Narada® *Reliable Battery Solutions*

NESP Series

The Narada NESP Series LPF High Capacity Lithium Iron Phosphate batteries are designed for a broad range of BESS solutions providing a wide operating temperature range, while delivering exceptional warranty, safety, and life. Whether used in cabinet, container or building applications, NESP Series batteries will meet any ESS need.

Features of Module & Rack Design

- 0.5C to 2.0C options available
- 633VDC to 1292VDC Charge Voltage Options
  - Frequency Regulation
  - Peak Shaving
  - Peak Shifting
  - Curtailment/Demand Response
  - Reserve Power
- High LFP Energy Density
- Passive & Active Thermal Ventilation
- Designed for Containerized, Cabinet, and Building Solutions

Interconnection Parameters			
Points of Interconnect	PCS AC Voltage	Vac	Customized
	POI Voltage	kV	Customized
	AC Frequency	Hz	50Hz/60Hz
	Round Trip Efficiency		93-95%
Environmental Characteristics			
Environmental Conditions	Operating Temperature	°C	-40 °C to 55 °C
	Storage Temperature	°C	10 °C to 30 °C
Relative Humidity	Maximum Humidity	%	up to 95%
Altitude	Above Sea Level	m	2000m/600ft
SOC	Recommended Range		5% ~ 95%

Certifications

Safety	
UL 9540	Safety for Energy Storage Systems and Equipment
UL 9540A	Test Methods for Evaluating Thermal Runaway Fire Propagation - BESS
UL 1973	Batteries for Use in Stationary Applications
UL 1642	Standards for Lithium Batteries
IEC 62619	Safety for Secondary Lithium Cells and Batteries
IEC 61508, UL 991, UL 1998, UL60730-1	Functional Safety for Electrical Systems
NFPA 70E	Standard for Electrical Safety in the Workplace
NFPA 70	(NEC) National Electrical Code
ANSI/IEEE C-2	National Electric Safety Code
UL 60950	Electrical Insulation
NFPA 551 / NFPA 550	Fire Detection and Suppression
IEC 60812	Safety Analysis and Control System (FMEA, FTA)
IEC 61025	
MIL-STD-1629A	
UL1778	UPS for Ancillary
UL1598	Luminaire
UL8750	
UL1012	Rectifier for D.C. power supply
UL1995	Air conditioner for cooling
UN 38.3 / IEC 62281	Transportation Safety of Lithium metal and lithium ion batteries
Performance Standards & Grid Interconnect	
IEC61427-2 2015	Secondary cells and batteries for renewable energy storage – General requirements and methods of test – Part 2: On-grid applications
IEC 62620	Secondary Lithium Cells and Batteries for Industrial Application
PNNL-22010	Protocal for Measuring Performance of Energy Storage System
UL 1741 (SA)	Standards for Inverters, Converters, Controllers and Interconnection System Equipment
IEEE 1547	Standard for Interconnecting DR WITH EP
ANSI/IEC 60529	Degrees of Protection Provided by Enclosures
NEMA 250	Enclosures for Electrical Equipment
NEMA 250 / UL 50E	Environmental Considerations for Electrical Equipment Enclosures
IEEE 693-2005	Recommended Practice for Seismic Design of Electrical Equipment

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NESP Module & Rack Specification 950-1296V

Item		Module	11 Module	13 Module	15 Module
Type No.	**2C**	76.8NESP160	76880135	76880160	76880184
Cell Capacity	Ah	160	160	160	160
Energy	kWh	12.3	135	160	184
Nominal Volt	V	76.8	844.8	998.4	1152
Minimum Volt	V	67.2	739.2	873.6	1008
Maximum Volt	V	86.4	950.4	1123.2	1296
Dimension (W x D x H)	mm	400 x 884 x 265	500 x 938 x 1860 (2P)	500 x 938 x 2130 (2P)	500 x 938 x 2400 (2P)
Weight	kg	110.7	1597.7	1859.1	2120.5

Item		Module	11 Module	13 Module	15 Module
Type No.	**1C**	76.8NESP200	768100169	768100200	768100230
Cell Capacity	Ah	200	200	200	200
Energy	kWh	15.4	169	200	230
Nominal Volt	V	76.8	844.8	998.4	1152
Minimum Volt	V	67.2	739.2	873.6	1008
Maximum Volt	V	86.4	950.4	1123.2	1296
Dimension (W x D x H)	mm	400 x 884 x 265	500 x 938 x 1860 (2 P)	500 x 938 x 2130 (2 P)	500 x 938 x 2400 (2 P)
Weight	kg	133.5	1848.5	2155.5	2462.5

Item		Module	11 Module	13 Module	15 Module
Type No.	**0.5C**	76.8NESP250	768125211	768125250	768125288
Cell Capacity	Ah	250	250	250	250
Energy	kWh	19.2	211	250	288
Nominal Volt	V	76.8	844.8	998.4	1152
Minimum Volt	V	67.2	739.2	873.6	1008
Maximum Volt	V	86.4	950.4	1123.2	1296
Dimension (W x D x H)	mm	400 x 884 x 265	500 x 938 x 1860 (2P)	500 x 938 x 2130 (2P)	500 x 938 x 2400 (2P)
Weight	kg	141	1931	2253	2575

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NESP Module & Rack Specification 633 to 864V

Item		Module	11 Module	13 Module	15 Module
Type No.	**2C**	51.2NESP160	5128090	51280106	51280123
Cell Capacity	Ah	160	160	160	160
Energy	kWh	8.2	90	106	123
Nominal Volt	V	51.2	563.2	665.6	768
Minimum Volt	V	44.8	492.8	582.4	672
Maximum Volt	V	57.6	633.6	748.8	864
Dimension (W x D x H)	mm	415x600x265	500x650x1860 (2P)	500x650x2130 (2P)	500x650x2400 (2P)
Weight	kg	73.8	1149.8	1323.4	1495

Item		Module	11 Module	13 Module	15 Module
Type No.	**1C**	51.2NESP200	512100113	512100133	512100154
Cell Capacity	Ah	200	200	200	200
Energy	kWh	10.2	113	133	154
Nominal Volt	V	51.2	563.2	665.6	768
Minimum Volt	V	44.8	492.8	582.4	672
Maximum Volt	V	57.6	633.6	748.8	864
Dimension (W x D x H)	mm	415x600x265	500x650x1860 (2P)	500x650x2130 (2P)	500x650x2400 (2P)
Weight	kg	89	1317	1521	1723

Item		Module	11 Module	13 Module	15 Module
Type No.	**0.5C**	51.2NESP250	512125141	512125166	512125192
Cell Capacity	Ah	250	250	250	250
Energy	kWh	12.8	141	166	192
Nominal Volt	V	51.2	563.2	665.6	768
Minimum Volt	V	44.8	492.8	582.4	672
Maximum Volt	V	57.6	633.6	748.8	864
Dimension (W x D x H)	mm	415x600x265	500x650x1860 (2P)	500x650x2130 (2P)	500x650x2400 (2P)
Weight	kg	94	1372	1586	1798

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