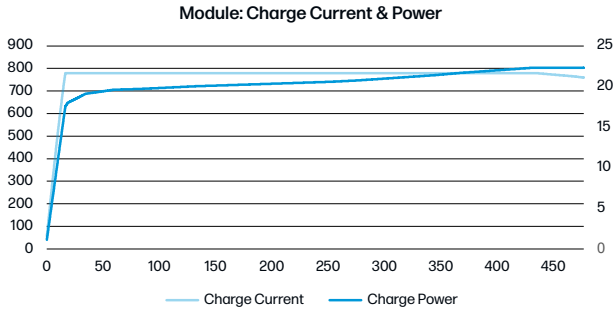
It can be used with the Nyobolt battery management system with its integrated cell monitor interface and power distribution unit. The battery management system has advanced monitoring and software algorithms for tracking the status and health of the battery through its life. The safety architecture comprises a main micro and safety micro to conform with requirements such as ISO 26262 to ASIL-C.

A maximum of 64 modules can be connected to each cell monitor interface which communicates with the battery management system over CAN. The battery management system can support connection of up to 2 cell monitor interfaces to give capability for monitoring up to a total of 768 series cells.

Example specifications for a 400V and 800V battery pack:

| | 400V xEV | 800V xEV |
|---|-----------------|------------------|
| Number of Series Modules | 16 | 28 |
| Number of Parallel Modules | 1 | 1 |
| Rated Capacity / Energy | 156 Ah / 65 kWh | 156 Ah / 113 kWh |
| Usable Energy | 59 kWh | 102 kWh |
| Nominal Voltage | 414 V | 725 V |
| Max Voltage | 470 V | 823 V |
| Min Voltage | 302 V | 529 V |
| Peak 2 second charge / discharge power | 520kW / 520kW | 900kW / 900kW |
| Peak 10 second charge / discharge power | 450kW / 450kW | 780kW / 780kW |
| Continuous charge / discharge power | 330kW / 330kW | 560kW / 560kW |
| 10%-90% Charge time with 500A/350kW Charger | < 10-minutes | < 10-minutes |

Module and Pack Charge profiles, limited to 600kW/600A charger:





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More power in less time

To find out more visit
www.nyobolt.com

Or contact us at
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