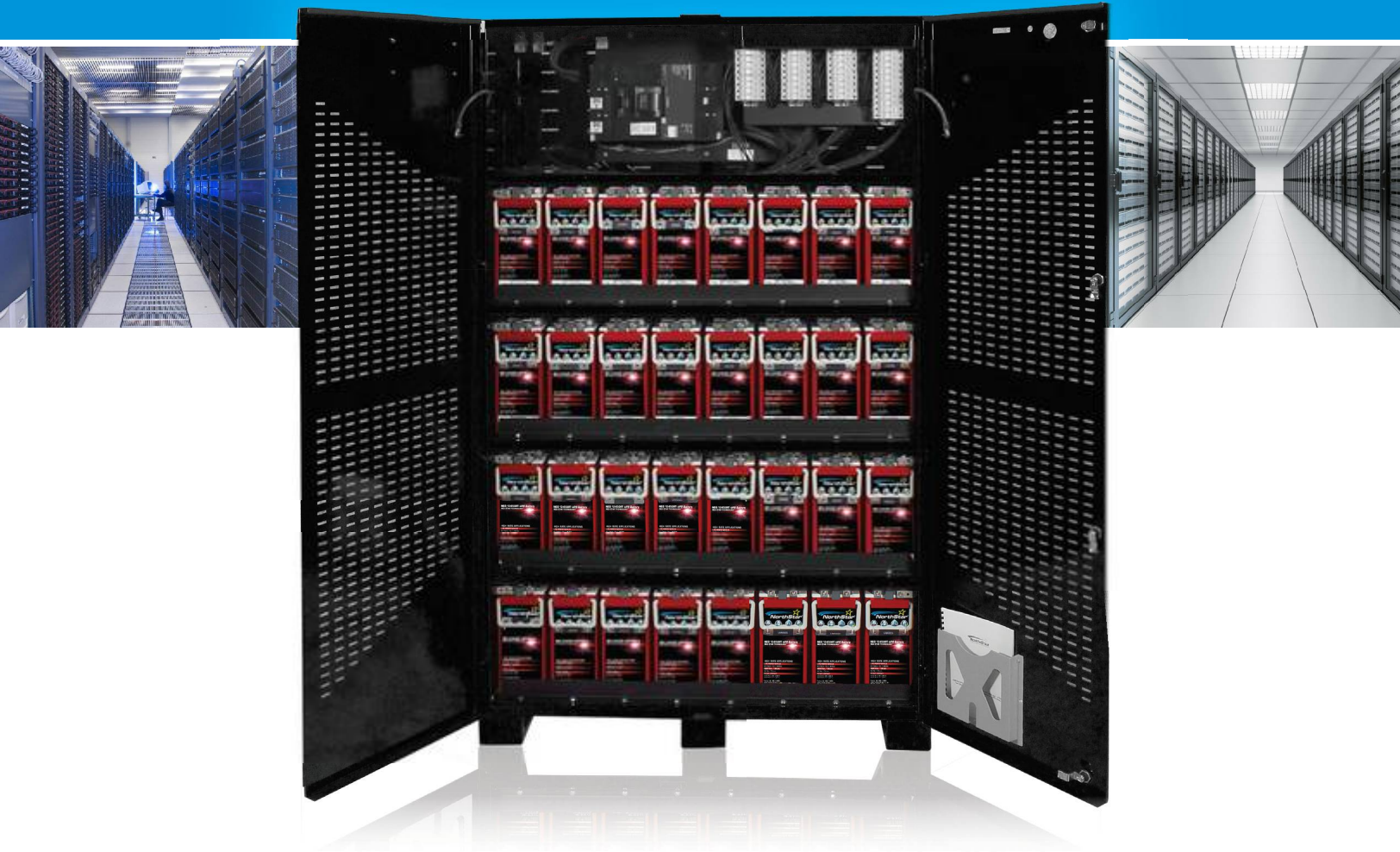


NORTHSTAR UPS BATTERY SOLUTIONS



NorthStar's Pure Lead UPS batteries, ideal for use with datacenters and applications where **downtime is not an option.**

- NorthStar Front Access cabinets are faster to service, safer to use, and easier to maintain
- Performance excels at high rates of discharge and recharge
- High energy density deliver more watts per cell, which can reduce footprint by 10%
- Higher temperature capabilities that allow increased operating temperatures and reduce electricity costs by more than 40%
- UL 1778 & UL 1989 and OSHPAD rated and approved.
- Longer life means less replacements and reduced operating costs of more than 20%
- 2 year shelf life at 25°C (77°F)
- Operating temperature range: -40°C to +65°C (-40°F to 149°F)
- 15 year float life at 20°C (68°F)
- EUROBAT design life definition: Long Life (12+ years)
- Advanced 3 stage terminal design to ensure leak-free operation - brass terminals provide maximum performance
- Flame retardant (UL 94 V0) and LOI of at least 28%




NorthStar[®]
www.northstarbattery.com

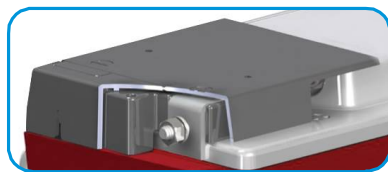
Form: SES-542-47-01 Date: 02-11-14 ECO: 2449-S14

ADVANTAGES



Our solutions multiply battery lifetime and save you energy. This delivers significant savings in operator OPEX and CAPEX, due to fewer battery replacements and less frequent site visits. Other benefits include:

- Reduced environmental impact
- High safety standards
- Low maintenance design
- Premium construction materials
- Integrated BMS platform standard
- Integrated breakers and fuses
- Integrated data com available
- Wide range of cabinet colors



Front Terminal Adapter



NorthStar UPS products provide **more energy in a smaller footprint, longer battery life**, are **faster to service** and **safer to use**. Already dominant in the telecom market, front access cabinets are now experiencing an **increasingly high demand** in the UPS and power quality markets — and are slated to become the **primary solution** to these segments within the next few years.

Below is a front terminal sizing example, compared to a monoblock system.

Number of strings	Number of cabinets	UPS kVA			Overall dimensions of string			Weight (lbs/kg)
		250	500	750	Width (in/cm)	Depth (in/cm)	Height (in/cm)	
		UPS kW	240	480				
1	1	6.9			48/122	35/89	82/208	6240/2824
2	2	25.7	6.9		96/244	35/89	82/208	12480/5647
3	3	44	16	6.9	144/366	35/89	82/208	18720/8471
4	4	65.5	23.3	13	192/488	35/89	82/208	24960/11294
5	5	87.5	33.5	19.2	240/610	35/89	82/208	31200/14118

Based on NSB12-730RT, 480V, 1.67vpc, for runtimes over 25 minutes, 1.75vpc

Delivering reliable and sustainable power to the world.



UPS BATTERY RANGE



12-400 NSB12-570 NSB12-170RT NSB12-245RT NSB12-365RT

Height	213 mm [8.4 in]	275 mm [10.8 in]	208 mm [8.2 in]	263 mm [10.4 in]	264 mm [10.4 in]
Width	173 mm [6.8 in]	173 mm [6.8 in]	97 mm [3.8 in]	108 mm [4.2 in]	108 mm [4.2 in]
Length	341 mm [13.4 in]	345 mm [13.6 in]	250 mm [9.8 in]	287 mm [11.3 in]	396 mm [15.6 in]
Weight	35 kg [78 lbs]	44 kg [97 lbs]	14 kg [31 lbs]	21 kg [45 lbs]	30 kg [66 lbs]
Terminal Torque	8.0 Nm [71 in-lbs]	8.0 Nm [71 in-lbs]	8.0 Nm [71 in-lbs]	8.0 Nm [71 in-lbs]	8.0 Nm [71 in-lbs]
4C (15 min) power to 1.67 vpc (68°F/77°F)	378 / 403 Watts per cell	534 / 570 Watts per cell	161 / 172 Watts per cell	233 / 248 Watts per cell	343 / 365 Watts per cell
Float voltage (68°F/77°F)	2.29 / 2.27 VPC	2.29 / 2.27 VPC	2.29 / 2.27 VPC	2.29 / 2.27 VPC	2.29 / 2.27 VPC
Shelf life	2 years	2 years	2 years	2 years	2 years
Conductance	1,552 S	1,952 S	1,042 S	965 S	1,344 S
Impedance (1KHz)	3.3 mΩ	2.7 mΩ	4.1 mΩ	4.8 mΩ	3.7 mΩ
Short circuit current	3,900	3,600 A	1,500 A	2,100 A	3,200 A
Nominal voltage	12 V	12 V	12 V	12 V	12 V
Silver Equivalent	N/A	NSB 12-540	NSB 12-150FT	NSB 12-225FT	NSB 12-420FT



NSB12-425RT NSB12-450RT NSB12-650RT NSB12-730RT

Height	287 mm [11.3 in]	227 mm [8.9 in]	280 mm [11.0 in]	320 mm [12.6 in]
Width	108 mm [4.2 in]	125 mm [4.9 in]	125 mm [4.9 in]	125 mm [4.9 in]
Length	396 mm [15.6 in]	560 mm [22.0 in]	560 mm [22.0 in]	560 mm [22.0 in]
Weight	33 kg [72 lbs]	39 kg [86 lbs]	53 kg [117 lbs]	61 kg [134 lbs]
Terminal Torque	8.0 Nm [71 in-lbs]	8.0 Nm [71 in-lbs]	8.0 Nm [71 in-lbs]	8.0 Nm [71 in-lbs]
4C (15 min) power to 1.67 vpc (68°F/77°F)	397 / 424 Watts per cell	425 / 454 Watts per cell	611 / 652 Watts per cell	686 / 731 Watts per cell
Float voltage (68°F/77°F)	2.29 / 2.27 VPC	2.29 / 2.27 VPC	2.29 / 2.27 VPC	2.29 / 2.27 VPC
Shelf life	2 years	2 years	2 years	2 years
Conductance	3,500 S	1,841 S	2,240 S	2,400 S
Impedance (1KHz)	3.9 mΩ	2.6 mΩ	2.3 mΩ	2.2 mΩ
Short circuit current	3,500 A	3,800 A	5,000 A	6,000 A
Nominal voltage	12 V	12 V	12 V	12 V
Silver Equivalent	NSB 12-420FT	NSB 12-450FT	NSB 12-590FT	N/A

