HP602030 LFP 40

40 Ah LFP Lithium Ion Battery Cell

High Power Cell
3.2 V / 128 Wh

The lithium iron phosphate battery cell **HP602030 LFP 40** 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	232	mm
Length without terminals	203	mm
Weight	1.3	kg
Volume	0.57	l

Chemical Characteristics

Cathode	Lithium Iron Phosphate (LFP)
Anode	Graphite

Electrical Characteristics

Maximum capacity @ 1 C @ 25 °C	42	Ah
Nominal capacity @ 1 C @ 25 °C	40	Ah
Nominal operating voltage	3.2	V
Charging voltage	3.5	V
Recommended cut-off discharge voltage	2.5	V
Energy	128	Wh
Discharge current @ 25 °C		
Recommended	80	A (2 C)
Maximum continuous	800	A (20 C)
Maximum pulse (2 s)	1,600	A (40 C)
Low temperature performance	See Chart	
AC impedance (1 kHz)	< 0.3	mΩ
DC resistance (2 s pulse @ 20 C / 50 % SoC)	< 0.7	mΩ
Specific energy	99	Wh/kg
Energy density	223	Wh/l
Specific power		
Continuous discharge @ 20 C / 50 % SoC	1,750	W/kg
2 s pulse discharge @ 40 C / 50 % SoC	2,400	W/kg
Power density		
Continuous discharge @ 20 C / 50 % SoC	3,900	W/l
2 s pulse discharge @ 40 C / 50 % SoC	5,400	W/l

Applications and Markets

- Hybrid Electric Drives
- Electric Drives
- Load Leveling & Peak Shaving
- Boosting & Range Extension
- Space
- Aerospace
- Defense
- Marine
- Heavy Duty Vehicles
- Off-Road Vehicles
- Rail and Transport
- Mining

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EAS Batteries GmbH
Lokomotivenstrasse 21
99734 Nordhausen
Germany

+49 3631 46703 0
sales@eas-batteries.com

www.eas-batteries.com

Operating Conditions

Recommended charging method	Constant Current/ Constant Voltage
Recommended charging voltage	3.5 V (max. 3.6 V)
Recommended continuous charging current	40 A (1 C)
Maximum continuous charging current	120 A (3 C)
Maximum pulse charge current (15 s) (max. SOC 70 %, average current < 120 A)	320 A (8 C)
Absolute lower voltage limit for discharge	
Continuous @ 20 C (- 30 °C to 60 °C)	2.0 V
Pulse @ 40 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	> 6,000 cycles
80 % DoD, 2 C	> 7,500 cycles