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# HRL 12330W ▶ 12V 330W

HRL 12330W is specially designed for high efficient discharge application. Its characteristics are high energy density, small footprint and high discharge efficiency. It can be used for more than 260 cycles at 100% discharge in cycle service, up to 10 years in standby service.



## Specification

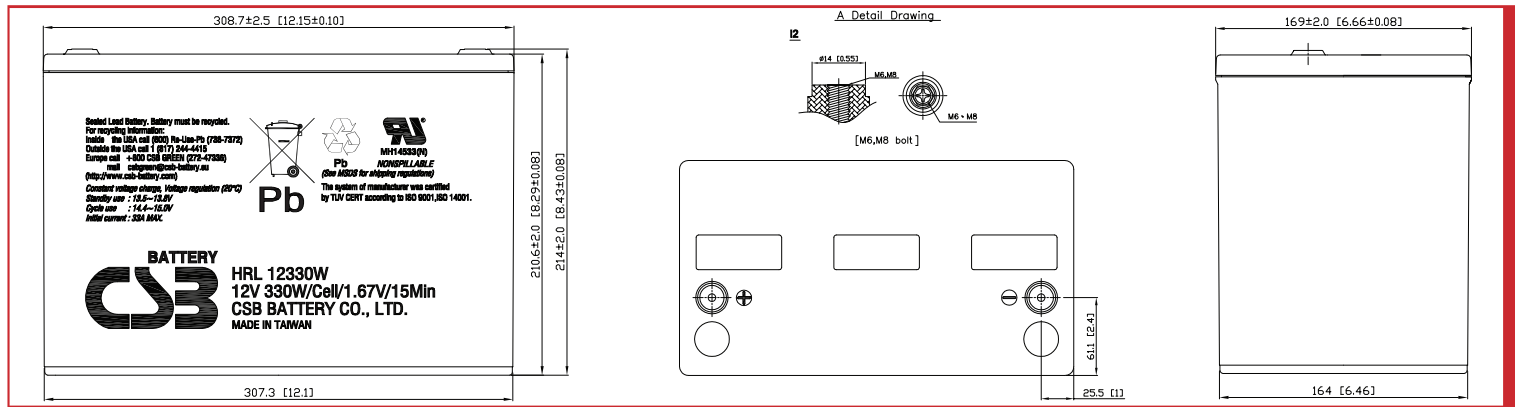
Cells per unit	6
Voltage per unit	12
Capacity	330 W@15min-rate to 1.67V per cell @25°C(77°F)
Weight	Approx.29.6 kg(65.26 lbs)
Maximum Discharge Current	800A(5sec)
Internal Resistance	Approx. 4 mΩ
Operating Temperature Range	Discharge: -15°C~50°C ( 5°F~122°F) Charge: -15°C~40°C( 5°F~104°F) Storage: -15°C~40°C( 5°F~104°F)
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 Current Limit	33A
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	I2-Thread lead alloy recessed terminal to accept M6/M8 bolt
Container Material	Polypropylene(UL 94-HB) & Flammability resistance of (UL 94-V0) can be available upon request.



CSB-manufactured **VRLA** (Absorbent Glass Mat type) batteries are UL-recognized components under UL1989.

CSB is also certified by ISO 9001 and ISO 14001.

Dimensions :	Overall Height (H)	Container height (h)	Length (L)	Width (W)
Unit: mm (inch)	214±2 (8.43±0.08)	210.6±2 (8.29±0.08)	308.7±2.5 (12.15±0.10)	169±2.0 (6.66±0.08)



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

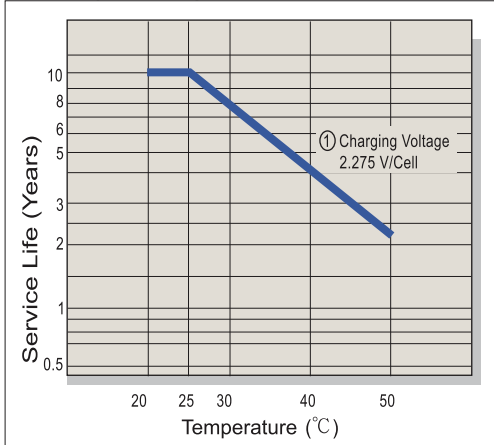
F.V/Time	5MIN	10MIN	15MIN	20MIN	30MIN	40MIN	45MIN	50MIN	60MIN	90MIN
1.60V	383	260	201	165	123	98.4	89.9	82.0	70.2	52.1
1.67V	339	239	188	157	117	94.2	85.3	78.1	67.1	49.4
1.70V	318	229	181	152	113	91.1	83.4	76.4	64.9	47.3
1.75V	284	210	168	144	106	85.6	78.9	72.5	61.2	44.4
1.80V	253	193	158	135	98.4	79.6	72.5	66.4	56.6	41.6
1.85V	219	177	147	125	92.5	74.9	68.5	62.5	53.5	39.5

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

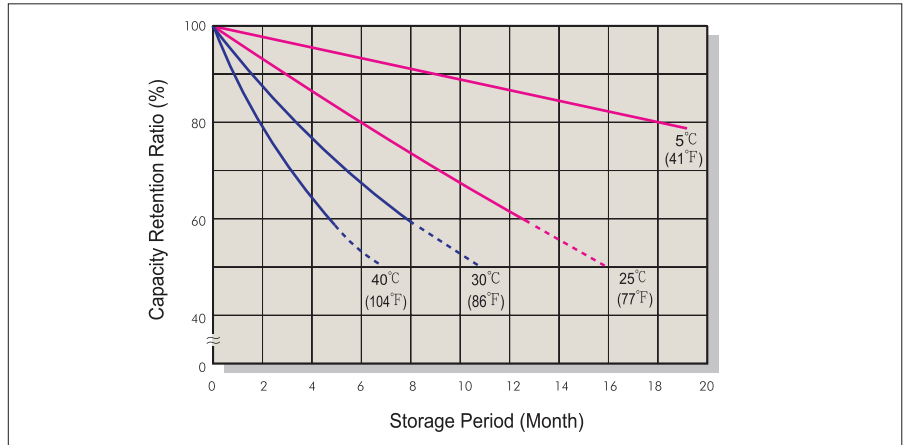
F.V/Time	5MIN	10MIN	15MIN	20MIN	30MIN	40MIN	45MIN	50MIN	60MIN	90MIN
1.60V	4,044	2,772	2,148	1,770	1,320	1,062	972	888	762	566
1.67V	3,621	2,608	2,040	1,712	1,290	1,032	936	864	744	547
1.70V	3,438	2,520	1,979	1,679	1,266	1,008	924	852	726	529
1.75V	3,115	2,354	1,891	1,605	1,210	963	894	816	696	503
1.80V	2,791	2,180	1,795	1,528	1,145	918	833	762	650	484
1.85V	2,478	2,016	1,690	1,428	1,070	864	786	720	613	460

Ratings presented herein are subject to revision without notice. Please refer to [www.csb-battery.com](http://www.csb-battery.com) to confirm the latest version.

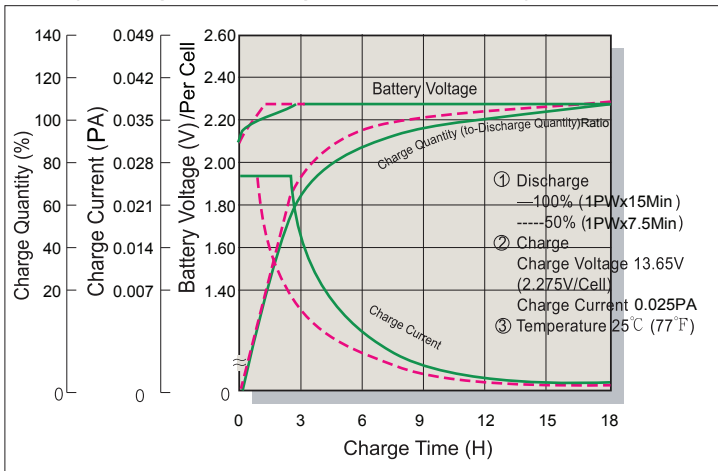
### Trickle (or Float) Service Life



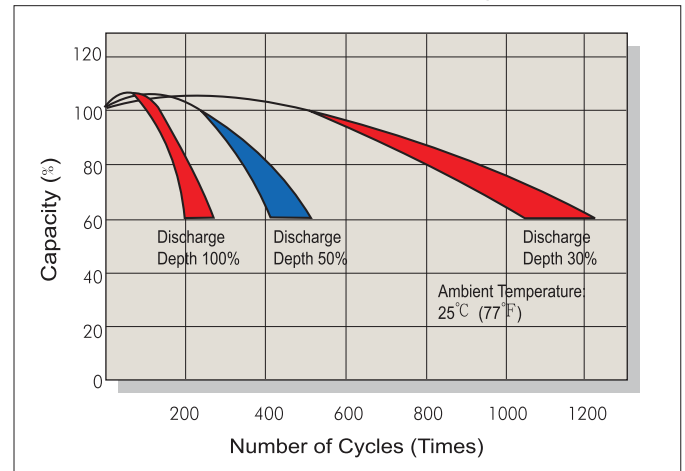
### Capacity Retention Characteristic



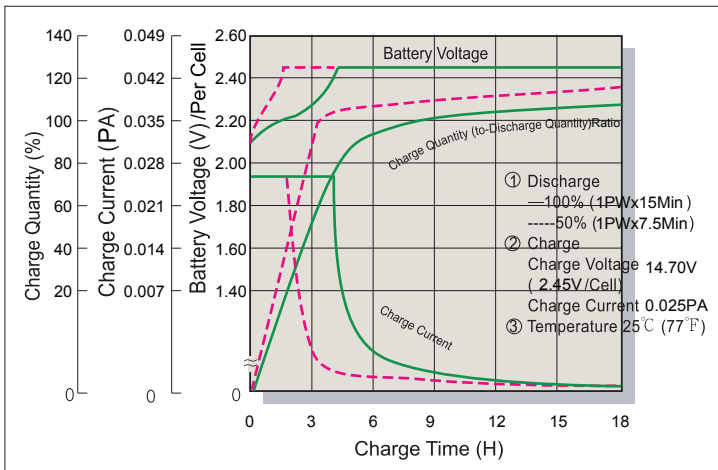
### Battery Voltage and Charge Time for Standby Use



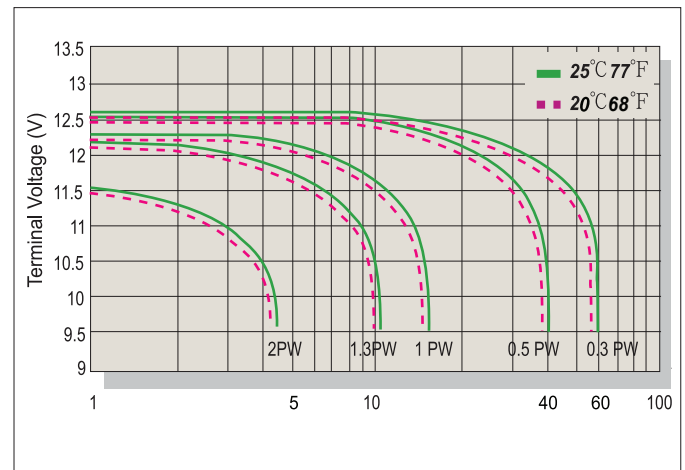
### Cycle Service Life



### 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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