

HP12-5.4 (12V-5.4Ah/20W)



Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	20W@15min-rate to 1.67V per cell @25°C
Weight	Approx. 1.70 Kg (Tolerance ±4.0%)
Internal Resistance	Approx. 30 mΩ
Terminal	F1/F2
Max. Discharge Current	50A (5 sec)
Short Circuit Current	275A
Design Life	Could Reach 8 years
Recommended Maximum Charging Current	1.5 A
Reference Capacity	C10 4.6AH C20 5.4AH
Standby Use Voltage	13.7 V~13.9 V @ 25°C
Cycle Use Voltage	14.6 V~14.8 V @ 25°C
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	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.
Constainer Material	A.B.S. UL94-HB, UL94-V0 Optional.



The **HP (High Rate)** series Valve Regulated Lead Acid (VRLA) battery is designed for heavy load discharge applications with 8 years design life in float service. By using strong grids and specially designed active material the **HP** series is with lower I.R, lower self discharge rate, high power, and longer service life performance. Generally the **HP** series offers 30% more power output than the standard range. Suitable for high power standby and cycling situation, such as UPS, datacenter, electric tools, etc.



Dimensions

Technical drawings of the battery showing top, side, and front views with dimensions:

- Top View:** Shows a rectangular battery with a width of 90 mm and a height of 70 mm. The distance between the two mounting holes is 72 mm. The distance from the bottom edge to the center of the mounting holes is 26 mm.
- Side View:** Shows the battery's profile with a total height of 101 mm.
- Front View:** Shows the battery's front face with a width of 90 mm and a height of 70 mm. The distance between the two mounting holes is 72 mm. The distance from the bottom edge to the center of the mounting holes is 26 mm.
- Terminal Detail:** Shows the F2 terminal with a width of 6.35 mm and a height of 3.4 mm. The distance from the bottom edge to the center of the terminal is 7.8 mm. The terminal is shown in a cross-section view with a width of 0.8 mm.

F2 Terminal

Length	90±1mm (3.54 inches)
Width	70±1mm (2.76 inches)
Height	101±1mm (3.98 inches)
Total Height	106±1mm (4.17 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	3MIN	5MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	22.98	19.98	16.61	14.66	11.33	9.173	6.716	3.916	2.854
1.67V	21.27	18.49	15.59	13.75	10.74	8.556	6.402	3.732	2.717
1.70V	20.38	17.72	15.04	13.26	10.41	8.230	6.221	3.625	2.635
1.75V	19.25	16.74	14.29	12.45	9.92	8.005	6.045	3.565	2.576
1.80V	18.11	15.74	13.53	11.63	9.43	7.767	5.860	3.495	2.514
1.85V	16.90	14.69	12.73	10.79	8.889	7.496	5.644	3.411	2.439

Constant Power Discharge Characteristics : WPC (25°C)

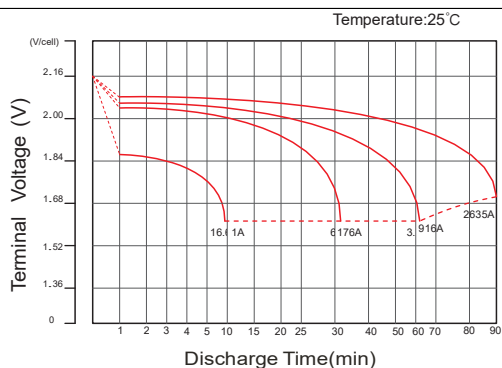
F.V/Time	3MIN	5MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	41.6	36.2	30.5	27.1	21.1	16.9	12.4	7.2	5.3
1.67V	38.9	33.8	28.9	25.7	20.2	15.9	11.9	7.0	5.1
1.70V	37.7	32.8	28.2	25.0	19.8	15.5	11.7	6.8	5.0
1.75V	36.1	31.4	27.2	23.8	19.1	15.2	11.5	6.8	4.9
1.80V	34.4	29.9	26.1	22.6	18.4	15.0	11.3	6.8	4.9
1.85V	32.8	28.5	25.0	21.4	17.7	14.8	11.1	6.8	4.8

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

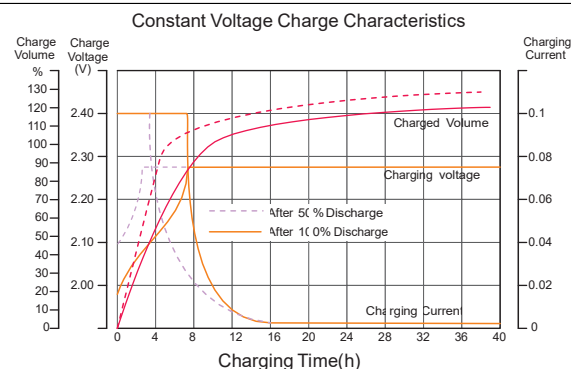
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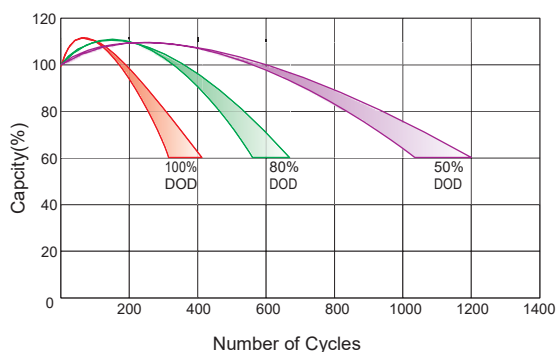
Discharge Characteristics Curve



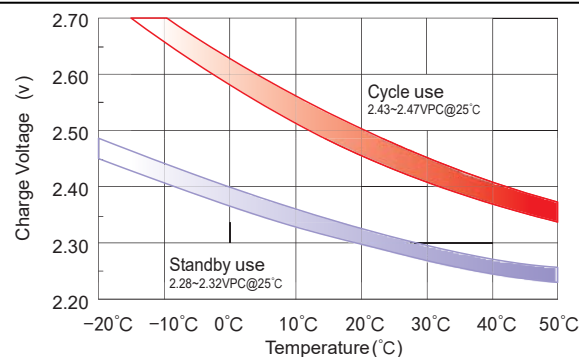
Charge Characteristic Curve For Standby Use



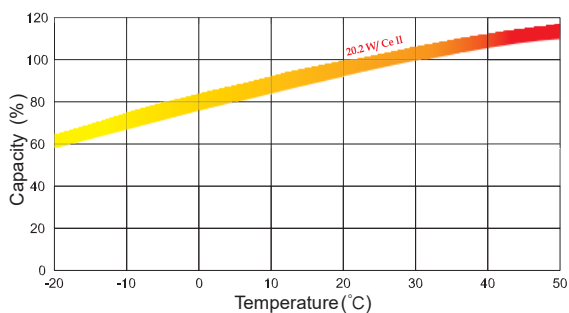
Cycle Life In Relation To Depth Of Discharge



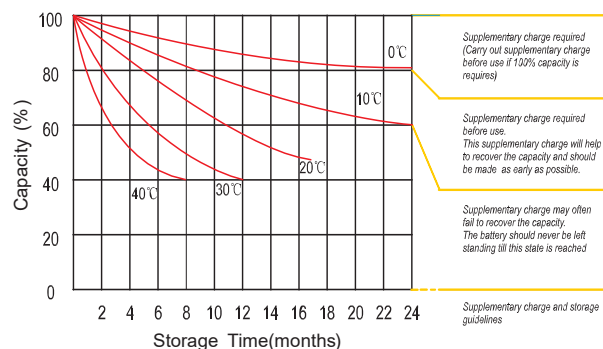
Relationship Between Charging Voltage And Temperature



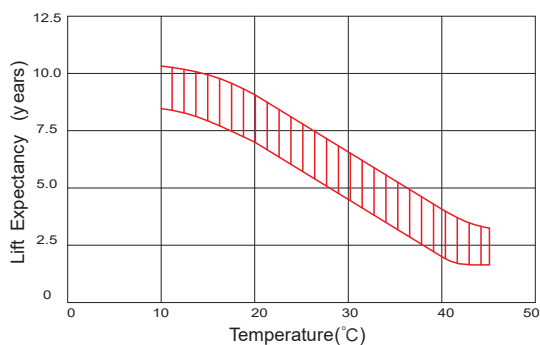
Temperature Effects On Capacity



Storage Characteristics



Effect Of Temperature On Long Term Life



Life Characteristics Of Standby Use

