

## 12HRL80

## 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)	80 watts
WPC @ 5 min 1.60 VPC / 77°F (25°C)	113 watts
Ah @ 20hr 1.75 VPC / 77°F (25°C)	20 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)	5 Amps

Electrolyte Absorbed H <sub>2</sub> SO <sub>4</sub>	1.300
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Short circuit current (A)	600 Amps
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Internal resistance (mΩ)	14.0 mΩ
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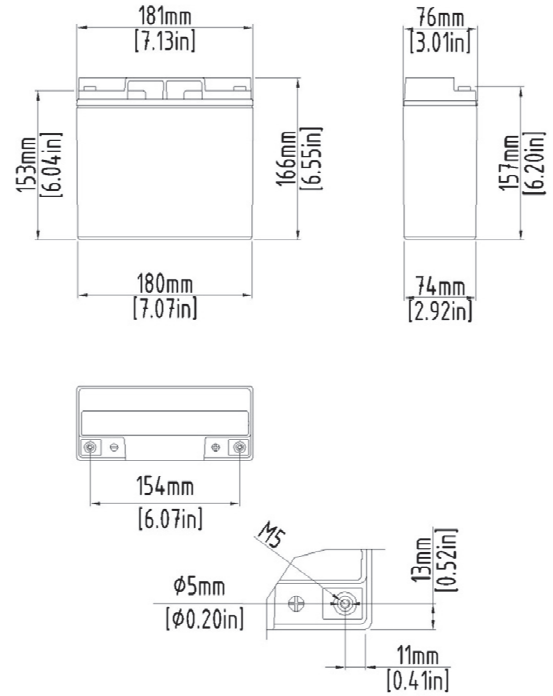
Terminal Type	Torque
M5-F	65 in-lbs (6 ± 1 Nm)

Dimension	in	mm
Length	7.13	181
Length Base	7.07	180
Width	3.01	76
Overall Height	6.55	166

Weight	Lbs.	Kg
	13	5.8

### 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
1.67V	164.0	106.0	80.0	64.0	47.0	34.8	28.4	24.2	14.4
1.70V	159.0	104.0	79.0	63.0	47.0	34.4	28.0	24.0	14.3
1.75V	150.0	99.0	76.0	61.0	45.0	34.0	27.6	23.6	14.5
1.80V	98.1	77.8	72.9	55.5	41.8	33.8	27.8	23.3	14.3
1.83V	95.8	75.5	71.2	54.7	41.0	33.7	27.5	22.8	13.8
1.85V	94.5	74.2	70.3	54.3	40.5	33.6	27.4	22.5	13.5

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

End Cell Voltage	5min	15min	30min	1h	2h	4h	8h	10h	20h
1.67V	60	42.6	23.9	13.6	7.88	4.31	2.35	2.06	1.02
1.70V	58	41.4	23.5	13.4	7.82	4.29	2.33	2.05	1.01
1.75V	56	39.9	22.7	13.3	7.73	4.25	2.29	2.00	0.99
1.80V	54	38.7	21.7	12.8	7.59	4.10	2.27	1.95	0.98
1.83V	52	37.3	21.3	12.6	7.30	4.04	2.21	1.89	0.97
1.85V	50	36.6	21.0	12.5	7.20	4.00	2.17	1.85	0.96

China: **Narada**  
 NARADA POWER SOURCE CO. LTD.  
 No.459 Wensan Road, Hangzhou, Zhejiang, P.R.China

**MPINarada** MPINarada  
 44 Oak St  
 Newton, MA 02464  
 Tel: 800-982-4339  
 sales@mpinarada.com www.mpinarada.com

