CENTENNIAL AGM BATTERIES

CB12-210(12V210Ah)

Specification

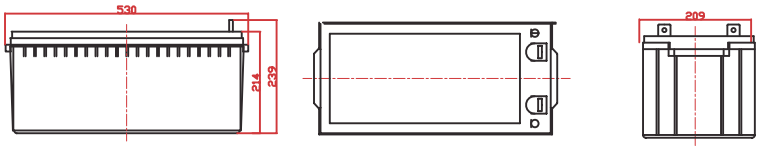
Cells Per Unit	6
Voltage Per Unit	12
Capacity	210Ah@20hr-rate to 1.75V per cell @25℃
Weight	Approx. 61.5 Kg/135.58Lbs (Tolerance±2%)
Internal Resistance	Approx. 4.0 mΩ
Terminal	L6
Max. Discharge Current	1950A (5 sec)
Cold Cranking Ampere(CCA)	790A
Cranking Ampere(CA)	1150A
Maximum Charging Current	58.5A
Reserve Capacity	455min@25A to 1.75V/Cell(25℃) 105min@75A to 1.75V/Cell(25℃)
Reference Capacity	C10 195.2AH C20 210.0AH
Float Charging Voltage	13.6 V~13.8 V @ 25℃ Temperature Compensation: -3mV/℃/Cell
Cycle Use Voltage	14.6 V~14.8 V @ 25℃ Temperature Compensation: -4mV/℃/Cell
Operating Temperature Range	Discharge: -20℃~60℃ Charge: 0℃~50℃ Storage: -20℃~60℃
Normal Operating Temperature Range	25℃±5℃
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25℃ and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25℃.Please charged batteries before using.
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.

The series batteries provide superior high integrity and reliability.It is specially designed for frequent cyclic charge and discharge.By using strong grids, thick plate and specially active material are designed for repeated deep-discharge applications. The series batteries offer 30% more cyclic life than the standby series.It is suitable for solar and wind renewable nergy storage,mobility and medical equipment,V,telecom,broadband and cable TV,UPS systems etc.

ISO 9001 ISO 14001 OHSAS 18001

MH 60419 G4M20206-0910-E-16

Dimensions



Length	530±2mm (20.9 inches)
Width	209±2mm (8.23 inches)
Height	214±2mm (8.43 inches)
Total Height	239±2mm (9.41 inches)
Terminal	Value
M5	6~7 N*m
M6	8~10 N*m
M8	10~12 N*m

Unit: mm

Constant Current Discharge Characteristics : A(25℃)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	588.1	439.2	336.1	195.9	121.7	75.15	51.07	41.18	34.18	22.51	20.29	10.87
10.0V	571.1	417.9	329.2	193.4	120.1	73.63	50.12	40.59	33.88	22.43	20.09	10.76
10.2V	554.2	403.1	324.0	190.5	119.0	72.85	49.68	40.19	33.65	22.22	19.89	10.63
10.5V	497.6	372.0	308.5	185.2	117.5	71.90	49.24	39.59	33.38	22.02	19.70	10.51
10.8V	449.1	339.2	284.4	179.1	115.9	71.31	48.66	38.24	33.21	21.94	19.52	10.34
11.1V	383.5	303.1	255.1	172.3	113.1	68.44	47.71	37.69	32.97	21.76	19.29	9.931

Constant Power Discharge Characteristics : W(25℃)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	6083	4677	3697	2,243	1,410	880.6	601.2	492.9	409.5	269.6	243.3	130.2
10.0V	5963	4534	3637	2,219	1,398	869.9	592.3	485.9	405.8	268.6	241.4	128.3
10.2V	5895	4414	3596	2,200	1,389	863.7	589.7	481.4	403.4	266.5	239.3	125.6
10.5V	5366	4110	3430	2,155	1,380	852.7	584.9	474.9	400.1	264.3	236.9	123.7
10.8V	4888	3789	3171	2,104	1,363	846.4	578.3	458.9	398.3	263.1	234.6	122.8
11.1V	4293	3426	2854	2,046	1,342	814.7	568.6	452.3	396.9	261.3	232.0	117.9

(Note) The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values.

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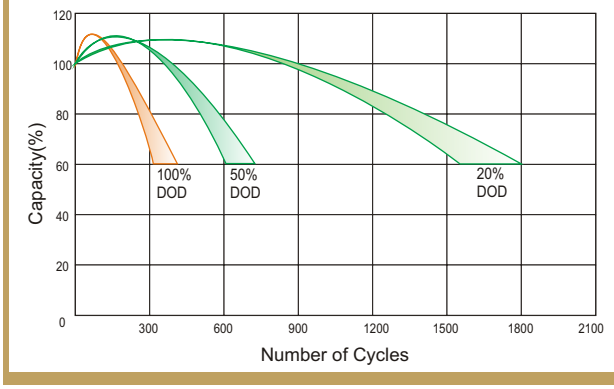
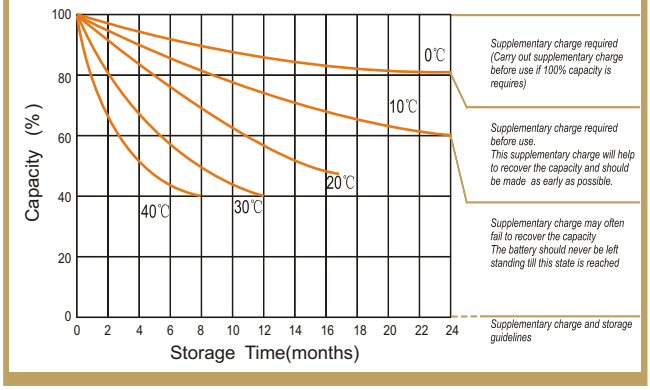
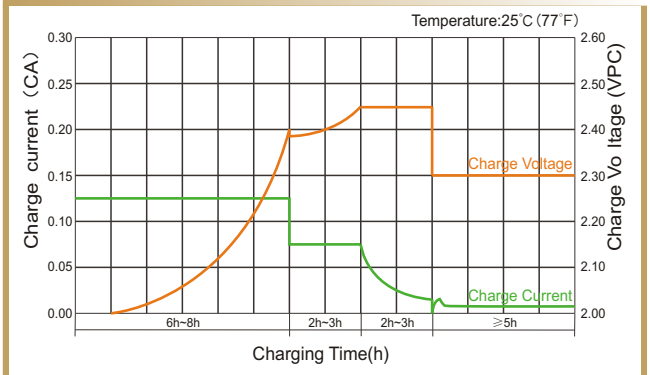
Cycle Life in Relation to Depth of Discharge



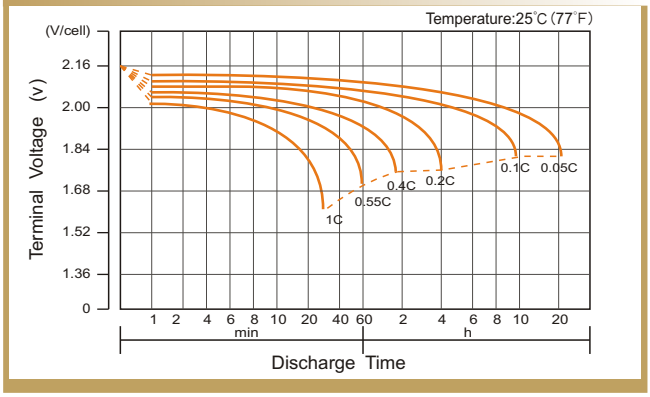
Storage Characteristics



Charge Characteristic Curve for Cycle Use(IIUU)



Discharge Characteristics Curve



CHARGE VOLTAGES

	Battery Voltage			
Charge Stage	**12V**	**24V**	**36V**	**48V**
Bulk	14.6	29.2	43.8	58.4
Absorption	14.6	29.2	43.8	58.4
Float	13.6	27.2	40.8	54.4
TC Factor:(-3mV℃/cell） or （-4mV℃/cell）				

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	6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
Battery	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM	6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
Battery	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

Discharge Current VS. Discharge Voltage

Final D ischarge 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℃.

Charging Method:

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

Maintenance & Cautions

Cycle Service

- ▶Avoid battery overcharge, especially in series connection use.
- ▶Charge with recommended voltage.Ensure battery fully recharges. In general, recharge capacity should be 1.1-1.15 times discharge capacity.
- ▶Effect of temperature on cycle charge voltage: -4mV/°C / Cell
- ▶The length of cycle service will be affected by depth of discharge, ambient temperature discharge rate, and the manner in which the battery is recharged. Generally speaking, the most important factor is depth of discharge.

Float Service:

- ▶Every month, recommend inspection of every battery's voltage.
- ▶Every three months, recommend a one time equalization charge.

Equalization charge method:

Discharge - 100% rate capacity discharge

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

- ▶Effect of temperature on float charge voltage: -3mV/℃/Cell.
- ▶Length of service life will be affected by the number of discharge cycles depth of discharge, ambient temperature ,and charging voltage