

# HR 1221W

## 12V 21W

HR 1221W is specially designed for high efficient discharge application. Its characteristics are small volume, light weight and high discharge efficiency. It can be used for more than 260 cycles at 100% discharge in cycle service, up to 5 years in standby service.



### Specification

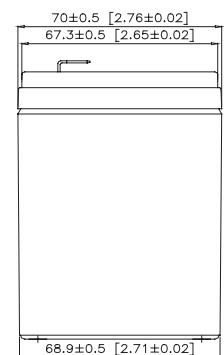
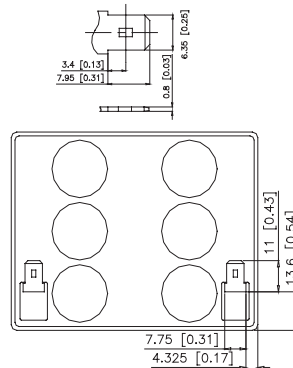
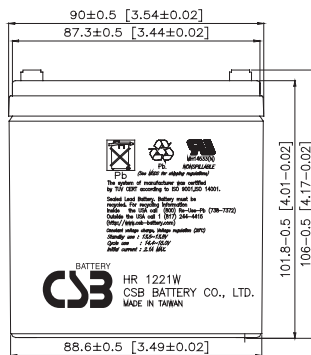
<b>Cells Per Unit</b>	6
<b>Voltage Per Unit</b>	12
<b>Capacity</b>	21W @ 15min-rate to 1.67V per cell @25 °C(77°F)
<b>Weight</b>	Approx. 1.80 kg(3.97 lbs)
<b>Maximum Discharge Current</b>	60A/90A(5sec)
<b>Internal Resistance</b>	Approx. 25mΩ
<b>Operating Temperature Range</b>	Discharge: -15°C~50°C ( 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>	2.1A
<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>	F1/F2-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 batteries are UL-recognized components under UL924 as well as ISO 9001 and ISO 14001 certified.

### Dimensions

unit: (MM)



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

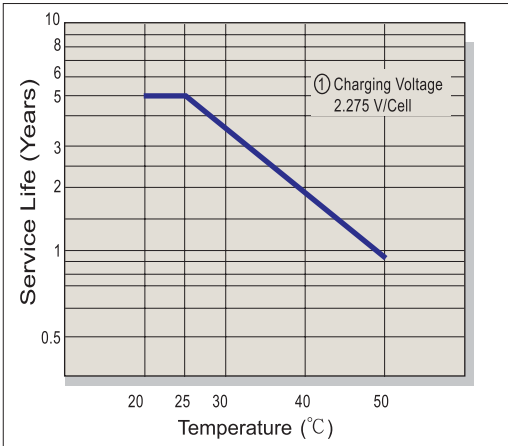
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	46.4	31.2	24.4	20.3	17.4	12.9	10.4	7.29	4.02	2.83
1.67V	43.1	29.7	23.6	19.9	17.1	12.5	10.1	7.18	4.00	2.71
1.70V	41.3	28.9	23.2	19.7	16.8	12.3	9.93	7.14	3.99	2.65
1.75V	37.4	27.4	22.2	19.0	16.3	12.1	9.70	7.07	3.98	2.56
1.80V	33.1	25.2	21.0	18.2	15.7	11.8	9.51	7.00	3.96	2.46
1.85V	28.6	22.8	19.2	16.9	14.8	11.5	9.29	6.92	3.95	2.36

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

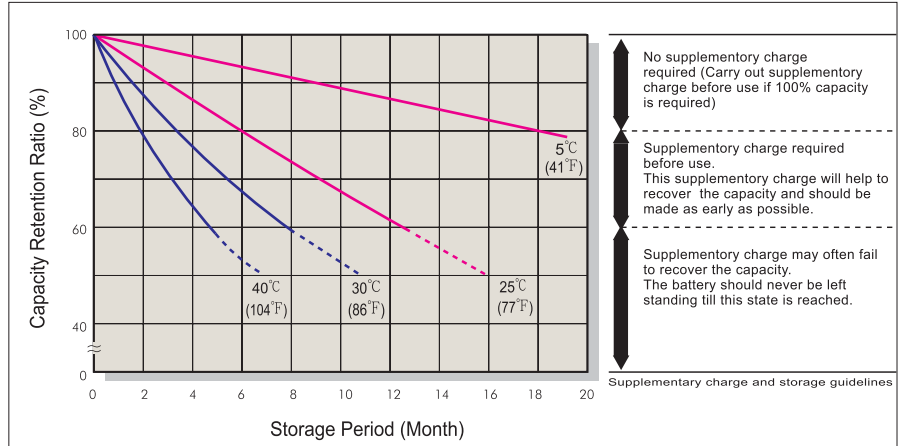
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	557	374	293	244	209	154	123	87.5	48.2	33.9
1.67V	515	357	284	238	203	150	120	86.6	48.1	32.5
1.70V	495	348	279	234	200	149	119	86.2	48.0	31.9
1.75V	451	329	266	226	194	145	116	85.8	47.9	30.7
1.80V	397	302	250	216	188	141	113	85.4	47.8	29.5
1.85V	343	275	237	208	181	138	111	85.3	47.7	28.3

• All mentioned values are average values.

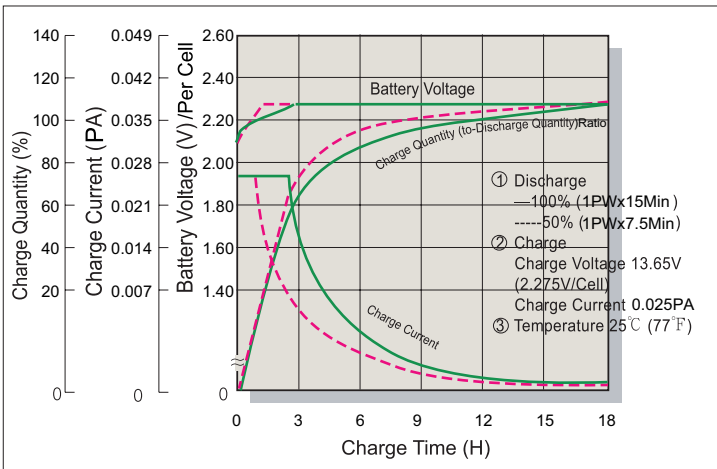
## Trickle (or Float) Service Life



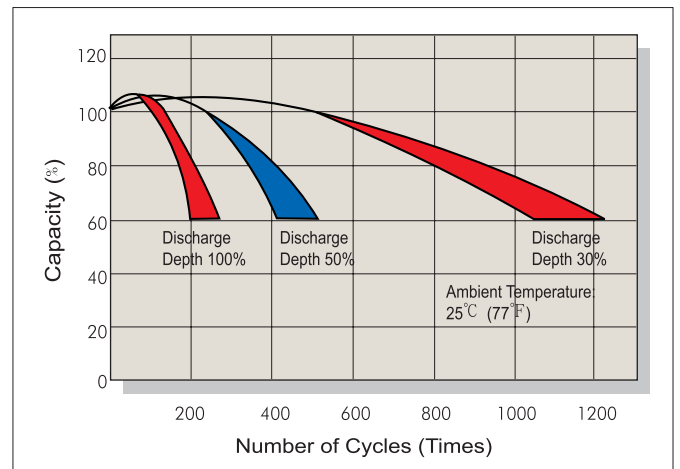
## Capacity Retention Characteristic



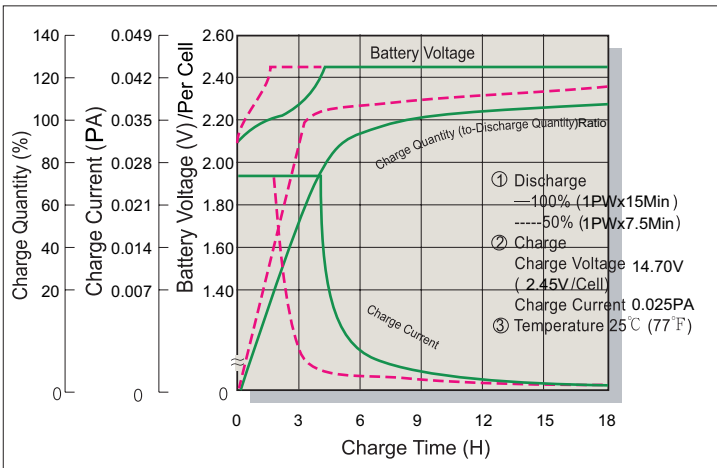
## Battery Voltage and Charge Time for Standby Use



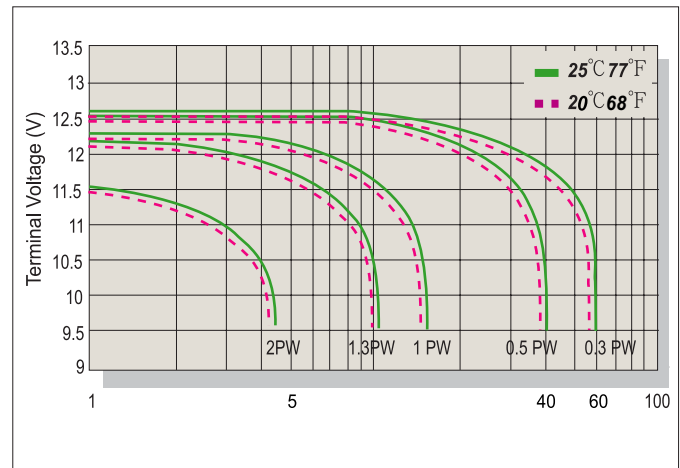
## Cycle Service Life



## 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

Sales Office URL: [WWW.CSB-BATTERY.COM](http://WWW.CSB-BATTERY.COM)

CSB BATTERY CO., LTD.  
TAIWAN OFFICE  
Tel: +886-2-2555-5600  
Fax: +886-2-2555-3300  
E-mail: [service@csb-battery.com.tw](mailto:service@csb-battery.com.tw)

CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.  
SHANGHAI OFFICE  
Tel: +86-21-5046-1622, 5046-0833  
Fax: +86-21-5064-3314

CSB BATTERY TECHNOLOGIES, INC  
USA OFFICE  
Tel: +1-817-244-7777/1-8003 CSBUSA(272872)  
Fax: +1-817-244-4445  
E-mail: [csb@csb-battery.com](mailto:csb@csb-battery.com)

CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.  
BEIJING OFFICE  
Tel: +86-10-6597-8060, 6597-8070  
Fax: +86-10-6597-8050  
E-mail: [chinasls@csb-battery.com](mailto:chinasls@csb-battery.com)

CSB BATTERY OF NETHERLANDS B.V  
NETHERLANDS OFFICE  
Tel: +31(0) 180 418 140  
Fax: +31(0) 180 418 327  
E-mail: [eurosales@csb-battery.com](mailto:eurosales@csb-battery.com)

CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.  
SHENZHEN OFFICE  
Tel: +86-755-2694-2788/2606/2706  
Fax: +86-755-2694-2748  
E-mail: [she@csb-battery.com.tw](mailto:she@csb-battery.com.tw)