

# EV12-33(12V33Ah)



## Specification

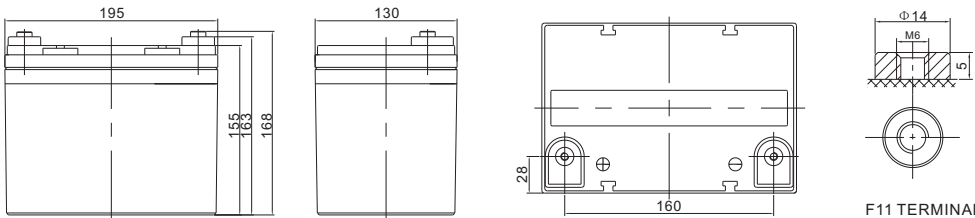


EV (Electric Vehicle) series is specially designed for frequent discharge deep cycle application. By using the specially designed active material, strong grids and thick plate construction, the EV series battery offers reliable performance in high load situations and could provide competitive cycle performance. Suitable for Electric Vehicle and Golf cart; Industrial equipment, Floor machines, Forklifts, Aerial lifts, and Robotics; Marine, RV, and no-idle solutions; Mobility and Medical equipment; and most outdoor application.



Cells Per Unit	6
Voltage Per Unit	12
Capacity	33Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 10.2 Kg (Tolerance ±3%)
Internal Resistance	Approx. 9 mΩ
Terminal	F11 (M6)/F7 (M8)
Max. Discharge Current	330A (5 sec)
Cold Cranking Ampere (CCA)	230A
Maximum Charging Current	9.9 A
Reference Capacity	C3 25.8AH C5 29.0AH C10 31.4AH C20 33.0AH
Float Charging Voltage	13.6 V~13.8 V @ 25°C Temperature Compensation: -3mV/°C/Cell
Cycle Use Voltage	14.6 V~14.8 V @ 25°C Temperature Compensation: -4mV/°C/Cell
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
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C. Please charge batteries before using.
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.

## Dimensions



Length	195±2mm (7.68 inches)
Width	130±2mm (5.12 inches)
Height	155±2mm (6.10 inches)
Total Height	168±2mm (6.61 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°C)

F.V/Time	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	35.32	20.41	12.08	9.19	7.23	6.12	4.06	3.36	1.71
1.65V	34.58	20.02	11.87	9.05	7.13	6.04	4.01	3.33	1.70
1.70V	33.60	19.51	11.60	8.86	7.00	5.94	3.95	3.29	1.68
1.75V	32.27	18.82	11.22	8.61	6.82	5.80	3.87	3.22	1.65
1.80V	30.44	17.86	10.71	8.25	6.56	5.61	3.75	3.14	1.61
1.85V	27.85	16.49	9.97	7.74	6.20	5.33	3.58	3.01	1.55

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

F.V/Time	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	64.2	38.2	22.9	17.6	13.9	11.8	7.92	6.61	3.38
1.65V	63.7	37.8	22.7	17.4	13.8	11.7	7.86	6.56	3.35
1.70V	62.3	37.0	22.2	17.1	13.5	11.5	7.75	6.48	3.31
1.75V	60.4	35.9	21.6	16.6	13.2	11.3	7.60	6.36	3.26
1.80V	57.6	34.2	20.7	16.0	12.8	11.0	7.39	6.20	3.19
1.85V	53.2	31.8	19.4	15.1	12.1	10.5	7.07	5.95	3.07

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



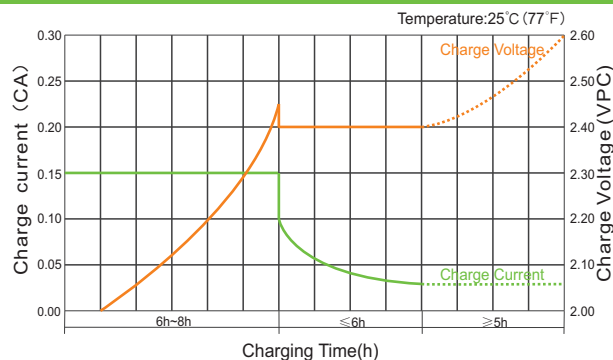
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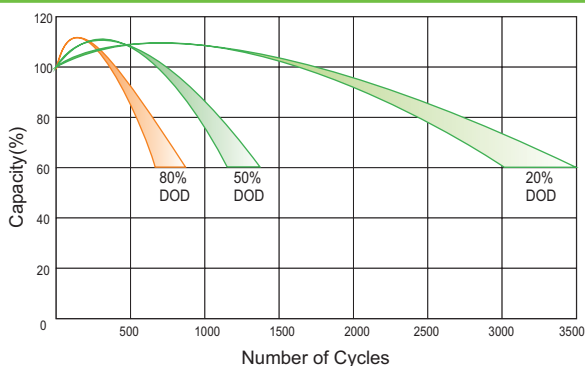
## Charge Characteristic Curve for Cycle Use(IUUU)



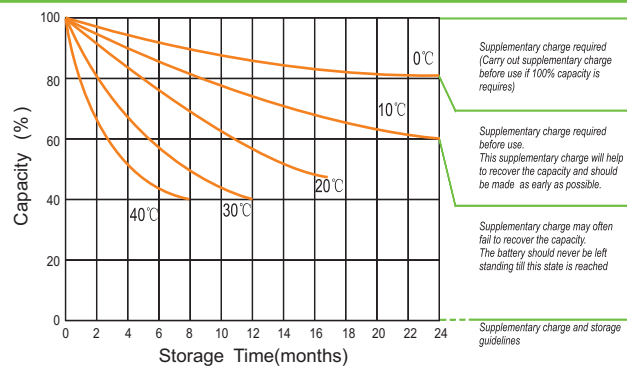
## Charge Characteristic Curve For Cycle Use(III)



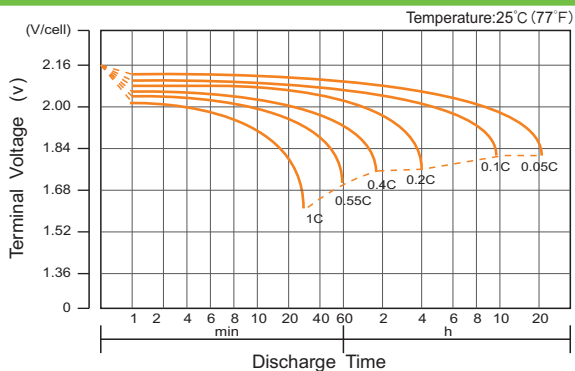
## Cycle Life in Relation to Depth of Discharge



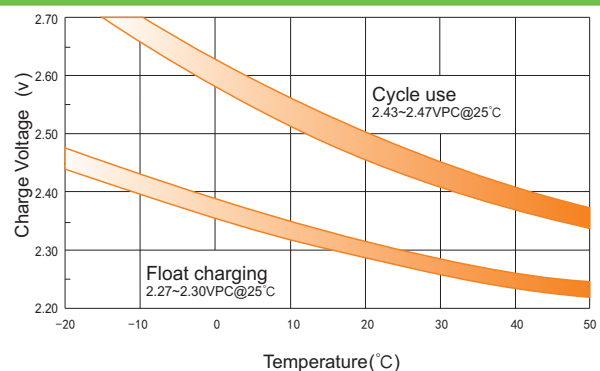
## Storage Characteristics



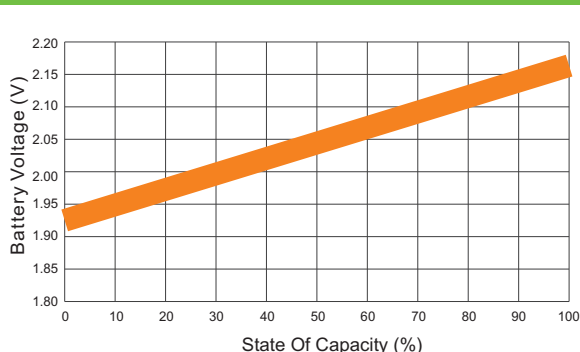
## Discharge Characteristics Curve



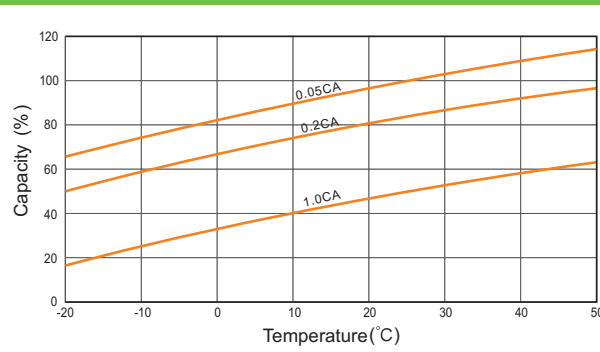
## Relationship Between Charging Voltage and Temperature



## Relationship of OCV And State of Charge(20°C)



## Temperature Effects on Capacity



(Note) All above information shall be changed without prior notice, Ritar reserves the right to explain and update the latest information.