



MP602030 LFP

**Lithium Ion Cell
Medium Power**

3.2 V / 48 Ah / 154 Wh

Physical and Mechanical Characteristics

Diameter	60 mm
Length	232 mm (203 mm without terminals)
Weight	1.2 kg
Volume	0.57 l
Material	aluminum housing Positive terminal: Al M12 length: 10 mm Negative terminal: Cu M12 length: 10 mm

Chemical Characteristics

Cathode	Lithium Iron Phosphate (LFP)
Anode	Graphite

Electrical Characteristics

Reference temperature 23°C +/- 3°C

Nominal operating voltage	3.2 V
Nominal capacity at 0.2 C	48 Ah
AC Impedance (1 kHz)	≤ 0.8 mOhm
DC Resistance (ESR) 2s pulse discharge @ 20°C / 50% SOC	≤ 2.0 mOhm
Specific energy at 0.2 C	110 Wh/kg
Energy density at 0.2 C	270 Wh/l
Specific power 2s pulse discharge @ 50% SOC, 60C	345 W/kg
Power density 2s pulse discharge @ 50% SOC, 60C	840 W/l

Operating Conditions

Reference temperature 23°C +/- 3°C

Recommended charge method	Constant current / Constant voltage
End of charge	$I \leq C/100$
Recommended charge voltage	3.5 V
Maximum charge voltage	3.6 V
Recommended charge current	Up to 24 A (0.5 C)
Maximum continuous charge current	Up to 48 A (1 C)
Maximum pulse charge current (15 s) (Max SOC 70%, average current <88 A)	192 A (4 C)
Recommended voltage limit for discharge	2.5 V
Lower voltage limit for discharge	2.0 V (at high current or low temperature)
Lower voltage limit for pulse discharge	1.5 V
Recommended discharge current	Up to 48 A (1 C)
Maximum continuous discharge current	Up to 144 A (3 C)
Maximum pulse discharge current (2 s)	Up to 380 A (8 C)
Operating temperature	-30°C to +60°C
Recommended charge temperature	0°C to +40°C
Storage and transport temperature	-40°C to +60°C
Recommended storage	+10°C to +25°C, 30-50% SOC
Cycle life at 20°C and 100% DoD, 0.5 C	> 5,000 cycles to 80% of nominal capacity
Cycle life at 20°C and 80% DoD, 0.5 C	> 6,000 cycles to 80% of nominal capacity

Features and Benefits

Solid aluminum construction to ensure high shock resistance	M10 screw terminals allow easy assembly and provide low resistance interface
High maximum pulse discharge to meet exceptional peak demands	Tested and certified to UN 38.3 (<i>not yet completed – expected 1Q20</i>)