



# HRL series HRL 12110W

## Valve Regulated Lead Acid Battery

Maintenance-Free Sealed Lead Acid Battery.  
Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99%.

### General Design for Standby Power Applications

#### 【Design Life】

Up to 10 Years in Standby Service at 25°C  
Eurobat (20°C) : 10/12 YEARS LONG LIFE

#### 【Operating Temperature Range】

Nominal Operating Temperature : 25°C (77°F)  
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)

#### 【Float Charging Voltage】

13.5 ~ 13.8 VDC/Unit at 25°C (77°F)

#### 【Equalization Charging Voltage】

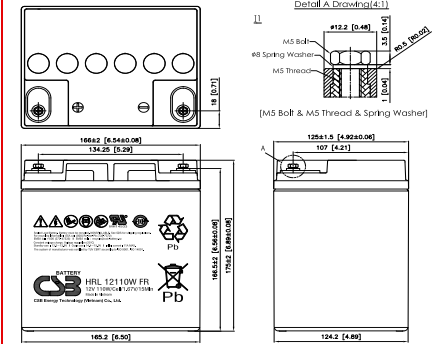
14.4 ~ 15.0 VDC/Unit at 25°C (77°F)

#### 【Self Discharge】

Less than 10% after 90 days, can be stored up to 6 months at 25°C (77°F);  
Fully recharging is required before usage, and charged sooner if stored at higher temperature than 25°C (77°F).

### Specification Design according with IEC 61056-1/2:2012

Nominal Voltage	12V (6 cells per unit)	
Nominal Capacity	110W @15min-rate to 1.67V per cell @25°C (77°F)	
Weight	Approx. 9.90 Kg (21.82 lbs)	
Maximum Discharge Current	225A (5sec)	
Internal Resistance	Approx. 8.10 mΩ	
Short Circuit Current	884A	
Maximum Charge Current	11.0A	
Terminal types	I1 thread lead alloy terminal to accept M5 bolt	
Terminal tightening torque	30.4±6.1 Kg·cm / 26.4±5.3 Lbf·in / 3.0±0.6 N·m	
Container Material	ABS (UL 94-HB) & Flame Retardant (94-V0) available upon request	
Dimensions	Length (L)	166.0±2.0 mm 6.54±0.08 inch
	Width (W)	125.0±1.5 mm 4.92±0.06 inch
	Container Height (h)	175.0±2.0 mm 6.89±0.08 inch
	Overall Height (H)	175.0±2.0 mm 6.89±0.08 inch



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

F.V/Time	2MIN	4MIN	5MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	45MIN	60MIN	90MIN
1.60V	170	145	129	118	97.5	81.6	61.4	48.0	33.6	25.7	21.3	14.9
1.67V	151	129	117	108	91.1	77.5	59.6	47.0	33.2	25.3	20.8	14.7
1.70V	141	121	111	103	88.3	75.7	58.6	46.3	32.7	24.8	20.4	14.5
1.75V	125	108	99.6	93.2	82.7	72.2	56.1	44.7	32.3	24.4	20.0	14.4
1.80V	109	94.0	88.2	83.7	76.4	68.7	53.7	42.5	31.9	24.0	19.6	14.2
1.85V	89.3	78.7	75.9	73.6	69.2	64.4	51.0	40.8	29.7	22.4	18.30	14.0

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

F.V/Time	2MIN	4MIN	5MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	45MIN	60MIN	90MIN
1.60V	1806	1541	1385	1270	1053	888	682	554	385	297	247	174
1.67V	1624	1386	1263	1171	988	852	665	535	377	292	243	173
1.70V	1530	1316	1197	1107	956	827	655	526	372	287	239	171
1.75V	1358	1190	1093	1020	900	796	636	510	361	280	234	170
1.80V	1177	1054	990	941	851	764	610	495	352	274	229	168
1.85V	995	918	882	854	793	733	589	478	337	260	217	167

Please refer to the official site for the latest rating confirmation. URL: [www.csb-battery.com](http://www.csb-battery.com)

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Recognized under UL 1989,  
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