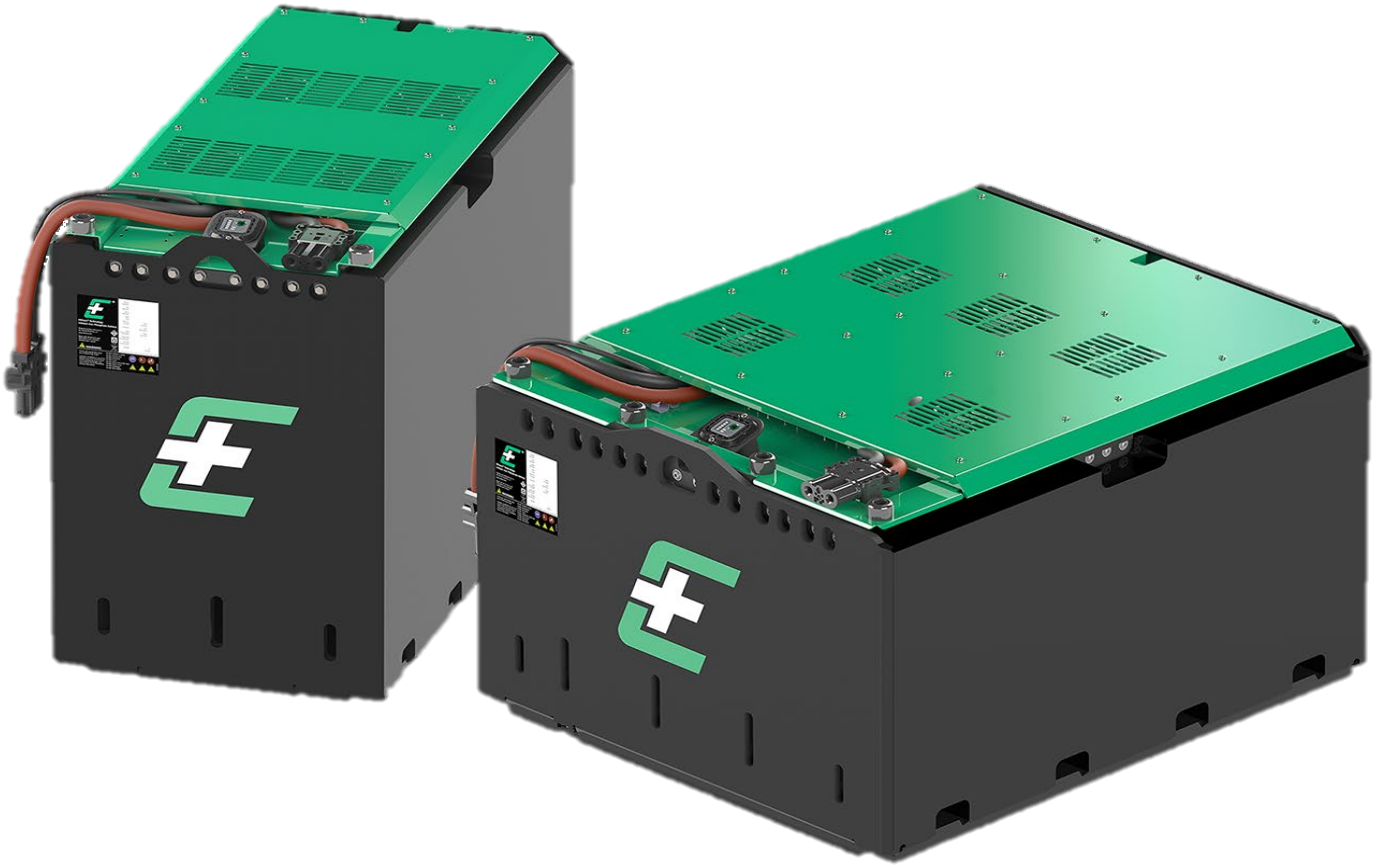


BBR SERIES

LITHIUM-ION BATTERIES

PRODUCT DETAILS



ETHIUM BBR SERIES LITHIUM-ION BATTERIES
ARE ENGINEERED SPECIFICALLY FOR SAFETY
AND TO PROVIDE CONSISTENT AND RELIABLE
POWER TO MATERIAL HANDLING EQUIPMENT FOR
LONG-TERM USE IN ALL WORK ENVIRONMENTS.

BBR PRODUCT DETAILS

| VOLTAGE CLASS | LEAD ACID EQUIVALENT | SERIES NUMBER | ENERGY | CAPACITY [♦] | DIMENSIONS L x W x H in. (mm) | WEIGHT lbs. (kg.) |
|---------------|----------------------|---------------|----------|--------------------------------------------|--------------------------------------------|-------------------|
| 24 VOLTS | 12-125-17 | ET24-2410-18 | 17.9 kWh | 746 Ah | 38.25 x 13.5 x 30.5 (972 x 343 x 775) | 1650 (748) |
| | | ET24-2410-13 | 13.4 kWh | 559 Ah | | |
| | 12-125-17 | ET24-2440-27 | 26.8 kWh | 1119 Ah | 38.25 x 15.125 x 30.5 (972 x 384 x 775) | 2000 (907) |
| | | ET24-2440-22 | 22.4 kWh | 932 Ah | | |
| | 12-125-15 | ET24-2840-13 | 13.4 kWh | 559 Ah | 36 x 14 x 30.5 (914 x 356 x 775) | 1650 (748) |
| | | ET24-2840-9 | 8.9 kWh | 373 Ah | | |
| | 12-125-15 | ET24-2420-13 | 13.4 kWh | 559 Ah | 36 x 14 x 30.5 (914 x 356 x 775) | 790 (358) |
| | | ET24-2420-9 | 8.9 kWh | 373 Ah | | |
| 12-125-13 | ET24-2450-13 | 13.4 kWh | 559 Ah | 30.5 x 12.75 x 31 (775 x 324 x 787) | 965 (438) | |
| | ET24-2450-9 | 8.9 kWh | 373 Ah | | | |
| 36 VOLTS | 18-125-11 | ET36-2410-18 | 18.1 kWh | 503 Ah | 38.25 x 13.5 x 30.5 (972 x 343 x 775) | 1650 (748) |
| | | ET36-2410-13 | 13.6 kWh | 377 Ah | | |
| | 18-125-13 | ET36-2440-27 | 27.1 kWh | 754 Ah | 38.25 x 15.125 x 30.5 (972 x 384 x 775) | 2000 (907) |
| | | ET36-2440-22 | 22.6 kWh | 628 Ah | | |
| | 18-125-15 | ET36-2440-18 | 18.1 kWh | 503 Ah | 38.25 x 17.5 x 30.5 (972 x 445 x 775) | 2500 (1134) |
| | | ET36-2460-27 | 27.1 kWh | 754 Ah | | |
| | 18-125-17 | ET36-2460-22 | 22.6 kWh | 628 Ah | 38.25 x 20.1 x 30.5 (972 x 511 x 775) | 2600 (1179) |
| | | ET36-2480-36 | 36.2 kWh | 1005 Ah | | |
| | 18-125-17 | ET36-2480-31 | 31.7 kWh | 880 Ah | 38.25 x 20.1 x 30.5 (972 x 511 x 775) | 2600 (1179) |
| | | ET36-2480-27 | 27.1 kWh | 754 Ah | | |
| | 18-125-19 | ET36-2490-36 | 36.2 kWh | 1005 Ah | 38.25 x 23 x 30.5 (972 x 584 x 775) | 3100 (1406) |
| | | ET36-2490-31 | 31.7 kWh | 880 Ah | | |
| | 18-125-19 | ET36-2490-27 | 27.1 kWh | 754 Ah | 38.25 x 23 x 30.5 (972 x 584 x 775) | 3100 (1406) |
| | | ET36-2830-23 | 23.3 kWh | 649 Ah | | |
| | 18-85-15 | ET36-2830-17 | 17.5 kWh | 486 Ah | 38.25 x 17.3 x 22.65 (972 x 439 x 575) | 1475 (669) |
| | | ET36-2510-23 | 23.3 kWh | 649 Ah | | |
| | 18-85-17 | ET36-2510-17 | 17.5 kWh | 486 Ah | 38.25 x 20 x 22.65 (972 x 508 x 575) | 2000 (907) |
| | | ET36-2520-29 | 29.2 kWh | 811 Ah | | |
| | 18-85-21 | ET36-2520-23 | 23.3 kWh | 649 Ah | 38.25 x 23.5 x 22.65 (972 x 597 x 575) | 2200 (998) |
| | | ET36-2540-35 | 35 kWh | 973 Ah | | |
| | 18-85-23 | ET36-2540-29 | 29.2 kWh | 811 Ah | 38.25 x 26.75 x 22.65 (972 x 679 x 575) | 2400 (1089) |
| | | ET36-2570-35 | 35 kWh | 973 Ah | | |
| | 18-85-25 | ET36-2570-29 | 29.2 kWh | 811 Ah | 38.25 x 28.75 x 22.65 (972 x 730 x 575) | 2800 (1270) |
| | | ET36-2570-23 | 23.3 kWh | 649 Ah | | |
| | 18-85-27 | ET36-2580-41 | 40.9 kWh | 1135 Ah | 38.25 x 31.5 x 22.65 (972 x 800 x 575) | 2900 (1315) |
| | | ET36-2580-35 | 35 kWh | 973 Ah | | |
| | 18-85-29 | ET36-2590-41 | 40.9 kWh | 1135 Ah | 38.25 x 33.5 x 22.65 (972 x 851 x 575) | 3200 (1451) |
| | | ET36-2590-35 | 35 kWh | 973 Ah | | |
| 18-100-21 | ET36-2530-29 | 29.2 kWh | 811 Ah | 38.25 x 24.75 x 22.65 (972 x 629 x 575) | 2500 (1134) | |
| | ET36-2530-23 | 23.3 kWh | 649 Ah | | | |

♦ Calculation based on Voltage Class

SMART LITHIUM-ION TECHNOLOGY AT WORK

BBR PRODUCT DETAILS

| VOLTAGE CLASS | LEAD ACID EQUIVALENT | SERIES NUMBER | ENERGY | CAPACITY [♦] | DIMENSIONS L x W x H in. (mm) | WEIGHT lbs. (kg.) |
|---------------|----------------------|---------------|----------|------------------------------------------|--------------------------------------------|----------------------|
| 48 VOLTS | 24-85-13 | ET48-2510-23 | 23.3 kWh | 486 Ah | 38.25 x 20 x 22.65 (972 x 508 x 575) | 2000 (907) |
| | | ET48-2510-17 | 17.5 kWh | 365 Ah | | |
| | 24-85-15 | ET48-2520-29 | 29.2 kWh | 608 Ah | 38.25 x 23.5 x 22.65 (972 x 597 x 575) | 2200 (998) |
| | | ET48-2520-23 | 23.3 kWh | 486 Ah | | |
| | 24-85-17 | ET48-2540-35 | 35 kWh | 730 Ah | 38.25 x 26.75 x 22.65 (972 x 679 x 575) | 2400 (1089) |
| | | ET48-2540-29 | 29.2 kWh | 608 Ah | | |
| | 24-85-19 | ET48-2550-35 | 35 kWh | 730 Ah | 38.25 x 29.75 x 22.65 (972 x 756 x 575) | 3000 (1361) |
| | | ET48-2550-29 | 29.2 kWh | 608 Ah | | |
| | 24-85-21 | ET48-2560-41 | 40.9 kWh | 851 Ah | 38.25 x 32.5 x 22.65 (972 x 826 x 575) | 3100 (1406) |
| | | ET48-2560-35 | 35 kWh | 730 Ah | | |
| | | ET48-2560-29 | 29.2 kWh | 608 Ah | | |
| | 24-125-13 | ET48-2810-36 | 35.8 kWh | 746 Ah | 43.5 x 20 x 30.5 (1105 x 508 x 775) | 3000 (1361) |
| ET48-2810-31 | | 31.3 kWh | 653 Ah | | | |
| 24-125-15 | ET48-2820-44 | 44.7 kWh | 932 Ah | 43.5 x 23.5 x 30.5 (1105 x 597 x 775) | 3000 (1361) | |
| | ET48-2820-40 | 40.3 kWh | 839 Ah | | | |
| 80 VOLTS | 40-125-07 | ET72-3310-36 | 36.2 kWh | 503 Ah | 38.25 x 20.1 x 30.5 (972 x 511 x 775) | 2600 (1179) |
| | | ET72-3310-27 | 27.1 kWh | 377 Ah | | |
| | | ET72-3320-36 | 36.2 kWh | 503 Ah | 38.25 x 23 x 30.5 (972 x 584 x 775) | 3100 (1406) |
| | | ET72-3320-27 | 27.1 kWh | 377 Ah | | |
| | 40-125-09 | ET72-3330-54 | 54.3 kWh | 754 Ah | 38.25 x 27 x 30.5 (972 x 686 x 775) | 3500 (1588) |
| | | ET72-3330-45 | 45.2 kWh | 628 Ah | | |
| | 40-125-11 | ET72-3340-63 | 63.3 kWh | 880 Ah | 38.25 x 33 x 30.5 (972 x 838 x 775) | 4000 (1814) |
| | | ET72-3340-54 | 54.3 kWh | 754 Ah | | |
| | 40-125-13 | ET72-3350-63 | 63.3 kWh | 880 Ah | 38.25 x 38.75 x 30.5 (972 x 984 x 775) | 4800 (2177) |
| | | ET72-3350-54 | 54.3 kWh | 754 Ah | | |
| | 40-85-09 | ET72-3410-35 | 35 kWh | 486 Ah | 38.25 x 25.5 x 22.65 (972 x 648 x 575) | 3000 (2177) |
| | 40-85-11 | ET72-3420-35 | 35 kWh | 486 Ah | 38.25 x 31.5 x 22.65 (972 x 800 x 575) | 3000 (2177) |
| | 40-85-13 | ET72-3430-35 | 35 kWh | 486 Ah | 38.25 x 33.5 x 22.65 (972 x 851 x 575) | 3200 (2177) |
| | 40-85-15 | ET72-3440-46 | 46.7 kWh | 649 Ah | 38.25 x 38.5 x 22.65 (972 x 978 x 575) | 3400 (1542) |
| | | ET72-3440-35 | 35 kWh | 486 Ah | | |
| | 40-85-17 | ET72-3450-58 | 58.4 kWh | 811 Ah | 38.25 x 45 x 22.65 (972 x 1143 x 575) | 4000 (1814) |
| ET72-3450-46 | | 46.7 kWh | 649 Ah | | | |

♦ Calculation based on Voltage Class



| VOLTAGE CLASS | NOMINAL VOLTAGE | RECOMMENDED CHARGE VOLTAGE | MAXIMUM CHARGE VOLTAGE |
|---------------|-----------------|----------------------------|------------------------|
| 24 V | 25.6 V | 28.8 V | 29.6 V |
| 36 V | 38.4 V | 43.2 V | 44.4 V |
| 48 V | 51.2 V | 57.6 V | 59.2 V |
| 80 V | 76.8 V | 86.4 V | 88.8 V |

* All data subject to change without notice.

BBR PRODUCT CHARACTERISTICS

| CHARACTERISTICS | VALUE |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Type | Advanced lithium-ion technology with modular scalability |
| Chemistry | Lithium iron phosphate [LiFePO ₄] |
| Battery Management System BMS | Active cell balancing with electronic fusing |
| Complete Thermal Management | Active forced air cooling and heating elements standard on all batteries |
| Charger | Compatible with CAN based chargers |
| Short Circuit Protection | Included |
| Certification | UL 2580 Listed and compliant with UN/DOT 38.3 |
| Communication | CAN Protocols, proprietary messages can be added to interface with vehicle, EControls displays and wireless devices |
| Protection | Internal battery components IP67 rated |
| Discharge Temperature Range* | -40° to 131°F |
| Charge Temperature Range* | -40° to 113°F |
| Storage Temperature Range | -20° to 50°C (-4° to 122°F), long-term storage see operating manual |
| Self Discharge Rate | < 2% / month |
| Warranty Cycle Life** | 4,000 cycles |
| Full Charge Time*** | 1 hour @ 1.0 C |

* Model dependent, actively controlled.

** See User's Manual for complete details.

*** Configuration-dependent: contact EControls for model-specific characteristics.

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