

AGM Thin Plate Lead Carbon



The NSB BLUE+ Battery® delivers ultra fast recharge and exceptional PSoC cycling performance.

- Exceptional PSoC cyclic performance 2050 cycles @50% DoD
- Design life 12+ years at 20°C (68°F)
- Ultra fast recharge
- Shelf life of up to 24 months
- Lead carbon added to negative electrodes increases power and reduces sulfation
- High potential fuel savings when used with hybrid genset applications
- Operating temperature range -40°C to +65°C (-40°F to 149°F)
- State-of-the-art automated manufacturing ensures consistency and reliability
- Advanced 3 stage terminal design to ensure leak-free operation - brass terminals provide maximum performance
- High modulus Polyphenylene Oxide (PPO) plastic materials designed to withstand extended elevated operating temperatures and maintain high battery compression essential for reliable operation
- Non-halogenated thermally sealed plastic casing
- Approved as non-hazardous cargo for ground sea and air transport DOT 49CFR173.159(d), (i) and (ii)

NSB 190FT BLUE+

Nominal Technical Specifications

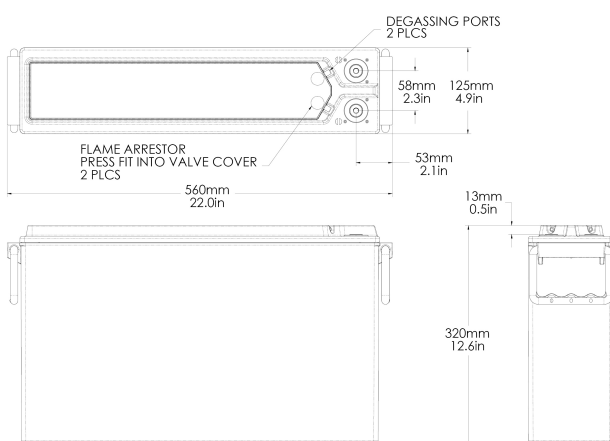
Dimensions

Height	320 mm	Width	125 mm
Length	560 mm	Weight	62 kg

Electrical

Terminal	Female M8 x 1.25
Terminal torque	8.0 Nm (71 in-lbs)
10 hr capacity to 1.80VPC @ 25°C (77°F)	183 Ah
8 hr capacity to 1.75VPC @ 25°C (77°F)	180 Ah
Float voltage @ 20/25°C (68/77°F)	2.28 / 2.27 VPC
Impedance (1Khz)	2.3 mΩ @ 25°C (77°F)
Conductance	2240 S
Short circuit current	6000 A
Maximum charge current (A)	No Limit
Operation temperature range	-40°C to +65°C
Nominal voltage	12 V

Technical Drawing



All NorthStar batteries are compliant with: Telcordia SR4228, IEC 60896; Bellcore GR-63-Core, Issue 1; British, German, and Russian telecom standards; UL approved and UN2800 certified. NorthStar is registered to ISO 9001 and ISO 14001.

NSB 190FT BLUE+ Battery®

Discharge tables @ 20°C (68°F)



Current / A

Duration		End of Discharge Voltage								
Minutes	Hours	1.85	1.80	1.75	1.70	1.67	1.65	1.60	1.55	1.50
2	0.03	451.6	536.3	624.1	711.8	762.7	795.5	871.3	935.3	983.9
5	0.08	416.5	476.4	535.5	591.4	622.6	642.0	684.8	717.8	739.4
10	0.17	336.1	373.4	408.9	441.4	458.9	469.6	492.5	509.2	518.9
15	0.25	281.2	307.2	331.6	353.4	365.0	372.1	386.9	397.3	403.0
20	0.33	242.6	262.0	280.0	295.9	304.3	309.3	319.9	327.2	331.0
30	0.50	191.7	204.0	215.1	224.8	229.9	232.9	239.1	243.4	245.5
45	0.75	147.3	154.5	161.0	166.6	169.5	171.2	174.7	177.1	178.3
60	1	120.4	125.1	129.4	133.0	134.9	136.0	138.3	139.8	140.6
120	2	70.9	72.4	73.7	74.8	75.4	75.7	76.5	77.0	77.3
180	3	50.9	51.5	52.1	52.6	52.9	53.1	53.5	53.7	53.9
240	4	39.9	40.3	40.6	40.9	41.0	41.1	41.4	41.6	41.7
300	5	32.9	33.2	33.4	33.6	33.7	33.7	33.9	34.1	34.2
480	8	21.8	22.0	22.1	22.2	22.3	22.3	22.4	22.5	22.5
600	10	17.9	18.1	18.2	18.3	18.3	18.4	18.4	18.5	18.6
1200	20	9.7	9.9	10.0	10.2	10.2	10.3	10.3	10.4	10.4

Capacity / Ah

Duration		End of Discharge Voltage								
Minutes	Hours	1.85	1.80	1.75	1.70	1.67	1.65	1.60	1.55	1.50
2	0.03	15.1	17.9	20.8	23.7	25.4	26.5	29.0	31.2	32.8
5	0.08	34.7	39.7	44.6	49.3	51.9	53.5	57.1	59.8	61.6
10	0.17	56.0	62.2	68.1	73.6	76.5	78.3	82.1	84.9	86.5
15	0.25	70.3	76.8	82.9	88.4	91.3	93.0	96.7	99.3	100.7
20	0.33	80.9	87.3	93.3	98.6	101.4	103.1	106.6	109.1	110.3
30	0.50	95.9	102.0	107.5	112.4	114.9	116.4	119.6	121.7	122.8
45	0.75	110.5	115.9	120.8	124.9	127.1	128.4	131.0	132.8	133.7
60	1	120.4	125.1	129.4	133.0	134.9	136.0	138.3	139.8	140.6
120	2	141.8	144.7	147.3	149.6	150.8	151.5	152.9	154.0	154.7
180	3	152.6	154.6	156.4	157.9	158.7	159.2	160.4	161.2	161.8
240	4	159.6	161.0	162.3	163.5	164.2	164.6	165.5	166.2	166.9
300	5	164.6	165.8	166.9	167.8	168.4	168.7	169.5	170.3	170.9
480	8	174.7	175.7	176.6	177.5	178.0	178.3	179.1	179.7	180.4
600	10	179.4	180.6	181.7	182.7	183.2	183.6	184.4	185.1	185.7
1200	20	195.0	198.1	200.9	203.2	204.4	205.1	206.5	207.4	207.9

Power / WPC

Duration		End of Discharge Voltage								
Minutes	Hours	1.85	1.80	1.75	1.70	1.67	1.65	1.60	1.55	1.50
2	0.03	848	972	1096	1216	1284	1327	1425	1507	1567
5	0.08	783	874	961	1041	1085	1112	1169	1212	1238
10	0.17	636.2	694.5	748.7	797.0	822.5	837.9	870.0	892.1	903.3
15	0.25	535.6	576.9	614.7	647.9	665.2	675.5	696.7	710.8	717.3
20	0.33	464.4	495.6	523.8	548.4	561.0	568.6	583.9	593.9	598.3
30	0.50	369.9	389.7	407.5	422.8	430.6	435.2	444.5	450.5	453.0
45	0.75	286.5	298.3	308.8	317.7	322.3	324.9	330.3	333.8	335.3
60	1	235.5	243.3	250.2	256.0	259.0	260.8	264.3	266.7	267.8
120	2	140.5	142.9	145.0	146.9	147.8	148.4	149.6	150.5	151.1
180	3	101.5	102.5	103.5	104.3	104.8	105.0	105.7	106.2	106.6
240	4	79.9	80.4	80.9	81.4	81.7	81.9	82.3	82.6	82.9
300	5	66.1	66.4	66.8	67.1	67.3	67.4	67.7	67.9	68.2
480	8	44.0	44.2	44.4	44.5	44.6	44.7	44.9	45.0	45.2
600	10	36.2	36.4	36.5	36.7	36.8	36.8	37.0	37.1	37.2
1200	20	19.6	19.9	20.1	20.3	20.4	20.5	20.6	20.6	20.7

NSB 190FT BLUE+ Battery®

Discharge tables @ 25°C (77°F)



Current / A

Duration		End of Discharge Voltage								
Minutes	Hours	1.85	1.80	1.75	1.70	1.67	1.65	1.60	1.55	1.50
2	0.03	501.2	595.1	692.6	789.8	846.4	882.8	966.9	1037.9	1091.9
5	0.08	453.5	518.7	583.0	643.9	677.8	699.0	745.6	781.5	805.1
10	0.17	361.1	401.2	439.3	474.2	493.1	504.6	529.2	547.1	557.5
15	0.25	299.9	327.7	353.6	376.9	389.3	396.8	412.6	423.8	429.8
20	0.33	257.4	278.1	297.2	314.1	323.0	328.3	339.5	347.2	351.3
30	0.50	202.1	215.0	226.7	237.0	242.3	245.5	252.1	256.6	258.8
45	0.75	154.3	161.9	168.7	174.5	177.5	179.3	183.0	185.5	186.8
60	1	125.6	130.5	134.9	138.7	140.7	141.8	144.2	145.8	146.7
120	2	73.2	74.8	76.1	77.3	77.9	78.2	79.0	79.5	79.9
180	3	52.3	52.9	53.6	54.1	54.4	54.5	54.9	55.2	55.4
240	4	40.8	41.2	41.6	41.9	42.0	42.1	42.4	42.6	42.7
300	5	33.6	33.9	34.1	34.3	34.4	34.5	34.6	34.8	34.9
480	8	22.2	22.3	22.4	22.5	22.6	22.7	22.7	22.8	22.9
600	10	18.2	18.3	18.4	18.5	18.6	18.6	18.7	18.8	18.8
1200	20	9.8	10.0	10.1	10.2	10.3	10.3	10.4	10.4	10.5

Capacity / Ah

Duration		End of Discharge Voltage								
Minutes	Hours	1.85	1.80	1.75	1.70	1.67	1.65	1.60	1.55	1.50
2	0.03	16.7	19.8	23.1	26.3	28.2	29.4	32.2	34.6	36.4
5	0.08	37.8	43.2	48.6	53.7	56.5	58.2	62.1	65.1	67.1
10	0.17	60.2	66.9	73.2	79.0	82.2	84.1	88.2	91.2	92.9
15	0.25	75.0	81.9	88.4	94.2	97.3	99.2	103.2	105.9	107.5
20	0.33	85.8	92.7	99.1	104.7	107.7	109.4	113.2	115.7	117.1
30	0.50	101.1	107.5	113.4	118.5	121.2	122.8	126.1	128.3	129.4
45	0.75	115.7	121.4	126.5	130.9	133.2	134.5	137.3	139.1	140.1
60	1	125.6	130.5	134.9	138.7	140.7	141.8	144.2	145.8	146.7
120	2	146.5	149.5	152.2	154.5	155.7	156.5	158.0	159.1	159.8
180	3	156.8	158.8	160.7	162.3	163.1	163.6	164.8	165.7	166.3
240	4	163.4	164.9	166.2	167.4	168.1	168.5	169.5	170.2	170.9
300	5	168.2	169.3	170.4	171.4	172.0	172.3	173.2	173.9	174.5
480	8	177.6	178.6	179.5	180.4	180.9	181.2	182.0	182.7	183.3
600	10	181.9	183.1	184.2	185.2	185.8	186.1	186.9	187.6	188.3
1200	20	196.4	199.6	202.4	204.7	205.9	206.6	208.0	209.0	209.4

Power / WPC

Duration		End of Discharge Voltage								
Minutes	Hours	1.85	1.80	1.75	1.70	1.67	1.65	1.60	1.55	1.50
2	0.03	941	1079	1216	1349	1425	1473	1582	1672	1739
5	0.08	852	951	1046	1134	1181	1210	1273	1320	1348
10	0.17	683.6	746.2	804.4	856.3	883.8	900.3	934.8	958.5	970.6
15	0.25	571.3	615.4	655.7	691.1	709.5	720.6	743.1	758.2	765.1
20	0.33	492.8	526.0	555.9	582.0	595.5	603.4	619.7	630.3	635.0
30	0.50	389.9	410.9	429.6	445.7	453.9	458.8	468.6	474.9	477.6
45	0.75	300.1	312.5	323.5	332.8	337.6	340.4	346.1	349.7	351.3
60	1	245.6	253.7	260.9	267.0	270.2	272.0	275.7	278.2	279.3
120	2	145.1	147.6	149.8	151.7	152.7	153.3	154.5	155.5	156.1
180	3	104.3	105.3	106.3	107.2	107.7	107.9	108.6	109.1	109.5
240	4	81.8	82.4	82.9	83.4	83.7	83.8	84.2	84.6	84.9
300	5	67.5	67.9	68.2	68.5	68.7	68.8	69.1	69.4	69.7
480	8	44.7	44.9	45.1	45.3	45.4	45.4	45.6	45.8	45.9
600	10	36.7	36.9	37.0	37.2	37.3	37.3	37.5	37.6	37.7
1200	20	19.8	20.0	20.3	20.5	20.6	20.6	20.7	20.8	20.8