

Lithium Iron Phosphate (LFP)



Features

- Simple installation and load/charge system integration (Pos/Neg termination)
- Advanced intelligent lithium battery management technology
- Energy transfer patented technology provides high cell utilization efficiency for prolong system operational life
- Configuration flexibility, support parallel connection expansion up to 16 modules

Compliance

- UL1642, Standard for Lithium Batteries
- UL2054, Standard for Household and Commercial Batteries
- UL1973 Certified
- UL9540A tested – No Thermal Runaway
- EN 61000-6-1:2007, Electromagnetic compatibility (EMC)
- EN 61000-6-3:2007+A1:2011, Electromagnetic compatibility (EMC)
- IEC 62133:2012, Battery Safety Testing
- UN 38.3

BMS – Alarming - Communication

- System monitoring of voltage, current, temperature of cells and module. Built in protection against over-current on discharge and recharge, over-temperature, low temperature, low and high voltage, and short circuit
- BMS maintenance and service communication via RS485 along with Modbus for simple interface with Inverters and other equipment
- 2 levels of remote alarming through dry contacts

MPINarada MPL series 48V LFP battery modules are ideally suited for telecom, OSP, and renewable energy applications with a max charge voltage of 54.5V. MPL series offer long cycle life, small size, reduced weight, and simplified installation as 19"/23" rack mountable modules.

MPL LFP chemistry makes it one of the safest technologies, suitable for high and low temperature operation and capable of 1C and higher discharge rates. These LFP batteries are ideal for telecom growth and as direct replacement for VRLA.

Dimensions and Specifications

End V	Ah 8hr to 43.2V 25C	Ah 1hr to 43.2V 25C	Max Discharge Current (A)
43.2	12.6	96.4	100

Width		Depth		Height	
(mm)	(in.)	(mm)	(in.)	(mm)	(in.)
442.5	17.42	400	15.8	133.5	5.24

Rack Units	Weight		Terminal
	(kg)	(lbs.)	
3U	38.5	84.9	M6

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Parallel Operation / Discharge Rate

48MPLhE100	5 Strings 0.91C	9 Strings 0.57C	12 Strings 0.48C	16 Strings 0.33C
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BMS/Battery Operating Parameters

Parameters	Units	Value
Charge voltage	V	54 ± 0.5
Equalization charge voltage	V	NA
Nominal charge current	A	0.2C
Charge current limitation	A	1.0C
Equalization charge interval	-	NA
Equalization charge duration	Hr.	NA
Equalization charge	A	NA
Condition to float charge	A	0.05C
LVBD (Low voltage battery disconnect)	V	> 40.5

Operating Environment Limits

Maximum Recommended Temperature Range (°C)	Discharge	-20 ~ +60
	Charge	0 ~ +60
	Storage	0 ~ +40
Recommended Temperature (°C)	Discharge	+15 ~ +35
	Charge	+15 ~ +35
	Storage	+15 ~ +30
Humidity	5% ~ 95%	

Over Temperature Protection	High temp. - charge	70±3°C
	Recover temp. - charge	60±3°C
	High temp. - discharge	70±3°C
	Recover temp. discharge	60±3°C
	Low temp. - charge	0±3°C
	Recover temp. - charge	5±3°C
	Low temp. - discharge	-10±3°C
	Recover temp. - discharge	0±3°C

Constant Current Rates@25C in Hours (Amps)

End	10	8	5	4	3.5	2.5	2	1.5	1
46.5	9.6	12.0	19.0	22.2	23.8	35.6	42.0	55.4	68.8
45.0	9.8	12.2	19.4	22.6	24.2	38.2	48.0	67.4	87.8
44.1	9.8	12.2	19.6	23.0	24.6	38.8	48.8	69.2	90.4
43.5	10	12.4	19.8	23.2	24.8	39.2	48.6	70.8	92.8
42.0	10	12.4	19.8	23.2	24.8	39.6	49.2	72.2	95.0
40.5	10	12.6	20.0	23.4	25.0	40	49.8	73.2	96.4

Constant Power Rates@25C in Hours (Watts)

End	10	8	5	4	3.5	2.5	2	1.5	1
46.5	490	600	960	1220	1350	1310	2200	2828	3868
45.0	500	614	982	1250	1384	1364	2334	3067	4454
44.1	502	618	988	1258	1392	1372	2362	3098	4528
43.5	504	622	994	1266	1400	1380	2284	3122	4588
42.0	508	626	1000	1274	1412	1394	2400	3174	4668
40.5	510	628	1088	1280	1418	1402	2418	3202	4696

Cycles - Temperature vs. Depth of Discharge

Temp (°C)	100%	80%	60%	40%	20%
25	2000	3500	6000	12000	24000
35	1600	2800	4800	9600	19200
45	1200	2100	3600	7200	14400

Accessories

NPFC Cables	Description
NPFC-CBL-U-RJ	Communication Cable - USB to RJ45
NPFC-COM-RS485	Communication Cable - RS485-USB

Bracket Part Numbers	48NPFC100 Brackets
NPFC100-3RU19UB-L	48NPFC100-3RU-19 Universal Mount Left Side Brackets
NPFC100-3RU19UB-R	48NPFC100-3RU-19 Universal Mount Right Side Brackets
NPFC100-3RU23UB-L	48NPFC100-3RU-23 Universal Mount Left Side Brackets
NPFC100-3RU23UB-R	48NPFC100-3RU-23 Universal Mount Right Side Brackets