

Narada HELiON™ NPFC series 48V Lithium LFP battery modules are ideally suited for telecom, CATV and renewable energy applications.



NPFC series offers long cycle life, compact size and reduced weight vs. Lead Acid Batteries. Simple installation and matching footprint make the battery an ideal replacement within existing battery tray or as a 19"/23" rack mountable modules.



NPFC Lithium chemistry makes it one of the safest technologies suitable for various temperature operation.

#### Technical Features:

- Simple installation with copper inserted Pos/Neg termination
- Advanced intelligent lithium battery management technology provides high cell utilization efficiency for prolonged system operational life.
- Configuration flexibilities support parallel connection expansion up to 10 modules, 2000Ah.
- 19" rack mounted design with option for 23" mounting.
- SOC Status Indicator
- Modbus communication for active battery monitoring
- Optional Antitheft battery disabling feature.
- DC battery breaker for module isolation and protection

#### 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

#### Compliance

UL1642, Standard for Lithium Batteries

UL2054, Standard for Household and Commercial Batteries

EN IEC 61000-6-1, Electromagnetic compatibility (EMC)

EN IEC 61000-6-3, Electromagnetic compatibility (EMC)

IEC/EN 62133, Battery Safety Testing

UL1973, Standard for Safety Batteries for Use in Stationary Applications

UN38.3, Certification for Lithium Batteries

### BMS/Battery Operating Parameters

Parameters	Units	Value
Float charge voltage	V	54 ±0.5
Equalization charge voltage	V	NA
Nominal charge current	A	0.2C (40A)
Charge current limitation	A	0.5C (100A)
Equalization charge interval	day	NA
Equalization charge duration	H	NA
Equalization charge	A	NA
Condition to float charge	A	NA
LVBD (Low voltage battery disconnect)	V	> 40.5
Temperature compensation (float charge)	- mV/°C	NA
Temperature compensation (equalization charge)	- mV/°C	NA

### 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

### Parallel Operation

Capacity Range	C ≤ 0.5C	C ≤ 0.33C	C ≤ 0.2C
Modules In Parallel	1-4	5-6	7-10

### Discharge Table

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

End	10	8	5	4	3.5	2.5	2	1.5	1
45.0V	19.6	24.4	38.8	45.2	48.4	76.4	87.8	87.8	87.8
44.1V	19.6	24.4	39.2	46.0	49.2	77.6	90.4	90.4	90.4
43.5V	20.0	24.8	39.6	46.4	49.6	78.4	92.8	92.8	92.8
42.0V	20.0	24.8	39.6	46.4	49.6	79.2	95.0	95.0	95
40.5V	20.0	25.2	40.0	46.8	50.0	80.0	96.4	96.4	96.4
40.5V	10.0	12.6	20.0	23.4	25.0	40.0	49.8	73.2	96.4

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

End	10	8	5	4	3.5	2.5	2	1.5	1
45.0V	1000	1228	1964	2500	2768	2728	4454	4454	4454
44.1V	1004	1236	1976	2516	2784	2744	4528	4528	4528
43.5V	1008	1244	1988	2532	2800	2760	4588	4588	4588
42.0V	1016	1252	2000	2548	2824	2788	4668	4668	4668
40.5V	1020	1256	2012	2560	2836	2804	4696	4696	4696
40.5V	510	628	1006	1280	1418	1402	2418	3202	4696

### Cycle Life vs. DoD

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