



1. RT645
2. RT670
3. RT6120
4. RT1213
5. RT1232
6. RT1250
7. RT1270
8. RT1290
9. RT12120
10. RT12180
11. RT12260
12. RT12280S
13. RA1233
14. RA1240
15. RA1255
16. RA1275
17. RA12-100
18. RA12-120
19. RA12-145

**SELECCIONA  
EL MODELO  
Y TE GUIARÁ  
A LA FICHA  
TÉCNICA**



**TE REGRESA A  
ESTA PÁGINA**

(SE ENCUENTRA EN LA  
PARTE BAJA DERECHA  
DE TODAS LAS HOJAS)





# RT 645 (6V4.5Ah)

RT 645 is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, RT series battery have long and reliable standby service life.



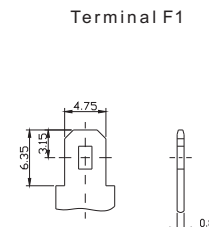
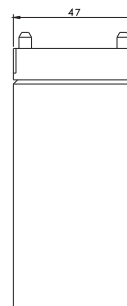
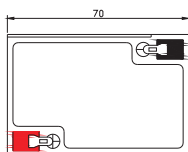
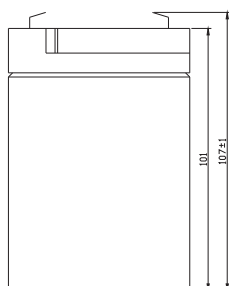
## Specification

Cells Per Unit	3
Voltage Per Unit	6
Capacity	4.5 Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 0.72 Kg
Max. Discharge Current	45 A (5 sec)
Internal Resistance	Approx. 23 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	6.85 to 6.95 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	1.35 A
Equalization and Cycle Service	7.3 to 7.4 VDC/unit Average at 25°C
Self Discharge	RITAR 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 Tab 187(F1)
Constainer Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.



## Dimensions

Unit: mm Dimension: 70(L)×47(W)×101(H)



### Constant Current Discharge Characteristics : A(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
4.80V	17.78	11.88	9.14	5.28	3.12	1.63	1.15	0.945	0.783	0.520	0.450	0.252
5.00V	17.13	11.42	8.84	5.20	3.11	1.62	1.15	0.941	0.779	0.518	0.445	0.243
5.10V	16.21	11.06	8.64	5.16	3.08	1.61	1.14	0.936	0.774	0.515	0.441	0.239
5.25V	14.64	10.35	8.19	5.04	3.04	1.59	1.14	0.932	0.769	0.513	0.436	0.230
5.40V	13.08	9.65	7.74	4.92	2.99	1.57	1.13	0.927	0.765	0.511	0.427	0.220
5.55V	11.52	8.94	7.29	4.80	2.95	1.54	1.12	0.923	0.760	0.509	0.422	0.216

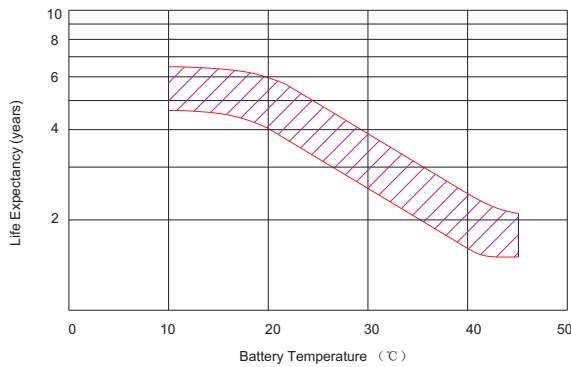
### Constant Power Discharge Characteristics : W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
4.80V	97.20	63.18	51.34	31.67	18.72	9.76	6.90	5.64	5.52	3.12	2.66	1.49
5.00V	94.67	63.11	50.60	31.16	18.67	9.70	6.89	5.63	5.48	3.10	2.63	1.43
5.10V	92.78	61.22	49.44	30.96	18.63	9.67	6.87	5.63	5.46	3.09	2.60	1.40
5.25V	83.84	58.69	46.87	30.21	18.32	9.52	6.83	5.59	5.45	3.09	2.58	1.35
5.40V	74.89	54.91	44.28	29.50	18.01	9.39	6.78	5.55	5.44	3.07	2.54	1.31
5.55V	65.95	51.12	41.70	28.78	17.70	9.25	6.72	5.51	5.42	3.07	2.50	1.27

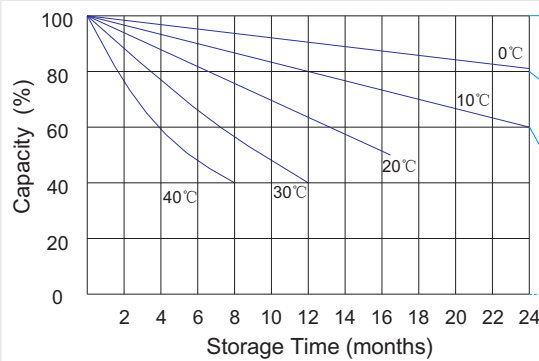
All mentioned values are average values.



**Effect of temperature on long term float life**



**Storage characteristic**



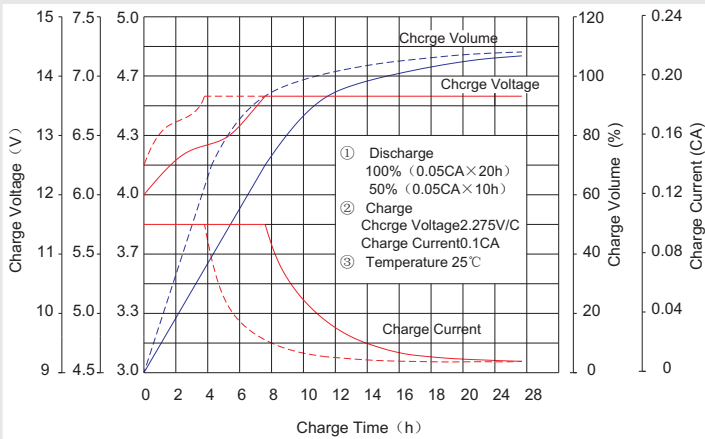
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

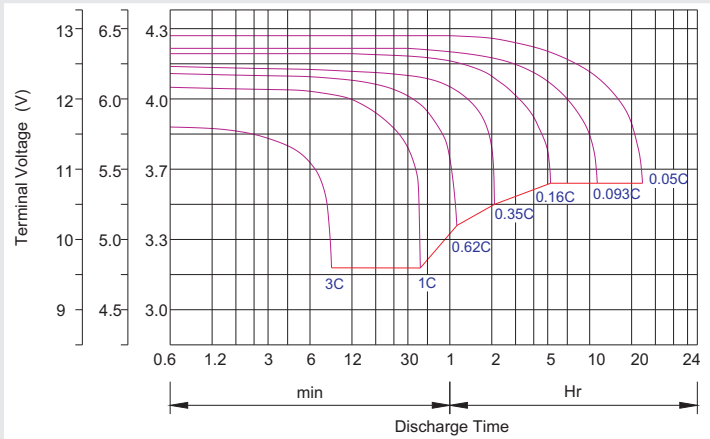
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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 Current 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

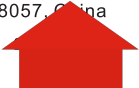
**Charge the batteries at least once every six months, if they are stored at 25°C.**

Charging Method:

Constant Voltage	-0.2Cx2h+2.4~2.45V/Cellx24h, Max. Current 0.3CA
Constant Current	-0.2Cx2h+0.1CAx12h
Fast	-0.2Cx2h+0.3CAx4.0h

## Maintenance & Cautions

<b>Float Service:</b>
※ 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.





# RT 670 (6V7.0Ah)

RT 670 is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, RT series battery have long and reliable standby service life.



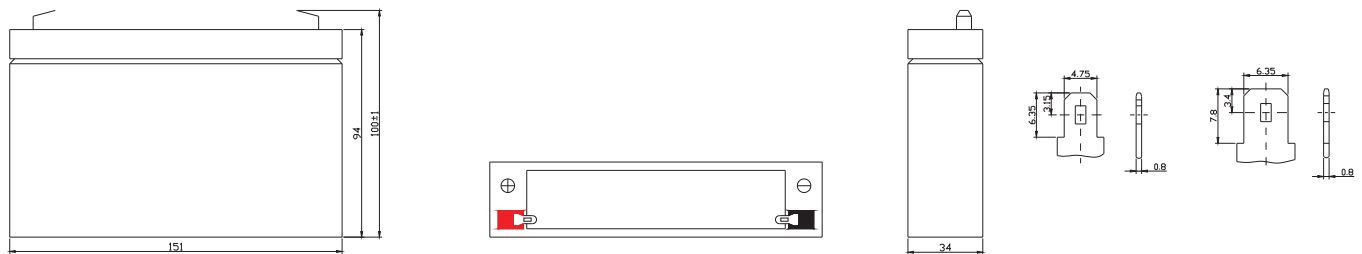
## Specification

Cells Per Unit	3
Voltage Per Unit	6
Capacity	7.0Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 1.15 Kg
Max. Discharge Current	70 A (5 sec)
Internal Resistance	Approx. 12 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	6.85 to 6.95 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	2.1 A
Equalization and Cycle Service	7.3 to 7.4 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 Tab 187(F1)/Faston tab 250(F2)
Container Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.



## Dimensions

Unit: mm Dimension: 151(L)×34(W)×100(H)



## Constant Current Discharge Characteristics : A(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
4.80V	28.46	18.66	14.63	8.21	4.88	2.81	1.91	1.53	1.27	0.81	0.70	0.39
5.00V	27.43	18.20	14.16	8.11	4.75	2.75	1.87	1.51	1.25	0.81	0.69	0.38
5.10V	25.82	17.29	13.77	7.98	4.70	2.72	1.86	1.49	1.23	0.80	0.68	0.37
5.25V	23.21	16.17	12.98	7.76	4.61	2.69	1.84	1.48	1.22	0.79	0.68	0.36
5.40V	20.80	15.08	12.25	7.51	4.53	2.67	1.82	1.47	1.21	0.79	0.67	0.34
5.55V	18.20	13.83	11.30	7.22	4.40	2.56	1.78	1.46	1.19	0.78	0.66	0.33

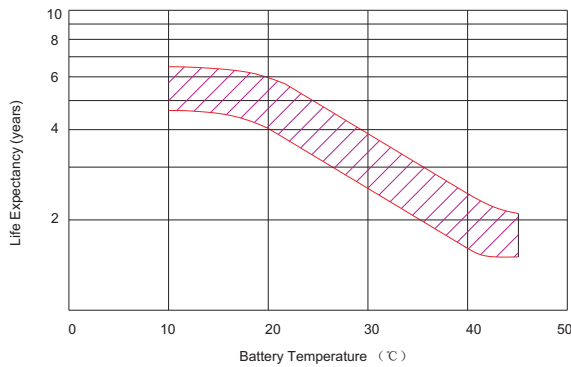
## Constant Power Discharge Characteristics : W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
4.80V	149.7	99.24	78.30	47.00	28.33	16.39	11.16	9.04	7.51	4.84	4.19	2.35
5.00V	145.8	97.18	77.17	46.51	27.91	16.25	11.14	9.02	7.47	4.82	4.15	2.27
5.10V	138.7	93.34	76.16	46.11	27.70	16.15	11.10	8.95	7.40	4.78	4.11	2.23
5.25V	126.6	89.49	72.19	45.16	27.33	16.02	11.05	8.86	7.31	4.74	4.07	2.16
5.40V	114.2	83.71	68.20	44.09	26.88	15.89	10.92	8.83	7.24	4.72	4.01	2.04
5.55V	100.7	77.94	64.24	42.89	26.38	15.34	10.71	8.74	7.17	4.69	3.95	2.01

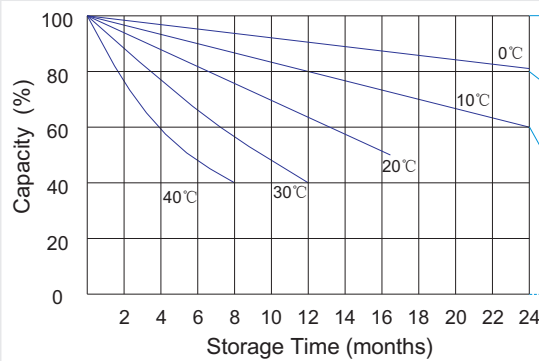
All mentioned values are average values.



**Effect of temperature on long term float life**



**Storage characteristic**



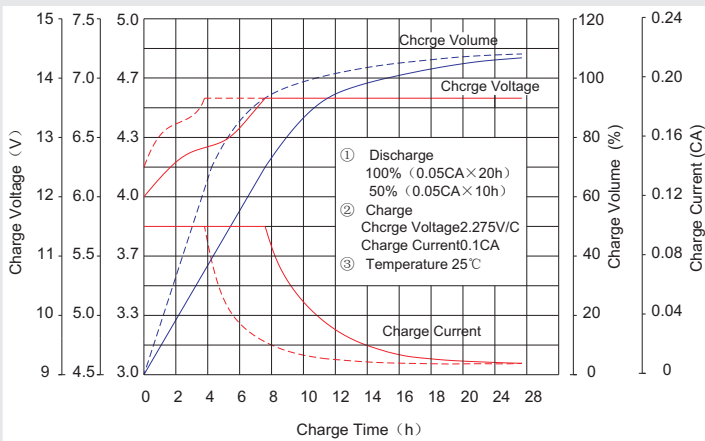
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

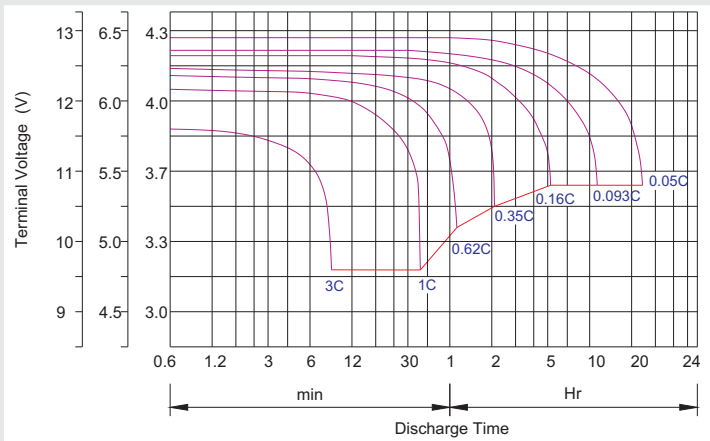
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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

## Maintenance & Cautions

<b>Float Service:</b>
※ 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.





# RT 6120 (6V12Ah)

RT 6120 is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, RT series battery have long and reliable standby service life.

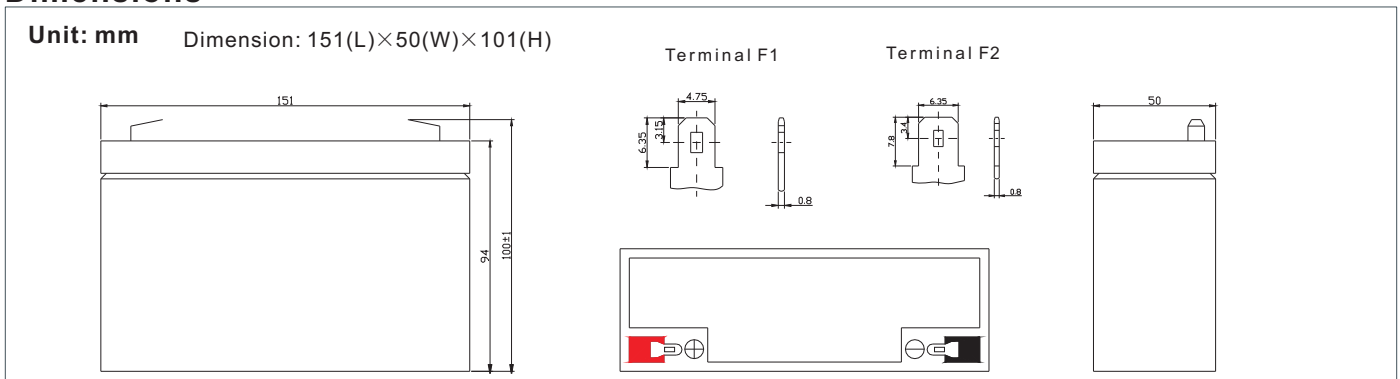


## Specification

Cells Per Unit	3
Voltage Per Unit	6
Capacity	12Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 1.80 Kg
Max. Discharge Current	120 A (5 sec)
Internal Resistance	Approx. 8 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	6.85 to 6.95 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	3.6 A
Equalization and Cycle Service	7.3 to 7.4 VDC/unit Average at 25°C
Self Discharge	RITAR 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 Tab 187(F1)/Faston Tab 250(F2)
Constainer Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.

MH28539  
G4M20206-0910-E-16  
ISO9001:2000 Certificate

## Dimensions



### Constant Current Discharge Characteristics : A(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
4.80V	47.400	31.680	24.360	14.076	8.3280	4.3409	3.0720	2.5200	2.0888	1.3855	1.1995	0.6732
5.00V	45.688	30.447	23.579	13.860	8.2800	4.3096	3.0600	2.5080	2.0765	1.3800	1.1873	0.6487
5.10V	43.218	29.506	23.038	13.752	8.2200	4.2991	3.0480	2.4960	2.0641	1.3745	1.1750	0.6365
5.25V	39.043	27.612	21.838	13.440	8.1000	4.2470	3.0360	2.4840	2.0518	1.3690	1.1628	0.6120
5.40V	34.868	25.731	20.627	13.116	7.9800	4.1739	3.0120	2.4720	2.0394	1.3634	1.1383	0.5875
5.55V	30.729	23.838	19.428	12.792	7.8720	4.1113	2.9880	2.4600	2.0270	1.3579	1.1261	0.5753

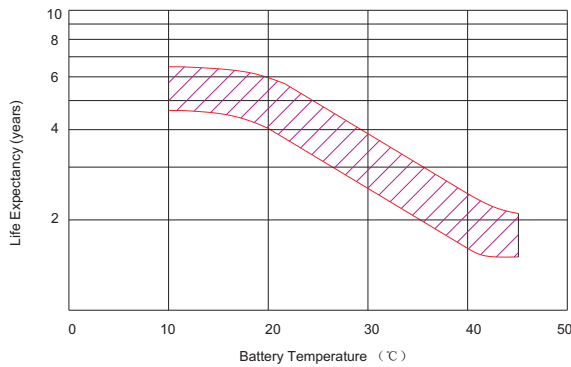
### Constant Power Discharge Characteristics : W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
4.80V	259.2	168.5	136.9	84.46	49.93	26.01	18.40	15.05	14.72	8.33	7.09	3.96
5.00V	252.5	168.3	134.9	83.09	49.79	25.86	18.36	15.01	14.61	8.26	7.02	3.82
5.10V	247.4	163.3	131.8	82.55	49.68	25.79	18.32	15.01	14.57	8.25	6.94	3.75
5.25V	223.6	156.5	125.0	80.57	48.85	25.39	18.22	14.90	14.54	8.23	6.87	3.60
5.40V	199.7	146.4	118.1	78.66	48.02	25.04	18.07	14.80	14.50	8.20	6.76	3.49
5.55V	175.9	136.3	111.2	76.75	47.20	24.67	17.93	14.69	14.46	8.20	6.65	3.38

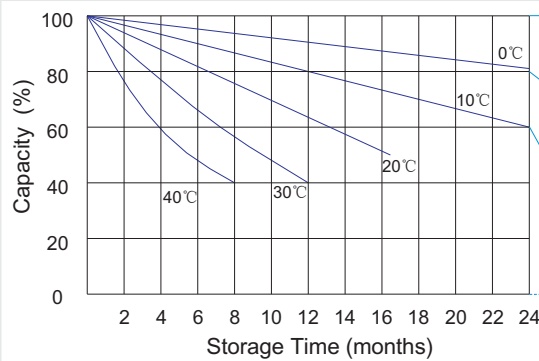
All mentioned values are average values.



**Effect of temperature on long term float life**



**Storage characteristic**



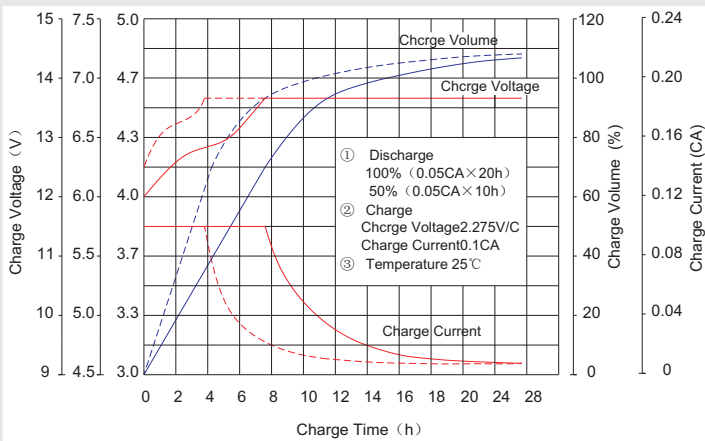
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is requires)

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

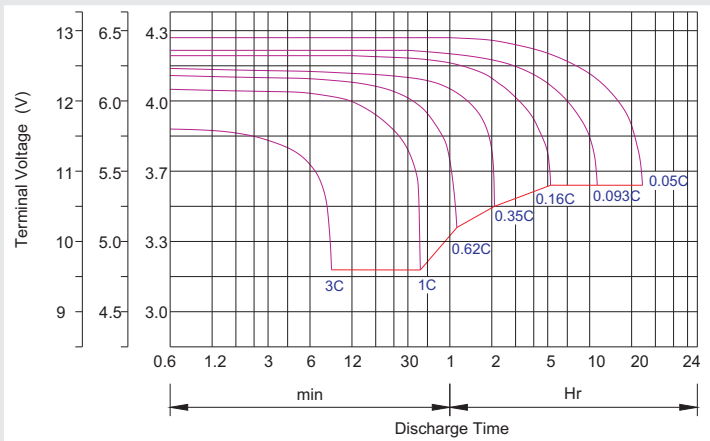
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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

## Maintenance & Cautions

<b>Float Service:</b>
※ 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.





# RT 1213 (12V1.3Ah)

RT 1213 is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, RT series battery have long and reliable standby service life.

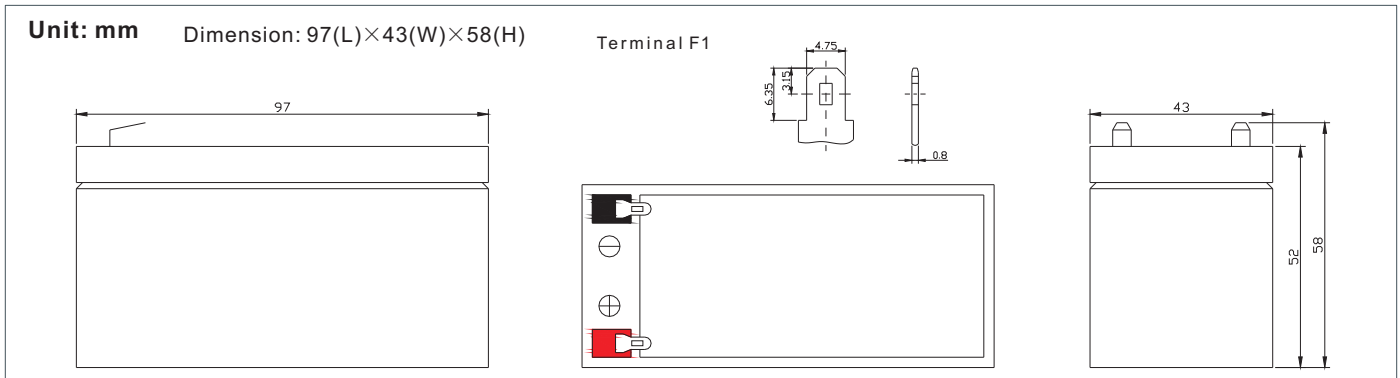


## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	1.3Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 0.6 Kg
Max. Discharge Current	13 A (5 sec)
Internal Resistance	Approx. 95 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	13.7 to 13.9 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	0.39 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 Tab 187(F1)
Constainer Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.

MH28539  
G4M20206-0910-E-16  
ISO9001:2000 Certificate

## Dimensions



### Constant Current Discharge Characteristics : A(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	5.286	3.466	2.717	1.525	0.906	0.522	0.355	0.284	0.236	0.150	0.130	0.073
10.0V	5.095	3.379	2.629	1.505	0.881	0.511	0.348	0.280	0.232	0.150	0.129	0.070
10.2V	4.796	3.212	2.556	1.482	0.873	0.506	0.345	0.277	0.229	0.148	0.127	0.069
10.5V	4.311	3.003	2.411	1.442	0.856	0.499	0.342	0.274	0.226	0.147	0.126	0.067
10.8V	3.863	2.801	2.275	1.394	0.840	0.495	0.338	0.273	0.224	0.146	0.124	0.063
11.1V	3.379	2.568	2.099	1.341	0.818	0.475	0.331	0.271	0.222	0.145	0.122	0.062

### Constant Power Discharge Characteristics : W(25°C)

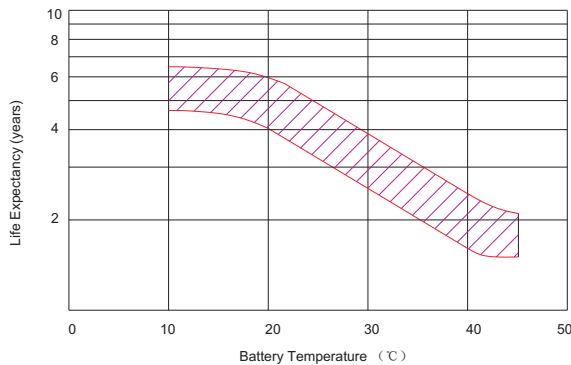
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	55.61	36.86	29.08	17.46	10.52	6.088	4.145	3.358	2.790	1.797	1.557	0.874
10.0V	54.16	36.10	28.66	17.27	10.37	6.036	4.137	3.350	2.776	1.790	1.542	0.843
10.2V	51.52	34.67	28.29	17.13	10.29	5.998	4.121	3.323	2.749	1.777	1.528	0.827
10.5V	47.02	33.24	26.81	16.78	10.15	5.950	4.105	3.292	2.716	1.762	1.512	0.804
10.8V	42.42	31.09	25.33	16.38	9.986	5.901	4.057	3.280	2.688	1.754	1.489	0.757
11.1V	37.41	28.95	23.86	15.93	9.799	5.697	3.977	3.247	2.662	1.742	1.467	0.745

All mentioned values are average values.

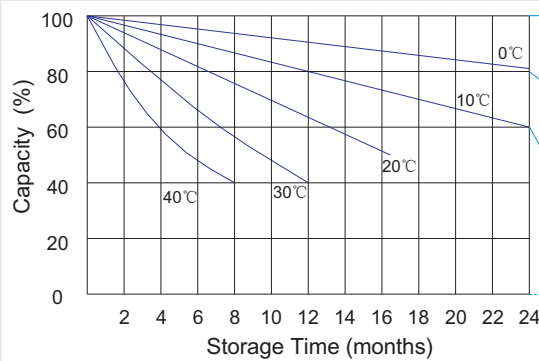




**Effect of temperature on long term float life**



**Storage characteristic**



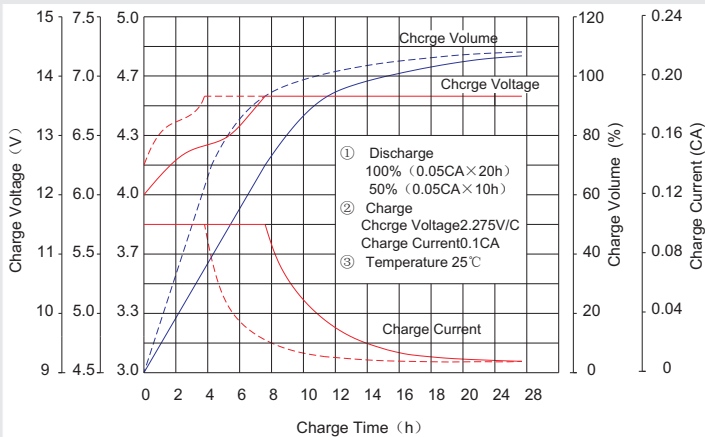
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

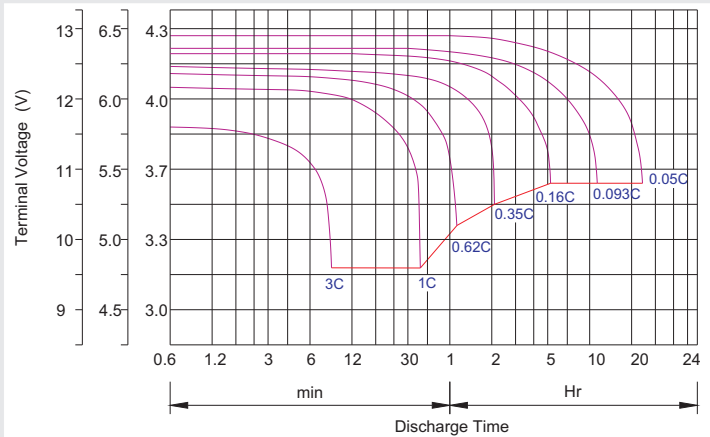
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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

## Maintenance & Cautions

<b>Float Service:</b>
※ 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.





# RT 1232 (12V3.2Ah)

RT 1232 is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, RT series battery have long and reliable standby service life.



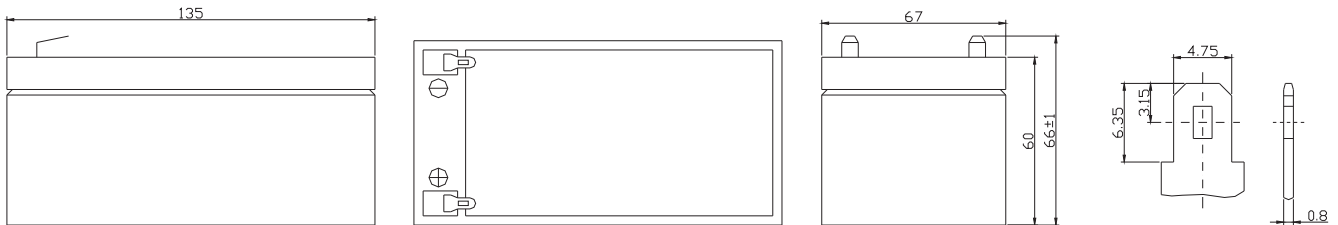
## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	3.2Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 1.3 Kg
Max. Discharge Current	32 A (5 sec)
Internal Resistance	Approx. 45 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	13.7 to 13.9 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	0.96 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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 Tab 187(F1)
Constainer Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.

MH28539  
G4M20206-0910-E-16  
ISO9001:2000 Certificate

## Dimensions

Unit: mm Dimension: 135(L)×67(W)×67(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	12.64	8.45	6.50	3.75	2.22	1.16	0.819	0.672	0.557	0.369	0.320	0.180
10.0V	12.18	8.12	6.29	3.70	2.21	1.15	0.816	0.669	0.554	0.368	0.317	0.173
10.2V	11.52	7.87	6.14	3.67	2.19	1.15	0.813	0.666	0.550	0.367	0.313	0.170
10.5V	10.41	7.36	5.82	3.58	2.16	1.13	0.810	0.662	0.547	0.365	0.310	0.163
10.8V	9.30	6.86	5.50	3.50	2.13	1.11	0.803	0.659	0.544	0.364	0.304	0.157
11.1V	8.19	6.36	5.18	3.41	2.10	1.10	0.797	0.656	0.541	0.362	0.300	0.153

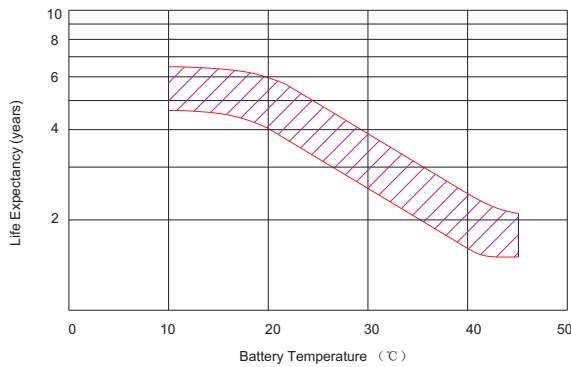
### Constant Power Discharge Characteristics : W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	138.24	89.86	73.02	45.04	26.63	13.87	9.81	8.03	7.85	4.44	3.78	2.11
10.0V	134.64	89.76	71.97	44.31	26.55	13.79	9.79	8.01	7.79	4.41	3.74	2.04
10.2V	131.95	87.07	70.32	44.03	26.50	13.76	9.77	8.01	7.77	4.40	3.70	2.00
10.5V	119.24	83.48	66.66	42.97	26.05	13.54	9.72	7.95	7.75	4.39	3.67	1.92
10.8V	106.51	78.09	62.98	41.95	25.61	13.36	9.64	7.89	7.73	4.37	3.61	1.86
11.1V	93.80	72.71	59.31	40.93	25.17	13.16	9.56	7.83	7.71	4.37	3.55	1.80

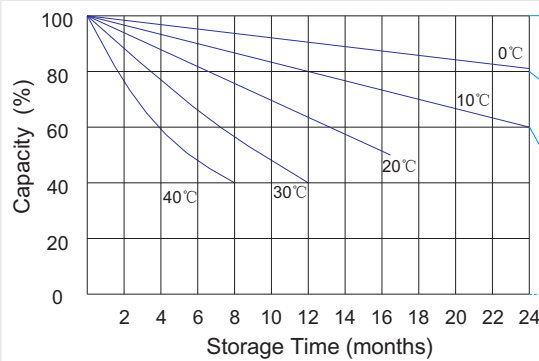
All mentioned values are average values.



**Effect of temperature on long term float life**



**Storage characteristic**



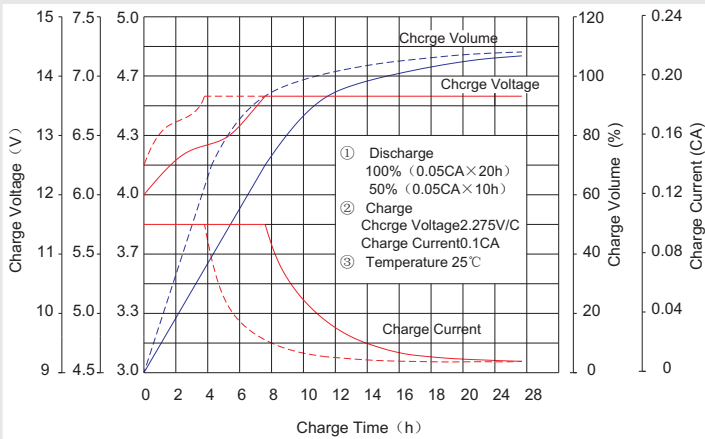
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

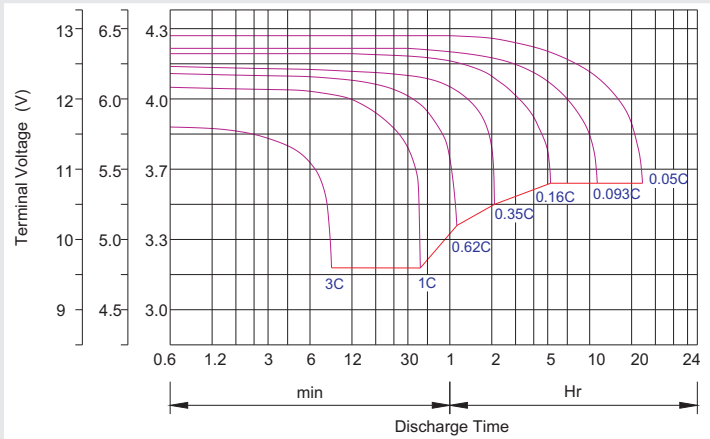
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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 Current 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

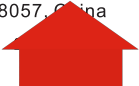
**Charge the batteries at least once every six months, if they are stored at 25°C.**

Charging Method:

Constant Voltage	-0.2Cx2h+2.4~2.45V/Cellx24h, Max. Current 0.3CA
Constant Current	-0.2Cx2h+0.1CAx12h
Fast	-0.2Cx2h+0.3CAx4.0h

## Maintenance & Cautions

<b>Float Service:</b>
※ 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.





# RT 1250 (12V5.0Ah)

RT 1250 is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, RT series battery have long and reliable standby service life.



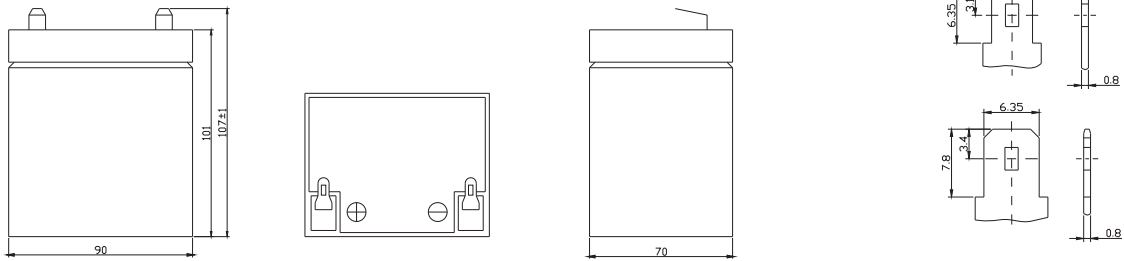
## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	5.0Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 1.60 Kg
Max. Discharge Current	50 A (5 sec)
Internal Resistance	Approx. 35 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	13.7 to 13.9 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	1.5 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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 Tab 187(F1)/Faston tab 250(F2)
Constainer Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.

MH28539  
G4M20206-0910-E-16  
ISO9001:2000 Certificate

## Dimensions

Unit: mm Dimension: 90(L)×70(W)×107(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	19.750	13.200	10.150	5.8650	3.4700	1.8087	1.2800	1.0500	0.8704	0.5773	0.4998	0.2805
10.0V	19.037	12.686	9.8245	5.7750	3.4500	1.7957	1.2750	1.0450	0.8652	0.5750	0.4947	0.2703
10.2V	18.008	12.294	9.5991	5.7300	3.4250	1.7913	1.2700	1.0400	0.8601	0.5727	0.4896	0.2652
10.5V	16.268	11.505	9.0993	5.6000	3.3750	1.7696	1.2650	1.0350	0.8549	0.5704	0.4845	0.2550
10.8V	14.529	10.721	8.5946	5.4650	3.3250	1.7391	1.2550	1.0300	0.8498	0.5681	0.4743	0.2448
11.1V	12.804	9.9323	8.0948	5.3300	3.2800	1.7130	1.2450	1.0250	0.8446	0.5658	0.4692	0.2397

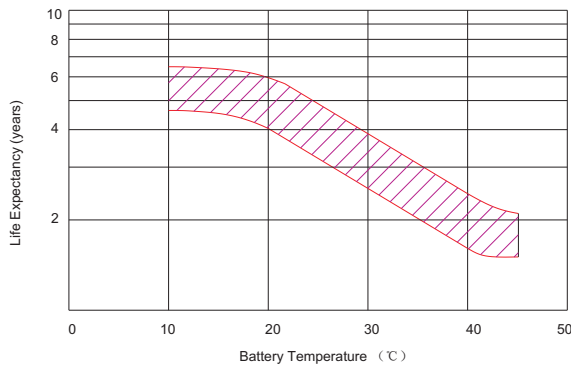
### Constant Power Discharge Characteristics : W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	216.00	140.40	114.09	70.380	41.610	21.678	15.330	12.540	12.267	6.9411	5.9085	3.3027
10.0V	210.38	140.25	112.45	69.240	41.490	21.548	15.300	12.510	12.175	6.8853	5.8479	3.1815
10.2V	206.17	136.04	109.87	68.790	41.400	21.496	15.270	12.510	12.144	6.8762	5.7873	3.1209
10.5V	186.31	130.43	104.15	67.140	40.710	21.157	15.180	12.420	12.113	6.8575	5.7267	2.9997
10.8V	166.42	122.02	98.399	65.550	40.020	20.870	15.060	12.330	12.082	6.8296	5.6358	2.9088
11.1V	146.56	113.60	92.677	63.960	39.330	20.557	14.940	12.240	12.051	6.8296	5.5449	2.8179

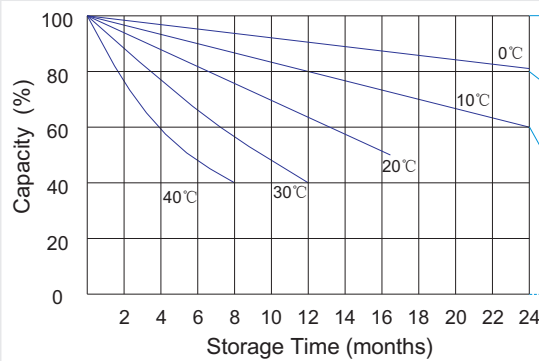
All mentioned values are average values.



**Effect of temperature on long term float life**



**Storage characteristic**



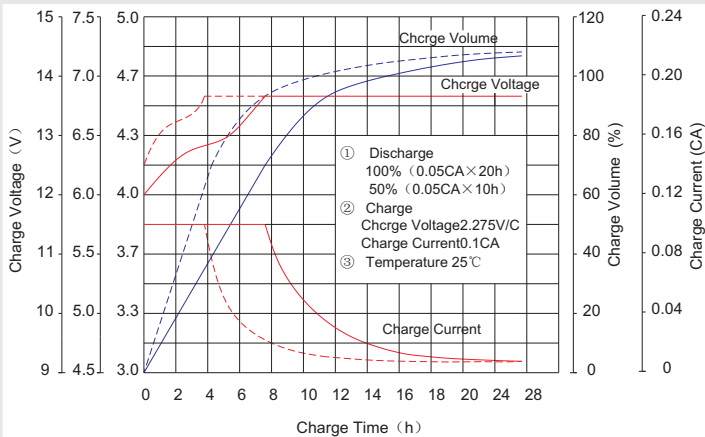
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

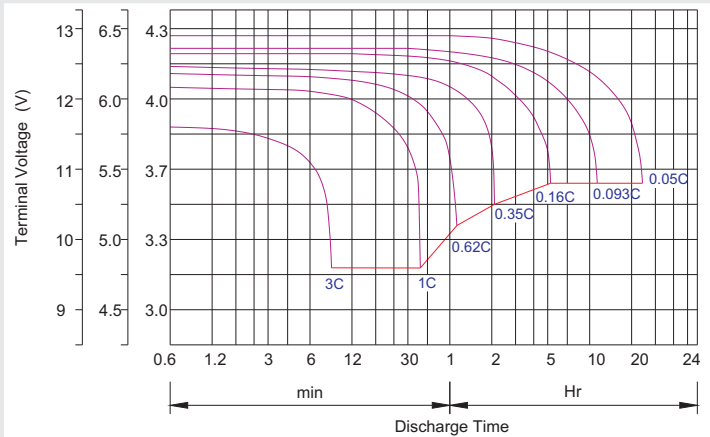
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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

## Maintenance & Cautions

<b>Float Service:</b>
※ 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.





# RT 1270E (12V7Ah)

RT1270E is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, RT series battery have long and reliable standby service life.



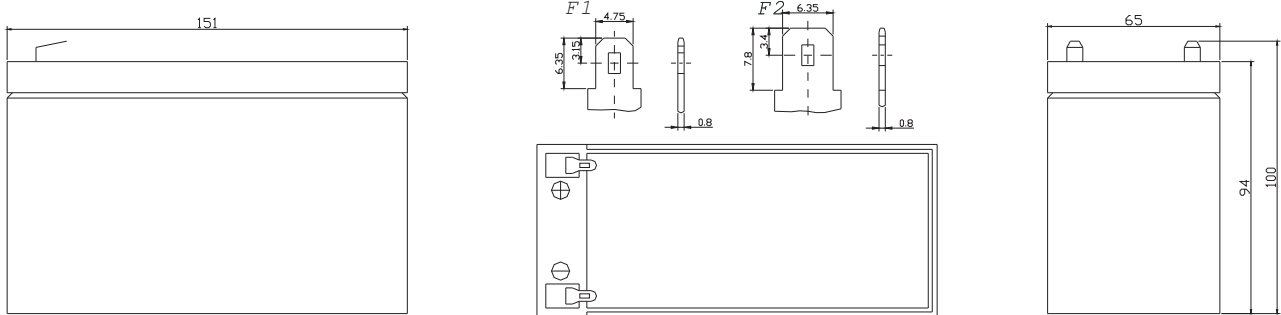
## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	7Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 2.0 Kg
Max. Discharge Current	70A (5 sec)
Internal Resistance	Approx. 30 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	13.7 to 13.9 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	2.1 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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 Tab 187(F1)/Faston tab 250(F2)
Constainer Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.

MH28539  
G4M20206-0910-E-16  
ISO9001:2000 Certificate

## Dimensions

Unit: mm Dimension: 151(L)×65(W)×100(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	26.27	17.56	13.50	7.80	4.62	2.41	1.70	1.40	1.16	0.77	0.66	0.37
10.0V	25.32	16.87	13.07	7.68	4.59	2.39	1.70	1.39	1.15	0.76	0.66	0.36
10.2V	23.95	16.35	12.77	7.62	4.56	2.38	1.69	1.38	1.14	0.76	0.65	0.35
10.5V	21.64	15.30	12.10	7.45	4.49	2.35	1.68	1.38	1.14	0.76	0.64	0.34
10.8V	19.32	14.26	11.43	7.27	4.42	2.31	1.67	1.37	1.13	0.76	0.63	0.33
11.1V	17.03	13.21	10.77	7.09	4.36	2.28	1.66	1.36	1.12	0.75	0.62	0.32

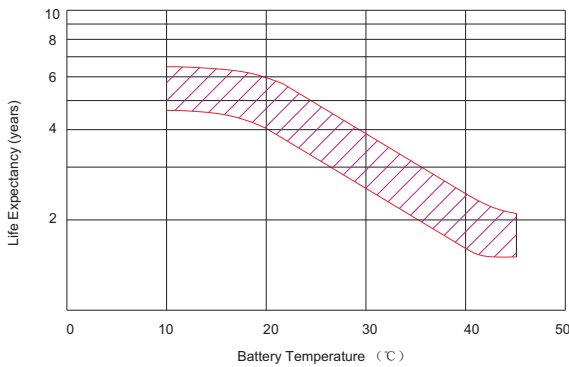
## Constant Power Discharge Characteristics : W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	287.3	186.7	151.7	93.61	55.34	28.83	20.39	16.68	16.32	9.23	7.86	4.39
10.0V	279.8	186.5	149.6	92.09	55.18	28.66	20.35	16.64	16.19	9.16	7.78	4.23
10.2V	274.2	180.9	146.1	91.49	55.06	28.59	20.31	16.64	16.15	9.15	7.70	4.15
10.5V	247.8	173.5	138.5	89.30	54.14	28.14	20.19	16.52	16.11	9.12	7.62	3.99
10.8V	221.3	162.3	130.9	87.18	53.23	27.76	20.03	16.40	16.07	9.08	7.50	3.87
11.1V	194.9	151.1	123.3	85.07	52.31	27.34	19.87	16.28	16.03	9.08	7.37	3.75

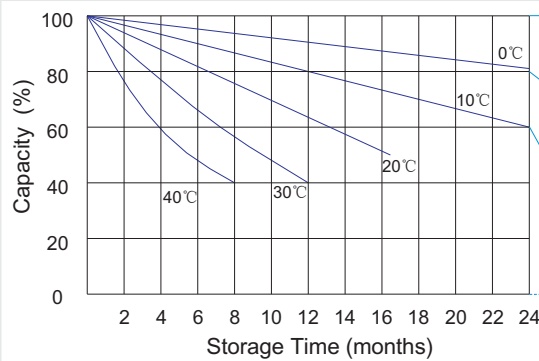
All mentioned values are average values.



**Effect of temperature on long term float life**



**Storage characteristic**



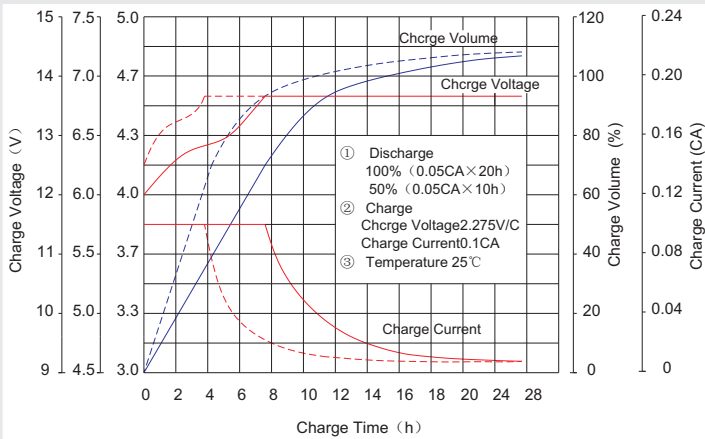
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is requires)

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

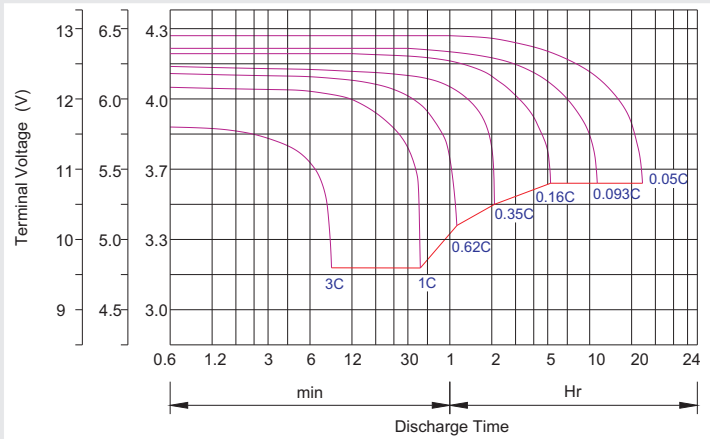
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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 Current 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

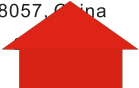
**Charge the batteries at least once every six months, if they are stored at 25°C.**

Charging Method:

Constant Voltage	-0.2Cx2h+2.4~2.45V/Cellx24h, Max. Current 0.3CA
Constant Current	-0.2Cx2h+0.1CAx12h
Fast	-0.2Cx2h+0.3CAx4.0h

## Maintenance & Cautions

<b>Float Service:</b>
※ 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.





# RT 1290 (12V9.0Ah)

RT 1290 is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, RT series battery have long and reliable standby service life.



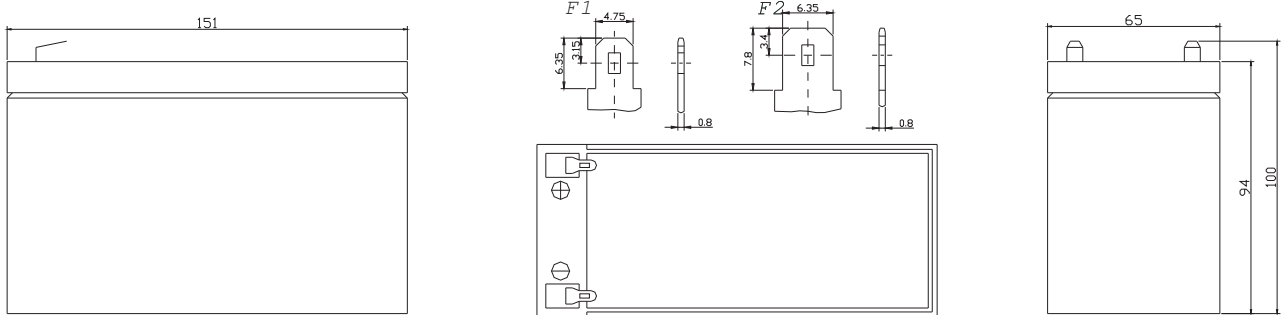
## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	9.0Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 2.60Kg
Max. Discharge Current	90 A (5 sec)
Internal Resistance	Approx. 18 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	13.7 to 13.9 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	2.7 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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 Tab 187(F1)/Faston tab 250(F2)
Constainer Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.



## Dimensions

Unit: mm Dimension: 151(L)×65(W)×101(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	35.550	23.760	18.270	10.557	6.2460	3.2557	2.3040	1.8900	1.5666	1.0391	0.8996	0.5049
10.0V	34.266	22.835	17.684	10.395	6.2100	3.2322	2.2950	1.8810	1.5574	1.0350	0.8905	0.4865
10.2V	32.414	22.129	17.278	10.314	6.1650	3.2243	2.2860	1.8720	1.5481	1.0309	0.8813	0.4774
10.5V	29.282	20.709	16.379	10.080	6.0750	3.1852	2.2770	1.8630	1.5388	1.0267	0.8721	0.4590
10.8V	26.151	19.298	15.470	9.8370	5.9850	3.1304	2.2590	1.8540	1.5296	1.0226	0.8537	0.4406
11.1V	23.047	17.878	14.571	9.5940	5.9040	3.0835	2.2410	1.8450	1.5203	1.0184	0.8446	0.4315

## Constant Power Discharge Characteristics : W(25°C)

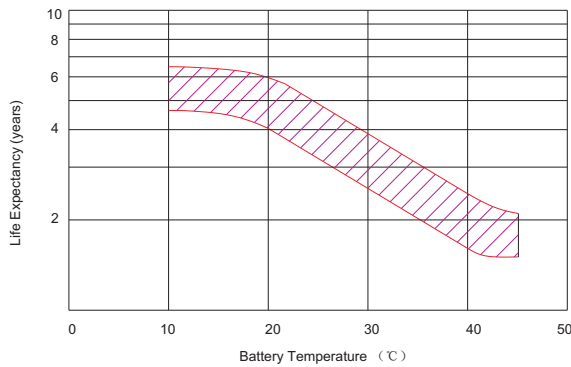
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	388.80	252.72	205.36	126.68	74.898	39.021	27.594	22.572	22.081	12.494	10.635	5.9449
10.0V	378.68	252.45	202.41	124.63	74.682	38.786	27.540	22.518	21.914	12.394	10.526	5.7267
10.2V	371.10	244.88	197.77	123.82	74.520	38.692	27.486	22.518	21.859	12.377	10.417	5.6176
10.5V	335.35	234.78	187.47	120.85	73.278	38.082	27.324	22.356	21.803	12.343	10.308	5.3995
10.8V	299.56	219.63	177.12	117.99	72.036	37.565	27.108	22.194	21.747	12.293	10.144	5.2358
11.1V	263.81	204.48	166.82	115.13	70.794	37.002	26.892	22.032	21.692	12.293	9.9808	5.0722

All mentioned values are average values.

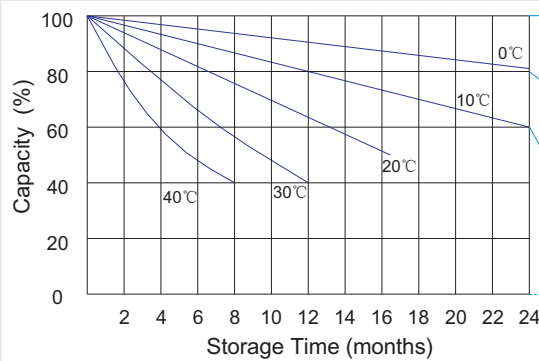




**Effect of temperature on long term float life**



**Storage characteristic**



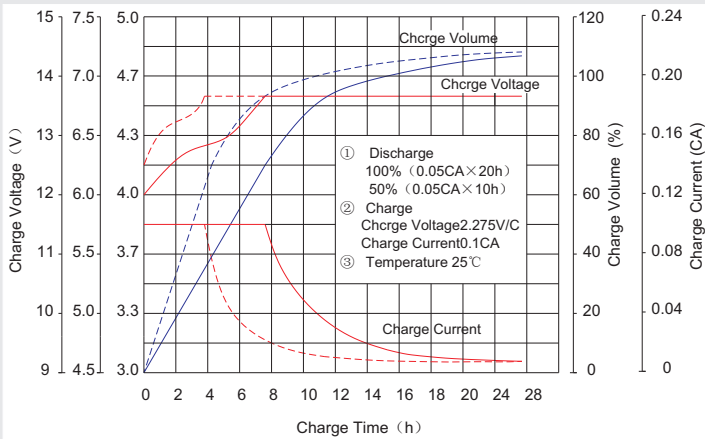
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

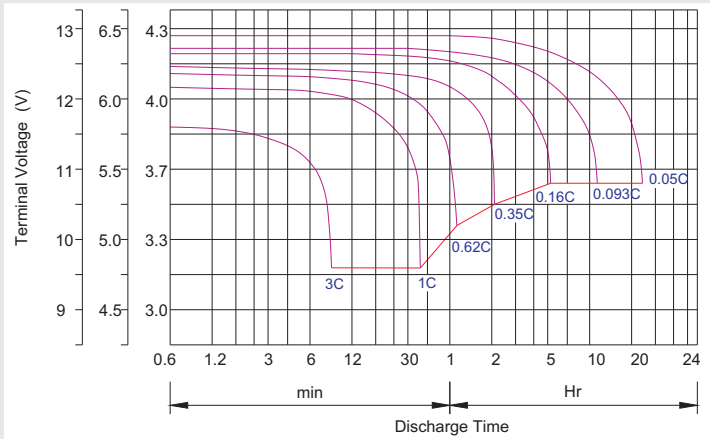
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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

## Maintenance & Cautions

<b>Float Service:</b>
※ 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.





# RT 12120 (12V12Ah)

RT 12120 is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, RT series battery have long and reliable standby service life.



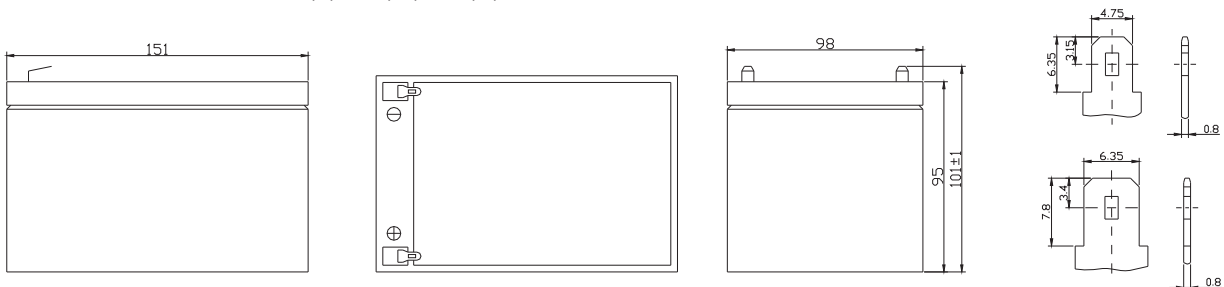
## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	12Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 3.60 Kg
Max. Discharge Current	120 A (5 sec)
Internal Resistance	Approx. 16 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	13.7 to 13.9 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	3.6 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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 Tab 187(F1)/Faston tab 250(F2)
Constainer Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.

MH28539  
G4M20206-0910-E-16  
ISO9001:2000 Certificate

## Dimensions

Unit: mm Dimension: 151(L)×98(W)×95(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	47.400	31.680	24.360	14.076	8.3280	4.3409	3.0720	2.5200	2.0888	1.3855	1.1995	0.6732
10.0V	45.688	30.447	23.579	13.860	8.2800	4.3096	3.0600	2.5080	2.0765	1.3800	1.1873	0.6487
10.2V	43.218	29.506	23.038	13.752	8.2200	4.2991	3.0480	2.4960	2.0641	1.3745	1.1750	0.6365
10.5V	39.043	27.612	21.838	13.440	8.1000	4.2470	3.0360	2.4840	2.0518	1.3690	1.1628	0.6120
10.8V	34.868	25.731	20.627	13.116	7.9800	4.1739	3.0120	2.4720	2.0394	1.3634	1.1383	0.5875
11.1V	30.729	23.838	19.428	12.792	7.8720	4.1113	2.9880	2.4600	2.0270	1.3579	1.1261	0.5753

### Constant Power Discharge Characteristics : W(25°C)

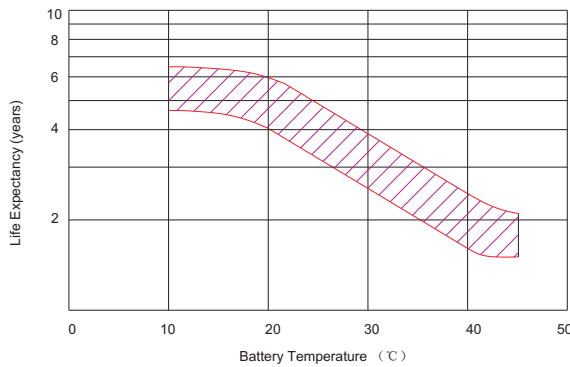
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	518.40	336.96	273.82	168.91	99.864	52.028	36.792	30.096	29.442	16.659	14.180	7.9265
10.0V	504.90	336.60	269.89	166.18	99.576	51.715	36.720	30.024	29.219	16.525	14.035	7.6356
10.2V	494.80	326.50	263.69	165.10	99.360	51.590	36.648	30.024	29.145	16.503	13.890	7.4902
10.5V	447.14	313.04	249.96	161.14	97.704	50.776	36.432	29.808	29.071	16.458	13.744	7.1993
10.8V	399.41	292.84	236.16	157.32	96.048	50.087	36.144	29.592	28.997	16.391	13.526	6.9811
11.1V	351.75	272.65	222.43	153.50	94.392	49.336	35.856	29.376	28.922	16.391	13.308	6.7630

All mentioned values are average values.

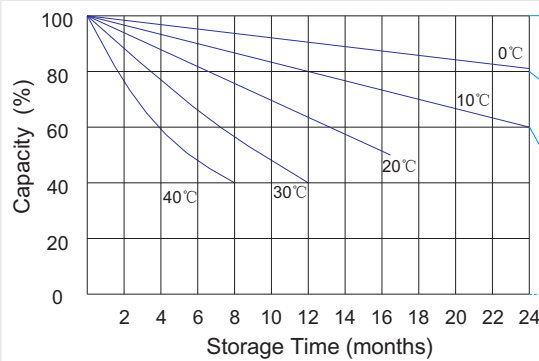




**Effect of temperature on long term float life**



**Storage characteristic**



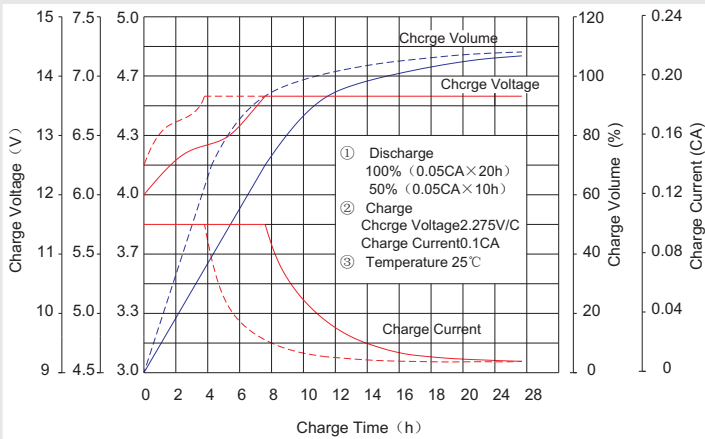
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

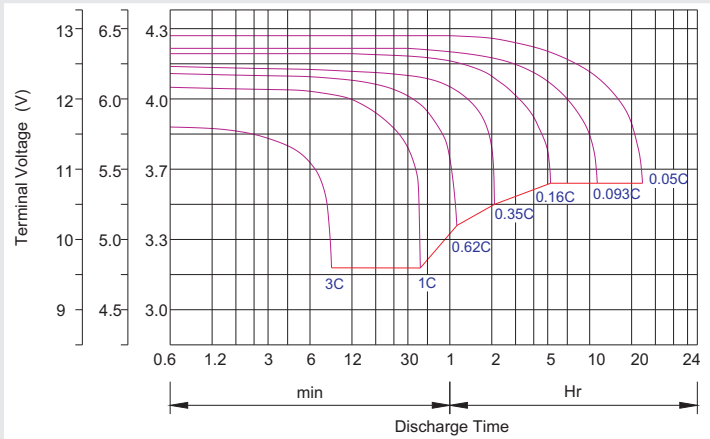
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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 Current 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

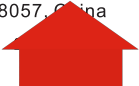
**Charge the batteries at least once every six months, if they are stored at 25°C.**

Charging Method:

Constant Voltage	-0.2Cx2h+2.4~2.45V/Cellx24h, Max. Current 0.3CA
Constant Current	-0.2Cx2h+0.1CAx12h
Fast	-0.2Cx2h+0.3CAx4.0h

## Maintenance & Cautions

<b>Float Service:</b>
※ 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.





# RT 12180 (12V18Ah)

RT 12180 is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, RT series battery have long and reliable standby service life.



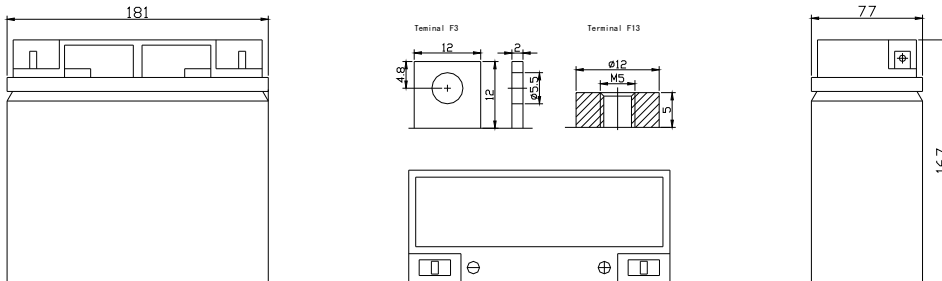
## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	18Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 5.0 Kg
Max. Discharge Current	180 A (5 sec)
Internal Resistance	Approx. 14 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	13.7 to 13.9 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	5.4 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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 F3/F13
Constainer Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.

MH28539  
G4M20206-0910-E-16  
ISO9001:2000 Certificate

## Dimensions

Unit: mm Dimension: 181(L)×77(W)×167(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	71.10	47.52	36.54	21.11	12.49	6.511	4.608	3.780	3.133	2.078	1.799	1.010
10.0V	68.53	45.67	35.37	20.79	12.42	6.464	4.590	3.762	3.115	2.070	1.781	0.973
10.2V	64.83	44.26	34.56	20.63	12.33	6.449	4.572	3.744	3.096	2.062	1.763	0.955
10.5V	58.56	41.42	32.76	20.16	12.15	6.370	4.554	3.726	3.078	2.053	1.744	0.918
10.8V	52.30	38.60	30.94	19.67	11.97	6.261	4.518	3.708	3.059	2.045	1.707	0.881
11.1V	46.09	35.76	29.14	19.19	11.81	6.167	4.482	3.690	3.041	2.037	1.689	0.863

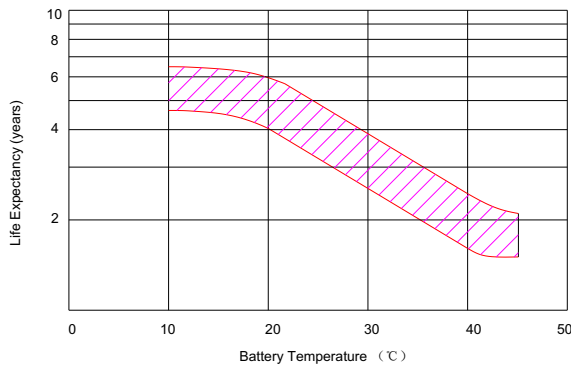
## Constant Power Discharge Characteristics : W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	777.6	505.4	410.7	253.4	149.8	78.04	55.19	45.14	44.16	24.99	21.27	11.89
10.0V	757.4	504.9	404.8	249.3	149.4	77.57	55.08	45.04	43.83	24.79	21.05	11.45
10.2V	742.2	489.8	395.5	247.6	149.0	77.38	54.97	45.04	43.72	24.75	20.83	11.24
10.5V	670.7	469.6	374.9	241.7	146.6	76.16	54.65	44.71	43.61	24.69	20.62	10.80
10.8V	599.1	439.3	354.2	236.0	144.1	75.13	54.22	44.39	43.49	24.59	20.29	10.47
11.1V	527.6	409.0	333.6	230.3	141.6	74.00	53.78	44.06	43.38	24.59	19.96	10.14

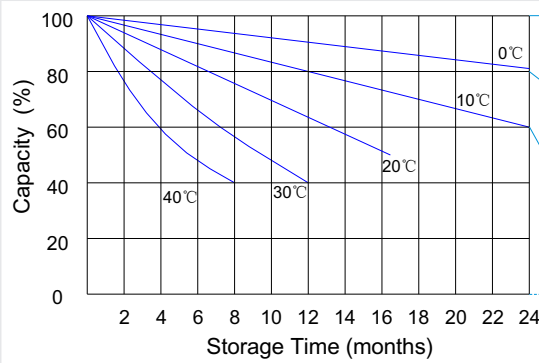
All mentioned values are average values.



**Effect of temperature on long term float life**



**Storage characteristic**



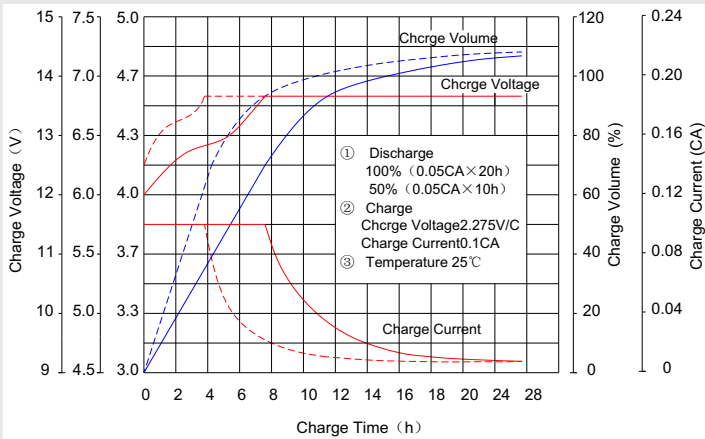
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

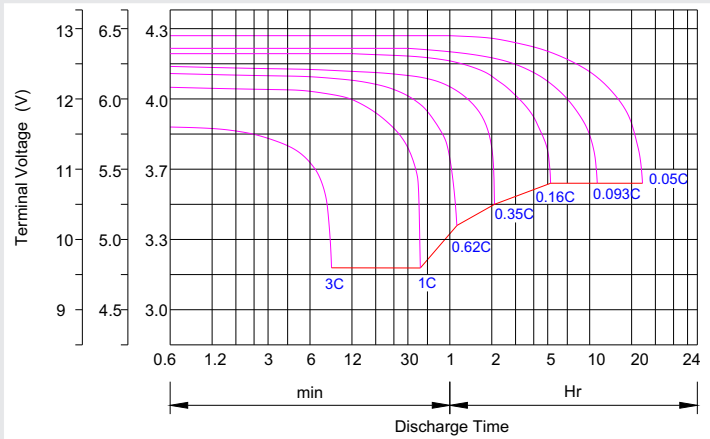
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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

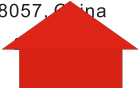
**Charge the batteries at least once every six months, if they are stored at 25°C.**

Charging Method:

Constant Voltage	-0.2Cx2h+2.4~2.45V/Cellx24h, Max. Current 0.3CA
Constant Current	-0.2Cx2h+0.1CAx12h
Fast	-0.2Cx2h+0.3CAx4.0h

## Maintenance & Cautions

<b>Float Service:</b>
※ 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.





# RT 12260 (12V26Ah)

RT 12260 is a general purpose battery with 5 years floating design life, meet with IEC, JIS standard. With heavy duty grid, thickness plates, special additives, RT series battery have long and reliable standby service life.



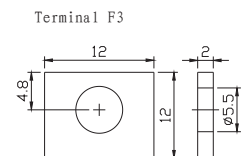
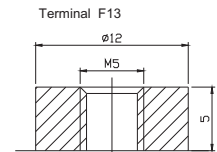
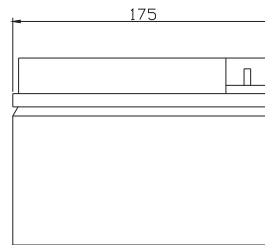
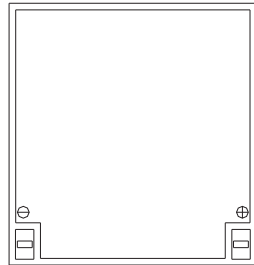
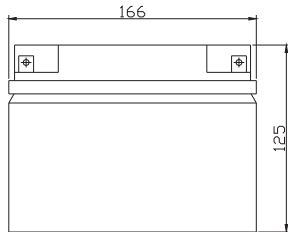
## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	26Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 8.20 Kg
Max. Discharge Current	260 A (5 sec)
Internal Resistance	Approx. 10 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	13.7 to 13.9 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	7.8 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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 F3/F13
Constainer Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V2 can be available upon request.



## Dimensions

Unit: mm Dimension: 166(L)×175(W)×125(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	93.35	66.89	48.67	29.90	16.90	10.37	6.786	5.616	4.420	3.230	2.731	1.444
10.0V	90.85	63.65	47.67	29.41	16.82	10.30	6.760	5.590	4.394	3.203	2.705	1.418
10.2V	85.61	61.40	46.92	29.15	16.67	10.22	6.708	5.564	4.368	3.177	2.678	1.392
10.5V	76.88	56.66	44.68	28.42	16.51	10.14	6.682	5.512	4.316	3.151	2.652	1.365
10.8V	69.39	51.67	41.18	27.17	16.12	9.958	6.500	5.382	4.238	3.098	2.626	1.339
11.1V	60.40	46.18	36.94	25.45	15.31	9.516	6.214	5.122	4.056	2.967	2.547	1.260

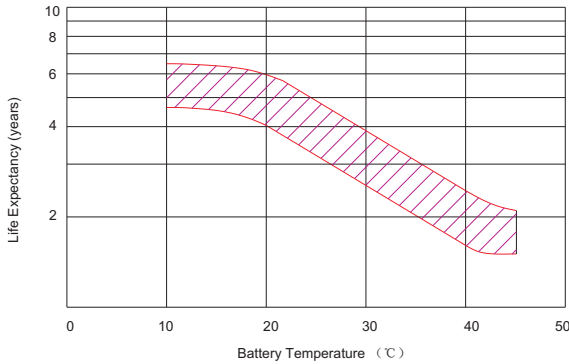
### Constant Power Discharge Characteristics : W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	889.1	650.1	478.7	337.4	193.3	119.3	78.31	64.90	51.17	37.48	30.71	16.22
10.0V	870.9	621.0	468.7	333.2	192.3	118.9	78.16	64.74	50.86	37.32	30.39	16.06
10.2V	822.1	600.3	462.4	329.3	190.9	117.8	77.69	64.43	50.70	37.00	30.23	15.90
10.5V	740.3	554.7	440.9	321.8	189.1	116.7	77.22	63.96	50.23	36.69	29.92	15.75
10.8V	665.9	503.6	405.1	307.2	184.4	115.0	75.35	62.24	49.45	35.90	29.60	15.59
11.1V	574.8	447.3	361.7	287.8	174.7	109.7	71.60	59.28	46.96	34.64	28.66	14.96

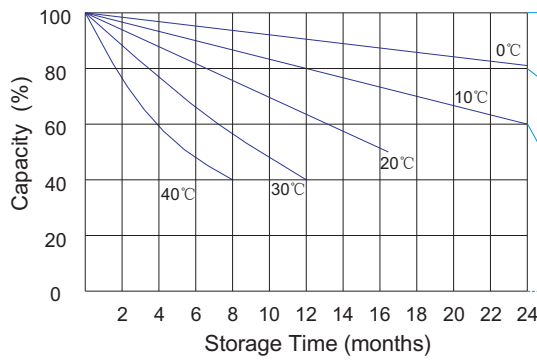
All mentioned values are average values.



**Effect of temperature on long term float life**



**Storage characteristic**



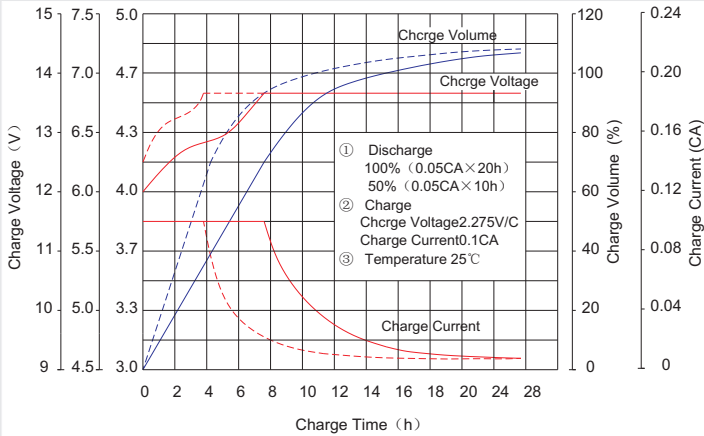
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

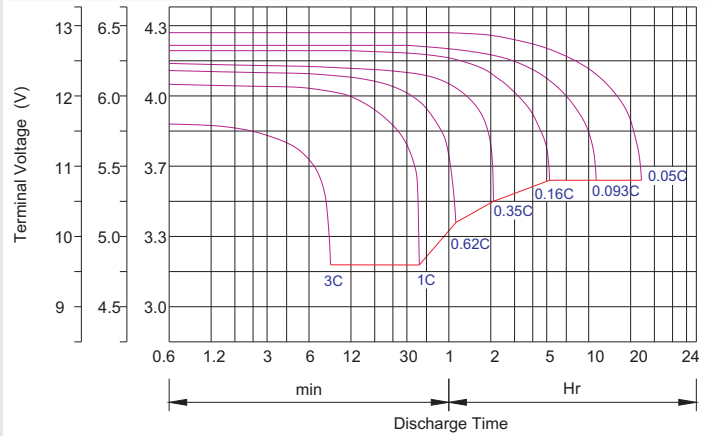
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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 Current 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

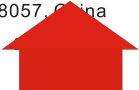
**Charge the batteries at least once every six months, if they are stored at 25°C.**

Charging Method:

Constant Voltage	-0.2Cx2h+2.4~2.45V/Cellx24h, Max. Current 0.3CA
Constant Current	-0.2Cx2h+0.1CAx12h
Fast	-0.2Cx2h+0.3CAx4.0h

## Maintenance & Cautions

<b>Float Service:</b>
※ 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.



# RT 12280S (12V28.0Ah)

RT12280S is a general purpose battery with 5 years life in standby service, or more than 260 cycles at 100% D.O.D by cyclic use. As with all Ritars batteries, all RT models are rechargeable, highly efficient, leak proof and maintenance free.

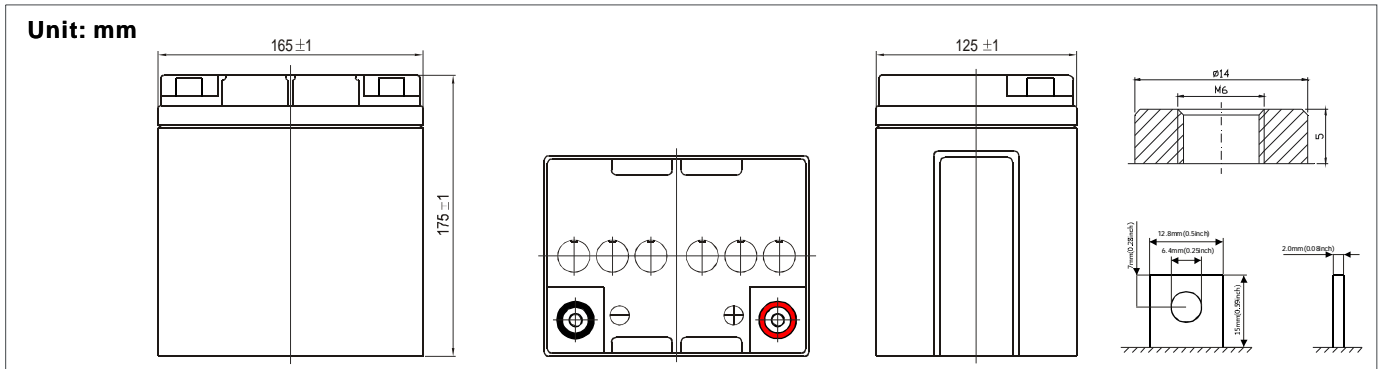


## Specification

<b>Cells Per Unit</b>	6
<b>Voltage Per Unit</b>	12
<b>Capacity</b>	28.0Ah @20hr-rate to 1.75V per cell @25°C
<b>Weight</b>	Approx. 9.95 Kg
<b>Max. Discharge Current</b>	280 A (5 sec)
<b>Internal Resistance</b>	Approx. 11 mΩ
<b>Operating Temperature Range</b>	Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C
<b>Normal Operating Temperature Range</b>	25°C±5°C
<b>Float charging Voltage</b>	13.6 to 13.8 VDC/unit Average at 25°C
<b>Recommended Maximum Charging Current Limit</b>	8.4 A
<b>Equalization and Cycle Service</b>	14.4 to 15.0 VDC/unit Average at 25°C
<b>Self Discharge</b>	RITAR batteries can be stored for more than 6 months at 25°C. Please charge batteries before using. For higher temperature, the time interval will be shorter.
<b>Terminal</b>	Terminal F11/F17
<b>Container Material</b>	A.B.S. (UL94-HB) Flammability resistance of UL94-V2 can be available upon request.



## Dimensions



### Constant Current Discharge Characteristics Unit: A(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	116	77.7	59.7	32.8	19.4	11.6	7.2	5.9	4.7	3.5	2.7	1.5
1.67V	109	72.5	56.1	32.3	19.3	11.6	7.1	5.9	4.7	3.5	2.7	1.5
1.70V	103	70.3	54.9	32.1	19.2	11.5	7.1	5.8	4.7	3.5	2.7	1.5
1.75V	93.0	65.7	52.0	31.4	18.9	11.4	7.1	5.8	4.6	3.5	2.7	1.4
1.80V	83.0	61.3	49.1	30.6	18.6	11.2	7.0	5.8	4.6	3.4	2.6	1.3
1.85V	73.2	56.8	46.3	29.8	18.4	11.0	7.0	5.7	4.6	3.4	2.6	1.3

### Constant Power Discharge Characteristics Unit: W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	224	146	118	65.7	38.8	23.3	14.3	11.7	11.1	7.0	5.5	3.1
1.67V	210	140	112	64.6	38.7	23.1	14.3	11.7	11.0	7.0	5.4	2.9
1.70V	206	136	110	64.2	38.6	23.1	14.3	11.7	11.0	6.9	5.3	2.9
1.75V	186	130	104	62.7	38.0	22.7	14.2	11.6	11.0	6.9	5.3	2.8
1.80V	166	122	98.2	61.2	37.4	22.4	14.1	11.5	10.9	6.9	5.2	2.7
1.85V	146	113	92.5	59.7	36.7	22.1	13.9	11.4	10.9	6.9	5.1	2.6

All mentioned values are average values.



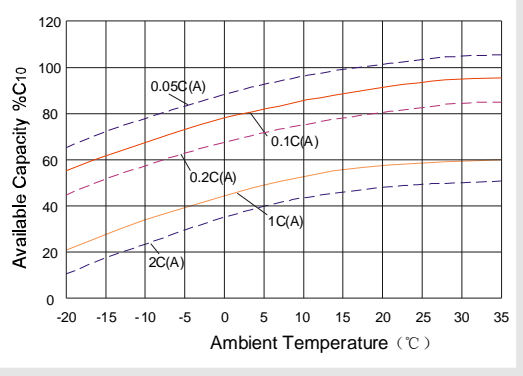


# RT 12280S

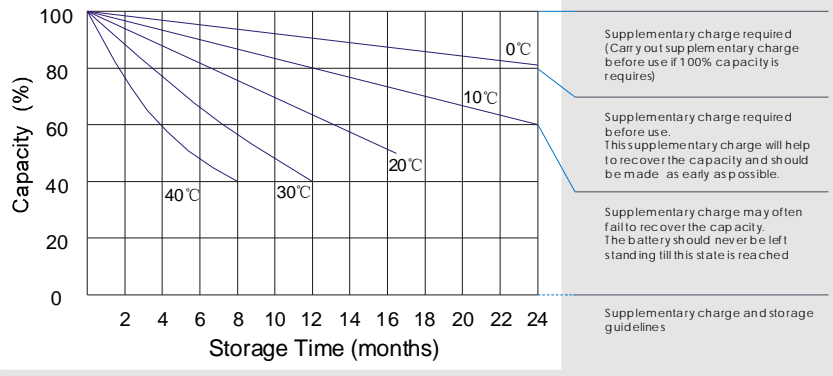
# 12V28Ah



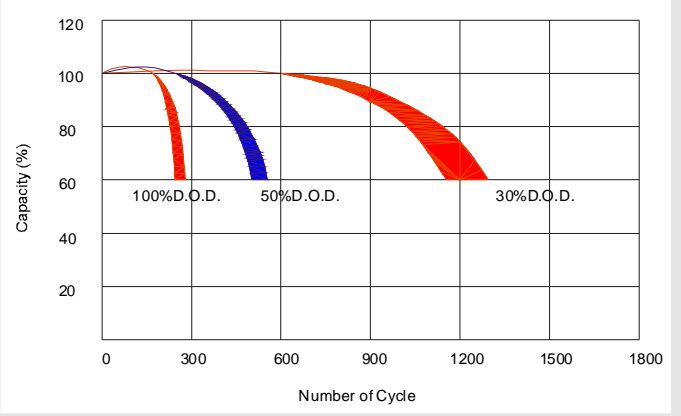
### Temperature effects curve



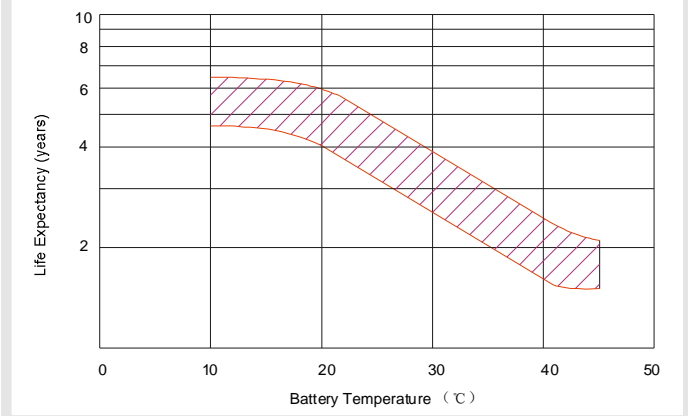
### Storage characteristic



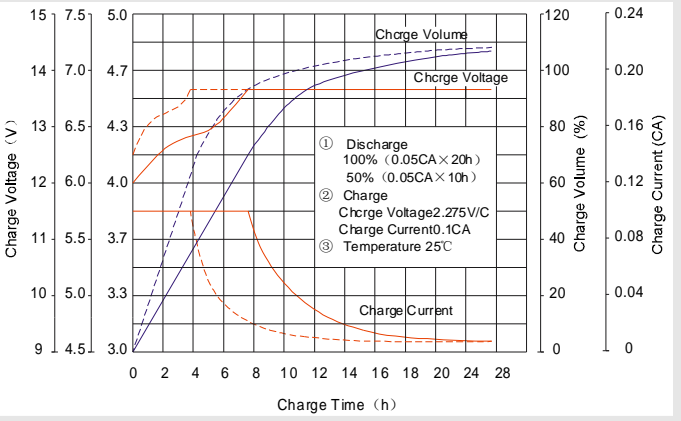
### Life characteristics of cyclic use



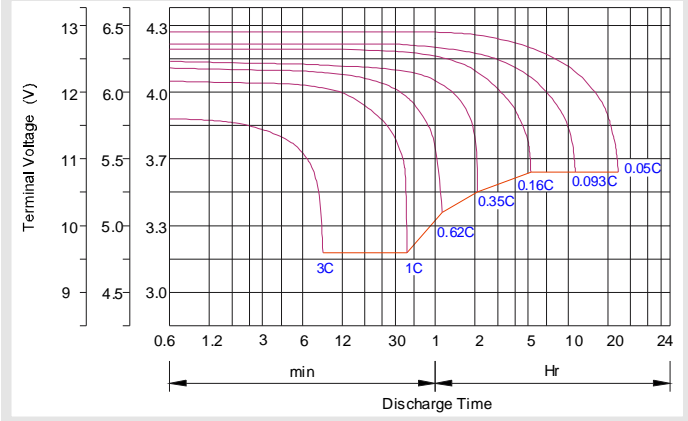
### Effect of temperature on long term float life



### Charge characteristic Curve for standby use



### Discharge characteristic Curve



### Charging Procedures

Application	Charge Voltage (V)			Max. Charge Current
	Temperature	Set point	Allowable range	
Cycle Use	25°C	14.7	14.4~15.0	0.3C
Standby	25°C	13.7	13.6~13.8	0.3C

### 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

### Charging Procedures(6V series)

Application	Charge Voltage (V)			Max. Charge Current
	Temperature	Set point	Allowable range	
Cycle Use	25°C	7.35	7.25~7.45	0.3C
Standby	25°C	6.85	6.8~6.9	0.3C

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

Charging Method:

Constant Voltage	-0.2Cx2h +14.4~15.0V,24h,Max. Current 0.3CA
Constant Current	-0.2Cx2h +0.1CAx12h
Fast	-0.2Cx2h +0.3CAx4h

### SHEN ZHEN RITAR POWER CO.,LTD.

Room 405,Tower C,Huahan Building,Jiangshan Road 16,North High-tech Industrial Park, Nanshan District,Shenzhen,518057,China  
 URL:www.ritarpower.com Tel:+86-755-33981668 Fax:86-755-83475180





# RA12-33 (12V33Ah)

RA12-33 is a general purpose battery with 10 years floating design life, meet with IEC, JIS .BS and Eurobat standard. With heavy duty grid, thickness plates, special additives, RA series battery have long and reliable standby service life. Our RA Series batteries keep high consistent for better performance in series usage.



## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	33Ah@10hr-rate to 1.75V per cell @25°C
Weight	Approx. 10.2 Kg
Max. Discharge Current	330A (5 sec)
Internal Resistance	Approx. 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 Limit	9.9 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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 F7/F11
Container Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V1 can be available upon request.



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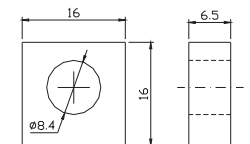
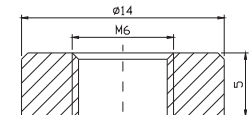
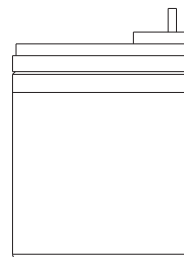
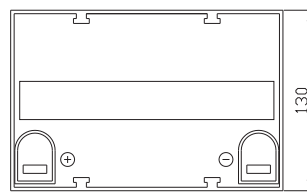
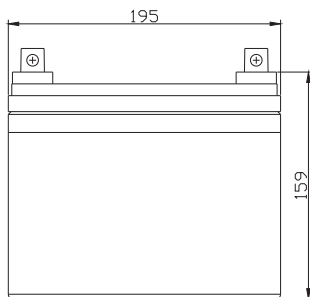
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ISO9001:2000 Certificate

## Dimensions

Unit: mm Dimension: 195(L)×130(W)×159(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	103.8	76.41	58.69	37.95	21.45	11.98	8.613	7.128	5.834	4.099	3.466	1.833
10.0V	100.8	72.71	57.48	37.32	21.35	11.89	8.580	7.095	5.800	4.066	3.433	1.800
10.2V	97.8	70.14	56.58	36.99	21.15	11.80	8.514	7.062	5.766	4.033	3.399	1.766
10.5V	87.82	64.72	53.87	36.07	20.96	11.71	8.481	6.996	5.697	3.999	3.366	1.733
10.8V	79.26	59.02	49.66	34.49	20.46	11.50	8.250	6.831	5.594	3.933	3.333	1.700
11.1V	69.00	52.75	44.54	32.31	19.44	10.99	7.887	6.501	5.354	3.766	3.233	1.600

### Constant Power Discharge Characteristics: W(25°C)

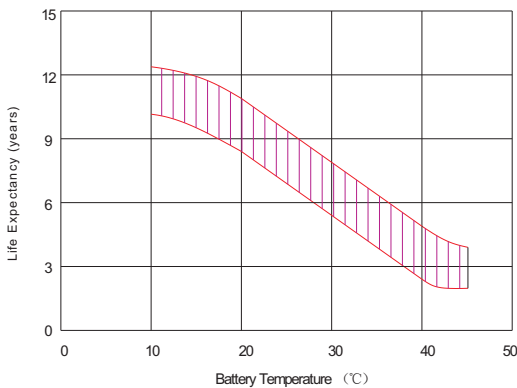
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	1012	755.7	631.5	406.9	245.3	137.8	99.40	82.37	67.54	47.57	38.97	20.59
10.0V	985	721.8	618.4	401.8	244.1	137.3	99.20	82.17	67.13	47.37	38.57	20.39
10.2V	956	697.7	610.0	397.1	242.4	136.0	98.60	81.77	66.92	46.97	38.37	20.19
10.5V	860	644.7	581.7	388.1	240.0	134.8	98.01	81.18	66.31	46.57	37.97	19.99
10.8V	774.0	585.4	534.4	370.4	234.0	132.8	95.63	79.00	65.28	45.57	37.57	19.79
11.1V	668.1	519.9	477.2	347.0	221.8	126.7	90.88	75.24	61.98	43.97	36.37	18.99

All mentioned values are average values.

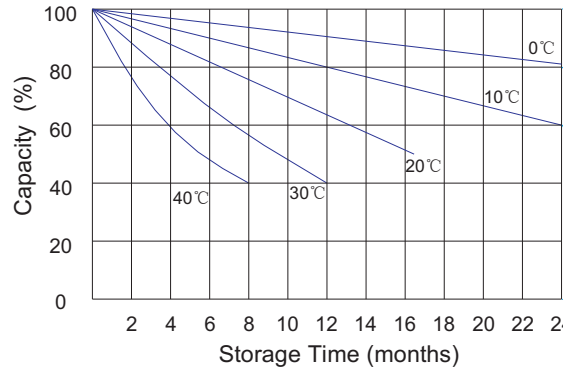




### Effect of temperature on long term float life



### Storage characteristic



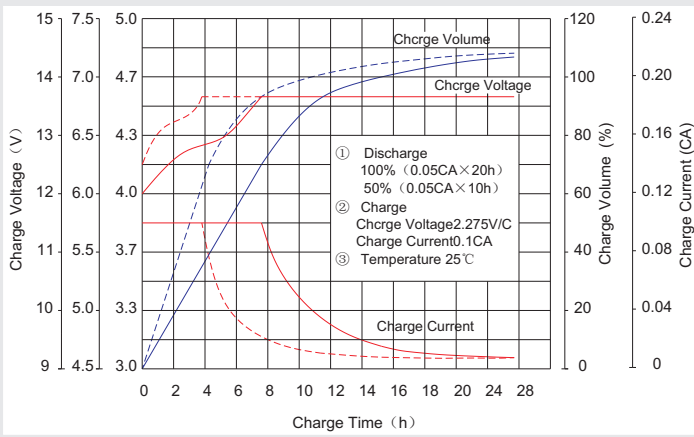
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

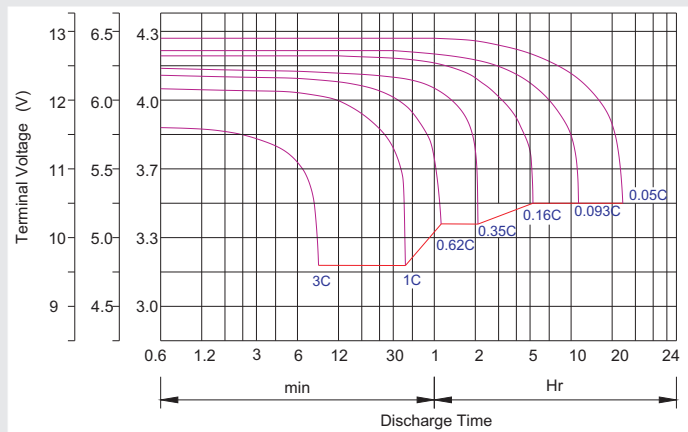
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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

### Maintenance & Cautions

#### Float Service:

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

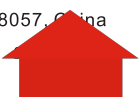
Equalization charge method:

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.





# RA12-40 (12V40Ah)

RA12-40 is a general purpose battery with 10 years floating design life, meet with IEC, JIS .BS and Eurobat standard. With heavy duty grid, thickness plates, special additives, RA series battery have long and reliable standby service life. Our RA Series batteries keep high consistent for better performance in series usage.



## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	40Ah@10hr-rate to 1.75V per cell @25°C
Weight	Approx. 13.2 Kg
Max. Discharge Current	400A (5 sec)
Internal Resistance	Approx. 8 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	12A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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
Container Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V1 can be available upon request.



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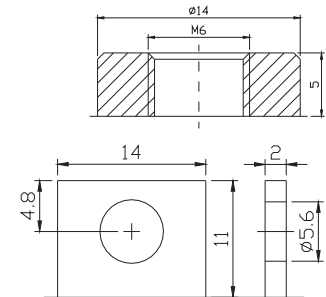
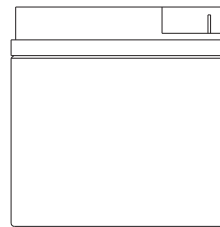
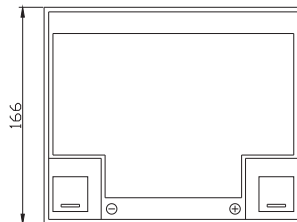
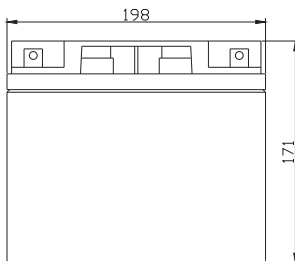
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ISO9001:2000 Certificate

## 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	125.80	92.62	71.136	46.000	26.000	14.524	10.440	8.6400	7.0720	4.9687	4.2012	2.2218
10.0V	122.16	88.128	69.677	45.240	25.880	14.414	10.400	8.6000	7.0304	4.9283	4.1608	2.1814
10.2V	118.54	85.018	68.582	44.840	25.640	14.305	10.320	8.5600	6.9888	4.8879	4.1204	2.1410
10.5V	106.44	78.451	65.299	43.720	25.400	14.196	10.280	8.4800	6.9056	4.8475	4.0800	2.1006
10.8V	96.08	71.539	60.192	41.800	24.800	13.941	10.000	8.2800	6.7808	4.7667	4.0396	2.0602
11.1V	83.635	63.936	53.990	39.160	23.560	13.322	9.5600	7.8800	6.4896	4.5648	3.9184	1.9390

### Constant Power Discharge Characteristics: W(25°C)

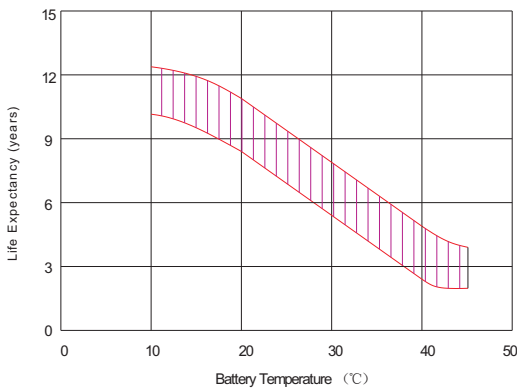
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	1227.0	916.0	765.46	493.16	297.36	167.08	120.48	99.840	81.869	57.657	47.240	24.952
10.0V	1194.2	874.9	749.56	487.01	295.92	166.42	120.24	99.600	81.370	57.415	46.755	24.710
10.2V	1158.3	845.7	739.38	481.31	293.76	164.89	119.52	99.120	81.120	56.930	46.513	24.468
10.5V	1043.0	781.46	705.03	470.36	290.88	163.36	118.80	98.400	80.371	56.446	46.029	24.226
10.8V	938.2	709.54	647.78	448.93	283.68	160.96	115.92	95.760	79.123	55.234	45.544	23.983
11.1V	809.86	630.14	578.45	420.66	268.80	153.54	110.16	91.200	75.130	53.296	44.091	23.014

All mentioned values are average values.

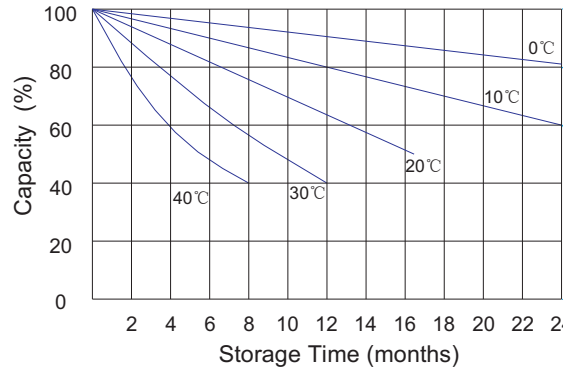




### Effect of temperature on long term float life



### Storage characteristic



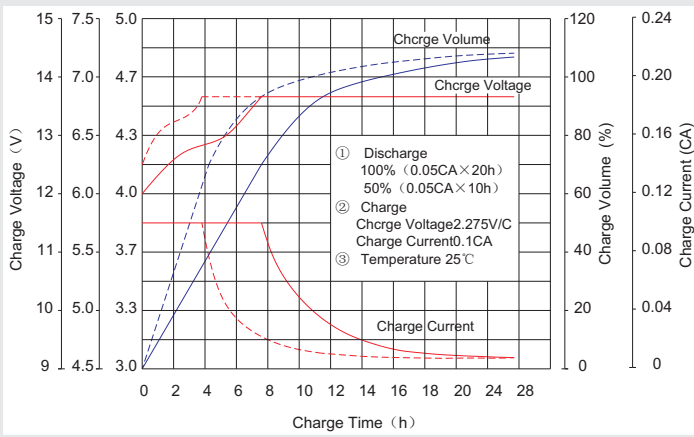
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

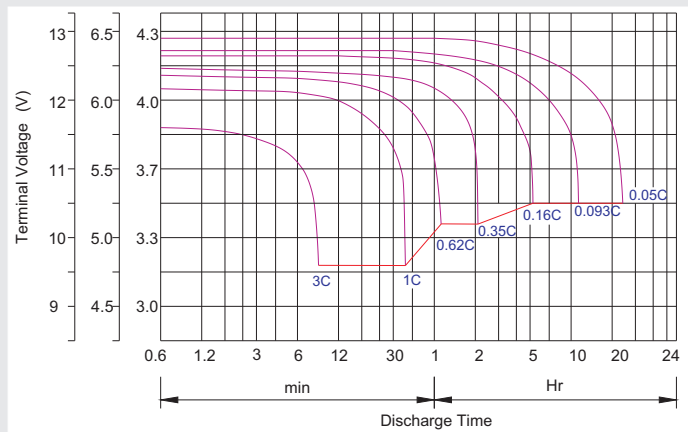
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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

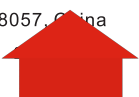
### Maintenance & Cautions

<b>Float Service:</b>
※ 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.

**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





# RA12-55 (12V55Ah)

RA12-55 is a general purpose battery with 10 years floating design life, meet with IEC, JIS .BS and Eurobat standard. With heavy duty grid, thickness plates, special additives, RA series battery have long and reliable standby service life. Our RA Series batteries keep high consistent for better performance in series usage.



## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	55Ah@10hr-rate to 1.75V per cell @25°C
Weight	Approx. 18.0 Kg
Max. Discharge Current	550A (5 sec)
Internal Resistance	Approx. 6 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	16.5 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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 F11/F15
Container Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V1 can be available upon request.



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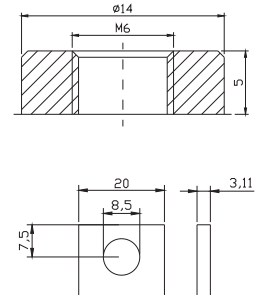
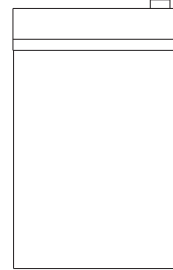
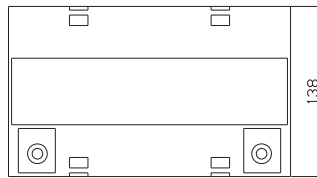
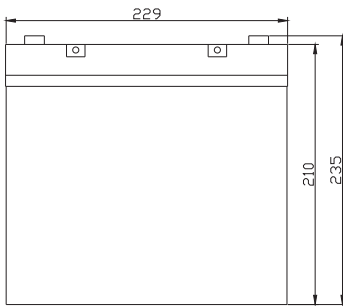
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ISO9001:2000 Certificate

## Dimensions

Unit: mm Dimension: 229(L)×138(W)×210(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	173.0	127.4	97.8	63.25	35.75	19.97	14.36	11.88	9.724	6.832	5.777	3.055
10.0V	168.0	121.2	95.8	62.21	35.59	19.82	14.30	11.83	9.667	6.776	5.721	2.999
10.2V	163.0	116.9	94.30	61.66	35.26	19.67	14.19	11.77	9.610	6.721	5.666	2.944
10.5V	146.4	107.9	89.79	60.12	34.93	19.52	14.14	11.66	9.495	6.665	5.610	2.888
10.8V	132.1	98.4	82.76	57.48	34.10	19.17	13.75	11.39	9.324	6.554	5.554	2.833
11.1V	115.0	87.9	74.24	53.85	32.40	18.32	13.15	10.84	8.923	6.277	5.388	2.666

### Constant Power Discharge Characteristics: W(25°C)

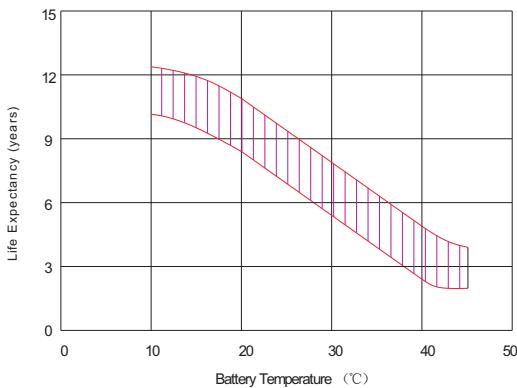
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	1687	1259	1053	678.1	408.9	229.7	165.7	137.3	112.6	79.28	64.95	34.31
10.0V	1642	1203	1031	669.6	406.9	228.8	165.3	137.0	111.9	78.95	64.29	33.98
10.2V	1593	1163	1017	661.8	403.9	226.7	164.3	136.3	111.5	78.28	63.96	33.64
10.5V	1434	1075	969	646.8	400.0	224.6	163.4	135.3	110.5	77.61	63.29	33.31
10.8V	1290	976	890.7	617.3	390.1	221.3	159.4	131.7	108.8	75.95	62.62	32.98
11.1V	1114	866	795.4	578.4	369.6	211.1	151.5	125.4	103.30	73.28	60.62	31.64

All mentioned values are average values.

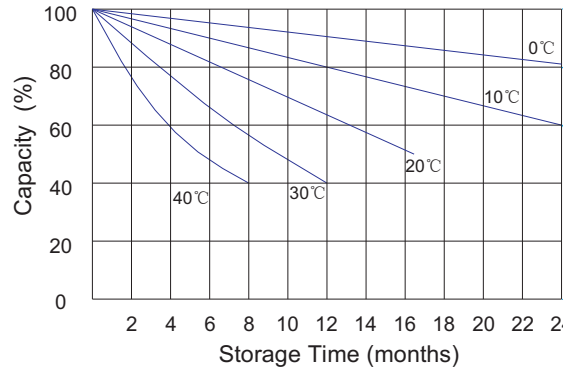




### Effect of temperature on long term float life



### Storage characteristic



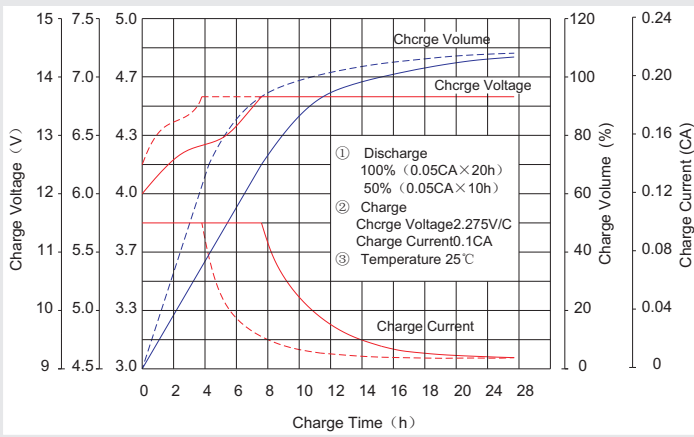
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

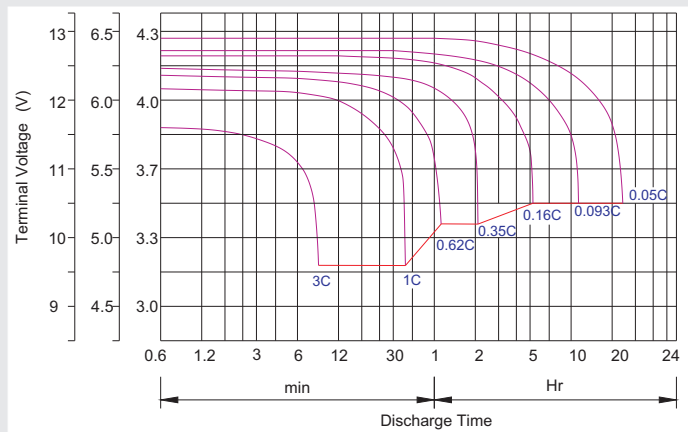
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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

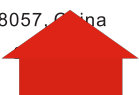
**Charge the batteries at least once every six months, if they are stored at 25°C.**

Charging Method:

Constant Voltage	-0.2Cx2h+2.4-2.45V/cellx24h, Max. Current 0.3CA
Constant Current	-0.2Cx2h+0.1CAx12h
Fast	-0.2Cx2h+0.3CAx4.0h

### Maintenance & Cautions

<b>Float Service:</b>
※ 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.





# RA12-75 (12V75Ah)

RA12-75 is a general purpose battery with 10 years floating design life, meet with IEC, JIS .BS and Eurobat standard. With heavy duty grid, thickness plates, special additives, RA series battery have long and reliable standby service life. Our RA Series batteries keep high consistent for better performance in series usage.



## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	75Ah@10hr-rate to 1.75V per cell @25°C
Weight	Approx. 23.5 Kg
Max. Discharge Current	750A (5 sec)
Internal Resistance	Approx. 6 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	22.5 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	RITAR 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 F11/F15
Container Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V1 can be available upon request.



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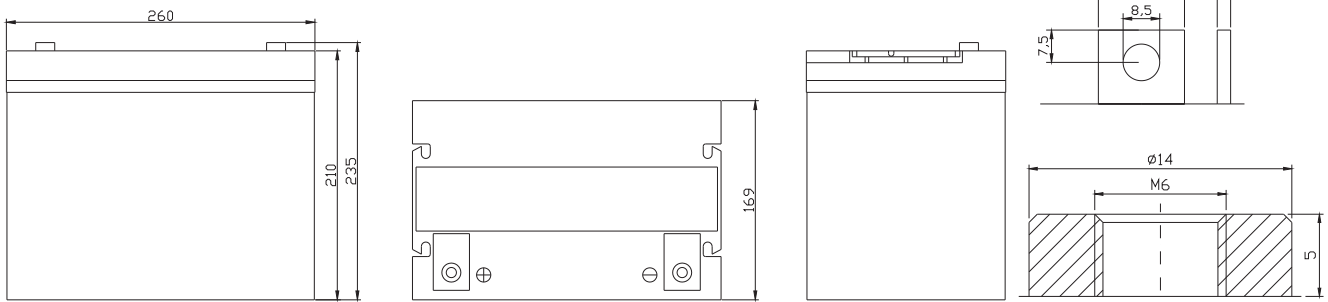
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ISO9001:2000 Certificate

## Dimensions

Unit: mm Dimension: 260(L)×169(W)×210(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	235.87	173.66	133.38	86.250	48.750	27.232	19.575	16.200	13.260	9.3163	7.8772	4.1658
10.0V	229.05	165.24	130.64	84.825	48.525	27.027	19.500	16.125	13.182	9.2406	7.8015	4.0901
10.2V	222.26	159.41	128.59	84.075	48.075	26.822	19.350	16.050	13.104	9.1649	7.7257	4.0144
10.5V	199.58	147.10	122.44	81.975	47.625	26.618	19.275	15.900	12.948	9.0891	7.6500	3.9386
10.8V	180.14	134.14	112.86	78.375	46.500	26.140	18.750	15.525	12.714	8.9376	7.5743	3.8629
11.1V	156.82	119.88	101.23	73.425	44.175	24.980	17.925	14.775	12.168	8.5589	7.3470	3.6356

### Constant Power Discharge Characteristics: W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	2473.8	1846.7	1435.2	924.68	557.55	313.27	225.90	187.20	153.50	108.11	88.575	46.786
10.0V	2407.7	1763.9	1405.4	913.14	554.85	312.04	225.45	186.75	152.57	107.65	87.666	46.331
10.2V	2335.2	1705.1	1386.3	902.45	550.80	309.17	224.10	185.85	152.10	106.74	87.212	45.877
10.5V	2102.8	1575.5	1321.9	881.93	545.40	306.31	222.75	184.50	150.70	105.84	86.304	45.423
10.8V	1891.5	1430.5	1214.6	841.75	531.90	301.80	217.35	179.55	148.36	103.56	85.395	44.969
11.1V	1632.8	1270.4	1084.6	788.74	504.00	287.88	206.55	171.00	140.87	99.931	82.670	43.152

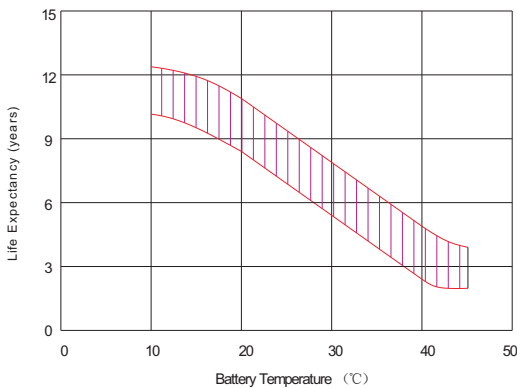
All mentioned values are average values.



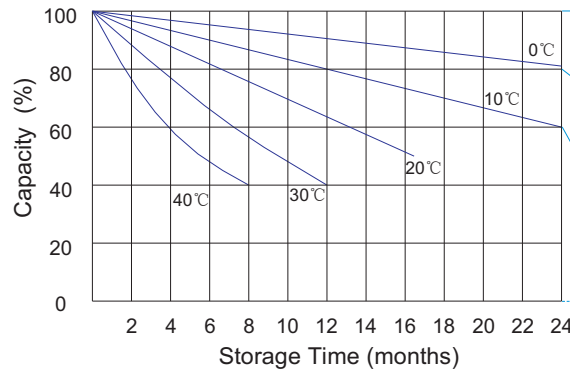




### Effect of temperature on long term float life



### Storage characteristic



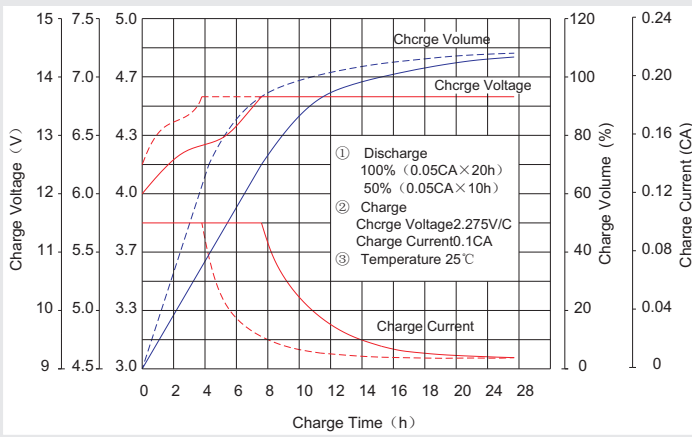
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

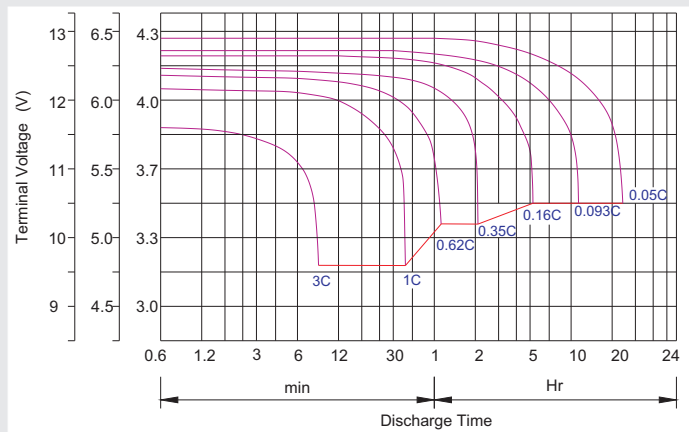
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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

### Maintenance & Cautions

#### Float Service:

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

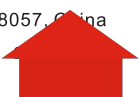
Equalization charge method:

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.





# RA12-100 (12V100Ah)

RA12-100 is a general purpose battery with 10 years design life time in float charging use. As with all Ritar batteries, all RA models are rechargeable, highly efficient, leak proof and maintenance free.



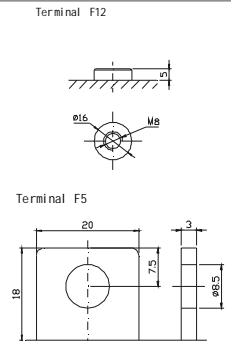
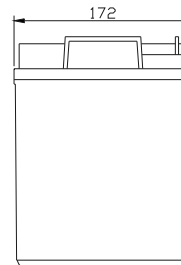
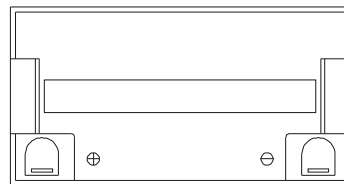
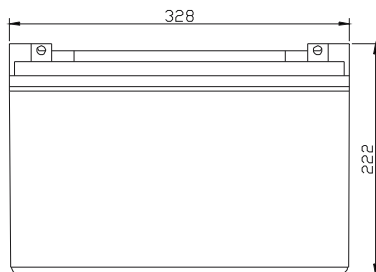
## Specification

<b>Cells Per Unit</b>	6
<b>Voltage Per Unit</b>	12
<b>Capacity</b>	100Ah @ 10hr-rate to 1.75V per cell @ 25°C
<b>Weight</b>	Approx. 30 Kg
<b>Max. Discharge Current</b>	500 A (5 sec)
<b>Internal Resistance</b>	Approx. 5 mΩ
<b>Operating Temperature Range</b>	Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C
<b>Normal Operating Temperature Range</b>	25°C±5°C
<b>Float charging Voltage</b>	13.6 to 13.8 VDC/unit Average at 25°C
<b>Recommended Maximum Charging Current Limit</b>	30 A
<b>Equalization and Cycle Service</b>	14.4 to 15.0 VDC/unit Average at 25°C
<b>Self Discharge</b>	RITAR batteries can be stored for more than 6 months at 25°C. Please charge batteries before using. For higher temperature, the time interval will be shorter.
<b>Terminal</b>	Terminal F5/F12
<b>Container Material</b>	A.B.S. (UL94-HB) Flammability resistance of UL94-V1 can be available upon request.



## Dimensions

Unit: mm



### Constant Current Discharge Characteristics Unit: A(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	374	268	195	115	65.0	39.9	26.1	21.6	17.0	12.3	10.4	5.5
1.67V	364	255	191	113	64.7	39.6	26.0	21.5	16.9	12.2	10.3	5.4
1.70V	343	246	188	112	64.1	39.3	25.8	21.4	16.8	12.1	10.2	5.3
1.75V	308	227	179	109	63.5	39.0	25.7	21.2	16.6	12.0	10.1	5.2
1.80V	278	207	165	105	62.0	38.3	25.0	20.7	16.3	11.8	10.0	5.1
1.85V	242	185	148	98	58.9	36.6	23.9	19.7	15.6	11.3	9.7	4.8

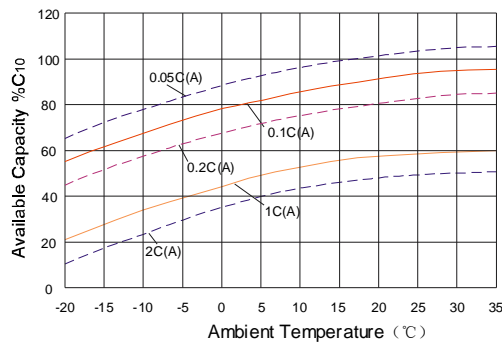
### Constant Power Discharge Characteristics Unit: W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	671	490	361	216	124	76.5	50.2	41.6	32.8	23.8	19.5	10.3
1.67V	657	468	354	214	123	76.2	50.1	41.5	32.6	23.7	19.3	10.2
1.70V	620	453	349	211	122	75.5	49.8	41.3	32.5	23.5	19.2	10.1
1.75V	558	418	333	206	121	74.8	49.5	41.0	32.2	23.3	19.0	10.0
1.80V	502	380	306	197	118	73.7	48.3	39.9	31.7	22.8	18.8	9.9
1.85V	434	337	273	185	112	70.3	45.9	38.0	30.1	22.0	18.2	9.5

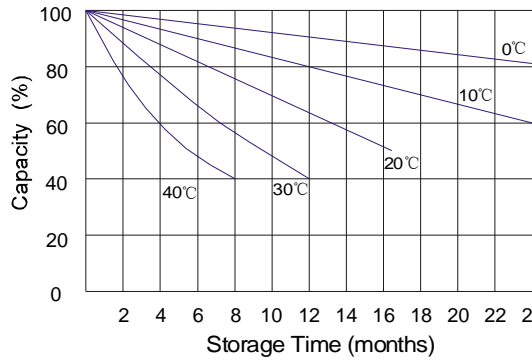
All mentioned values are average values.



### Temperature effects curve



### Storage characteristic



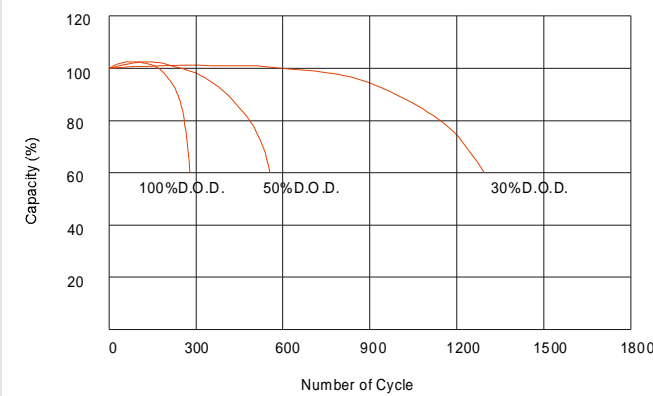
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

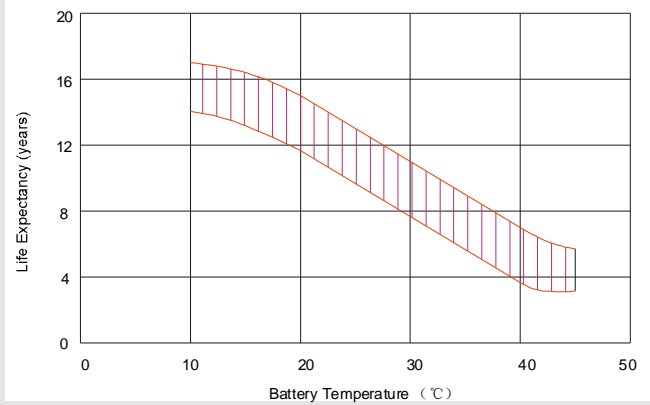
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

Supplementary charge and storage guidelines

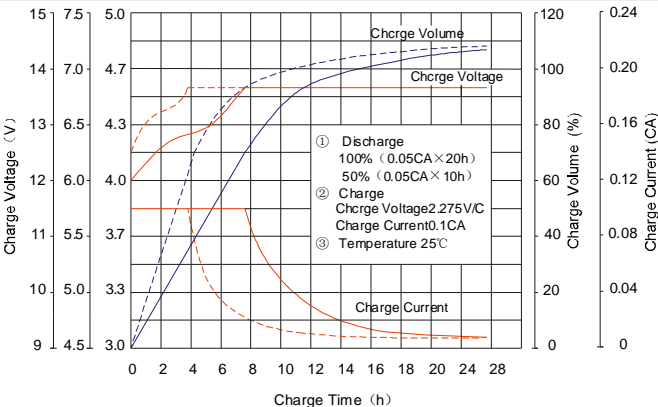
### Life characteristics of cyclic use



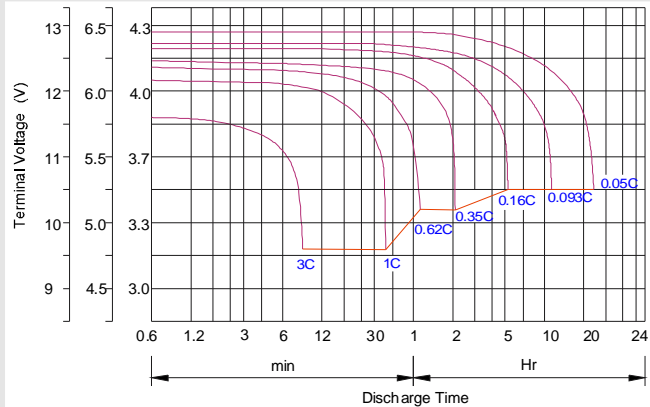
### Effect of temperature on long term float life



### Charge characteristic Curve for standby use



### Discharge characteristic Curve



### Charging Procedures(12V series)

Application	Charge Voltage (V)			Max. Charge Current
	Temperature	Set point	Allowable range	
Cycle Use	25°C	14.7	14.4~15.0	0.3C
Standby	25°C	13.7	13.6~13.8	0.3C

### 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 +14.4~15.0V,24h,Max. Current 0.3CA
Constant Current	-0.2Cx2h +0.1CAx12h
Fast	-0.2CX2h +0.3CAx4h

### Charging Procedures(6V series)

Application	Charge Voltage (V)			Max. Charge Current
	Temperature	Set point	Allowable range	
Cycle Use	25°C	7.35	7.25~7.45	0.3C
Standby	25°C	6.85	6.8~6.9	0.3C

SHEN ZHEN RITAR POWER CO.,LTD.

Room 405, Tower C, Huahan Building, Jangshan Road 16, North High-tech Industrial Park, Nanshan District, Shenzhen, 518057, China  
 URL: [www.ritarpower.com](http://www.ritarpower.com) Tel: +86-755-33981668 Fax: 86-755-83475180





# RA12-120 (12V120Ah)

RA series is a general purpose battery with 10 years design life in float service. It meets with IEC, JIS and BS standards. With up-dated AGM valve regulated technology and high purity raw materials, the RA series battery maintains high consistency for better performance and reliable standby service life. It is suitable for UPS/EPS, medical equipment, emergency light and security system applications.



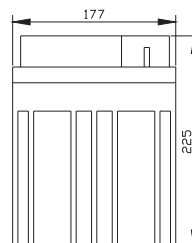
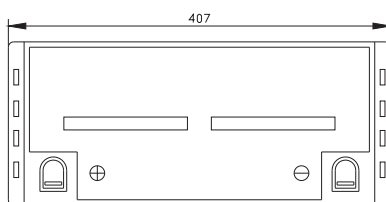
## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	120Ah@10hr-rate to 1.80V per cell @25°C
Weight	Approx. 35.0 Kg (Tolerance ±2%)
Max. Discharge Current	1200A (5 sec)
Internal Resistance	Approx. 4.5 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	36A
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 F5/F12
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.

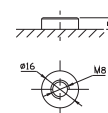


## Dimensions

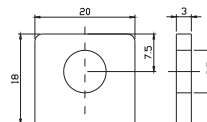
Unit: mm Dimension: 407(L) × 177(W) × 225(H)



Terminal F12



Terminal F5



### Constant Current Discharge Characteristics: A (25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	382.0	278.8	217.7	120.6	74.90	46.24	31.43	25.34	21.04	13.86	12.49	6.61
10.0V	371.0	265.3	213.2	119.0	73.91	45.31	30.84	24.98	20.85	13.80	12.36	6.49
10.2V	360.0	255.9	209.9	117.2	73.20	44.83	30.57	24.73	20.71	13.68	12.24	6.36
10.5V	323.2	236.1	199.8	114.0	72.30	44.25	30.30	24.37	20.54	13.55	12.12	6.24
10.8V	291.7	215.3	184.2	110.2	71.30	43.88	29.95	23.53	20.44	13.50	12.01	6.18
11.1V	249.1	192.4	165.2	106.0	69.61	42.12	29.36	23.19	20.29	13.39	11.87	5.93

### Constant Power Discharge Characteristics: W(25°C)

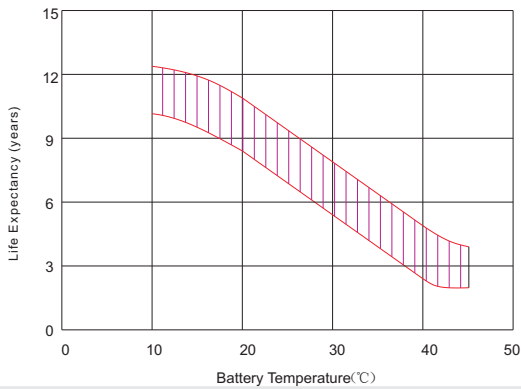
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	3951	2969	2395	1380	868.0	541.9	370.0	303.3	252.0	165.9	149.7	79.63
10.0V	3873	2878	2356	1366	860.1	535.3	364.5	299.0	249.7	165.3	148.6	78.25
10.2V	3829	2802	2330	1354	855.0	531.5	362.9	296.2	248.2	164.0	147.2	76.80
10.5V	3486	2609	2222	1326	849.5	524.8	359.9	292.2	246.2	162.6	145.8	75.35
10.8V	3175	2405	2054	1295	838.6	520.9	355.9	282.4	245.1	161.9	144.4	74.62
11.1V	2789	2175	1849	1259	826.0	501.4	349.9	278.3	244.2	160.8	142.8	71.95

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

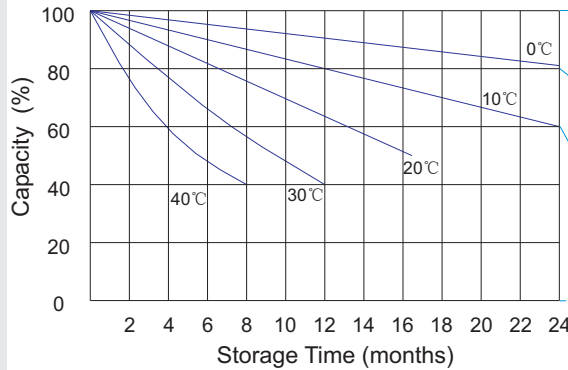




### Effect of temperature on long term float life



### Storage characteristic



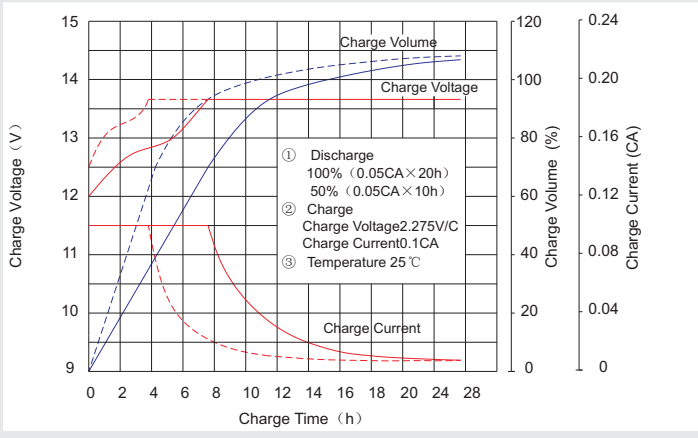
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

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

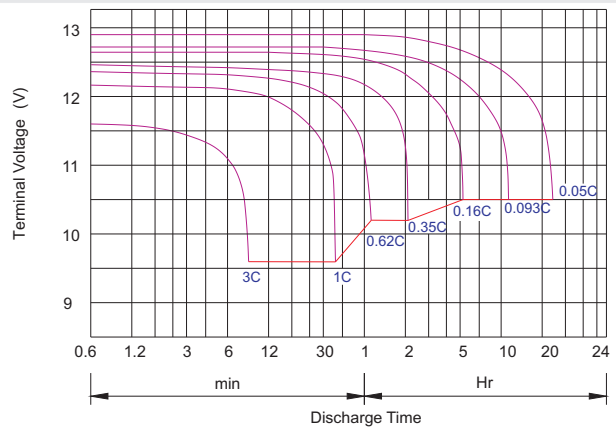
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

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+14.4-14.7Vx24h, 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 14.4-14.7V 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.





# RA12-145 (12V145Ah)

RA12-145 is a general purpose battery with 10 years floating design life, meet with IEC, JIS .BS and Eurobat standard. With heavy duty grid, thickness plates, special additives, RA series battery have long and reliable standby service life. Our RA Series batteries keep high consistent for better performance in series usage.



## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	145Ah@10hr-rate to 1.80V per cell @25°C
Weight	Approx. 44 Kg
Max. Discharge Current	1450A (5 sec)
Internal Resistance	Approx. 4.0 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	43.5A
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 F5/F12
Container Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V1 can be available upon request.



MH28539



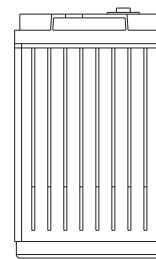
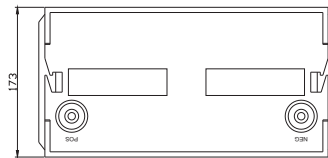
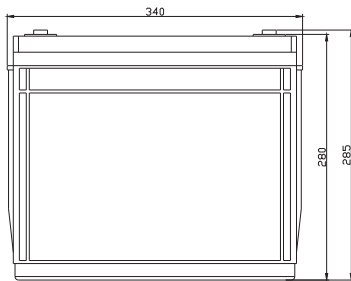
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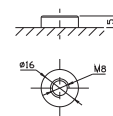
ISO9001:2000 Certificate

## Dimensions

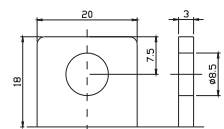
Unit: mm Dimension: 340(L)×173(W)×280(H)



Terminal F12



Terminal F5



## Constant Current Discharge Characteristics: A (25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	427.8	319.1	263.1	163.4	94.25	56.40	38.98	31.95	26.15	18.01	15.23	8.376
10.0V	415.4	303.6	257.7	160.7	93.82	55.97	38.83	31.80	25.99	17.87	15.08	8.224
10.2V	403.1	292.9	253.6	159.2	92.95	55.55	38.53	31.65	25.84	17.72	14.94	8.072
10.5V	361.9	270.3	241.5	155.3	92.08	55.12	38.38	31.35	25.53	17.57	14.79	7.919
10.8V	326.7	246.4	222.6	148.4	89.90	54.14	37.34	30.62	25.07	17.28	14.64	7.767
11.1V	278.9	220.3	199.6	139.1	85.41	51.73	35.69	29.14	24.00	16.55	14.20	7.310

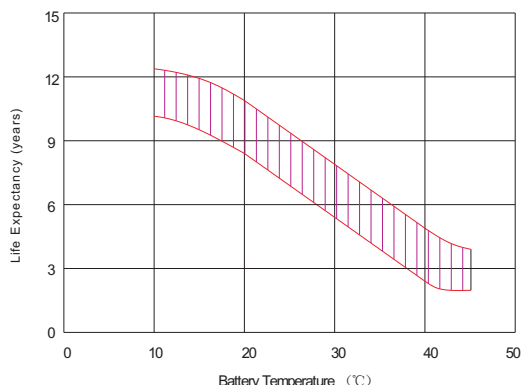
## Constant Power Discharge Characteristics: W(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.6V	4424	3398	2894	1862	1089	664.7	463.9	380.8	312.0	215.1	182.0	100.4
10.0V	4337	3294	2847	1840	1087	661.2	464.0	380.3	311.2	214.0	180.8	98.7
10.2V	4288	3207	2815	1827	1078	657.2	462.0	379.5	310.1	212.6	179.2	96.9
10.5V	3903	2986	2685	1784	1068	652.4	460.2	375.9	306.4	210.9	177.5	95.0
10.8V	3555	2753	2482	1710	1049	644.1	447.7	367.4	300.9	207.4	175.7	93.2
11.1V	3123	2489	2234	1606	1004	620.2	428.3	349.6	287.9	198.6	170.5	87.7

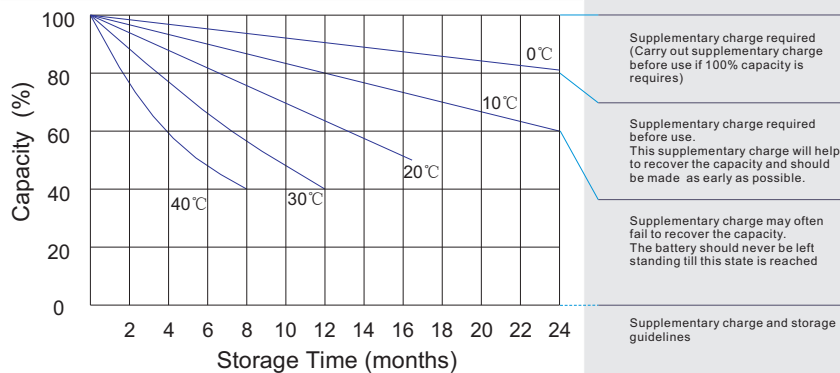
All mentioned values are average values.



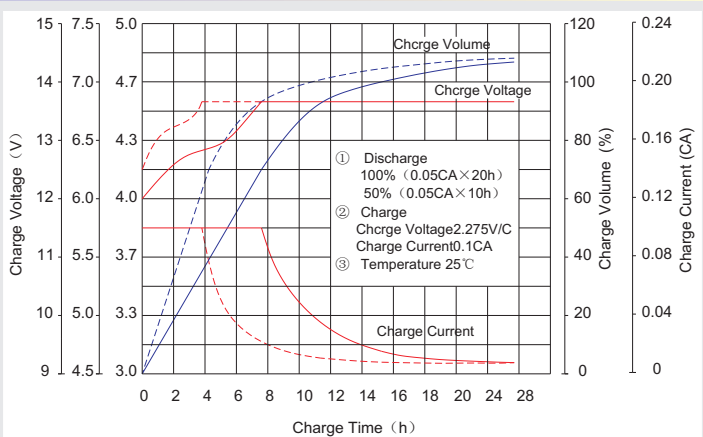
### Effect of temperature on long term float life



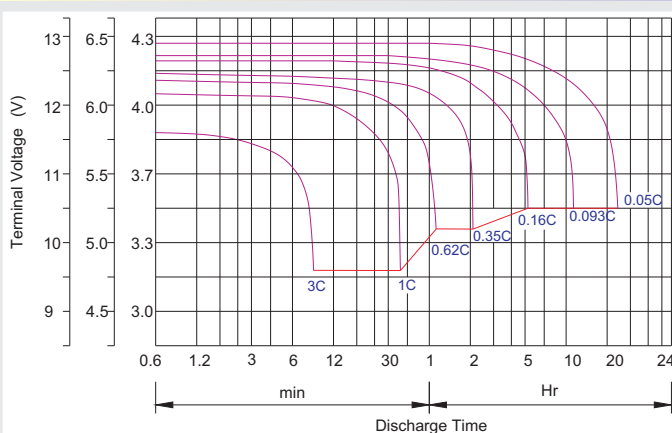
### Storage characteristic



### 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

**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

### Maintenance & Cautions

<b>Float Service:</b>
※ 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.

