

# NSB 170FT *Blue Battery*™

Specifically designed for **unstable mains**



**Superior cyclic performance and fast recharge** for high potential **fuel savings** when used with hybrid gensets.

- Ideal for demanding environments with unstable AC power
- 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 and cover
  - Flame retardant (UL 94 V0) and LOI of at least 28%
- Operating temperature range -40°C to +65°C
- High cycling and superior fast recharge performance
- Modified electrochemistry for repeated outages
  - Optimized paste additives and grid alloy
  - Less reliance on full recharge following an outage
  - No need for regular overcharge factor
  - Capable of uncontrolled Partial State of Charge (uPSOC)\* operation without loss of capacity

\* For a detailed description of uPSOC, please see the *Blue Star Technology*™ section of the Telecom Application Manual



# NSB 170FT Blue Battery™

## Technical Specifications



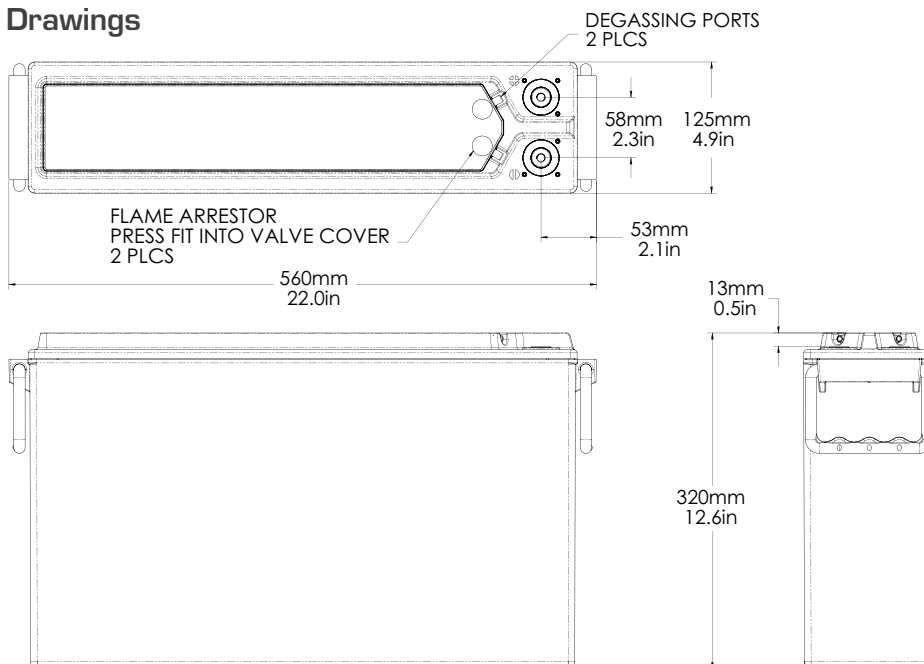
### Electrical

|  |                                 |
|--|---------------------------------|
| 10 hour capacity to 1.80 VPC @ 25°C (77°F) | 141 Ah                          |
| 8 hour capacity to 1.75 VPC @ 25°C (77°F)  | 140 Ah                          |
| 10 hour capacity to 1.80 VPC @ 20°C (68°F) | 139 Ah                          |
| Float Voltage                              | 2.27 +/- 0.02 VPC @ 25°C (77°F) |
| Nominal Voltage                            | 12 V                            |
| Impedance (1kHz)                           | 2.3 mΩ @ 25°C (77°F)            |
| Conductance                                | 2,201 S                         |
| Short Circuit Current                      | 6,000 A                         |
| Maximum Charge Current                     | no limit                        |

### Dimensions

|        |                  |                 |                    |
|--------|------------------|-----------------|--------------------|
| Height | 320 mm (12.6 in) | Weight          | 58 kg (128 lbs)    |
| Width  | 125 mm (4.9 in)  | Terminal        | Female M8 x 1.25   |
| Depth  | 560 mm (22.0 in) | Terminal Torque | 8.0 Nm (71 in-lbs) |

### Drawings



# Performance Table @ 20°C (68°F)

## NSB 170 Blue



### Current / A

| Duration |       | End of Discharge Voltage |       |       |       |       |       |       |       |       |
|----------|-------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Mins     | Hours | 1.85                     | 1.80  | 1.75  | 1.70  | 1.67  | 1.65  | 1.60  | 1.55  | 1.50  |
| 2        | 0.03  | 388.8                    | 476.8 | 568.9 | 660.4 | 712.7 | 745.7 | 819.3 | 875.7 | 910.6 |
| 5        | 0.08  | 346.4                    | 400.6 | 453.9 | 504.1 | 531.7 | 548.6 | 585.1 | 611.5 | 626.3 |
| 10       | 0.17  | 274.9                    | 306.1 | 335.6 | 362.4 | 376.7 | 385.3 | 403.5 | 416.1 | 422.5 |
| 15       | 0.25  | 228.4                    | 249.4 | 268.9 | 286.2 | 295.3 | 300.8 | 312.1 | 319.7 | 323.4 |
| 20       | 0.33  | 196.2                    | 211.6 | 225.6 | 238.0 | 244.4 | 248.3 | 256.1 | 261.4 | 263.8 |
| 30       | 0.50  | 154.4                    | 163.8 | 172.3 | 179.7 | 183.4 | 185.7 | 190.2 | 193.1 | 194.4 |
| 45       | 0.75  | 118.1                    | 123.7 | 128.5 | 132.7 | 134.8 | 136.0 | 138.5 | 140.1 | 140.7 |
| 60       | 1     | 96.3                     | 99.9  | 103.1 | 105.8 | 107.2 | 108.0 | 109.5 | 110.5 | 110.8 |
| 120      | 2     | 56.3                     | 57.5  | 58.5  | 59.4  | 59.8  | 60.1  | 60.6  | 60.9  | 60.9  |
| 180      | 3     | 40.2                     | 40.8  | 41.3  | 41.7  | 42.0  | 42.1  | 42.3  | 42.5  | 42.5  |
| 240      | 4     | 31.3                     | 31.7  | 32.1  | 32.3  | 32.5  | 32.6  | 32.7  | 32.8  | 32.8  |
| 300      | 5     | 25.8                     | 26.0  | 26.3  | 26.5  | 26.6  | 26.6  | 26.8  | 26.8  | 26.8  |
| 480      | 8     | 16.9                     | 17.1  | 17.2  | 17.4  | 17.4  | 17.5  | 17.5  | 17.6  | 17.6  |
| 600      | 10    | 13.8                     | 13.9  | 14.1  | 14.2  | 14.3  | 14.3  | 14.4  | 14.4  | 14.4  |
| 1200     | 20    | 7.3                      | 7.4   | 7.6   | 7.7   | 7.7   | 7.7   | 7.8   | 7.8   | 7.9   |

### Capacity / Ah

| Duration |       | End of Discharge Voltage |       |       |       |       |       |       |       |       |
|----------|-------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Mins     | Hours | 1.85                     | 1.80  | 1.75  | 1.70  | 1.67  | 1.65  | 1.60  | 1.55  | 1.50  |
| 2        | 0.03  | 13.0                     | 15.9  | 19.0  | 22.0  | 23.8  | 24.9  | 27.3  | 29.2  | 30.4  |
| 5        | 0.08  | 28.9                     | 33.4  | 37.8  | 42.0  | 44.3  | 45.7  | 48.8  | 51.0  | 52.2  |
| 10       | 0.17  | 45.8                     | 51.0  | 55.9  | 60.4  | 62.8  | 64.2  | 67.2  | 69.3  | 70.4  |
| 15       | 0.25  | 57.1                     | 62.3  | 67.2  | 71.5  | 73.8  | 75.2  | 78.0  | 79.9  | 80.9  |
| 20       | 0.33  | 65.4                     | 70.5  | 75.2  | 79.3  | 81.5  | 82.8  | 85.4  | 87.1  | 87.9  |
| 30       | 0.50  | 77.2                     | 81.9  | 86.2  | 89.8  | 91.7  | 92.8  | 95.1  | 96.6  | 97.2  |
| 45       | 0.75  | 88.6                     | 92.7  | 96.4  | 99.5  | 101.1 | 102.0 | 103.9 | 105.1 | 105.5 |
| 60       | 1     | 96.3                     | 99.9  | 103.1 | 105.8 | 107.2 | 108.0 | 109.5 | 110.5 | 110.8 |
| 120      | 2     | 112.6                    | 115.0 | 117.1 | 118.8 | 119.7 | 120.2 | 121.1 | 121.7 | 121.9 |
| 180      | 3     | 120.5                    | 122.3 | 123.9 | 125.2 | 125.9 | 126.2 | 127.0 | 127.4 | 127.5 |
| 240      | 4     | 125.3                    | 126.9 | 128.3 | 129.4 | 129.9 | 130.2 | 130.8 | 131.2 | 131.3 |
| 300      | 5     | 128.8                    | 130.2 | 131.4 | 132.4 | 132.9 | 133.2 | 133.8 | 134.1 | 134.2 |
| 480      | 8     | 135.1                    | 136.6 | 137.8 | 138.8 | 139.3 | 139.6 | 140.2 | 140.6 | 140.7 |
| 600      | 10    | 137.8                    | 139.4 | 140.8 | 142.0 | 142.5 | 142.9 | 143.5 | 143.9 | 144.1 |
| 1200     | 20    | 145.9                    | 148.7 | 151.2 | 153.3 | 154.3 | 154.9 | 156.2 | 156.9 | 157.2 |

### Power / W per cell

| Duration |       | End of Discharge Voltage |       |       |        |        |        |        |        |        |
|----------|-------|--------------------------|-------|-------|--------|--------|--------|--------|--------|--------|
| Mins     | Hours | 1.85                     | 1.80  | 1.75  | 1.70   | 1.67   | 1.65   | 1.60   | 1.55   | 1.50   |
| 2        | 0.03  | 722.1                    | 860.0 | 999.2 | 1132.5 | 1206.5 | 1252.2 | 1350.7 | 1421.3 | 1459.1 |
| 5        | 0.08  | 649.2                    | 734.6 | 816.6 | 891.9  | 932.3  | 956.9  | 1008.6 | 1044.4 | 1062.4 |
| 10       | 0.17  | 519.0                    | 568.6 | 614.8 | 655.9  | 677.6  | 690.6  | 717.5  | 735.6  | 744.2  |
| 15       | 0.25  | 433.1                    | 466.8 | 497.7 | 524.7  | 538.8  | 547.2  | 564.4  | 575.8  | 580.9  |
| 20       | 0.33  | 373.4                    | 398.2 | 420.7 | 440.2  | 450.3  | 456.2  | 468.4  | 476.3  | 479.8  |
| 30       | 0.50  | 295.2                    | 310.6 | 324.4 | 336.2  | 342.2  | 345.7  | 352.9  | 357.5  | 359.4  |
| 45       | 0.75  | 227.1                    | 236.1 | 244.1 | 250.9  | 254.3  | 256.3  | 260.3  | 262.8  | 263.8  |
| 60       | 1     | 185.8                    | 191.8 | 197.0 | 201.4  | 203.6  | 204.9  | 207.5  | 209.1  | 209.6  |
| 120      | 2     | 109.7                    | 111.6 | 113.3 | 114.7  | 115.3  | 115.7  | 116.5  | 116.9  | 117.1  |
| 180      | 3     | 78.8                     | 79.7  | 80.4  | 81.0   | 81.3   | 81.5   | 81.8   | 82.0   | 82.1   |
| 240      | 4     | 61.8                     | 62.3  | 62.7  | 63.0   | 63.1   | 63.2   | 63.4   | 63.5   | 63.6   |
| 300      | 5     | 51.0                     | 51.3  | 51.5  | 51.7   | 51.8   | 51.8   | 51.9   | 52.0   | 52.0   |
| 480      | 8     | 33.8                     | 33.8  | 33.9  | 33.9   | 33.9   | 34.0   | 34.0   | 34.0   | 34.1   |
| 600      | 10    | 27.7                     | 27.7  | 27.7  | 27.7   | 27.8   | 27.8   | 27.8   | 27.8   | 27.9   |
| 1200     | 20    | 14.9                     | 14.9  | 14.9  | 14.9   | 14.9   | 14.9   | 14.9   | 15.0   | 15.0   |

# Performance Table @ 25°C (77°F)

## NSB 170 Blue



### Current / A

| Duration |       | End of Discharge Voltage |       |       |       |       |       |       |       |        |
|----------|-------|--------------------------|-------|-------|-------|-------|-------|-------|-------|--------|
| Mins     | Hours | 1.85                     | 1.80  | 1.75  | 1.70  | 1.67  | 1.65  | 1.60  | 1.55  | 1.50   |
| 2        | 0.03  | 431.4                    | 529.1 | 631.3 | 732.8 | 790.9 | 827.5 | 909.2 | 971.8 | 1010.5 |
| 5        | 0.08  | 377.1                    | 436.1 | 494.2 | 548.9 | 578.9 | 597.4 | 637.1 | 665.8 | 681.9  |
| 10       | 0.17  | 295.4                    | 328.9 | 360.6 | 389.3 | 404.7 | 414.0 | 433.5 | 447.0 | 454.0  |
| 15       | 0.25  | 243.6                    | 266.0 | 286.8 | 305.3 | 315.0 | 320.8 | 332.9 | 341.1 | 345.0  |
| 20       | 0.33  | 208.3                    | 224.6 | 239.5 | 252.6 | 259.4 | 263.5 | 271.8 | 277.4 | 279.9  |
| 30       | 0.50  | 162.8                    | 172.7 | 181.7 | 189.4 | 193.4 | 195.8 | 200.5 | 203.6 | 204.9  |
| 45       | 0.75  | 123.8                    | 129.5 | 134.6 | 139.0 | 141.2 | 142.5 | 145.1 | 146.8 | 147.4  |
| 60       | 1     | 100.4                    | 104.2 | 107.5 | 110.4 | 111.8 | 112.6 | 114.2 | 115.3 | 115.6  |
| 120      | 2     | 58.1                     | 59.4  | 60.5  | 61.4  | 61.8  | 62.1  | 62.6  | 62.9  | 63.0   |
| 180      | 3     | 41.3                     | 41.9  | 42.4  | 42.9  | 43.1  | 43.2  | 43.5  | 43.6  | 43.7   |
| 240      | 4     | 32.1                     | 32.5  | 32.8  | 33.1  | 33.3  | 33.3  | 33.5  | 33.6  | 33.6   |
| 300      | 5     | 26.3                     | 26.6  | 26.8  | 27.1  | 27.2  | 27.2  | 27.3  | 27.4  | 27.4   |
| 480      | 8     | 17.2                     | 17.3  | 17.5  | 17.6  | 17.7  | 17.7  | 17.8  | 17.9  | 17.9   |
| 600      | 10    | 14.0                     | 14.1  | 14.3  | 14.4  | 14.5  | 14.5  | 14.6  | 14.6  | 14.6   |
| 1200     | 20    | 7.3                      | 7.5   | 7.6   | 7.7   | 7.8   | 7.8   | 7.9   | 7.9   | 7.9    |

### Capacity / Ah

| Duration |       | End of Discharge Voltage |       |       |       |       |       |       |       |       |
|----------|-------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Mins     | Hours | 1.85                     | 1.80  | 1.75  | 1.70  | 1.67  | 1.65  | 1.60  | 1.55  | 1.50  |
| 2        | 0.03  | 14.4                     | 17.6  | 21.0  | 24.4  | 26.4  | 27.6  | 30.3  | 32.4  | 33.7  |
| 5        | 0.08  | 31.4                     | 36.3  | 41.2  | 45.7  | 48.2  | 49.8  | 53.1  | 55.5  | 56.8  |
| 10       | 0.17  | 49.2                     | 54.8  | 60.1  | 64.9  | 67.4  | 69.0  | 72.3  | 74.5  | 75.7  |
| 15       | 0.25  | 60.9                     | 66.5  | 71.7  | 76.3  | 78.7  | 80.2  | 83.2  | 85.3  | 86.2  |
| 20       | 0.33  | 69.4                     | 74.9  | 79.8  | 84.2  | 86.5  | 87.8  | 90.6  | 92.5  | 93.3  |
| 30       | 0.50  | 81.4                     | 86.4  | 90.8  | 94.7  | 96.7  | 97.9  | 100.3 | 101.8 | 102.5 |
| 45       | 0.75  | 92.8                     | 97.2  | 101.0 | 104.3 | 105.9 | 106.9 | 108.8 | 110.1 | 110.5 |
| 60       | 1     | 100.4                    | 104.2 | 107.5 | 110.4 | 111.8 | 112.6 | 114.2 | 115.3 | 115.6 |
| 120      | 2     | 116.3                    | 118.8 | 120.9 | 122.7 | 123.6 | 124.1 | 125.1 | 125.7 | 125.9 |
| 180      | 3     | 123.8                    | 125.7 | 127.3 | 128.7 | 129.3 | 129.7 | 130.5 | 130.9 | 131.0 |
| 240      | 4     | 128.4                    | 130.0 | 131.3 | 132.5 | 133.0 | 133.4 | 134.0 | 134.3 | 134.4 |
| 300      | 5     | 131.5                    | 133.0 | 134.2 | 135.3 | 135.8 | 136.1 | 136.6 | 137.0 | 137.1 |
| 480      | 8     | 137.3                    | 138.8 | 140.0 | 141.1 | 141.6 | 141.9 | 142.5 | 142.8 | 143.0 |
| 600      | 10    | 139.8                    | 141.4 | 142.8 | 143.9 | 144.5 | 144.9 | 145.5 | 145.9 | 146.1 |
| 1200     | 20    | 147.0                    | 149.9 | 152.3 | 154.4 | 155.5 | 156.1 | 157.3 | 158.1 | 158.4 |

### Power / W per cell

| Duration |       | End of Discharge Voltage |       |        |        |        |        |        |        |        |
|----------|-------|--------------------------|-------|--------|--------|--------|--------|--------|--------|--------|
| Mins     | Hours | 1.85                     | 1.80  | 1.75   | 1.70   | 1.67   | 1.65   | 1.60   | 1.55   | 1.50   |
| 2        | 0.03  | 801.3                    | 954.3 | 1108.8 | 1256.8 | 1338.8 | 1389.6 | 1498.9 | 1577.3 | 1619.1 |
| 5        | 0.08  | 706.8                    | 799.8 | 889.1  | 971.0  | 1015.1 | 1041.8 | 1098.1 | 1137.1 | 1156.7 |
| 10       | 0.17  | 557.6                    | 611.0 | 660.6  | 704.8  | 728.0  | 742.0  | 770.9  | 790.4  | 799.6  |
| 15       | 0.25  | 462.0                    | 497.9 | 530.8  | 559.7  | 574.7  | 583.7  | 602.0  | 614.1  | 619.6  |
| 20       | 0.33  | 396.3                    | 422.6 | 446.5  | 467.2  | 477.9  | 484.2  | 497.1  | 505.6  | 509.2  |
| 30       | 0.50  | 311.2                    | 327.4 | 342.0  | 354.4  | 360.8  | 364.5  | 372.0  | 376.9  | 378.8  |
| 45       | 0.75  | 237.9                    | 247.4 | 255.8  | 262.8  | 266.4  | 268.5  | 272.7  | 275.3  | 276.3  |
| 60       | 1     | 193.7                    | 200.0 | 205.5  | 210.1  | 212.4  | 213.8  | 216.4  | 218.0  | 218.6  |
| 120      | 2     | 113.3                    | 115.3 | 117.0  | 118.4  | 119.1  | 119.5  | 120.3  | 120.8  | 120.9  |
| 180      | 3     | 81.0                     | 81.9  | 82.6   | 83.3   | 83.6   | 83.8   | 84.1   | 84.3   | 84.4   |
| 240      | 4     | 63.3                     | 63.8  | 64.2   | 64.5   | 64.7   | 64.8   | 64.9   | 65.1   | 65.1   |
| 300      | 5     | 52.1                     | 52.4  | 52.6   | 52.8   | 52.9   | 52.9   | 53.0   | 53.1   | 53.2   |
| 480      | 8     | 34.3                     | 34.4  | 34.4   | 34.5   | 34.5   | 34.5   | 34.5   | 34.6   | 34.6   |
| 600      | 10    | 28.1                     | 28.1  | 28.1   | 28.1   | 28.1   | 28.2   | 28.2   | 28.2   | 28.3   |
| 1200     | 20    | 15.0                     | 15.0  | 15.0   | 15.0   | 15.0   | 15.0   | 15.1   | 15.1   | 15.1   |