

stored energy solutions for a demanding world

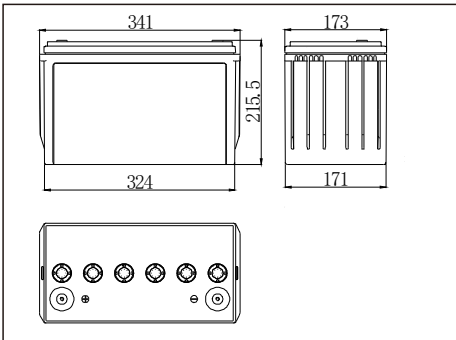
Narada

Model: **12HRL400A**

HRL Series

The HRL range of VRLA batteries with 12+ years design life is perfectly suited to any application which requires a high rate current over a short period. In particular they are ideal for IDC and UPS systems thanks to their optimized performance and a patented post seal design. Meanwhile with excellent uniform battery performance, long design life wide usage temperature range, HRL series are suit for high ambient temperature.

Dimensions-mm [inch]



Specifications

Battery Model	12HRL400A
Nominal Voltage	12V
Rated Capacity	400 W/cell(15 minute rate, 1.67 V/cell) and 100Ah(10 hr to 1.80V/cell) @25°C(77°F)
Typical Weight	34kg
Internal Resistance	Approx 3.80mΩ
Temperature Ranges	Operation (maximum) : -40°C to 55°C(-40°F to 131°F)
	Operation (recommended) : 15°C to 25°C(59°F to 77°F)
	Storage: -20°C to 40°C(-4°F to 104°F)
Float Voltage	2.27V/cell@25°C(77°F)
Recommended Maximum Charging Current Limit	25A
Equalize and Cycle Service	2.35V~2.40V@25°C(77°F)
Self Discharge	The residual capacity is above 94% after 90 days storage(25°C/77°F)
Terminal	M6 Female
Terminal Hardware Torque	8 ± 1.0Nm
Container Material	ABS (V0 optional)

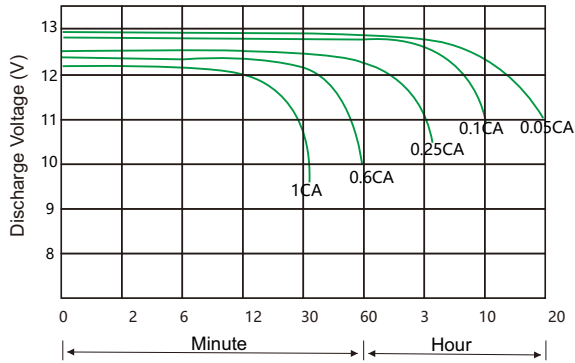
Discharge Data with Constant Power Units: Watts per cell (25°C, 77°F)

End Voltage per cell	5min	10min	15min	20min	30min	40min	50min	1h	2h
1.60V	827	549	412	325	233	182	150	129	74.9
1.67V	795	536	400	319	228	178	147	127	73.9
1.70V	777	527	395	315	226	176	146	126	73.7
1.75V	736	505	382	307	223	175	145	125	73.5
1.80V	675	468	359	293	217	172	143	124	73.3
1.83V	631	442	343	282	211	169	142	123	72.4
1.85V	608	431	334	274	203	163	137	119	70.8

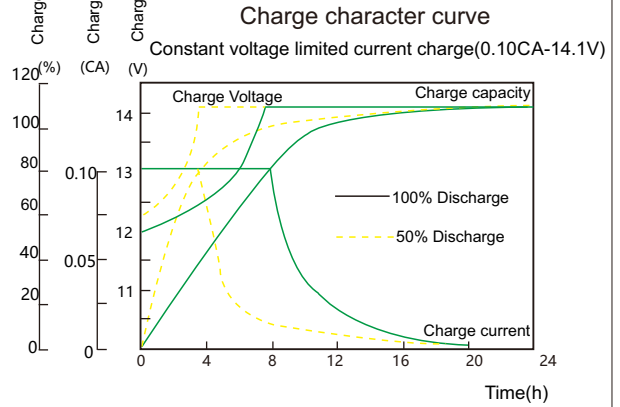
Discharge Data with Constant Current Units: Amperes (25°C, 77°F)

End Voltage per cell	5min	10min	15min	20min	30min	40min	50min	1h	2h	3h	5h	8h	10h
1.60V	483	294	217	174	128	101	84.0	72.3	40.5	28.6	18.3	12.5	10.5
1.67V	447	285	214	172	126	99.8	83.7	72.0	40.0	28.2	18.0	12.3	10.3
1.70V	428	280	212	170	125	99.5	83.5	71.8	39.8	28.0	17.9	12.2	10.2
1.75V	394	268	205	168	124	98.9	82.6	71.1	39.4	27.7	17.7	12.1	10.1
1.80V	356	248	193	159	119	95.7	80.3	69.3	38.8	27.3	17.5	12.0	10.0
1.83V	331	235	185	153	115	92.6	77.8	67.3	37.8	26.7	17.2	11.9	9.9
1.85V	314	222	175	145	110	89.0	75.2	65.2	37.2	26.4	17.0	11.7	9.6

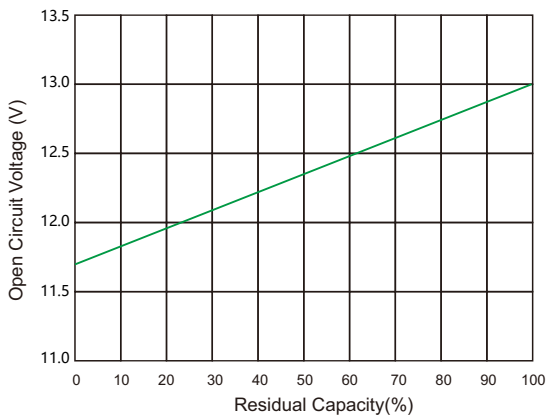
Discharge voltage vs time curve (25°C)



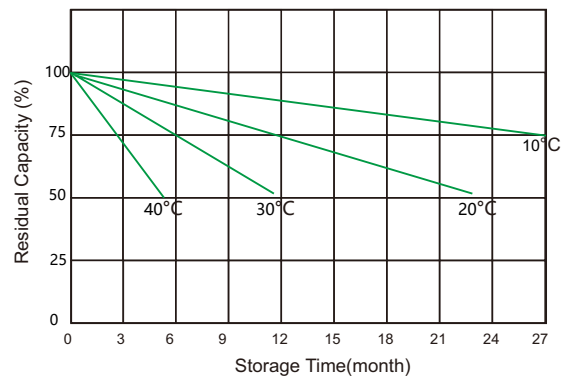
Charge curve(25°C)



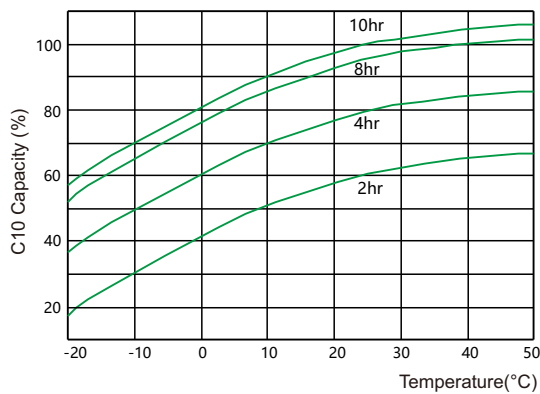
Capacity vs OCV curve



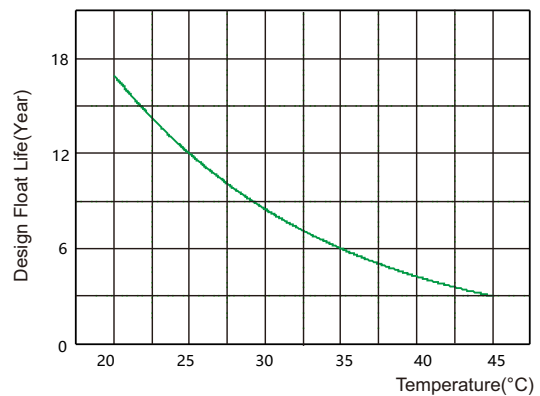
Residual capacity vs storage time



Capacity vs temperature curve



Float life vs temperature curve



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