

Narada HELiON™ NPFC series 48V LiFePO<sub>4</sub> battery modules are ideally suited for telecom base station, OSP, and renewable energy applications.



NPFC series offer long cycle life, small size, reduced weight, and simplified installation as 19"/23" rack mountable modules.



NPFC chemistry makes it one of the safest technologies, suitable for high and low temperature operation and capable of 1C and higher discharge rates.

#### Technical 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

#### BMS - Alarming

- 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 RS232 or RS485
- 2 levels of remote alarming through dry contacts

#### Compliance

UL1642, Standard for Lithium Batteries

UL2054, Standard for Household and Commercial Batteries

EN 61000-6-1:2007, Electromagnetic compatibility (EMC)

EN 61000-6-3:2007+A1:2011, Electromagnetic compatibility (EMC)

IEC 62133:2012, Battery Safety Testing

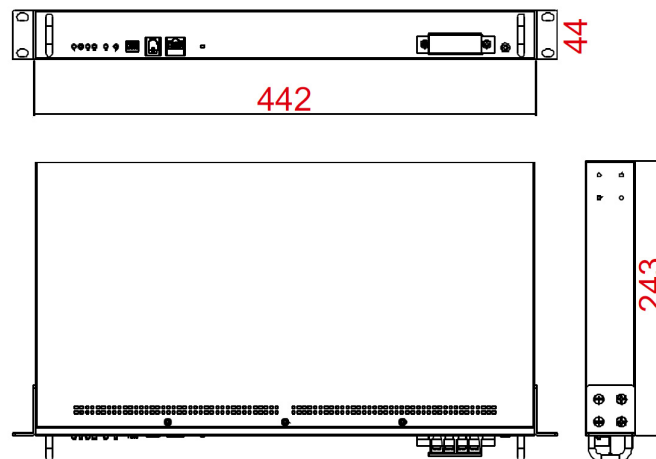
UL1973, Standard for -cells

NEBS Level 1 Certified GR-1089 / GR-63

UN3800

Specifications

Battery Specification		
Rated Voltage		48V
Rated Capacity		10Ah (C <sub>5</sub> , 0.2C to 40.5V at 25 °C)
Discharge Current (Max.)		10A
Discharge End Voltage		40.5V
Charge Current (Recomm.)		2A
Charge Current (Max.)		10A
Charge Voltage		54±0.5V
Dimensions	Width	442mm
	Depth	243mm
	Height	44mm (1U)
Typical Weight		7.3kg
Layout of Front Panel		
Status Indicators		SOC / ALM / RUN
Communication Ports		RS232 / RS485
Communication in Parallel		8 modules in maximum
Reset Key		Available
Terminal Size		M4 / 10mm (Screw size / Cable Width)
LCD Screen		Not Available
Breaker		Not Available
Dry contact		Not Available
Operation Environments		
Temperature Range	Discharge	-20 to +60 °C
	Charge	0 to +60 °C
	Storage	0 to +40 °C
Temperature Recommendation	Discharge	+15 to +35 °C
	Charge	+15 to +35 °C
	Storage	+15 to +30 °C
Humidity		5% to 95%



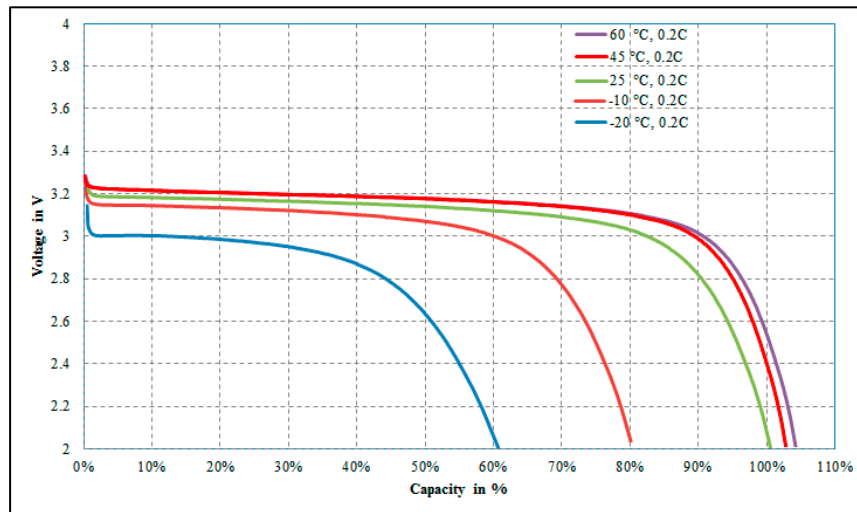
### Constant Current Discharge Rates @25C in Hours (Amps)

48NFPC10										-2C
End	10	8	5	4	3.5	2.5	2	1.5	1	0.5
46.5V	1.0	1.2	1.9	2.4	2.6	3.5	4.2	5.2	6.9	13.3
45.0V	1.0	1.2	2.0	2.4	2.7	3.8	4.7	6.6	8.8	16.9
44.1V	1.0	1.2	2.0	2.5	2.8	3.9	4.8	6.8	9.0	17.4
43.5V	1.0	1.2	2.0	2.5	2.8	3.9	4.9	7.0	9.3	17.9
42.0V	1.0	1.3	2.0	2.5	2.8	4.0	4.9	7.1	9.5	18.3
40.5V	1.0	1.4	2.0	2.5	2.8	4.0	5.0	7.2	9.7	18.6

### Constant Power Discharge Rates @25C in Hours (Watts)

48NFPC10										-2C
End	10	8	5	4	3.5	2.5	2	1.5	1	0.5
46.5V	49.0	60.0	96	122	135	131	220	283	387	529
45.0V	49.9	61.4	98	125	138	136	233	307	445	647
44.1V	50.2	61.8	99	126	139	137	236	310	453	662
43.5V	50.5	62.1	99	127	140	138	238	312	459	675
42.0V	50.9	62.5	100	128	141	139	240	317	467	687
40.5V	51.1	62.9	101	128	142	140	242	320	470	689

### Discharge - Temperature vs. Percent Capacity %



### Cycles - Temperature vs. Depth of Discharge

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

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