



RA12-45EV (12V45Ah)

RA12-45EV is specially designed for deep cycle discharge and grouping usage in electric vehicle application. By the special active material design in the plate, it makes battery have more than 300 cycles life time by 100% D.O.D. Specially, the consistency performance of grouping usage is much better than general series.



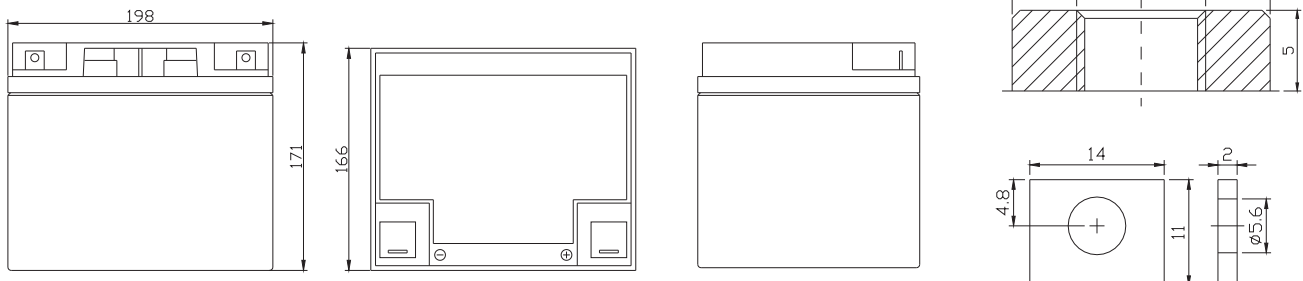
Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	45Ah@10hr-rate to 1.75V per cell @25°C
Weight	Approx. 14.6 Kg
Max. Discharge Current	450 A (5 sec)
Internal Resistance	Approx. 7 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 Limit	13.5 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	Terminal F4/F11
Constainer Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.



Dimensions

Unit: mm Dimension: 198(L)×166(W)×171(H)



Constant Current Discharge Characteristics: A(25°C)

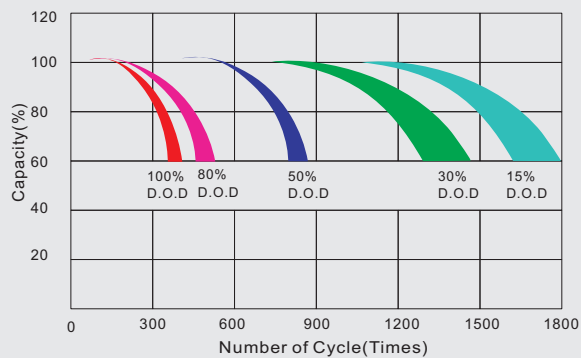
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	161.3	117.7	89.35	53.46	31.59	18.35	12.68	10.783	8.748	5.762	4.779	2.650
10.0V	156.7	112.0	87.52	52.53	31.44	18.21	12.63	10.733	8.697	5.715	4.733	2.602
10.2V	152.0	108.1	86.14	51.83	31.15	18.07	12.54	10.683	8.645	5.668	4.687	2.554
10.5V	136.5	99.73	82.02	51.17	30.86	17.94	12.49	10.583	8.542	5.622	4.641	2.506
10.8V	123.2	90.94	75.15	50.30	30.13	17.61	12.15	10.334	8.388	5.528	4.595	2.457
11.1V	105.2	81.28	66.92	47.09	28.62	16.83	11.61	9.835	8.028	5.294	4.458	2.313

Constant Power Discharge Characteristics: W(25°C)

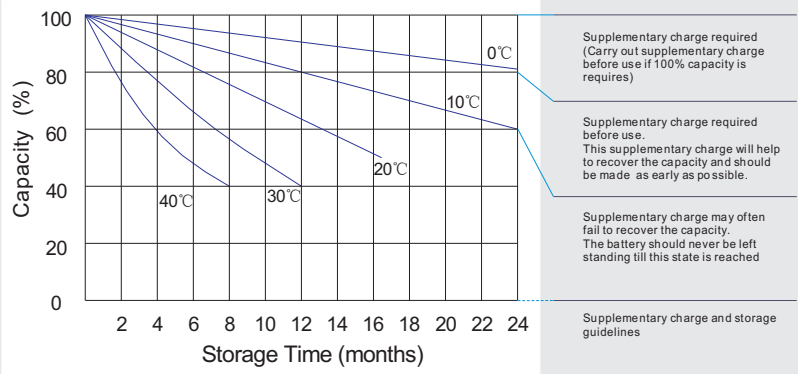
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	1687	1254	982.9	605.2	365.0	216.3	150.9	128.5	104.36	68.80	57.11	31.78
10.0V	1654	1216	967.1	597.9	364.1	215.1	151.0	128.4	104.10	68.47	56.75	31.22
10.2V	1635	1183	956.2	592.3	361.3	213.8	150.3	128.1	103.74	68.02	56.25	30.65
10.5V	1488	1102	912.1	585.0	358.1	212.3	149.7	126.9	102.51	67.46	55.70	30.07
10.8V	1356	1015.8	843.0	579.6	351.5	209.6	145.7	124.0	100.65	66.33	55.14	29.49
11.1V	1184	918.4	763.4	546.3	336.4	201.8	139.4	118.01	96.33	63.52	53.49	27.75

All mentioned values are average values.

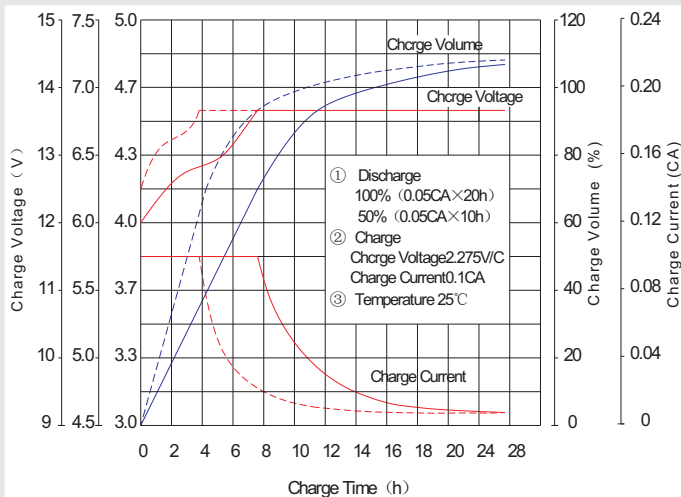
Life characteristics of cyclic use



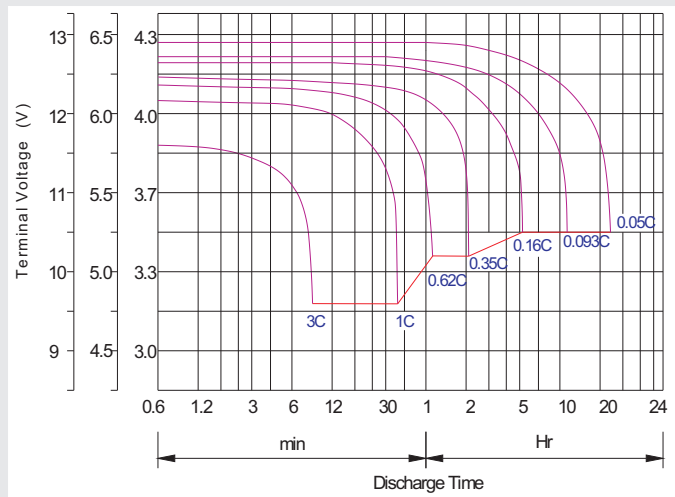
Storage characteristic



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

Maintenance & Cautions

Cycle service
※ Avoid battery over discharge, especially battery series connection use.
※ Charged with recommend voltage, ensure battery can be full recharged.
In general, recharge capacity should be 1.1-1.15 times discharge capacity.
※ Effect of temperature on cycle charge voltage: -4mV/°C/Cell.
※ There are a number of factors that will affect the length of cyclic service.
The most significant are depth of discharge, ambient temperature, discharge rate, and the manner in which the battery is recharged.
Generally speaking, the most important factors is depth of discharge.

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 0.3CA
Constant Current	-0.2Cx2h+0.1CAx12h
Fast	-0.2Cx2h+0.3CAx4.0h