



HP601300 LFP 22

22 Ah LFP Lithium Ion Battery Cell

High Power Cell
3.2 V / 70 Wh

The lithium iron phosphate battery cell **HP601300 LFP 22** is ideally suited for applications requiring high power density, high charge and discharge rates and very safe operation.

Features and Benefits

- ▲ Very safe cell chemistry
- ▲ Robust stainless-steel casing avoids corrosion and provides shock resistance for harsh environment applications
- ▲ Ultra-high maximum pulse discharge to meet exceptional peak demands
- ▲ M12 terminals for easy assembly and low resistance interfaces
- ▲ Suitable for low temperature operation
- ▲ Made in Germany
- ▲ UN 38.3 certified

Mechanical Characteristics

Diameter	60	mm
Length	159	mm
Length without terminals	130	mm
Weight	0.9	kg
Volume	0.37	l

Chemical Characteristics

Cathode	Lithium Iron Phosphate (LFP)
Anode	Graphite

Electrical Characteristics

Maximum capacity @ 1 C @ 25 °C	24	Ah
Nominal capacity @ 1 C @ 25 °C	22	Ah
Nominal operating voltage	3.2	V
Charging voltage	3.5	V
Recommended cut-off discharge voltage	2.5	V
Energy	70	Wh

Discharge current @ 25 °C

Recommended	44	A (2 C)
Maximum continuous	550	A (25 C)
Maximum pulse (2 s)	1,320	A (60 C)

Low temperature performance

AC impedance (1 kHz)	See Chart
DC resistance (2 s pulse @ 20 C / 50 % SoC)	< 0.4 mΩ
Specific energy	< 1.0 mΩ
Energy density	78 Wh/kg
	189 Wh/l

Specific power

Continuous discharge @ 25 C / 50 % SoC	1,550	W/kg
2 s pulse discharge @ 60 C / 50 % SoC	3,420	W/kg

Power density

Continuous discharge @ 25 C / 50 % SoC	3,770	W/l
2 s pulse discharge @ 60 C / 50 % SoC	8,330	W/l

Applications and Markets

- ▲ Hybrid electric drives
- ▲ Electric drives
- ▲ Load leveling and peak shaving
- ▲ Boosting and range extension
- ▲ Space
- ▲ Aerospace
- ▲ Defense
- ▲ Marine
- ▲ Heavy duty vehicles
- ▲ Off-Road vehicles
- ▲ Rail and transport
- ▲ Mining

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Operating Conditions

Recommended charging method	Constant Current/ Constant Voltage
Recommended charging voltage	3.5 V (max. 3.6 V)
Recommended continuous charging current	22 A (1 C)
Maximum continuous charging current	110 A (5 C)

Maximum pulse charge current (15 s) (max. 70 % SoC, average current < 110 A)	220 A (10 C)
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Absolute lower voltage limit for discharge	
Continuous @ 25 °C (-30 °C to 60 °C)	2.0 V
Pulse @ 60 °C (-30 °C to 60 °C)	1.5 V

Storage and transport conditions	25 to 50 % SoC
Maximum temperature range	-40 °C to 60 °C
Recommended temperature range	10 °C to 25 °C

Operating temperature	
Discharge	-30 °C to 60 °C
Charge (recommended)	-10 °C to 40 °C

Cycle life @ 20 °C (EoL @ 80 % of nominal capacity)	
100 % DoD, 2 C	> 5,000 cycles
80 % DoD, 2 C	> 6,250 cycles

