YUASA REC BATTERIES

REC22-12



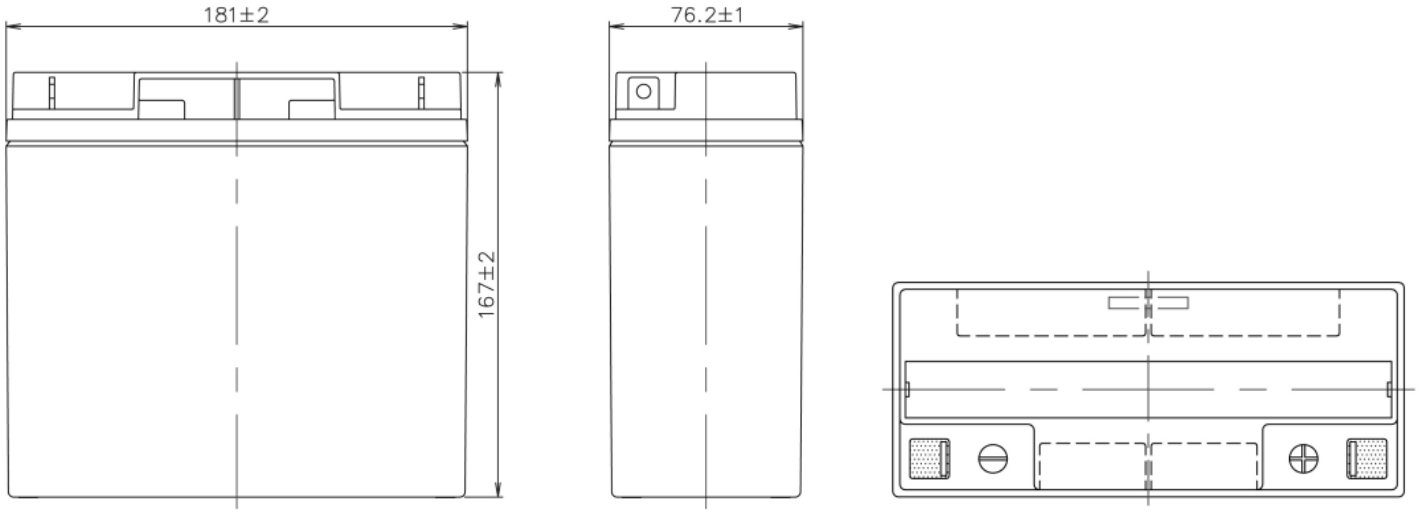
Developed by the world renowned GS Yuasa Corporation, Yuasa REC batteries are a range of sealed maintenance free, VRLA batteries designed to deliver superior cycling performance in high rate discharge applications. Yuasa REC batteries incorporate Yuasa's unique electrolyte retention system, heavy duty 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. 6.2kg
Capacity	22Ah @ 20hr-rate	**Max. Discharge Current**	330A (5 sec)
Operating Temperature Range	Discharge: -15℃~45℃ Charge: -15℃~45℃ Storage: -15℃~45℃	**Internal Resistance**	Approx. 8.2mΩ
Normal Operating Temperature Range	25±2℃	**Container Material**	A.B.S (UL94HB)
Terminal	Bolt M5 Tightening torque 2.0~3.0Nm (20~30kgf · cm)		
Dimensions	Length: 181±2mm Width: 76.2±2mm	Case Height: 167±2mm Overall Height: 167±2mm	



*Excluding continuous inverted use.

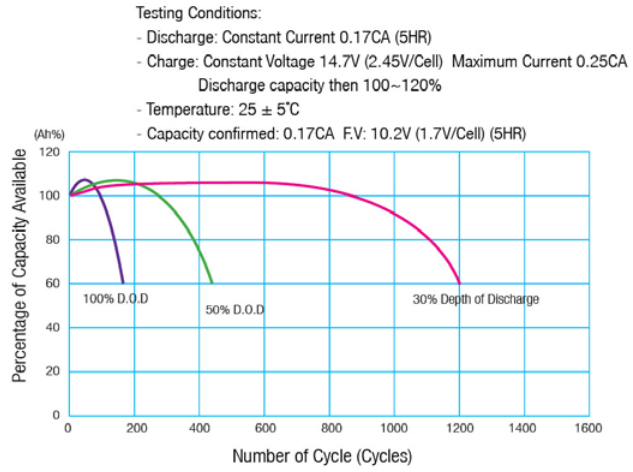
Charging

Method	Given Voltage	Maximum Charging Current	Special Conditions
Float Charging	13.5V~13.8V	5.5A	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	5.5A	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.

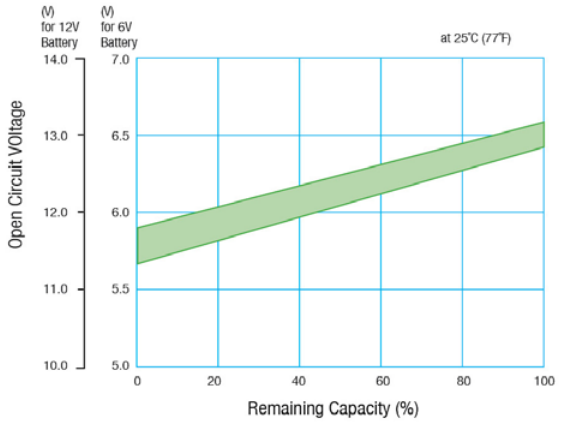
Storage Period without Charge:

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

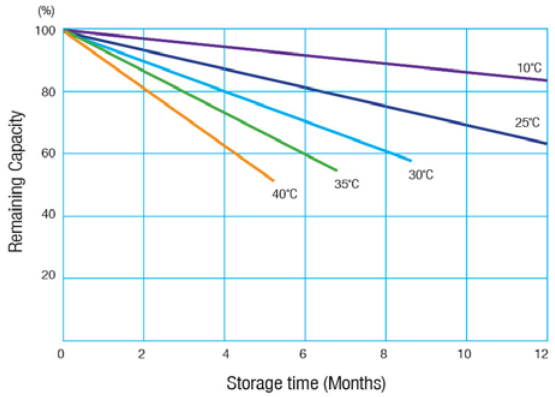
Cycle Service Life in Relation to Depth of Discharge



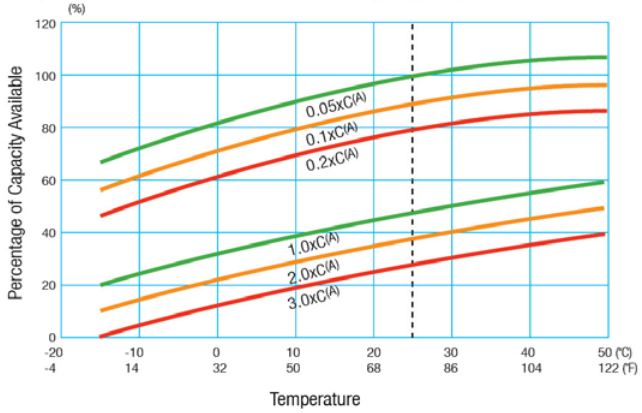
Open Circuit Voltage vs Remaining Capacity



Self Discharge Characteristics



Temperature Effects in Relation to Battery Capacity



Discharge Capacity

Constant Current Discharge Characteristics: Watts (25°C)

F.V./ TIME	3M	5M	6M	8M	10M	15M	30M	1H	2H	3H	5H	10H	20H
10.8V	1145	954	890	749	668	501	301	172	94.1	67.2	44.1	23.1	12.91
10.5V	1213	999	926	779	692	514	307	174	96.2	68.7	45.3	23.8	12.99
10.2V	1288	1041	957	805	709	523	311	176	97.1	69.4	45.7	24.1	13.04
10.0V	1340	1067	974	820	717	527	313	177	97.8	69.9	46.1	24.3	13.17
9.6V	1469	1124	1005	846	725	531	315	178	98.6	70.4	46.5	24.5	13.31

Constant Current Discharge Characteristics: Amps (25°C)

F.V./ TIME	3M	5M	6M	8M	10M	15M	30M	1H	2H	3H	5H	10H	20H
10.8V	102	84	78	66	58	43.1	25.6	14.5	7.97	5.69	3.75	1.97	1.06
10.5V	111	89	82	69	61	44.3	26.1	14.7	8.05	5.75	3.78	1.99	1.07
10.2V	119	94	85	71	62	45.0	26.5	14.8	8.11	5.79	3.80	1.99	1.07
10.0V	126	98	88	74	64	45.7	26.7	14.9	8.16	5.83	3.83	2.01	1.08
9.6V	140	104	91	77	65	46.8	27.5	15.3	8.34	5.95	3.89	2.04	1.10

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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