

# US12-90(12V90AH)

## Application

- Data Center
- Telecommunication center room
- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Emergency light
- Railway signal
- Aircraft signal
- Alarm and security system
- Electronic apparatus and equipment

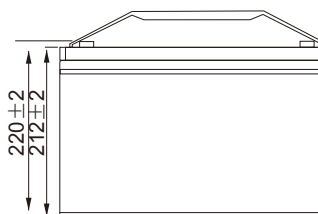
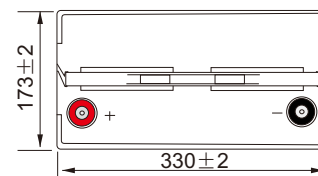


## Features

- General purpose: 7~10 years design life
- VRLA Battery, maintenance-free
- Low self-discharge rate
- Silver-coated copper terminals
- PbCaSn alloy for plate grids: less gassing, less self-discharge
- ABS container, Flame retardant UL94-V0

### Layout

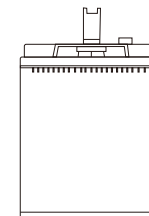
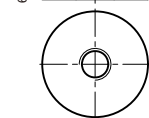
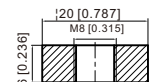
Unit: mm



### Terminal

#### T11 Terminal

Unit: mm [inches]

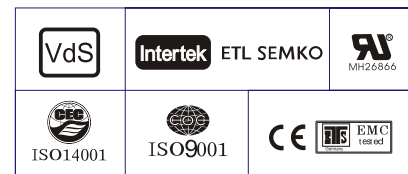


## General Purpose AGM Battery-US Series

# US12-90(12V90AH)

### Specification

Nominal Voltage	12V	
Rated Capacity (Ah)	93.6 AH/4.68A	(20hr, 1.80V/cell, 25°C/77°F)
	90.0AH/9.0A	(10hr, 1.80V/cell, 25°C/77°F)
	77.5 AH/15.5A	(5hr, 1.75V/cell, 25°C/77°F)
	70.2AH/23.4A	(3hr, 1.75V/cell, 25°C/77°F)
	54.9 AH/54.9A	(1hr, 1.60V/cell, 25°C/77°F)
Dimension	Length	330±3mm (12.99 inches)
	Width	173±2mm (6.81 inches)
	Container Height	212±3mm (8.35 inches)
	Total Height (with Terminal)	220±3mm (8.66 inches)
Approx Weight	Approx 28.0 kg (61.7lbs)	
Terminal	T11	
Container Material	ABS	
Max. Discharge Current	1080A (5s)	
Internal Resistance	Approx 5.0mΩ	
Operating Temp. Range	Discharge : -15 ~ 50°C	
	Charge : 0 ~ 40°C	
	Storage : -15 ~ 40°C	
Capacity affected by Temperature	40°C	106%
	25°C	100%
	0°C	86%
Self Discharge	US series batteries can be stored up to 6 months at 25°C and then a freshening charge is required. For higher temperatures the time interval will be shorter.	



### Performance - 25 °C

#### Constant Current Discharge (Amperes) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	154.0	121.1	103.0	86.1	68.5	51.8	42.4	27.0	21.4	17.5	14.1	12.2	9.95	8.50	4.64
1.80V/cell	206.8	154.7	124.4	101.8	80.8	60.3	47.5	29.5	23.0	18.6	15.1	13.1	10.5	9.00	4.68
1.75V/cell	233.1	170.0	135.9	109.5	83.9	62.5	49.7	30.6	23.4	19.1	15.5	13.5	10.7	9.09	4.73
1.70V/cell	256.7	185.3	145.1	115.1	87.3	65.0	51.3	31.8	24.1	19.6	15.9	13.8	10.9	9.18	4.82
1.65V/cell	283.1	200.0	154.3	122.3	92.1	66.7	53.0	32.7	25.1	20.2	16.3	14.1	11.1	9.37	4.88
1.60V/cell	312.2	217.1	165.0	130.3	97.2	69.5	54.9	33.8	25.9	20.9	16.9	14.4	11.2	9.47	4.91

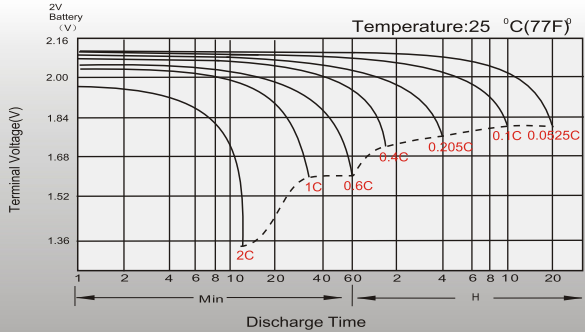
#### Constant Power Discharge (Watts/cell) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	281.6	223.7	192.2	162.4	130.5	99.6	81.8	52.5	41.6	34.1	27.6	24.1	19.6	16.8	9.18
1.80V/cell	374.0	282.5	229.1	189.1	151.6	114.9	91.2	56.9	44.6	36.2	29.5	25.7	20.8	17.8	9.26
1.75V/cell	412.7	305.4	247.1	201.5	156.1	118.1	95.0	58.8	45.2	36.9	30.2	26.4	21.1	17.9	9.33
1.70V/cell	441.9	325.3	260.2	210.2	161.6	122.4	97.6	61.0	46.4	37.8	30.9	26.9	21.3	18.1	9.51
1.65V/cell	480.4	347.9	274.5	221.6	169.1	124.3	100.2	62.3	48.1	39.0	31.6	27.4	21.6	18.4	9.62
1.60V/cell	517.6	369.1	288.7	233.5	177.2	128.9	103.2	64.1	49.4	40.1	32.5	27.9	21.8	18.6	9.66

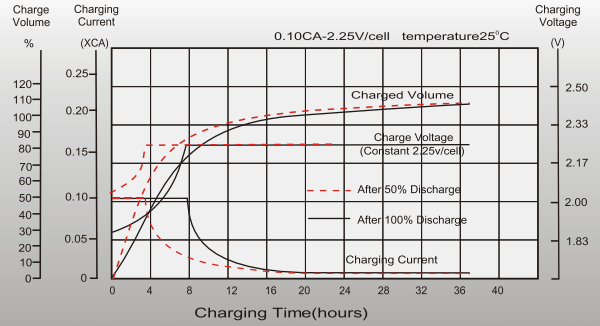
## General Purpose AGM Battery-US Series

### Characteristic Curve

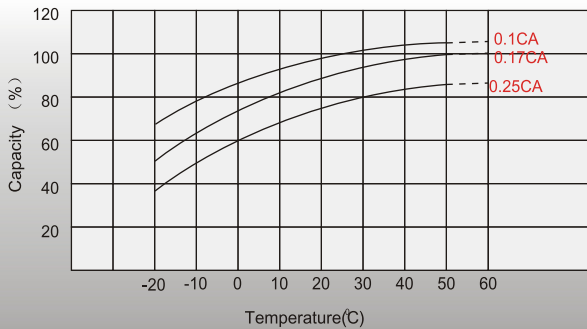
#### Discharge Characteristics



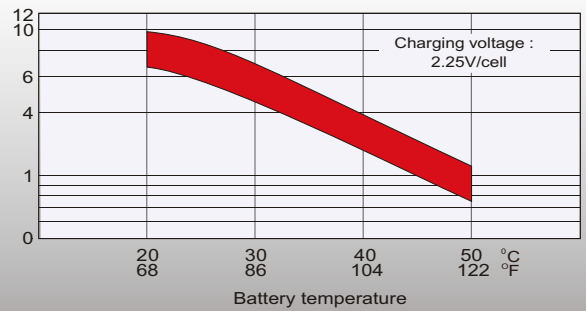
#### Float Charging Characteristics



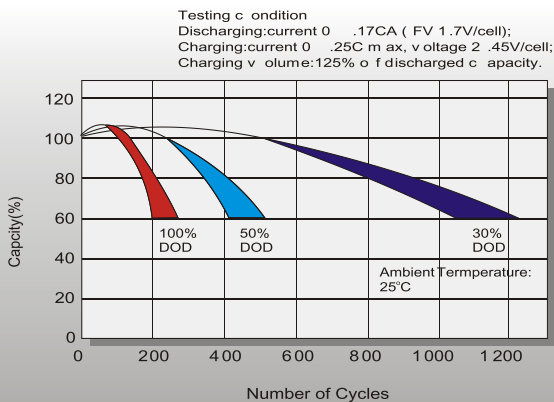
#### Temperature Effects in Relation to Battery Capacity



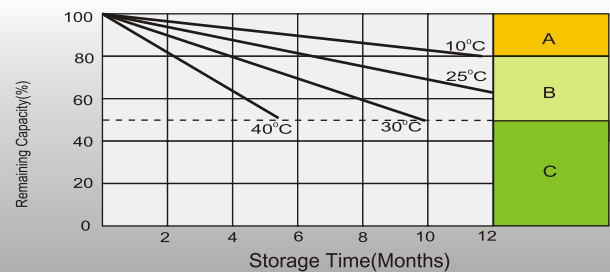
#### Effect of Temperature on Long Term Float Life



#### Cycle Life in Relation to Depth of Discharge



#### Self Discharge Characteristics



**A** No supplementary charge required (Carry out supplementary charge before use if 100% capacity is required.)

Supplementary charge required before use. Optional charging way as below:

**B** 1. Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.  
2. Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.  
3. Charged for 8~10 hours at limited current 0.05CA.

**C** Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this is reached.