

## 12HRL100

## HRL SERIES

The Narada High Rate range of VRLA batteries provide reliable battery backup to any High Rate UPS application.

All Narada High Rate series batteries use optimized plate technology and a patented post design offering exceptional service life.



### Technical Features:

- ◆ Flame Retardant ABS Cover and Container, UL94 V-0, LOI>28%
- ◆ Patented copper alloy terminal design
- ◆ Epoxy TPS design for high reliability post seal
- ◆ 6 months of storage at 77°F (25°C) with a capacity > 80%
- ◆ Initial capacity at 100%
- ◆ Low pressure one-way flame arresting valve(s) UL1989
- ◆ Absorbent Glass Mat (AGM) Sealed Technology, Recombination efficiency of 99.9%

### Compliance and Safety:

- ◆ **ISO 9001:2000 and ISO 14001:2004 certified production facilities**
- ◆ UL Recognized Component 924, for use in or with listed UL1778, UL1989 and UL924 systems
- ◆ IEC60896-21/22
- ◆ BS6290 part 4 / Eurobatt guide
- ◆ **TL9001 / ISO9001(TUV) Quality System**
- ◆ Battery installation compliant with: EN 50272-2
- ◆ All batteries meet or exceed IEEE recommended practices

### Transportation:

- ◆ Classified as Nonspillable UN 2800 and meet the Nonspillable criteria listed in DOT-CFR Title 49, 171-189 (d) (3) (i) and (ii) and exempt from CFR 49, Subchapter C requirements
- ◆ Meets transportation conditions of IMDG exemption 238, IATA/ICAO Special Provision A67 (Not Restricted)

WPC @ 15 min 1.67 VPC / 77°F (25°C)	100 watts
WPC @ 5 min 1.60 VPC / 77°F (25°C)	209 watts
Ah @ 20hr 1.75 VPC / 77°F (25°C)	28 Ah

Nominal voltage	12V
Float charge voltage @25°C (2.23 – 2.27VPC)	13.4 – 13.6
Max. charge current (A) (5 hour rate @ 1.75VPC)	7.8 Amps

Electrolyte Absorbed H <sub>2</sub> SO <sub>4</sub>	1.300
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Short circuit current (A)	1240 Amps
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Internal resistance (mΩ)	8 mΩ
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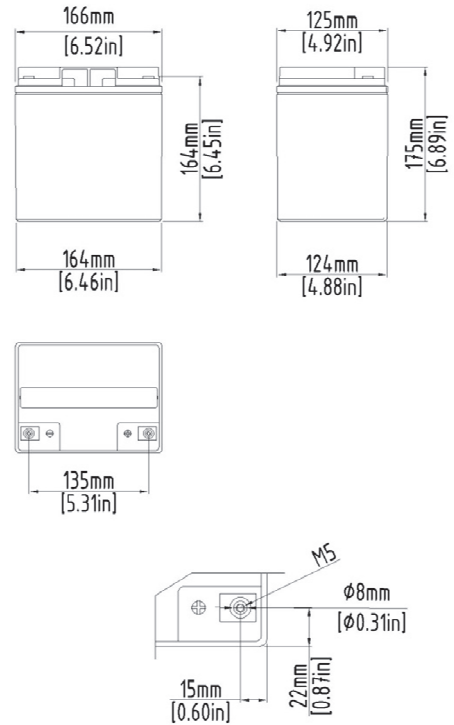
Terminal Type	Torque
M5-F	65 in-lbs (6 ± 1 Nm)

Dimension	in	mm
Length	6.52	166
Length Base	6.46	164
Width	4.92	125
Overall Height	6.89	175

Weight	Lbs.	Kg
	22	9.7

### Operating Parameters

Float Charging Voltage	13.5V / 2.25VPC @ 77°F (25°C)
Equalize /Cycle	14.0V – 14.3V 2.33VPC to 2.38VPC @ 77°F (25°C)
See Operations and Maintenance Manual for specific guidelines and recharge times	
Charging Temperature Compensation	-2 mV/cell/°F > 77°F (-3.6 mV/cell /°C > 25°C)
	+2 mV/cell/°F < 77°F (+3.6 mV/cell/°C < 25°C)
Maximum AC Ripple (Charger)	0.5% RMS, 1.5% peak-to-peak for float charge voltage for best results
Operating Temperature Range	
Nominal	+74°F (24°C) to 80°F (27°C)
Charge	-20°F (-28°C) to +122°F (50°C)
Discharge	-40°F (-40°C) to +140°F (60°C)
Storage Temperature Range	-4°F (-20°C) to +104°F (40°C)



### Constant Power Discharge Watts per cell (25°C, 77°F)

End Cell Voltage	5min	10min	15min	20min	30min	40min	50min	1h	2h
1.60V	209.2	131.7	101.5	79.4	60.6				
1.67V	205.0	133.0	100.0	80.0	59.0	50.2	44.2	39.1	21.3
1.70V	199.0	130.0	98.0	79.0	59.0	48.6	42.9	38.2	21.2
1.75V	188.0	124.0	95.0	76.0	57.0	46.3	41.1	36.3	20.9
1.80V	164.4	114.9	88.8	69.1	52.4	44.0	38.8	34.6	20.6
1.83V	155.1	108.2	83.5	65.0	49.9	41.9	36.8	32.6	20.3
1.85V	127.4	91.1	71.3	56.2	43.8	37.2	32.9	29.6	20.2

### Constant Current Discharge Amperes (25°C, 77°F)

End Cell Voltage	5min	15min	30min	1h	2h	4h	8h	10h	20h
1.60V	125	59.4	34.6						
1.67V	118	57.2	33.2	21.0	10.7	6.85	3.81	3.17	1.43
1.70V	108	54.7	31.4	20.3	10.6	6.68	3.75	3.12	1.42
1.75V	99	52.2	30.0	19.2	10.5	6.50	3.70	3.09	1.40
1.80V	90	48.5	28.4	18.2	10.3	6.35	3.66	3.06	1.38
1.83V	83	44.5	26.4	17.0	10.2	6.18	3.60	3.02	1.36
1.85V	67	37.0	22.4	15.0	10.1	5.62	3.31	2.81	1.34

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