

# NSB 190FT Red Battery®

Long float life at elevated temperatures



Red Star Technology® uses pure lead plates to deliver exceptionally long float life even at elevated temperatures.

- Pure lead AGM technology delivers long float life for telecom applications even at elevated temperatures
- 15 year float life at 20°C (68°F)
- EUROBAT design life definition: Long Life (12+ years)
- High energy density
- 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 - female M8 brass terminals provide maximum performance
- 2 year shelf life at 25°C (77°F)
- 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
  - Flame retardant (UL 94 VO) and LOI of at least 28%
- Integral handles and front access terminals ensure ease of installation and maintenance
- Approved as non-hazardous cargo for ground, sea, and air transport - DOT 49CFR173.159(d), (i) and (ii)



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## Nominal Technical Specifications



### Electrical

	International Standard 20°C (68°F)	North American Standard 25°C (77°F)
8 hour capacity to 1.75 VPC	188 Ah	191 Ah
10 hour capacity to 1.80 VPC	191 Ah	193 Ah
Float Voltage	2.29 +/- 0.02 VPC	2.27 +/- 0.02 VPC
Nominal Voltage	12 V	
Impedance (1kHz)	2.6 mΩ @ 25°C (77°F)	
Conductance	2,041 S	
Short Circuit Current	6,000 A	

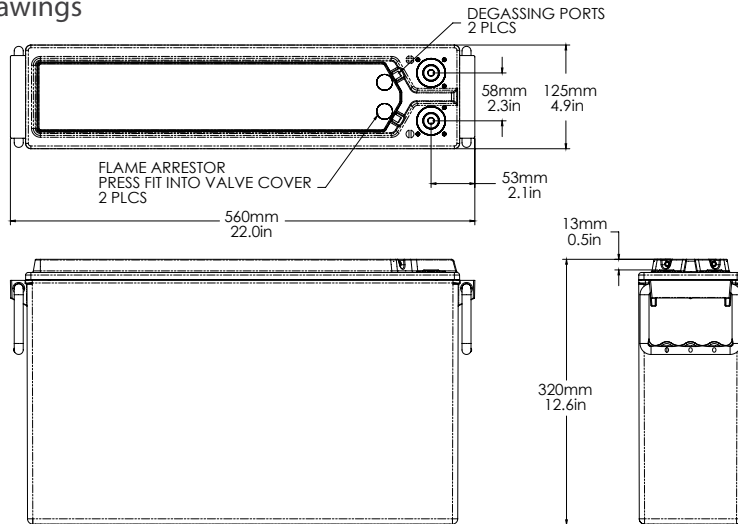
### Dimensions

Height	320 mm (12.6 in)	Weight	60 kg (132 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)

### Ah Capacity Ratings @ 25°C (77°F)

Capacity Discharge / hours	1	2	4	8	10
Capacity @ 25°C /Ah	150	167	181	191	192
End of Discharge / VPC	1.70	1.75	1.75	1.75	1.80

### Drawings



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

# Northstar 190FT Red Battery™



## Discharge Tables - 20°C (68°F)

### 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	383.6	472.4	566.9	662.9	719.1	755.3	838.6	907.3	956.6
5	0.08	390.6	452.9	515.3	575.2	608.9	630.0	677.1	714.1	738.9
10	0.17	334.1	372.9	410.2	444.8	463.7	475.4	500.8	520.1	532.3
15	0.25	287.3	314.5	340.1	363.5	376.0	383.7	400.2	412.4	419.9
20	0.33	252.0	272.4	291.4	308.5	317.6	323.1	334.9	343.4	348.5
30	0.50	203.0	216.0	227.9	238.4	244.0	247.3	254.3	259.3	262.0
45	0.75	158.2	166.1	173.1	179.3	182.5	184.4	188.3	191.0	192.5
60	1	130.2	135.5	140.2	144.3	146.4	147.6	150.2	151.9	152.7
120	2	77.2	79.1	80.7	82.0	82.7	83.1	83.9	84.4	84.6
180	3	55.3	56.2	57.0	57.7	58.0	58.2	58.5	58.8	58.8
240	4	43.1	43.7	44.2	44.6	44.8	44.9	45.1	45.2	45.2
300	5	35.4	35.8	36.1	36.4	36.5	36.6	36.7	36.8	36.8
480	8	23.1	23.3	23.5	23.6	23.6	23.7	23.7	23.8	23.8
600	10	18.8	19.0	19.1	19.2	19.2	19.2	19.3	19.3	19.3
1200	20	9.8	9.9	10.0	10.1	10.1	10.1	10.1	10.2	10.2

### 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	12.8	15.7	18.9	22.1	24.0	25.2	28.0	30.2	31.9
5	0.08	32.6	37.7	42.9	47.9	50.7	52.5	56.4	59.5	61.6
10	0.17	55.7	62.2	68.4	74.1	77.3	79.2	83.5	86.7	88.7
15	0.25	71.8	78.6	85.0	90.9	94.0	95.9	100.1	103.1	105.0
20	0.33	84.0	90.8	97.1	102.8	105.9	107.7	111.6	114.5	116.2
30	0.50	101.5	108.0	114.0	119.2	122.0	123.6	127.1	129.6	131.0
45	0.75	118.7	124.6	129.9	134.5	136.9	138.3	141.2	143.3	144.4
60	1	130.2	135.5	140.2	144.3	146.4	147.6	150.2	151.9	152.7
120	2	154.4	158.1	161.4	164.0	165.4	166.2	167.8	168.7	169.1
180	3	165.8	168.6	171.0	173.0	174.0	174.5	175.6	176.3	176.5
240	4	172.6	174.8	176.7	178.3	179.1	179.5	180.4	180.8	180.9
300	5	177.1	179.0	180.6	182.0	182.6	183.0	183.7	184.0	184.1
480	8	185.0	186.5	187.7	188.7	189.2	189.4	189.9	190.2	190.2
600	10	188.1	189.5	190.7	191.6	192.1	192.3	192.8	193.1	193.2
1200	20	196.4	198.3	199.8	201.1	201.8	202.2	203.0	203.5	203.7

### 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	709.1	846.5	987.0	1123.9	1201.3	1250.0	1357.8	1440.6	1492.8
5	0.08	734.2	829.4	921.7	1007.7	1054.8	1083.9	1146.9	1194.0	1222.8
10	0.17	635.8	694.7	750.0	800.0	826.8	843.2	878.2	903.7	918.9
15	0.25	550.6	591.8	629.8	663.7	681.7	692.6	715.7	732.4	742.1
20	0.33	485.2	516.2	544.4	569.4	582.5	590.5	607.2	619.1	625.8
30	0.50	393.5	413.3	431.1	446.6	454.7	459.6	469.7	476.8	480.7
45	0.75	308.7	320.7	331.4	340.6	345.3	348.1	354.0	358.0	360.0
60	1	255.1	263.3	270.5	276.7	279.9	281.7	285.6	288.1	289.4
120	2	152.8	155.8	158.3	160.5	161.6	162.2	163.5	164.2	164.5
180	3	109.9	111.5	112.8	114.0	114.5	114.8	115.4	115.8	115.9
240	4	86.1	87.1	87.9	88.6	89.0	89.2	89.5	89.7	89.8
300	5	70.8	71.5	72.2	72.6	72.9	73.0	73.3	73.4	73.4
480	8	46.4	46.8	47.1	47.4	47.5	47.6	47.7	47.8	47.8
600	10	37.8	38.1	38.4	38.6	38.7	38.7	38.8	38.9	38.9
1200	20	19.8	20.0	20.2	20.3	20.3	20.4	20.4	20.5	20.5