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# HRL 12200W ▶ 12V 200W

HRL 12200W 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

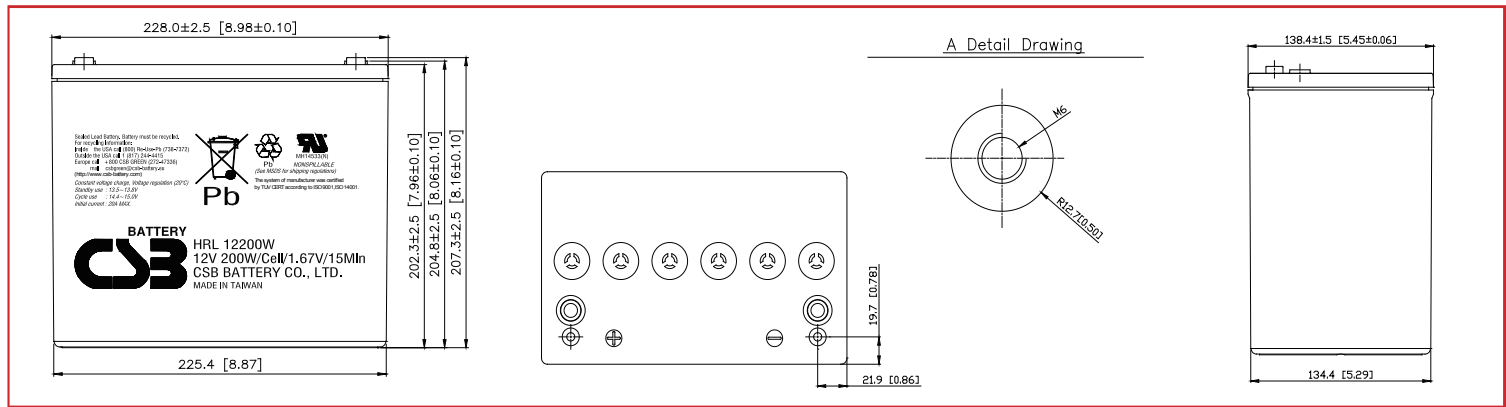
Cells per unit	6
Voltage per unit	12
Capacity	200W @ 15min-rate to 1.67V per cell @25 °C(77°F)
Weight	Approx.17.3 kg(38.1 lbs)
Maximum Discharge Current	300A(5sec)
Internal Resistance	Approx.5.3 mΩ
Operating Temperature Range	Discharge: -15°C~50°C ( 5°F~122°F) Charge: -15 °C~40°C ( 5°F~104°F) Storage: -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(77°F)
Recommended Maximum Charging Current Limit	20A
Equalization and Cycle Service	14.4 to 15.0 VDC/Unit Average at 25(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 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)	207.3±2.5 (8.16±0.10)	202.3±2.5 (7.96±0.10)	228.0±2.5 (8.98±0.10)	138.4±1.5 (5.45±0.06)



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

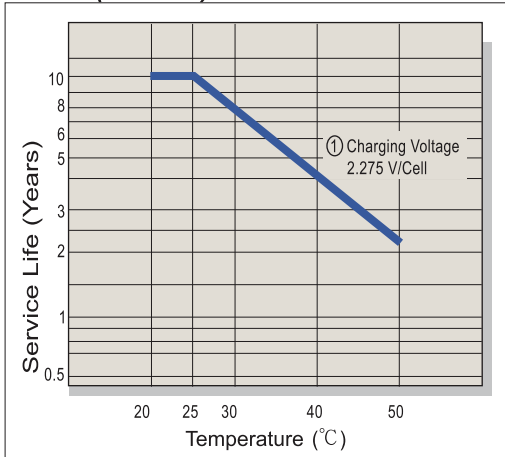
F.V/Time	5MIN	7.5MIN	10MIN	15MIN	20MIN	30MIN	40MIN	50MIN	60MIN	90MIN
1.60V	243	197	164	123	98.9	71.9	57.7	48.5	41.8	29.9
1.67V	218	184	157	118	97.0	71.2	56.9	48.0	41.2	29.5
1.70V	209	175	151	116	95.7	70.3	56.6	47.8	41.1	29.4
1.75V	192	161	141	111	92.0	68.2	55.2	46.9	40.3	29.1
1.80V	165	145	126	102	85.2	64.6	53.2	45.0	38.9	28.2
1.85V	145	124	110	91.3	76.1	59.0	49.5	41.8	36.2	26.6

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

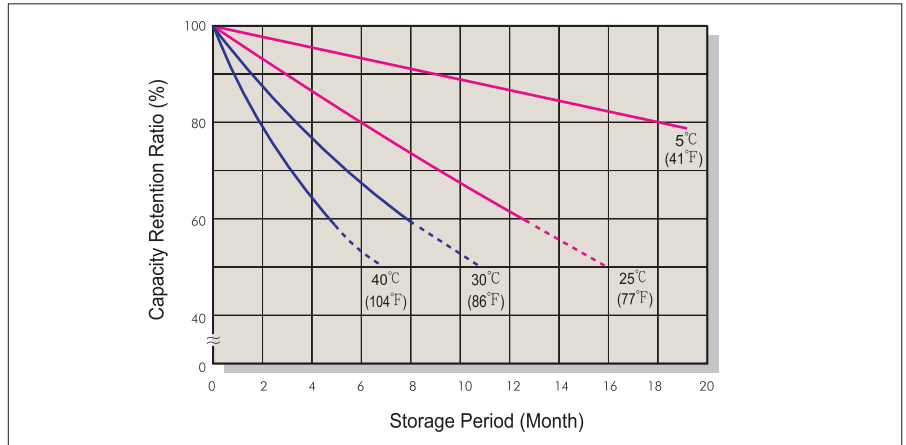
F.V/Time	5MIN	7.5MIN	10MIN	15MIN	20MIN	30MIN	40MIN	50MIN	60MIN	90MIN
1.60V	2448	2041	1745	1333	1098	816	659	556	476	343
1.67V	2306	1931	1666	1308	1083	809	656	554	475	342
1.70V	2207	1870	1625	1282	1066	796	648	553	474	339
1.75V	2022	1761	1523	1232	1027	772	638	542	464	335
1.80V	1840	1621	1409	1158	959	738	616	522	452	326
1.85V	1659	1418	1255	1035	873	687	576	490	423	310

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.

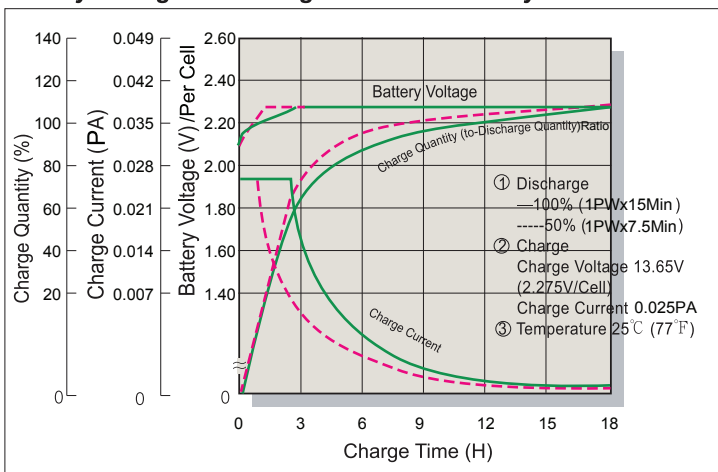
### Trickle (or Float) Service Life



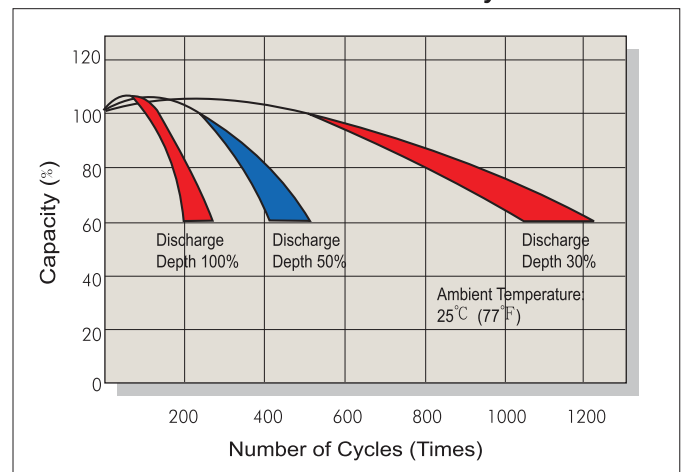
### Capacity Retention Characteristic



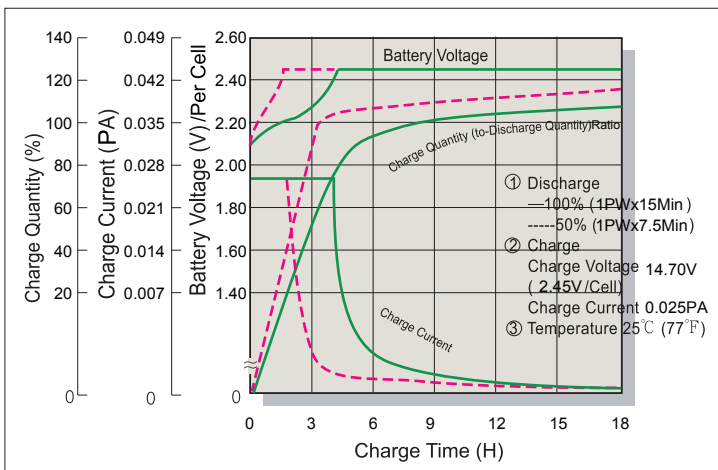
### Battery Voltage and Charge Time for Standby Use



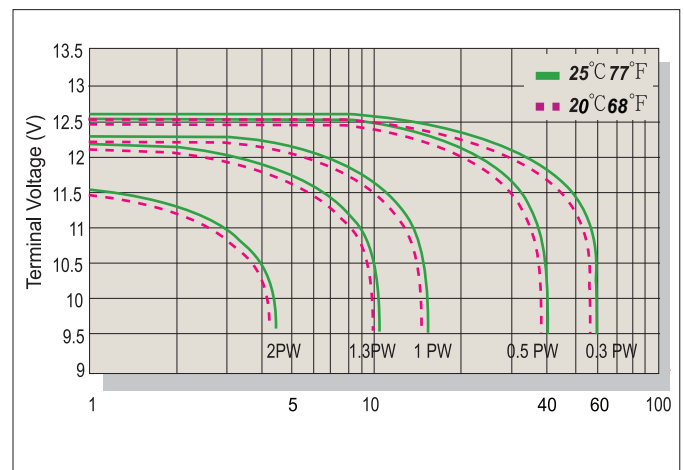
### Cycle Service Life



### 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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