

SP series is Valve Regulated Lead Acid battery that adopts immobilized GEL and Tubular Plate technology to offer high reliability and performance. The Battery is designed and manufactured according to DIN standards and with die-casting positive grid and patented formula of active material SP series exceeds DIN standard values with more than 20 years floating design life at 25 °C, and It is the best solution for cyclic use under extreme operating conditions.

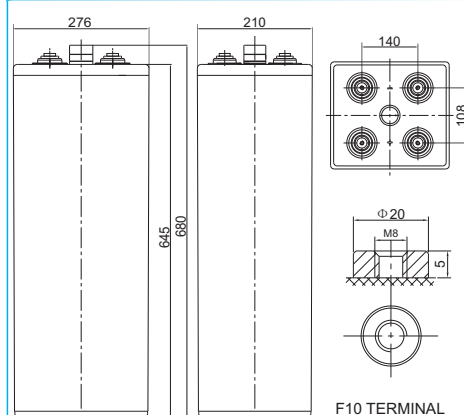


Specification

Cells Per Unit	1
Voltage Per Unit	2
Nominal Capacity	1200Ah@10hr-rate to 1.80V per cell @25°C
Weight	Approx. 92.0 Kg (Tolerance ± 1%)
Internal Resistance	Approx. 0.45 mΩ
Terminal	F10(M8)
Max. Discharge Current	4000A (5 sec)
Design Life	20 years (floating charge)
Maximum Charging Current	240.0 A
Reference Capacity	C24 1333AH C48 1500AH C72 1510AH C100 1530AH C120 1556AH C240 1582AH
Float Charging Voltage	2.25 V~2.30 V @ 25°C Temperature Compensation: -3mV/°C/Cell
Cycle Use Voltage	2.37 V~2.40 V @ 25°C Temperature Compensation: -4mV/°C/Cell
Operating Temperature Range	Discharge: -40°C~60°C Charge: -20°C~50°C Storage: -40°C~60°C
Normal Operating Temperature Range	25°C ± 5°C
Self Discharge	SP 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 2% at 25°C. Please charged batteries before using.
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.

Dimensions

Unit: mm



Length	276±1mm (10.9 inches)
Width	210±1mm (8.27 inches)
Height	645±1mm (25.4 inches)
Total Height	680±1mm (26.8 inches)
Torque Value	10~12 N*m

Constant Current Discharge Characteristics : A(25°C)

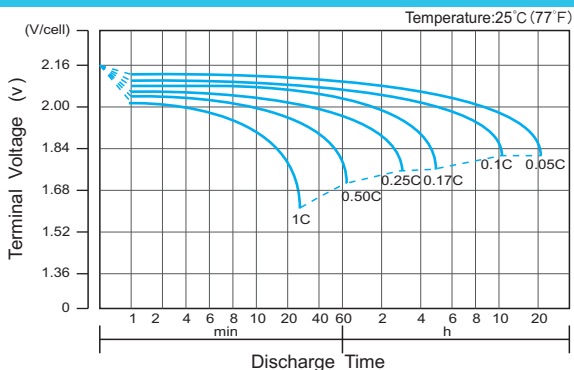
F.V/ Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.90V	590.4	468.0	330.0	250.3	205.2	177.4	159.6	124.5	106.8	56.07
1.87V	660.0	516.0	354.0	265.4	216.6	186.5	169.2	130.4	111.6	58.59
1.83V	756.0	576.0	384.0	282.8	228.0	194.6	175.2	136.2	116.4	61.11
1.80V	840.0	624.0	398.4	291.0	232.6	199.2	180.0	139.7	120.0	63.00
1.75V	936.0	668.4	416.4	302.6	236.4	204.0	183.6	142.0	122.4	64.26
1.70V	1032	690.0	428.4	308.5	240.5	206.4	186.0	143.2	123.6	64.89
1.65V	1064	733.2	442.8	316.8	244.0	208.8	188.4	144.3	124.8	65.52
1.60V	1110	758.4	459.6	330.0	250.8	212.4	190.8	145.5	126.0	66.15

Constant Power Discharge Characteristics : WPC(25°C)

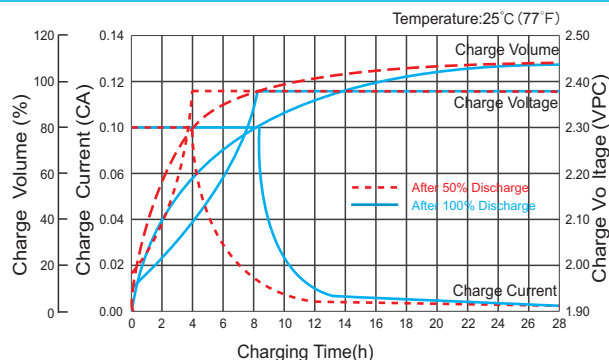
F.V/ Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.90V	1130	898.5	638.0	484.8	401.6	349.2	315.6	249.1	217.7	114.3
1.87V	1243	975.7	676.6	507.7	423.3	366.0	333.6	259.6	227.0	119.2
1.83V	1393	1064	720.0	534.2	443.8	380.4	344.4	268.9	235.1	123.4
1.80V	1522	1135	744.1	546.4	452.3	388.8	352.8	274.7	240.9	126.5
1.75V	1651	1185	768.2	563.2	458.3	398.4	358.8	278.2	244.4	128.3
1.70V	1770	1198	787.5	572.9	465.5	402.0	362.4	280.5	246.8	129.6
1.65V	1801	1251	809.2	584.9	471.5	405.6	366.0	282.9	247.9	130.2
1.60V	1822	1289	828.5	604.2	483.6	409.2	368.4	284.0	249.1	130.8

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

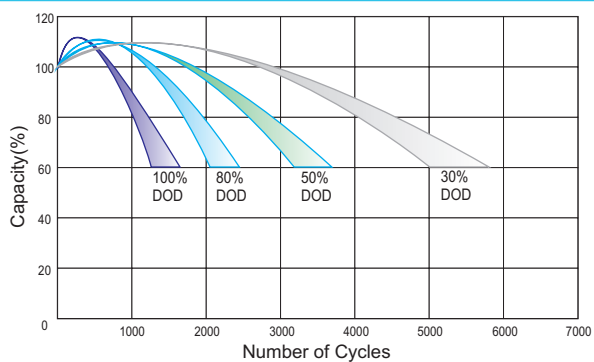
Discharge Characteristics Curve



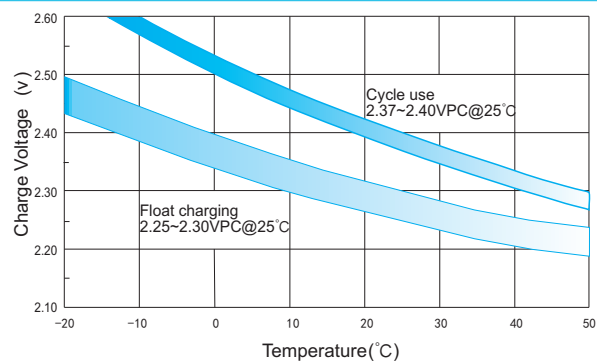
Charge Characteristic Curve for Cycle Use(IU)



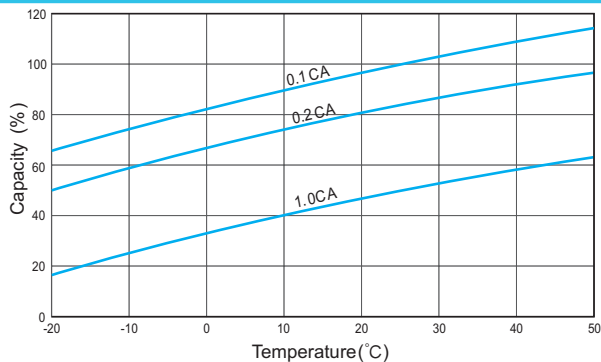
Cycle Life in Relation to Depth of Discharge



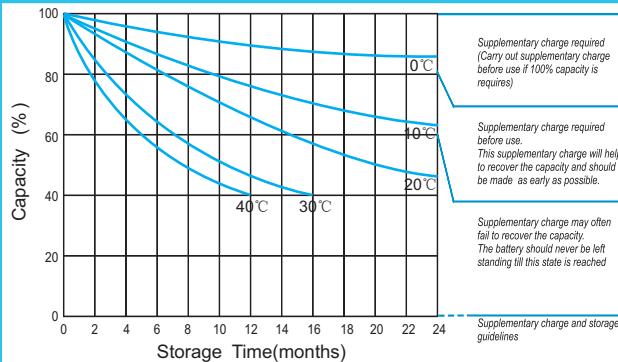
Relationship Between Charging Voltage and Temperature



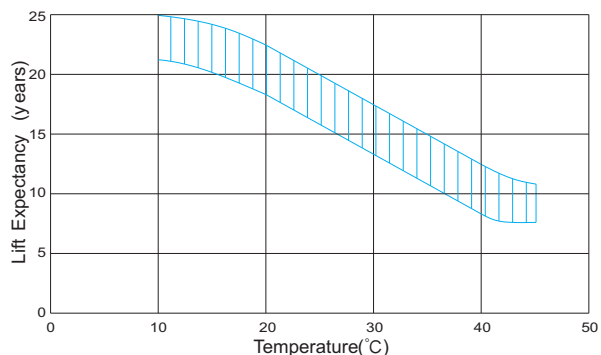
Temperature Effects on Capacity



Storage Characteristics



Effect of Temperature on Long Term Life



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

