

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

313K Series

## High Temperature Batteries

### 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% CO2 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	600Ah -60A for 10h to 1.80V/cell(25°C) 630Ah - 63.0A for 10h to 1.80V/cell(35°C)
Internal resistance	0.23mΩ(acc.to IEC 60896-21)
Short circuit current	8641 A(acc.to IEC 60896-21)
Self disc harge(35°C)	less than 5% per month
Design life at 35°C	15years
Mechanical data	
Weigh ready for use	46 kg(37.5 lbs)
Length	231mm(9.09 in)
Width	180mm(7.09 in)
Height of monobloc	396mm(15.59 in)
Total height	408mm(16.06 in)
Terminal	M8 female
Terminal hardware torque	1 0 -12Nm

### Constant Current Discharge Data 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	708.3	519.1	346.1	159.0	101.5	77.3	64.5	28.8	14.9	10.2	6.45	3.33
1.80V	667.8	485.7	324.2	154.2	107.9	75.9	63.0	28.3	14.5	9.93	6.30	3.24
1.83V	627.0	462.4	303.6	149.2	105.4	74.6	61.7	27.6	14.2	9.72	6.22	3.20
1.85V	592.2	433.1	292.6	146.3	104.3	73.7	61.3	27.3	14.1	9.67	6.13	3.16
1.88V	540.0	406.8	280.3	143.3	103.2	72.8	60.8	27.1	14.0	9.59	6.02	3.10
1.90V	500.7	371.5	259.8	137.2	100.4	70.9	59.3	26.7	13.7	9.34	5.93	3.05

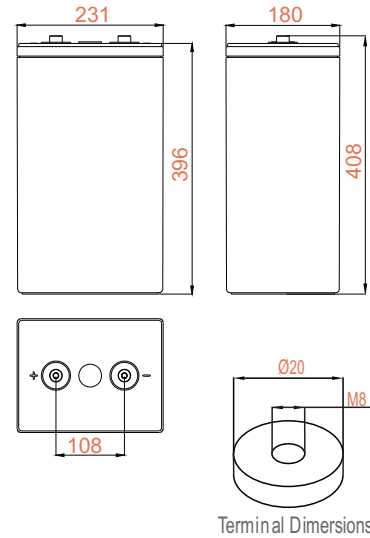
### Constant Power Discharge Data Units: Watts per cell (35°C, 95°F)

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	1590.1	1348.1	1069.5	727.2	571.2	475.0	339.7	274.2	233.8	200.9	155.9	128.0	116.4	58.6
1.75V	1540.5	1297.4	1033.1	698.9	554.0	458.2	327.1	268.5	228.0	196.3	150.1	126.0	114.7	58.0
1.80V	1498.0	1236.7	996.6	682.6	540.9	449.7	315.6	259.8	221.7	190.5	146.3	124.1	113.0	57.1
1.83V	1415.9	1179.9	939.9	658.3	522.6	431.5	307.9	255.9	217.1	184.7	143.4	121.7	110.8	56.3
1.85V	1362.3	1126.3	886.2	620.9	502.0	413.2	298.9	249.8	211.3	180.4	141.4	119.3	108.6	54.8
1.88V	1286.3	1043.2	824.0	583.4	463.9	384.1	288.7	241.2	204.4	174.0	137.6	116.4	105.9	53.4
1.90V	1202.2	977.4	747.5	534.8	430.2	358.5	277.1	232.6	197.4	168.6	132.3	110.7	100.8	51.4
1.94V	1086.8	875.1	669.7	474.0	385.3	331.3	257.5	217.7	187.0	161.6	127.0	105.8	96.70	49.9

## Construction

Positive plate	Reinforced grids in a 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 (UL94 FV-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.

## Dimensions (mm)



## Installation and operation

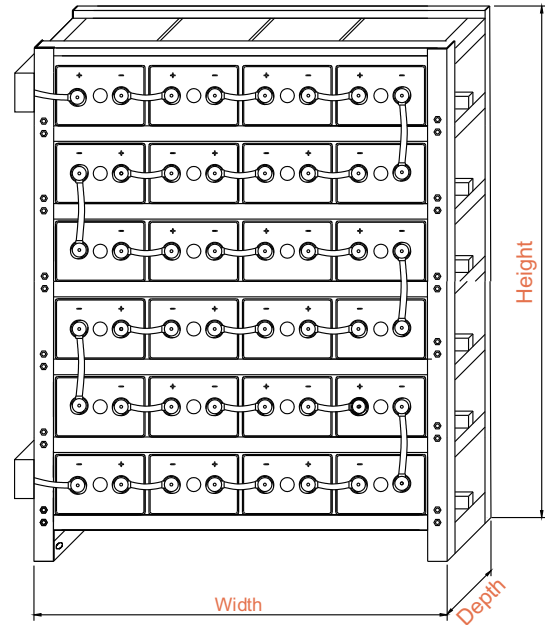
- Recommended float charge voltage compensation in function of temperature: 2.24V per cell at 35°C -3mV/°C/cell
- Cycle and equalize charge voltage: compensation in function of temperature: 2.30V per cell at 35°C, or case by case -5mV/°C/cell
- CC-CV charge current: unlimited, otherwise 0.25C10A max. 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-600		
Number of cells:	24		
System Voltage:	48		
Cell Configuration	4 high 6 wide	6 high 4 wide	In outdoor cabinet
Rack width (mm)	1646	1064	Cabinet width (1200)
Rack depth (mm)	405	405	Cabinet depth (1450)
Rack height (mm)	1000	1450	Cabinet height (1500)
System weight (kg)	1238	1225	1380

\* Please allow 100mm for terminal boxes



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