

# HRL 12330W

## 12V 330W

HRL 12330W is specially designed for high efficient discharge and long life application. It's 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.



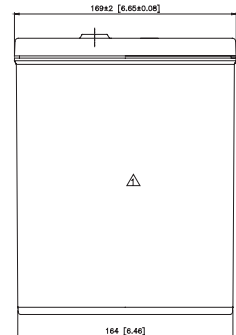
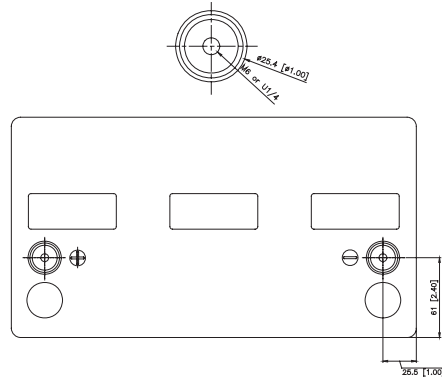
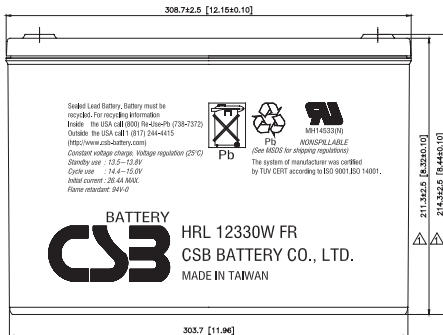
### Specification

Cells per unit	6
Voltage per unit	12
Capacity	330W @15 minute-rate to 1.67V per cell @25°C (77°F)
Weight	Approx. 31.6kg(69.5 lbs)
Maximum Discharge Current	800A(5sec)
Internal Resistance Approx.	Approx. 4mΩ
Operating Temperature Range	Discharge: -20°C~50°C (-4°F~122°F) Charge: 0°C~40°C (32°F~104°F) Storage: -20°C~40°C (14°F~104°F)
Nominal Operating Temperature Range	25°C ± 3°C (77°F ± 5°F)
Float Charging Voltage	13.5 to 13.8 VDC/unit Average at 25°C (77°F)
Recommended Maximum Charging	33 A
Current Limit	
Equalization and Cycle Service	14.4 to 15.0 VDC/unit Average at 25°C (77°F)
Self Discharge	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.
Terminal	Thread lead alloy recessed terminal to accept 1/4" & M6-20bolt
Container Material	-Polypropylene (UL94-HB)*Flammability resistance of UL94-V0 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:Amperes(25°C,77°F)

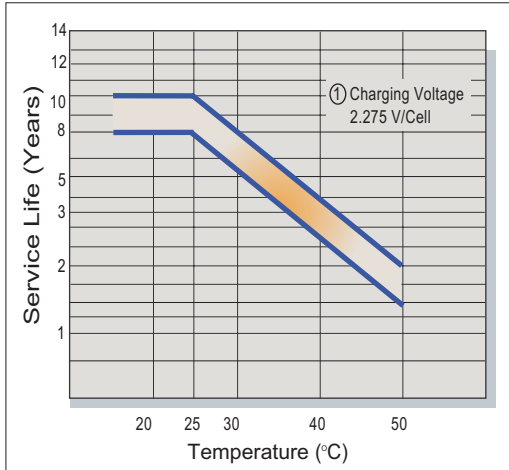
F.V/Time	5MIN	10MIN	15MIN	20MIN	30MIN	40MIN	45MIN	50MIN	60MIN	90MIN
1.60V	383.00	260.00	201.00	165.00	123.00	98.40	89.90	82.00	70.20	52.10
1.67V	357.00	247.00	193.00	159.00	118.00	94.20	85.30	78.10	67.10	49.40
1.70V	348.00	236.00	186.00	154.00	114.00	91.10	83.40	76.40	64.90	47.30
1.75V	320.00	227.00	174.00	149.00	106.00	87.60	76.60	72.50	59.20	44.40
1.80V	262.00	198.00	154.00	135.00	95.80	79.60	69.20	65.80	54.50	41.60
1.85V	219.00	177.00	141.00	124.00	89.40	74.90	64.90	62.00	51.10	39.50

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

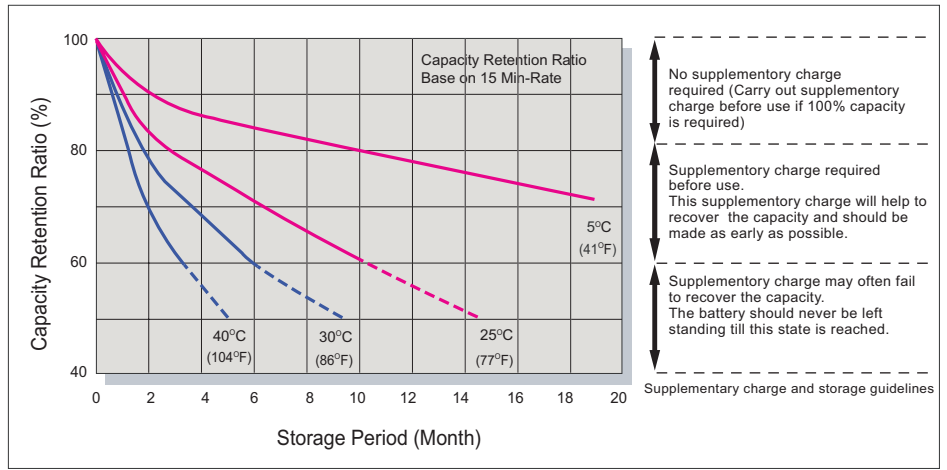
F.V/Time	5MIN	10MIN	15MIN	20MIN	30MIN	40MIN	45MIN	50MIN	60MIN	90MIN
1.60V	4,044.00	2,772.00	2,148.00	1,770.00	1,320.00	1,062.00	972.00	888.00	762.00	566.40
1.67V	3,840.00	2,682.00	2,100.00	1,740.00	1,290.00	1,032.00	936.00	864.00	744.00	547.20
1.70V	3,780.00	2,580.00	2,052.00	1,698.00	1,266.00	1,008.00	924.00	852.00	726.00	528.60
1.75V	3,552.00	2,520.00	1,998.00	1,668.00	1,242.00	984.00	894.00	816.00	696.00	503.40
1.80V	2,958.00	2,256.00	1,770.00	1,548.00	1,104.00	918.00	798.00	762.00	630.00	483.60
1.85V	2,478.00	2,016.00	1,608.00	1,428.00	1,026.00	864.00	750.00	720.00	592.20	459.60

• All mentioned values are average values.

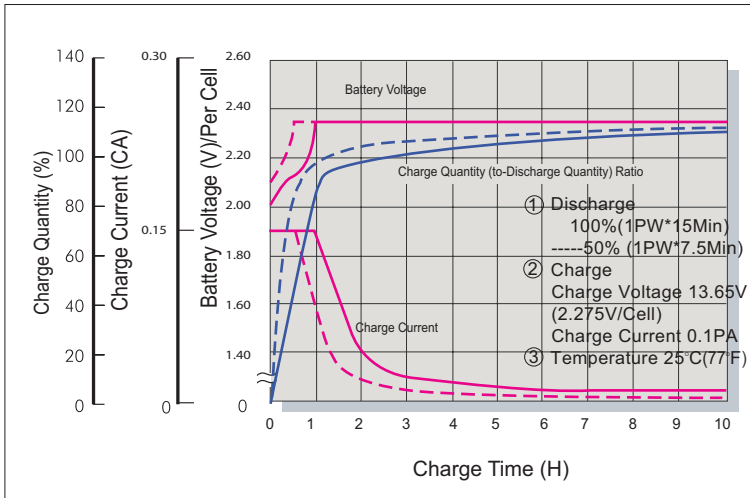
## Trickle (or Float) Service Life



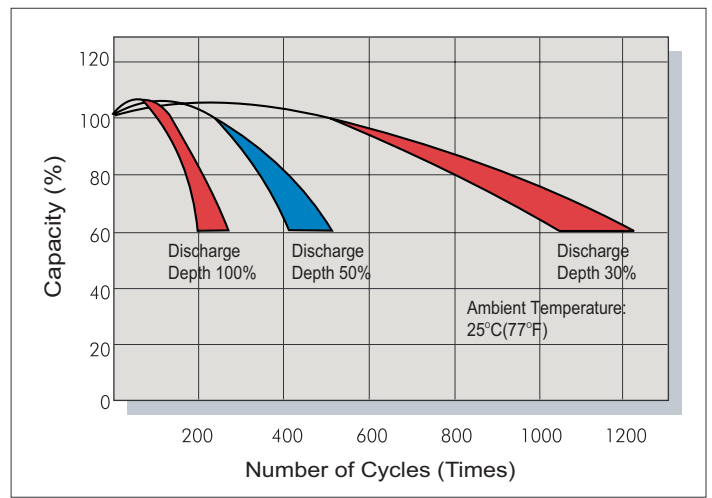
## Capacity Retention Characteristic



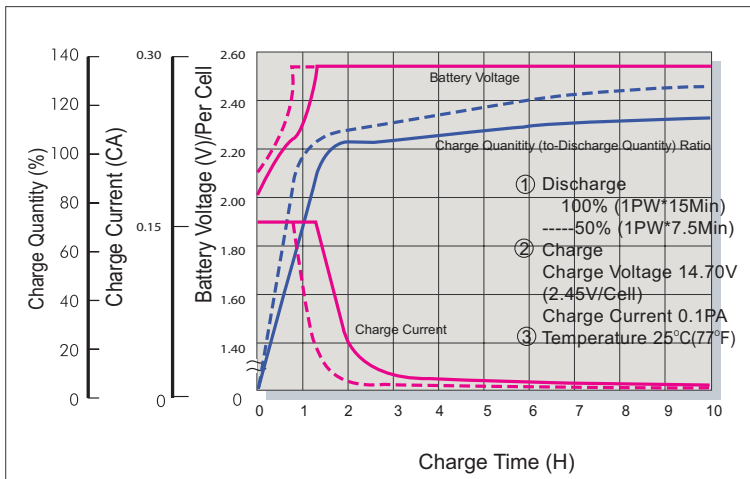
## Battery Voltage and Charge Time for Standby Use



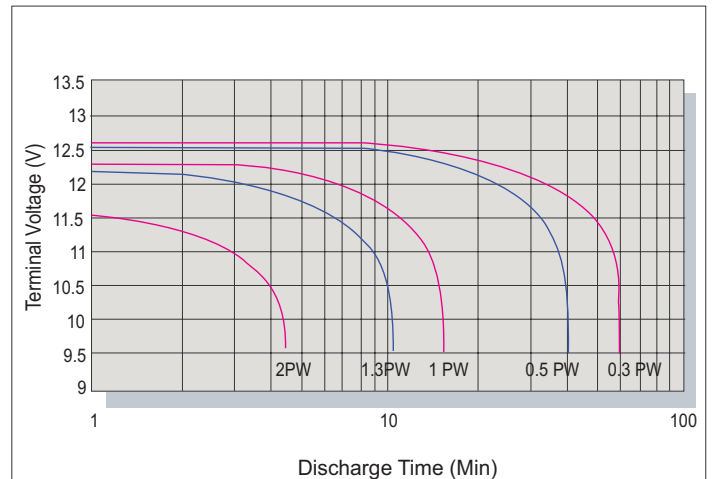
## Cycle Service Life



## Battery Voltage and Charge Time for Cycle Use



## Terminal Voltage (V) and Discharge Time (25°C/77°F)



## 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	

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