

### 313K Series High Temperature Batteries

Designed and manufactured with 8 exclusive patented technologies, Narada have created an innovative range of high temperature batteries. The 313K series is designed to cope with the most extreme temperatures and environments. The advanced technology and unique manufacturing methods enable 313K batteries to deliver at least twice the cycle life of conventional lead-acid batteries, making them the first choice increasing power demands in remote hybrid telecom sites and other tough off-grid applications.

#### Standards

Test standards

IEC60896-21/-22, IEC61427, YD/T799 etc.

Safety standard, ventilation

EN 50272-2

Manufactured under system

ISO9001/TL9000& ISO 14001 by Narada

#### Benefits

- Excellent deep cycling capability
- Suitable for continuous operation at temperatures in excess of 35°C
- Reduced system operating costs
- 25% electricity power saving
- Up to 100% air conditioner maintenance saving
- Up to 100% condensing agent saving
- 30% CO<sub>2</sub> gas emission reduce
- Less than 1 year payback period depend on environment



#### Technical specifications

##### Electrical data

Nominal voltage	2 V
Number of cells	1
Rated capacity	1000Ah -100A for 10h to 1.80V/cell(25°C) 1052Ah - 105.2A for 10h to 1.80V/cell(35°C)
Internal resistance	0.15mΩ(acc.to IEC 60896-21)
Short circuit current	12835 A(acc.to IEC 60896-21)
Self discharge(35°C)	less than 5% per month
Design life at 35°C	15 years

##### Mechanical data

Weight ready for use	76 kg(167.6 lbs)
Length	231mm(9.09 in)
Width	281mm(11.10 in)
Height of monobloc	396mm(15.59 in)
Total height	408mm(16.02 in)
Terminal	M8 female
Terminal hardware torque	10 -12Nm

#### Constant Current Discharge Date Units:Amperes(35°C,95°F)

End Voltage	15 min	30 min	60 min	3 hour	5 hour	8 hour	10 hour	24 hour	48 hour	72 hour	120 hour	240 hour
1.75V	1043.9	778.1	564.6	273.2	186.2	127.9	106.6	49.5	23.7	14.0	10.7	4.96
1.80V	973.5	728.5	563.2	267.1	181.9	125.5	105.2	48.5	23.2	13.7	10.5	4.89
1.83V	896.1	679.9	505.9	259.0	179.1	124.7	104.7	48.5	23.2	13.5	10.5	4.87
1.85V	828.1	640.5	473.5	245.0	170.5	120.4	100.9	47.1	22.5	13.3	10.2	4.74
1.88V	749.0	592.9	430.0	231.0	162.5	116.0	97.1	45.7	21.8	13.2	9.71	4.79
1.90V	653.8	532.2	391.6	218.9	154.4	109.2	92.0	44.0	21.0	13.0	9.2	4.74

#### Constant Power Discharge Date Units:Wants per cell(35°C,95°F)

End Voltage	5 min	15 min	30 min	60 min	90 min	2 hour	3 hour	4 hour	5 hour	6 hour	8 hour	10 hour	12 hour	24 hour
1.70V	2349.8	1998.3	1628.1	1190.1	907.5	747.7	575.3	463.9	392.0	344.4	282.6	235.0	195.8	102.8
1.75V	2235.5	1912.2	1530.6	1122.2	854.8	715.1	564.1	455.8	384.9	334.2	276.5	233.0	194.1	101.8
1.80V	2152.3	1802.8	1430.6	1033.1	803.2	688.7	546.9	448.7	374.7	327.1	270.4	228.9	190.7	100.3
1.83V	2025.7	1686.4	1336.9	966.2	764.7	663.4	534.8	436.5	364.6	318.0	263.3	224.8	187.4	98.8
1.85V	1879.8	1574.9	1235.7	885.2	719.1	638.1	516.5	424.4	354.5	308.9	255.0	216.7	180.6	96.2
1.88V	1769.9	1447.1	1114.1	810.3	688.7	605.7	488.2	407.2	344.4	301.8	248.1	210.7	175.6	93.7
1.90V	1595.2	1276.2	1010.3	750.5	648.2	575.3	471.0	439.0	331.2	291.7	239.0	204.0	170.0	90.1
1.94V	1443.3	1166.0	892.6	676.5	590.5	529.7	431.0	358.0	301.8	262.3	214.7	183.7	153.1	89.1

## Construction

Positive plate	Reinforced grids in corrosion-resistant pure lead, high tin, low calcium alloy
Negative plate	Lead-calcium alloy grid
Separator	High density microporous glass mat with low electrical resistance
Container & lid	High temperature ABS. Optional flame retardant versions available (UL94FV-0 with L.O.I. of 28%)
Electrolyte	Sulphuric acid with a density of 1.28g/ml absorbed in AGM
Terminal design	Patented leak resistant seal configuration with brass insert
Safety valve	Calibrated opening pressure, the valve equipped with flame arrestors for increased operational safety and service life

## Installation and operation

- Recommended float charge voltage compensation in function of temperature: 2.24V per cell at 35°C -3mV/°C/cell
- Cycle and equalize charge voltage: 2.30V per cell at 35°C, or case by case compensation in function of temperature: -5mV/°C/cell
- CC-CV charge current: unlimited, otherwise 0.25C10A max. if T>25°C
- Preferred operating temperature range: 15°C to 35°C (68°F to 95°F)
- Maximum operating temperature range: -40°C to 80°C (-40°F to 176°F)
- A separate battery room: is not necessary
- Reduced maintenance: no water addition required

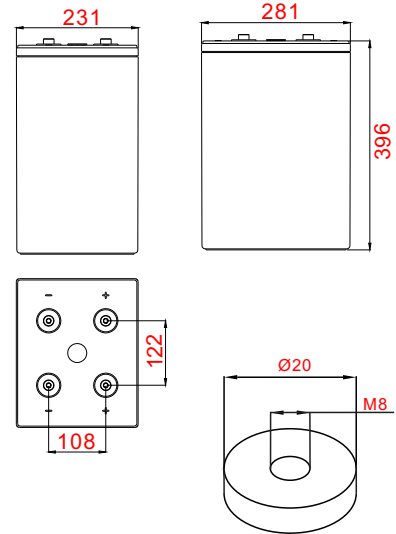
## Racking(optional)

Narada racks are constructed using strong, easy to assemble powder-coated steel tubing and come complete with sliding cover terminal (take-off) plates.

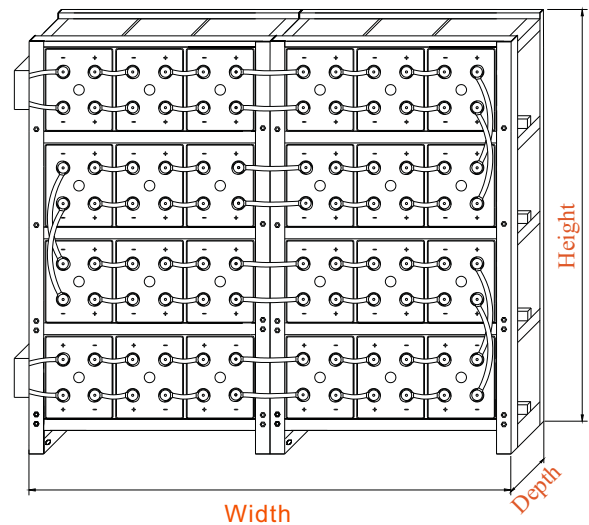
Cell model:	HTB-1000	
Number of cells:	24	
System Voltage:	48	
Cell Configuration	4 high 6 wide	In outdoor cabinet
Rack width (mm)	1646	Cabinet width (1520)
Rack depth (mm)	405	Cabinet depth (1710)
Rack height (mm)	1408	Cabinet height (1520)
System weight (kg)	1914	2560

\*Please allow 100mm for terminal boxes

## Dimensions(mm)



Terminal Dimensions



Width

Height

Depth

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