YUASA REC BATTERIES

REC80-12



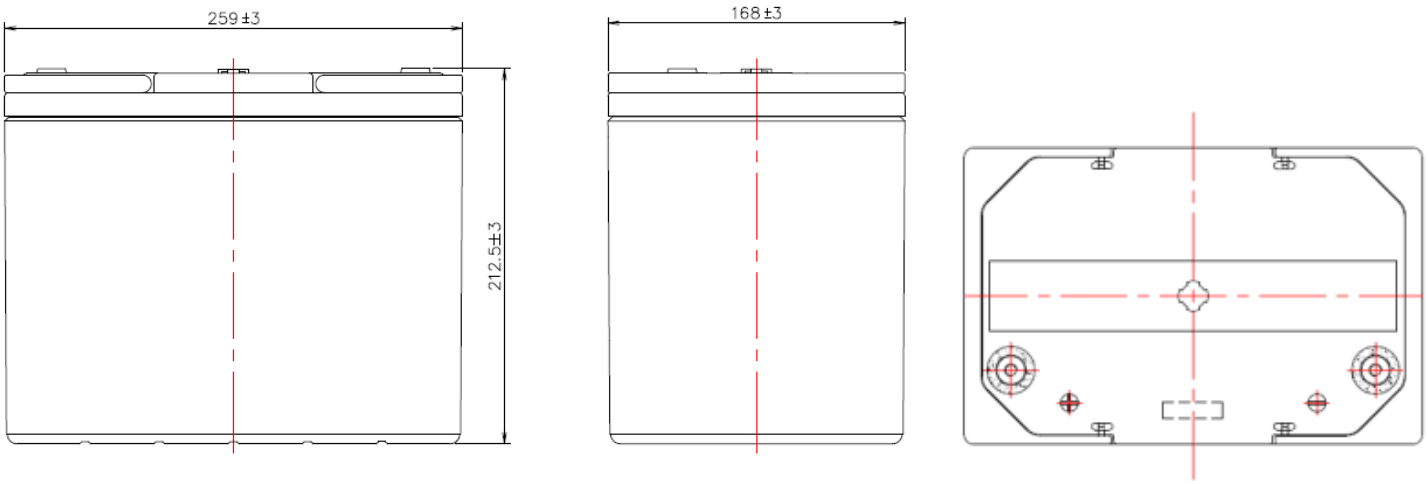
Developed by the world renowned GS Yuasa Corporation, Yuasa REC batteries are a range of sealed maintenance free, VRLA batteries designed to deliver superior cycling performance in high rate discharge applications. Yuasa REC batteries incorporate Yuasa's unique electrolyte retention system, heavy duty lead acid calcium alloy grids and specialist raw materials for extra performance in both cyclic and float applications.

The sealed maintenance free design enables operation in any orientation* without compromising performance or risk of electrolyte leakage, making Yuasa REC batteries ideal for use in a diverse range of applications:

- ✓ Mobility scooters
- ✓ Golf trundles
- ✓ Electric toys
- ✓ Electric bikes & vehicles
- ✓ Caravans & motorhomes
- ✓ Auxiliary field equipment

Product Specification

Voltage	12V	**Weight**	Approx. 27kg
Capacity	80Ah @ 20hr-rate	**Max. Discharge Current**	480A (5 sec)
Operating Temperature Range	Discharge: -15℃~45℃ Charge: -15℃~45℃ Storage: -15℃~45℃	**Internal Resistance**	Approx. 4.7mΩ
Normal Operating Temperature Range	25±2℃	**Container Material**	A.B.S (UL94HB)
Terminal	Bolt M6 Tightening torque 3.9~5.4Nm (40~55kgf · cm)		
Dimensions	Length: 259±3mm Width: 168±3mm	Case Height: 212.5±3mm Overall Height: 212.5±3mm	



*Excluding continuous inverted use.

Charging

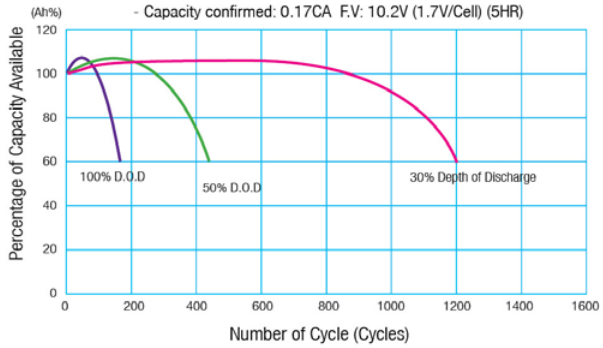
Method	Given Voltage	Maximum Charging Current	Special Conditions
Float Charging	13.5V~13.8V	20A	As the average ambient temperature rises, charging voltage should be reduced to prevent overcharge. Accordingly, the recommended compensation factor is -3mV/˚C/cell at 25˚C of standard centre point.
Cyclic Charging	14.4V~15.0V	20A	As the average ambient temperature rises, charging voltage should be reduced to prevent overcharge. Accordingly, the recommended compensation factor is -4mV/˚C/cell at 25˚C of standard centre point. Caution: This needs to be terminated with appropriate charging period in order to avoid excess over charging that can result in the damage of the batteries.

Storage Period without Charge:

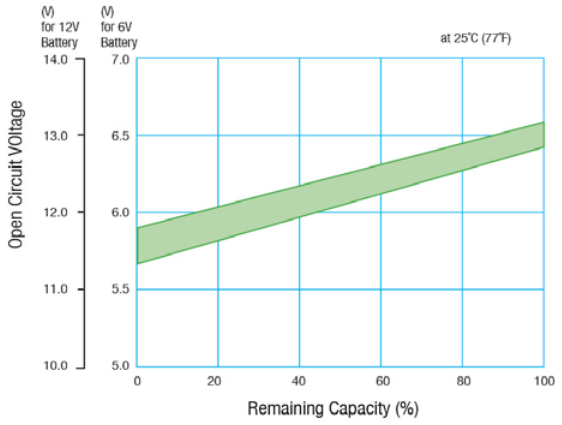
Storage Temperature	Max. Storage Period
Temp. ≦25˚C	6 months
25< Temp. ≦30˚C	4 months
30< Temp. ≦35˚C	3 months
35< Temp. ≦40˚C	2 months

Cycle Service Life in Relation to Depth of Discharge

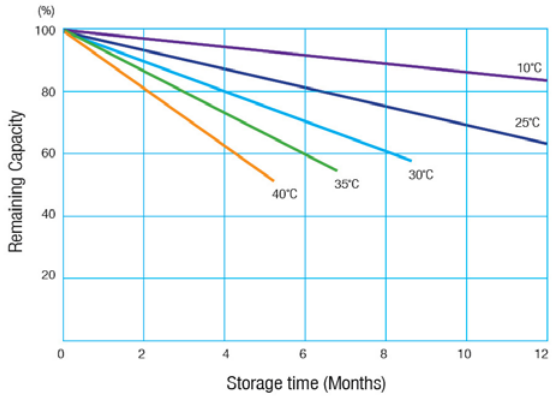
Testing Conditions:
- Discharge: Constant Current 0.17CA (5HR)
- Charge: Constant Voltage 14.7V (2.45V/Cell) Maximum Current 0.25CA
  Discharge capacity then 100~120%
- Temperature: 25 ± 5˚C
- Capacity confirmed: 0.17CA F.V: 10.2V (1.7V/Cell) (5HR)



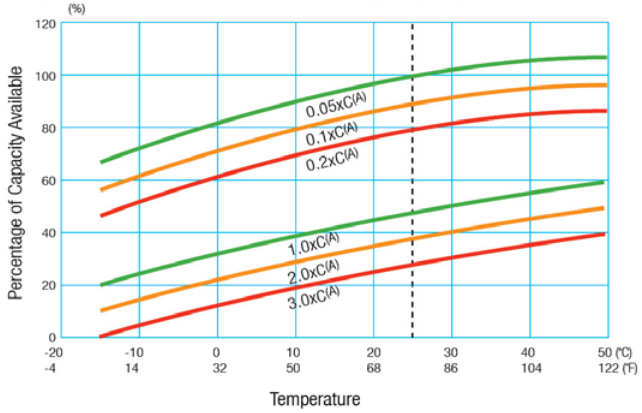
Open Circuit Voltage vs Remaining Capacity



Self Discharge Characteristics



Temperature Effects in Relation to Battery Capacity



Discharge Capacity

Constant Current Discharge Characteristics: Watts (25°C)

F.V./ TIME	5M	10M	15M	20M	30M	1H	2H	3H	4H	5H	8H	10H	20H
10.8V	2500	2036	1711	1459	1084	653	355	253	202	172	107	88.9	46.9
10.5V	2766	2153	1765	1488	1105	660	357	255	204	173	108	89.4	47.1
10.2V	2958	2303	1834	1526	1133	668	360	257	206	175	108	90.1	47.4
9.6V	3324	2424	1892	1559	1158	676	366	261	209	178	110	91.7	48.4

Constant Current Discharge Characteristics: Amps (25°C)

F.V./ TIME	5M	10M	15M	20M	30M	1H	2H	3H	4H	5H	8H	10H	20H
10.8V	230	184	144	118	89	54.5	29.5	21.1	16.8	14.3	8.9	7.4	3.88
10.5V	245	201	154	126	94	55.0	29.7	21.2	17.0	14.4	9.0	7.4	3.90
10.2V	285	225	168	135	100	55.7	30.0	21.4	17.1	14.6	9.0	7.5	3.92
9.6V	310	235	174	140	103	56.4	30.5	21.8	17.4	14.8	9.2	7.6	4.00

Installation Conditions

Storage container for rechargeable battery must not be of sealed and air tight construction; the container must be equipped with appropriate ventilation system, such as ventilation holes leading to the outside and so on.

The following applies to using a rechargeable battery inside a metallic storage box: to prevent the rechargeable battery from leaking fluid due to a breakage in the electrolytic cell, thus forming a leak circuit between the battery and the storage box (or fixed frame), install between these two items a heat and acid resistant insulating sheet (or tray) that will not be damaged by periodic stress. Alternatively, place the rechargeable battery inside an insulating bag but not to be sealed.

For the above described insulation material, do not use any material that can be stained with grease, or that can have organic substance oozing out of itself.

Do not allow the rechargeable battery to come into contact with vinyl tape containing plasticizer, insulation sheet, solvent, or grease.

Caution

It is not recommended to use different kinds of batteries or capacities lot numbers in series string connections.

It is not recommended to use more than 3 parallel string connections.

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