



RA12-120HL (12V120Ah) (450w/cell)

HRL is high rate series with 12 years floating design life, especially designed for high rate load discharge applications . By using strong grid and specific paste plate to insure high performance during big current discharge requirement when electricity is off .High Rate series offering extra-durable stable performance under high rate discharge.



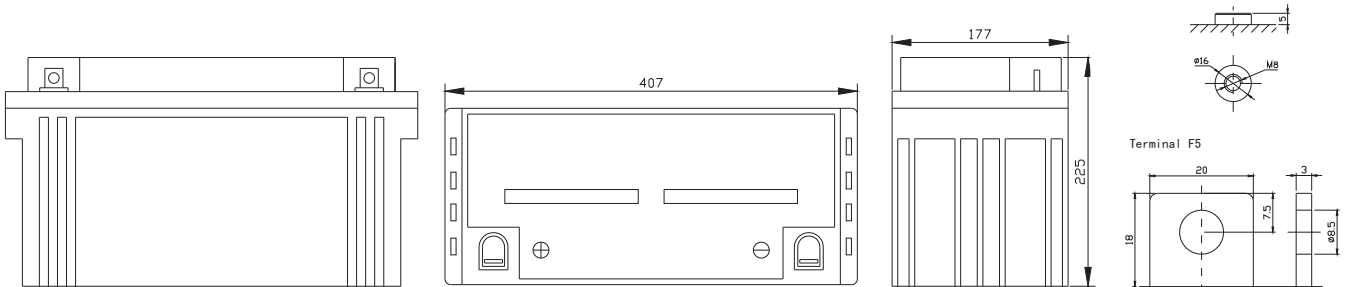
Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	450W@15min-rate to 1.67V per cell @25°C
Weight	Approx. 37.0 Kg(Tolerance ± 2%)
Max. Discharge Current	1200A (5 sec)
Internal Resistance	Approx. 3.9 mΩ
Operating Temperature Range	Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C
Normal Operating Temperature Range	25°C ± 5°C
Float charging Voltage	13.6 to 13.8 VDC/unit Average at 25°C
Recommended Maximum Charging Current	36.0 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.
Terminal	Faston tabF5/F12
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



Dimensions

Unit: mm Dimension: 407(L) × 177(W) × 225(H)



Constant Current Discharge Characteristics : A(25°C)

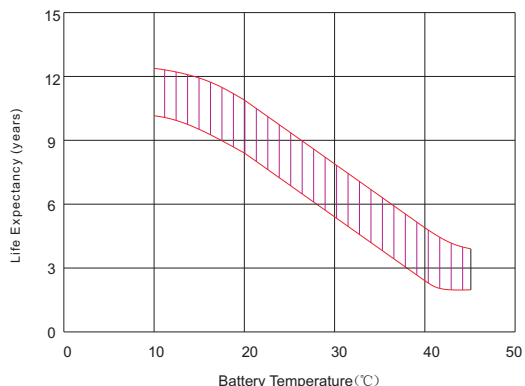
F.V /Time	5MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
9.60V	445	365	330	247	194	139	77.80	62.03
10.0V	432	346	328	241	183	134	76.27	59.89
10.2V	420	338	311	232	178	132	74.97	58.82
10.5V	377	325	284	220	170	127	73.22	57.72
10.8V	340	312	254	210	164	121	71.48	56.72
11.1V	290	287	234	200	158	117	69.28	54.45

Constant Power Discharge Characteristics : W(25°C)

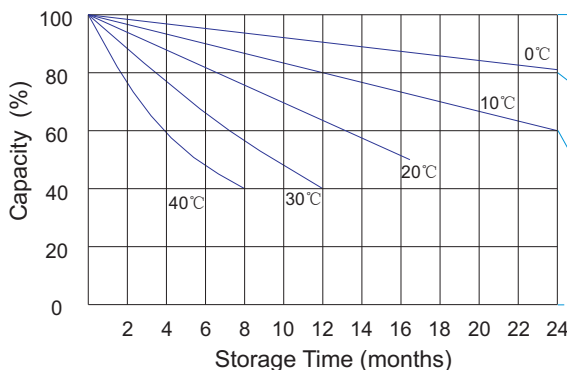
F.V /Time	5MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
9.60V	4697	3876	3670	2877	2168	1550	870	694
10.0V	4604	3721	3642	2827	2063	1507	851	674
10.2V	4552	3622	3476	2743	2023	1484	845	667
10.5V	4144	3541	3234	2658	1950	1449	840	663
10.8V	3774	3400	3172	2546	1890	1401	826	658
11.1V	3315	3220	3109	2435	1848	1359	811	638

All mentioned values are average values (Tolerance ± 2%).

Effect of temperature on long term float life



Storage characteristic



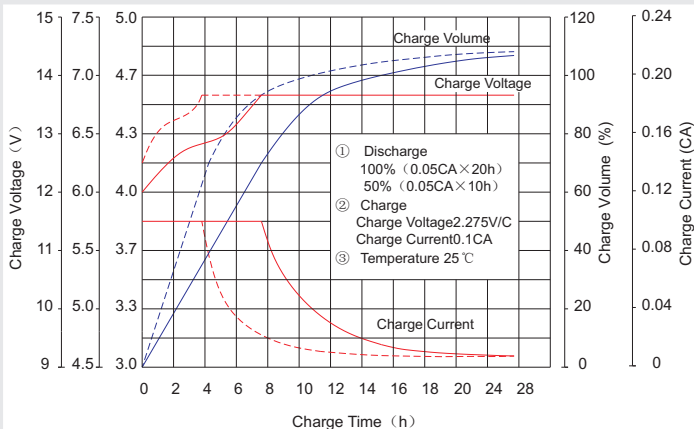
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

Supplementary charge required before use. This supplementary charge will help to recover the capacity and should be made as early as possible.

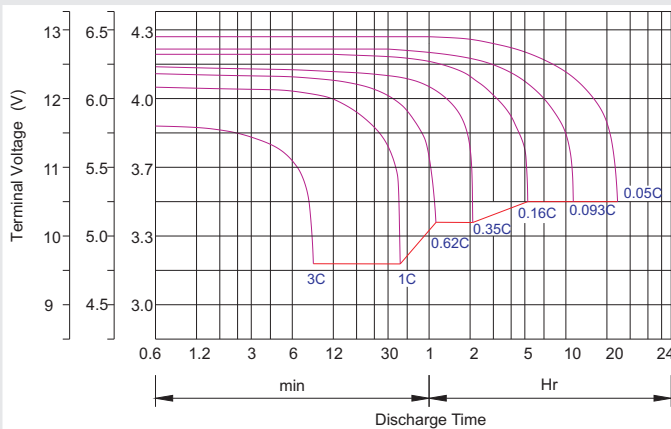
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

Supplementary charge and storage guidelines

Charge characteristic Curve for standby use



Discharge characteristic Curve



Capacity Factors With Different Temperature

Battery Type		-20°C	-10°C	0°C	5°C	10°C	20°C	25°C	30°C	40°C	45°C
GEL Battery	6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM Battery	6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/cell	1.75V	1.70V	1.60V
Discharge Current (A)	(A) ≤ 0.2C	0.2C < (A) < 1.0C	(A) ≥ 1.0C

Charge the batteries at least once every six months, if they are stored at 25°C.

Charging Method:

Constant Voltage	-0.2Cx2h+2.4-2.45V/cellx24h, Max. Current 0.3C
Constant Current	-0.2Cx2h+0.1Cx12h
Fast	-0.2Cx2h+0.3Cx4h

Bolt	M5	M6	M8
Terminal	F3 F4 F13 F18 T25 T26	F8 F11 F12-1 F15	F5 F9 F10 F12 F14 F16
Torque	6~7N·m	8~10N·m	10~12N·m

Maintenance & Cautions

Float Service:

- ※ Every month, recommend inspection every battery voltage.
- ※ Every three months, recommend equalization charge for one time.

Equalization charge method:

Discharge: 100% rate capacity discharge.

Charge: Max. current 0.3CA, constant voltage 2.4-2.45V/Cell charge 24h.

- ※ Effect of temperature on float charge voltage: -3mV/°C/Cell.

- ※ Length of service life will be directly affected by the number of discharge cycles, depth of discharge, ambient temperature and charging voltage.