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# HC 1221W ▶ 12V 21W

HC 1221W is specially designed for high efficient discharge application. Its invisible terminals can be inserted PC board directly. HC series battery can serve more than 260 cycles at 100 % discharge in cycle service, up to 5 years in standby service.



## ► Specification

<b>Cells Per Unit</b>	6
<b>Voltage Per Unit</b>	12
<b>Capacity</b>	21W @ 15min-rate to 1.67V per cell @25°C (77°F) 5Ah @ 20hr-rate to 1.75V per cell @25°C (77°F)
<b>Weight</b>	Approx. 1.79 kg(3.95 lbs)
<b>Maximum Discharge Current</b>	60A(5sec)
<b>Internal Resistance</b>	Approx. 25mΩ
<b>Operating Temperature Range</b>	Discharge: -15°C~50°C ( 5°F~122°F) Charge: -15 °C~40°C ( 5°F~104°F) Storage: -15°C~40°C ( 5°F~104°F)
<b>Nominal Operating Temperature Range</b>	25°C±3°C (77°F±5°F)
<b>Float Charging Voltage</b>	13.5 to 13.8 VDC/unit Average at 25°C (77°F)
<b>Recommended Maximum Charging Current Limit</b>	12.1A
<b>Equalization and Cycle Service</b>	14.4 to 15.0 VDC/unit Average at 25°C (77°F)
<b>Self Discharge</b>	CSB Batteries can be stored for more than 6 months at 25°C (77°F). Please charge batteries before using. For higher temperatures the time interval will be shorter.
<b>Terminal</b>	C1-Faston Tab187/250
<b>Container Material</b>	ABS(UL 94-HB/File E50263)*Flammability resistance of (UL 94-V0/File E88637) can be available upon request.



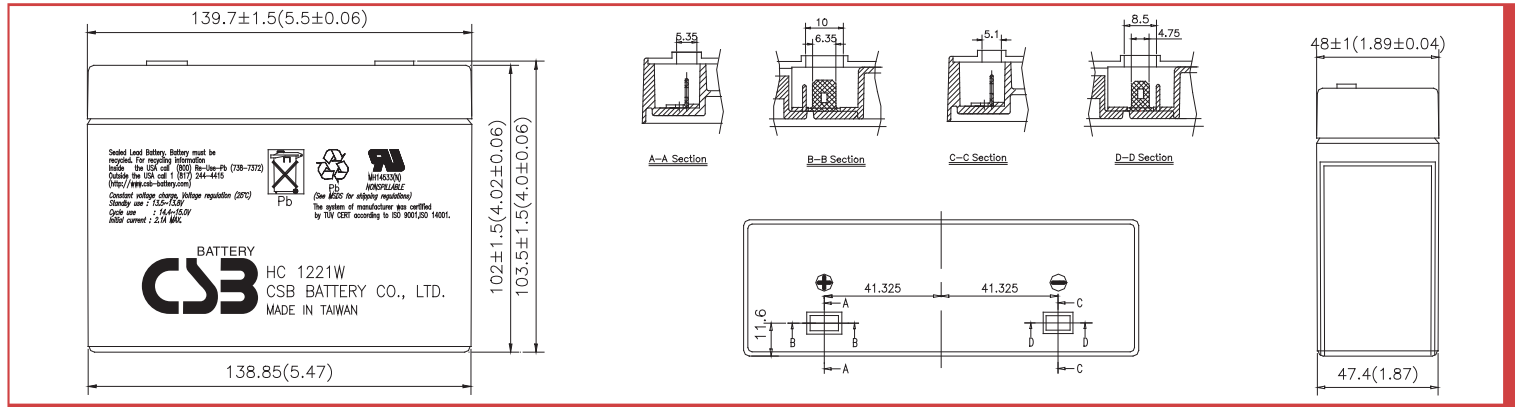
CSB-manufactured VRLA batteries are UL-recognized components under UL924 and UL1989.

CSB is also certified by ISO 9001 and ISO 14001.

## ► Dimensions :

Unit: mm (inch)

Overall Height (H)	Container height (h)	Length (L)	Width (W)
103.5±1.5 (4.02±0.06)	102±1.5 (4.0±0.06)	139.7±1.5 (5.5±0.06)	48±1.0 (1.89±0.04)



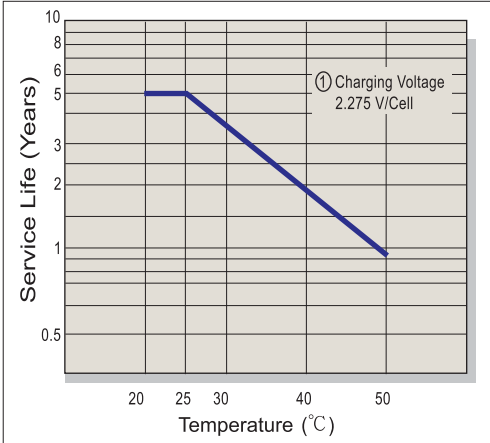
## Constant Current Discharge Characteristics Unit:A (25°C, 77°F)

F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	46.4	31.2	24.4	20.3	17.1	12.3	10.1	7.18	4.02	2.83
1.67V	43.4	29.8	23.8	20.0	16.9	12.2	10.0	7.16	4.01	2.71
1.70V	40.2	28.5	23.0	19.5	16.5	12.1	9.93	7.15	4.00	2.66
1.75V	36.6	27.0	22.0	18.9	16.1	11.9	9.82	7.14	3.99	2.56
1.80V	32.8	25.1	20.8	18.2	15.7	11.7	9.71	7.13	3.98	2.46
1.85V	28.6	22.9	19.5	17.3	15.2	11.5	9.59	7.12	3.97	2.36

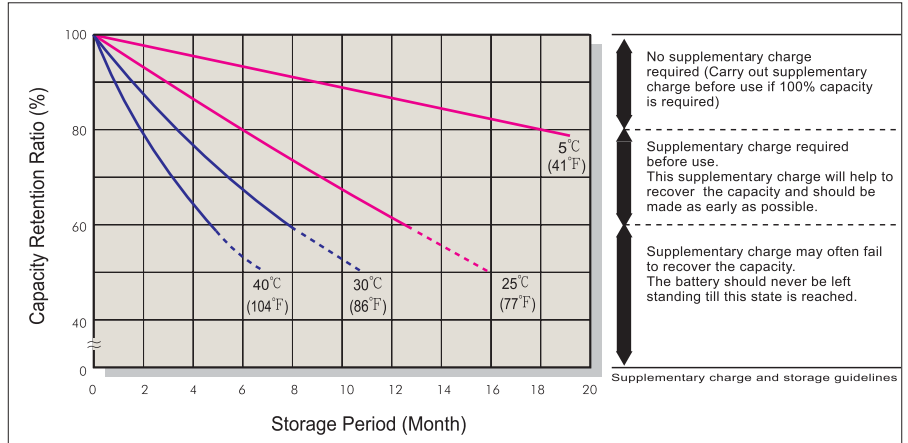
## Constant Power Discharge Characteristics Unit:W (25°C, 77°F)

F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	557	374	293	238	202	148	121	86.1	48.2	33.9
1.67V	521	358	285	233	199	147	120	85.9	48.1	32.8
1.70V	483	340	274	227	196	145	119	85.8	48.0	31.6
1.75V	440	320	263	220	191	144	117	85.6	47.9	30.5
1.80V	393	299	250	212	186	141	116	85.4	47.8	29.4
1.85V	343	275	234	203	180	138	114	85.3	47.7	28.3

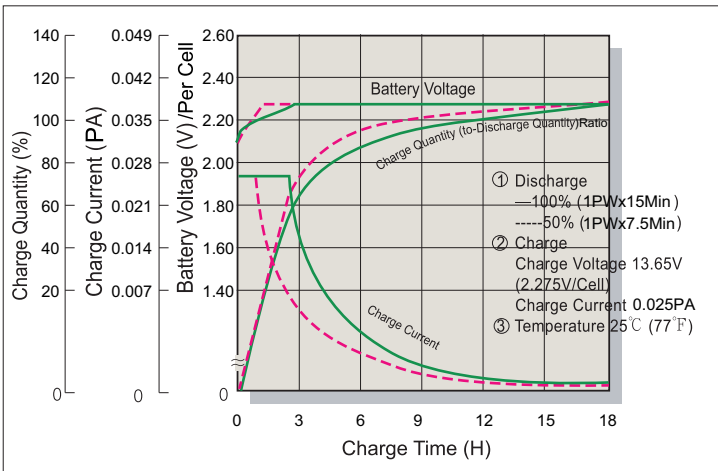
### Trickle (or Float) Service Life



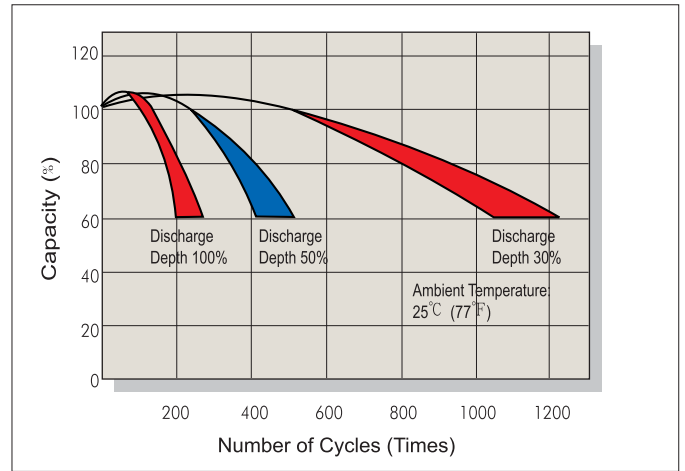
### Capacity Retention Characteristic



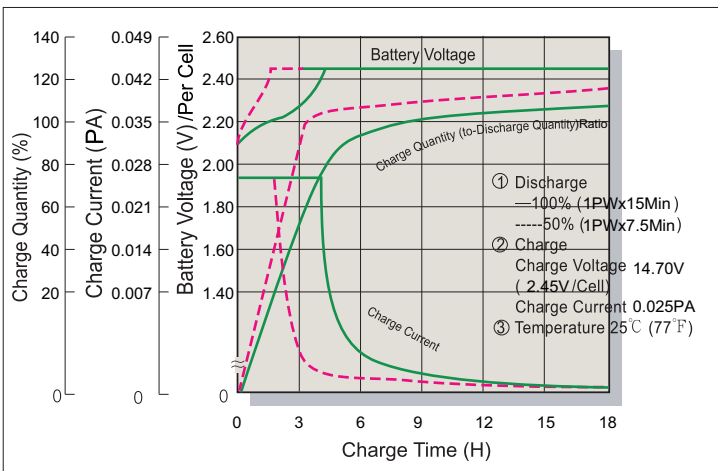
### Battery Voltage and Charge Time for Standby Use



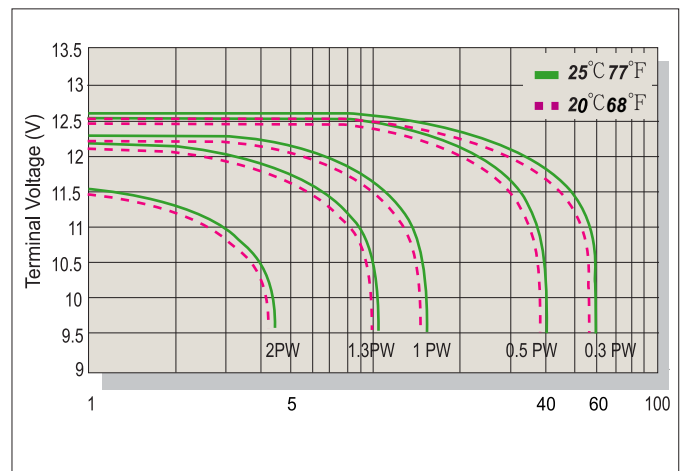
### Cycle Service Life



### Battery Voltage and Charge Time for Cycle Use



### Terminal Voltage (V) and Discharge Time



### Charging Procedures

Application	Charge Voltage(V/Cell)			Max.Charge Current
	Temperature	Set Point	Allowable Range	
Cycle Use	25°C (77°F)	2.45	2.40~2.50	0.1PA
Standby	25°C (77°F)	2.275	2.25~2.30	

### Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/Cell	1.75	1.70	1.60	1.30
Discharge Power(W)	0.1P>(W)	0.1P≤(W)<0.25P	0.25P≤(W)<1.0P	(W)≥1.0P

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