

AGM Thin Plate Pure Lead-High Temp



The NSB Red Battery® delivers long life in unreliable grid conditions even at high temperatures.

- Pure lead electrochemistry greatly increases temp and corrosion resistance while reducing component aging
- Thin plates deliver large surface area high power density and low resistance
- Design life 15+ years at 20°C (68°F)
- Extra long life at high temp operation 40°C (104°F)
- EUROBAT design life definition: Long Life (12+ years)
- High cyclic performance
- Fast recharging
- Shelf life of up to 24 months
- 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 40FT Red

Nominal Technical Specifications

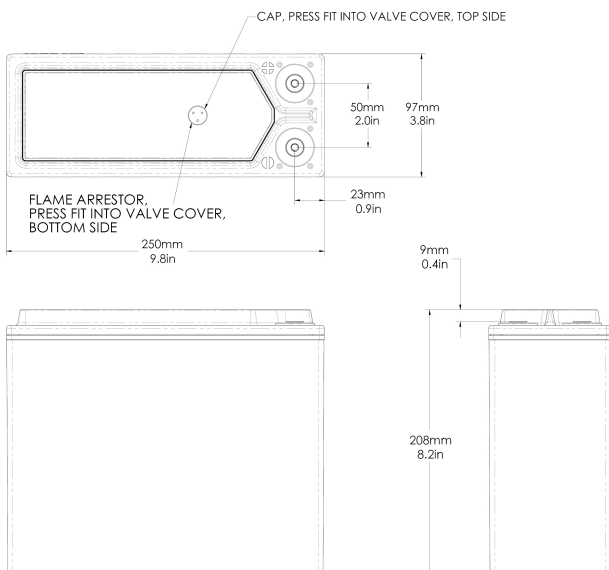
Dimension

| | | | |
|--------|-------|--------|------|
| Height | 208mm | Width | 97mm |
| Length | 250mm | Weight | 14kg |

Electrical

| | |
|---|----------------------|
| Terminal | Female M6 x 1.0 |
| Terminal torque | 8.0 Nm (71 in-lbs) |
| 1 hr capacity to 1.70VPC @ 20/25°C (68/77°F) | 29 / 30 Ah |
| 3 hr capacity to 1.75VPC @ 20/25°C (68/77°F) | 34 / 35 Ah |
| 8 hr capacity to 1.75VPC @ 20/25°C (68/77°F) | 39 / 39 Ah |
| 10 hr capacity to 1.80VPC @ 20/25°C (68/77°F) | 40 / 40 Ah |
| Float voltage @ 20/25°C (68/77°F) | 2.28 / 2.27 VPC |
| Impedance (1Khz) | 5.2 mΩ @ 25°C (77°F) |
| Conductance | 840 S |
| Short circuit current | 1500 A |
| 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 40FT Red 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 | 220.7 | 243.9 | 266.0 | 286.4 | 297.5 | 304.4 | 319.3 | 330.6 | 337.9 |
| 5 | 0.08 | 140.2 | 152.1 | 163.0 | 172.6 | 177.6 | 180.6 | 186.6 | 190.6 | 192.3 |
| 10 | 0.17 | 93.8 | 100.0 | 105.6 | 110.4 | 112.9 | 114.3 | 117.0 | 118.7 | 119.1 |
| 15 | 0.25 | 72.5 | 76.6 | 80.2 | 83.2 | 84.7 | 85.6 | 87.3 | 88.2 | 88.4 |
| 20 | 0.33 | 59.9 | 62.8 | 65.4 | 67.5 | 68.5 | 69.1 | 70.3 | 71.0 | 71.1 |
| 30 | 0.50 | 45.2 | 46.9 | 48.4 | 49.7 | 50.3 | 50.6 | 51.3 | 51.7 | 51.7 |
| 45 | 0.75 | 33.7 | 34.6 | 35.5 | 36.1 | 36.5 | 36.7 | 37.1 | 37.3 | 37.3 |
| 60 | 1 | 27.1 | 27.7 | 28.2 | 28.7 | 28.9 | 29.0 | 29.3 | 29.4 | 29.5 |
| 120 | 2 | 15.7 | 15.8 | 16.0 | 16.1 | 16.2 | 16.2 | 16.3 | 16.4 | 16.4 |
| 180 | 3 | 11.2 | 11.3 | 11.3 | 11.4 | 11.4 | 11.5 | 11.5 | 11.6 | 11.6 |
| 240 | 4 | 8.8 | 8.8 | 8.9 | 8.9 | 8.9 | 8.9 | 9.0 | 9.0 | 9.0 |
| 300 | 5 | 7.2 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.4 | 7.4 | 7.4 |
| 480 | 8 | 4.8 | 4.8 | 4.8 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 |
| 600 | 10 | 3.9 | 3.9 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 1200 | 20 | 2.1 | 2.1 | 2.1 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |

Current / 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 | 7.4 | 8.1 | 8.9 | 9.5 | 9.9 | 10.1 | 10.6 | 11.0 | 11.3 |
| 5 | 0.08 | 11.7 | 12.7 | 13.6 | 14.4 | 14.8 | 15.0 | 15.6 | 15.9 | 16.0 |
| 10 | 0.17 | 15.6 | 16.7 | 17.6 | 18.4 | 18.8 | 19.0 | 19.5 | 19.8 | 19.9 |
| 15 | 0.25 | 18.1 | 19.2 | 20.0 | 20.8 | 21.2 | 21.4 | 21.8 | 22.1 | 22.1 |
| 20 | 0.33 | 20.0 | 20.9 | 21.8 | 22.5 | 22.8 | 23.0 | 23.4 | 23.7 | 23.7 |
| 30 | 0.50 | 22.6 | 23.5 | 24.2 | 24.8 | 25.1 | 25.3 | 25.7 | 25.8 | 25.9 |
| 45 | 0.75 | 25.2 | 26.0 | 26.6 | 27.1 | 27.4 | 27.5 | 27.8 | 28.0 | 28.0 |
| 60 | 1 | 27.1 | 27.7 | 28.2 | 28.7 | 28.9 | 29.0 | 29.3 | 29.4 | 29.5 |
| 120 | 2 | 31.3 | 31.7 | 32.0 | 32.2 | 32.4 | 32.4 | 32.6 | 32.8 | 32.9 |
| 180 | 3 | 33.6 | 33.8 | 34.0 | 34.2 | 34.3 | 34.4 | 34.5 | 34.7 | 34.8 |
| 240 | 4 | 35.1 | 35.3 | 35.4 | 35.6 | 35.6 | 35.7 | 35.8 | 36.0 | 36.1 |
| 300 | 5 | 36.2 | 36.3 | 36.5 | 36.6 | 36.7 | 36.7 | 36.9 | 37.0 | 37.2 |
| 480 | 8 | 38.3 | 38.5 | 38.7 | 38.8 | 38.9 | 39.0 | 39.1 | 39.3 | 39.4 |
| 600 | 10 | 39.2 | 39.5 | 39.7 | 39.9 | 40.0 | 40.1 | 40.2 | 40.4 | 40.5 |
| 1200 | 20 | 41.5 | 42.3 | 42.9 | 43.4 | 43.7 | 43.8 | 44.1 | 44.2 | 44.2 |

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 | 359.5 | 396.7 | 432.6 | 466.3 | 485.1 | 496.9 | 523.4 | 544.9 | 560.8 |
| 5 | 0.08 | 257.1 | 275.5 | 292.5 | 307.7 | 315.9 | 320.8 | 331.4 | 339.3 | 344.1 |
| 10 | 0.17 | 181.1 | 190.6 | 199.0 | 206.4 | 210.2 | 212.5 | 217.1 | 220.3 | 221.9 |
| 15 | 0.25 | 142.7 | 148.8 | 154.1 | 158.7 | 161.0 | 162.4 | 165.1 | 166.9 | 167.7 |
| 20 | 0.33 | 118.9 | 123.2 | 127.0 | 130.1 | 131.7 | 132.7 | 134.5 | 135.7 | 136.1 |
| 30 | 0.50 | 90.3 | 92.9 | 95.1 | 97.0 | 97.9 | 98.4 | 99.5 | 100.1 | 100.2 |
| 45 | 0.75 | 67.3 | 68.8 | 70.1 | 71.1 | 71.6 | 71.9 | 72.5 | 72.8 | 72.9 |
| 60 | 1 | 54.1 | 55.1 | 55.9 | 56.6 | 56.9 | 57.1 | 57.5 | 57.7 | 57.8 |
| 120 | 2 | 31.0 | 31.4 | 31.7 | 31.9 | 32.0 | 32.1 | 32.2 | 32.3 | 32.3 |
| 180 | 3 | 20.8 | 21.0 | 21.2 | 21.4 | 21.5 | 21.5 | 21.6 | 21.7 | 21.7 |
| 240 | 4 | 17.2 | 17.3 | 17.4 | 17.5 | 17.6 | 17.6 | 17.7 | 17.7 | 17.7 |
| 300 | 5 | 14.1 | 14.2 | 14.3 | 14.4 | 14.4 | 14.5 | 14.5 | 14.6 | 14.6 |
| 480 | 8 | 9.3 | 9.4 | 9.4 | 9.5 | 9.5 | 9.5 | 9.6 | 9.6 | 9.6 |
| 600 | 10 | 7.6 | 7.7 | 7.7 | 7.8 | 7.8 | 7.8 | 7.9 | 7.9 | 7.9 |
| 1200 | 20 | 4.1 | 4.1 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.3 | 4.3 |

NSB 40FT Red 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 | 244.9 | 270.6 | 295.2 | 317.8 | 330.2 | 337.8 | 354.3 | 366.9 | 375.0 |
| 5 | 0.08 | 152.6 | 165.6 | 177.4 | 187.9 | 193.3 | 196.6 | 203.2 | 207.5 | 209.4 |
| 10 | 0.17 | 100.8 | 107.5 | 113.5 | 118.6 | 121.3 | 122.8 | 125.8 | 127.5 | 128.0 |
| 15 | 0.25 | 77.4 | 81.7 | 85.5 | 88.8 | 90.4 | 91.3 | 93.1 | 94.1 | 94.3 |
| 20 | 0.33 | 63.6 | 66.7 | 69.4 | 71.6 | 72.7 | 73.4 | 74.6 | 75.3 | 75.4 |
| 30 | 0.50 | 47.7 | 49.5 | 51.1 | 52.4 | 53.0 | 53.4 | 54.1 | 54.5 | 54.6 |
| 45 | 0.75 | 35.3 | 36.3 | 37.1 | 37.9 | 38.2 | 38.4 | 38.8 | 39.1 | 39.1 |
| 60 | 1 | 28.3 | 28.9 | 29.4 | 29.9 | 30.1 | 30.3 | 30.5 | 30.7 | 30.7 |
| 120 | 2 | 16.2 | 16.4 | 16.5 | 16.6 | 16.7 | 16.8 | 16.8 | 16.9 | 17.0 |
| 180 | 3 | 11.5 | 11.6 | 11.7 | 11.7 | 11.7 | 11.8 | 11.8 | 11.9 | 11.9 |
| 240 | 4 | 9.0 | 9.0 | 9.1 | 9.1 | 9.1 | 9.1 | 9.2 | 9.2 | 9.2 |
| 300 | 5 | 7.4 | 7.4 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.6 | 7.6 |
| 480 | 8 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 5.0 | 5.0 | 5.0 | 5.0 |
| 600 | 10 | 4.0 | 4.0 | 4.0 | 4.0 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| 1200 | 20 | 2.1 | 2.1 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |

Current / 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 | 8.2 | 9.0 | 9.8 | 10.6 | 11.0 | 11.3 | 11.8 | 12.2 | 12.5 |
| 5 | 0.08 | 12.7 | 13.8 | 14.8 | 15.7 | 16.1 | 16.4 | 16.9 | 17.3 | 17.4 |
| 10 | 0.17 | 16.8 | 17.9 | 18.9 | 19.8 | 20.2 | 20.5 | 21.0 | 21.3 | 21.3 |
| 15 | 0.25 | 19.3 | 20.4 | 21.4 | 22.2 | 22.6 | 22.8 | 23.3 | 23.5 | 23.6 |
| 20 | 0.33 | 21.2 | 22.2 | 23.1 | 23.9 | 24.2 | 24.5 | 24.9 | 25.1 | 25.1 |
| 30 | 0.50 | 23.8 | 24.7 | 25.5 | 26.2 | 26.5 | 26.7 | 27.0 | 27.2 | 27.3 |
| 45 | 0.75 | 26.4 | 27.2 | 27.9 | 28.4 | 28.7 | 28.8 | 29.1 | 29.3 | 29.3 |
| 60 | 1 | 28.3 | 28.9 | 29.4 | 29.9 | 30.1 | 30.3 | 30.5 | 30.7 | 30.7 |
| 120 | 2 | 32.4 | 32.7 | 33.0 | 33.3 | 33.4 | 33.5 | 33.7 | 33.8 | 33.9 |
| 180 | 3 | 34.5 | 34.8 | 35.0 | 35.1 | 35.2 | 35.3 | 35.5 | 35.6 | 35.7 |
| 240 | 4 | 36.0 | 36.1 | 36.3 | 36.4 | 36.5 | 36.6 | 36.7 | 36.8 | 37.0 |
| 300 | 5 | 37.0 | 37.1 | 37.3 | 37.4 | 37.5 | 37.5 | 37.7 | 37.8 | 38.0 |
| 480 | 8 | 38.9 | 39.1 | 39.3 | 39.5 | 39.5 | 39.6 | 39.8 | 39.9 | 40.0 |
| 600 | 10 | 39.7 | 40.0 | 40.2 | 40.4 | 40.6 | 40.6 | 40.8 | 40.9 | 41.0 |
| 1200 | 20 | 41.8 | 42.6 | 43.2 | 43.8 | 44.0 | 44.2 | 44.4 | 44.5 | 44.5 |

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 | 399.0 | 440.2 | 480.1 | 517.5 | 538.4 | 551.4 | 580.8 | 604.7 | 622.3 |
| 5 | 0.08 | 279.9 | 299.9 | 318.4 | 335.0 | 343.9 | 349.3 | 360.8 | 369.4 | 374.7 |
| 10 | 0.17 | 194.6 | 204.8 | 213.9 | 221.8 | 225.8 | 228.3 | 233.3 | 236.7 | 238.5 |
| 15 | 0.25 | 152.2 | 158.7 | 164.4 | 169.2 | 171.7 | 173.2 | 176.1 | 178.0 | 178.8 |
| 20 | 0.33 | 126.2 | 130.7 | 134.7 | 138.1 | 139.8 | 140.8 | 142.8 | 144.0 | 144.5 |
| 30 | 0.50 | 95.2 | 97.9 | 100.3 | 102.2 | 103.2 | 103.8 | 104.9 | 105.5 | 105.7 |
| 45 | 0.75 | 70.5 | 72.1 | 73.4 | 74.5 | 75.0 | 75.4 | 76.0 | 76.3 | 76.4 |
| 60 | 1 | 56.4 | 57.4 | 58.3 | 59.0 | 59.4 | 59.6 | 60.0 | 60.2 | 60.2 |
| 120 | 2 | 32.0 | 32.4 | 32.7 | 33.0 | 33.1 | 33.2 | 33.3 | 33.4 | 33.4 |
| 180 | 3 | 21.4 | 21.6 | 21.8 | 22.0 | 22.1 | 22.1 | 22.2 | 22.3 | 22.3 |
| 240 | 4 | 17.6 | 17.7 | 17.9 | 18.0 | 18.0 | 18.0 | 18.1 | 18.1 | 18.2 |
| 300 | 5 | 14.5 | 14.6 | 14.6 | 14.7 | 14.8 | 14.8 | 14.8 | 14.9 | 14.9 |
| 480 | 8 | 9.5 | 9.5 | 9.6 | 9.7 | 9.7 | 9.7 | 9.7 | 9.8 | 9.8 |
| 600 | 10 | 7.7 | 7.8 | 7.8 | 7.9 | 7.9 | 7.9 | 8.0 | 8.0 | 8.0 |
| 1200 | 20 | 4.1 | 4.2 | 4.2 | 4.2 | 4.2 | 4.3 | 4.3 | 4.3 | 4.3 |