

# HA12-12P (12V-12Ah/48W)



## Specification

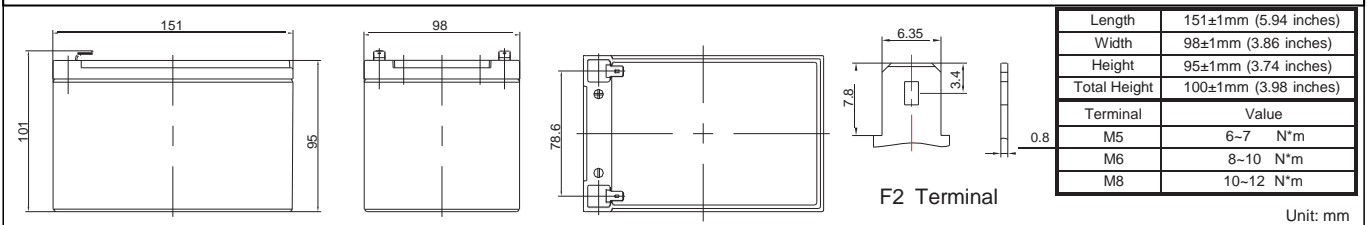
Cells Per Unit	6
Voltage Per Unit	12
Capacity	48W@15min-rate to 1.67V per cell @25°C
Weight	Approx. 3.50 Kg (Tolerance±4.0%)
Internal Resistance	Approx. 14 mΩ
Terminal	F2
Max. Discharge Current	120A (5 sec)
Short Circuit Current	620A
Design Life	Could Reach 10 years
Recommended Maximum Charging Current	3.6 A
Reference Capacity	C10 11.4AH C20 12.0AH
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.
Container 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 8~10 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



### Constant Current Discharge Characteristics : A (25°C)

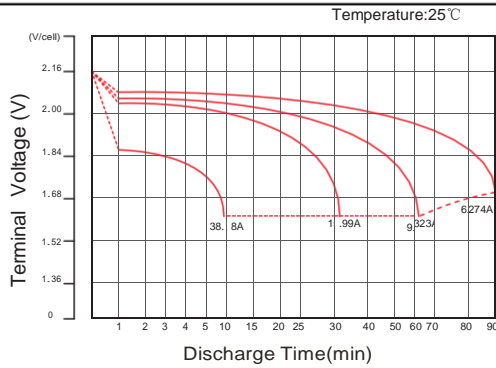
F.V/Time	3MIN	5MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	52.40	46.04	38.68	34.48	26.98	21.84	15.99	9.323	6.795
1.67V	48.49	42.60	36.28	32.35	25.57	20.37	15.24	8.885	6.469
1.70V	46.47	40.83	35.01	31.18	24.79	19.59	14.81	8.630	6.274
1.75V	43.89	38.57	33.26	29.28	23.62	19.06	14.39	8.488	6.134
1.80V	41.28	36.27	31.51	27.36	22.44	18.49	13.95	8.320	5.986
1.85V	38.52	33.85	29.62	25.37	21.16	17.85	13.44	8.121	5.806

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

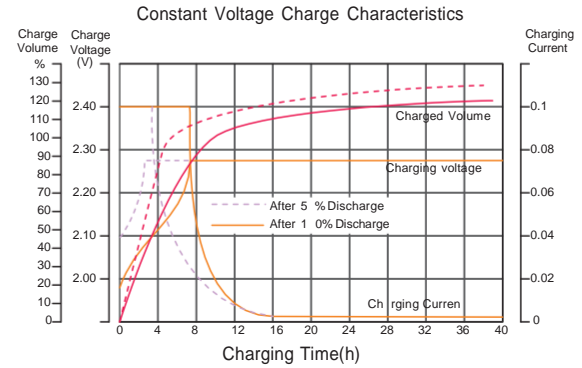
F.V/Time	3MIN	5MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	94.9	83.4	71.1	63.7	50.2	40.1	29.5	17.2	12.6
1.67V	88.7	77.9	67.3	60.4	48.0	37.8	28.4	16.6	12.1
1.70V	86.0	75.6	65.7	58.9	47.1	36.8	27.9	16.3	11.9
1.75V	82.2	72.3	63.2	56.0	45.5	36.2	27.4	16.2	11.8
1.80V	78.5	68.9	60.8	53.1	43.8	35.7	27.0	16.2	11.7
1.85V	74.7	65.7	58.3	50.2	42.2	35.1	26.5	16.1	11.5

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

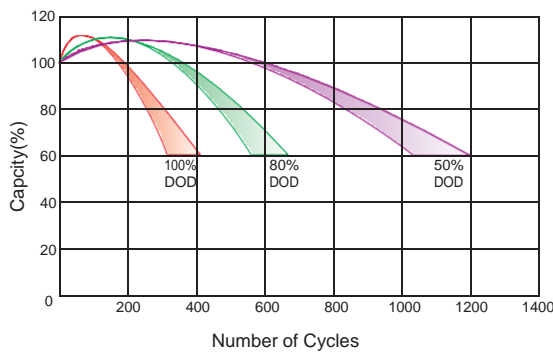
## Discharge Characteristics Curve



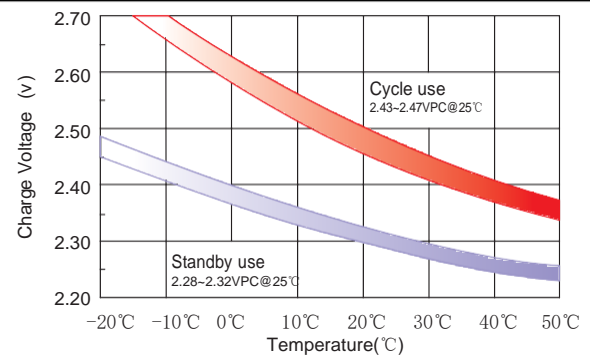
## Charge Characteristic Curve For Standby Use



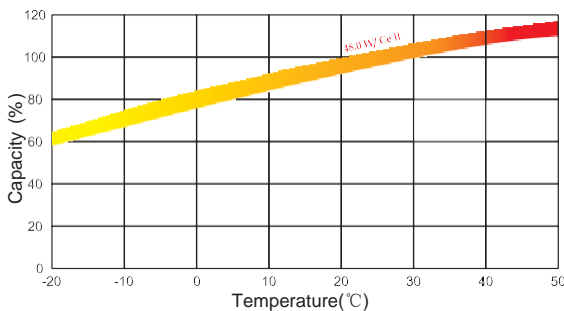
## Cycle Life In Relation To Depth Of Discharge



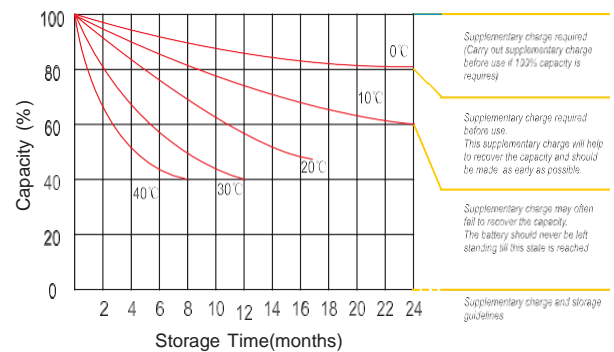
## Relationship Between Charging Voltage And Temperature



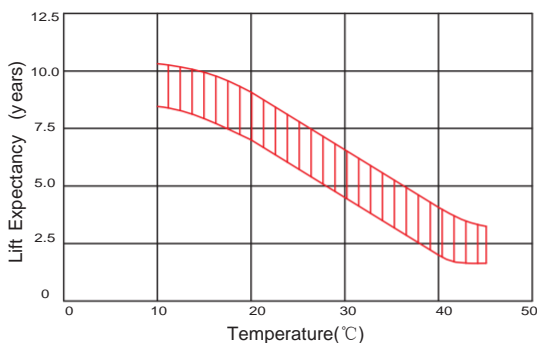
## Temperature Effects On Capacity



## Storage Characteristics



## Effect Of Temperature On Long Term Life



## Life Characteristics Of Standby Use

