



**HRL series**

**HRL 12390W 12V 410W**



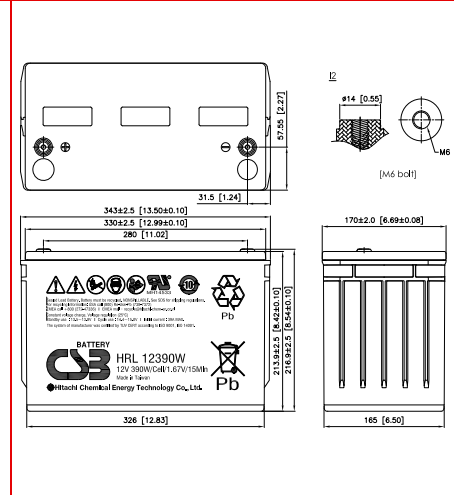
**Valve Regulated Lead Acid Battery**

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

**Design for Standby Power Applications**

<p><b>【Design Life】</b> Up to 10 Years in Standby Service at 25°C Eurobat (20°C) : 10-12 years, Long Life</p> <p><b>【Operating Temperature Range】</b> 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)</p>	<p><b>【Float Charging Voltage】</b> 13.5 ~ 13.8 VDC/Unit at 25°C (77°F)</p> <p><b>【Equalization Charging Voltage】</b> 14.4 ~ 15.0 VDC/Unit at 25°C (77°F)</p> <p><b>【Self Discharge】</b> 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).</p>
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Specification		Design according with IEC 60896-21/22:2004	
Nominal Voltage	12V (6 cells per unit)		
Nominal Capacity	410W @15min-rate to 1.67V per cell @25°C (77°F)		
Weight	Approx. 33.00 Kg (72.73 lbs)		
Maximum Discharge Current	800A (5sec)		
Internal Resistance	Approx. 3.00 mΩ		
Short Circuit Current	2779A		
Maximum Charge Current	39.0A		
Terminal types	I2 thread lead alloy terminal to accept M6 bolt		
Terminal breaking Torque	138.6 Kgf·cm / 120.3 lbf·in / 13.58 N·m		
Container Material	PP (UL 94-HB) & Flame Retardant (94-V0) available upon request		
Dimensions	Length (L)	343.0±2.5 mm	13.50±0.10 inch
	Width (W)	170.0±2.0 mm	6.69±0.08 inch
	Container Height (h)	213.9±2.5 mm	8.42±0.10 inch
	Overall Height (H)	216.9±2.5 mm	8.54±0.10 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	589	499	465	423	362	315	239	192	140	101	79.6	57.1	
1.67V	532	456	416	386	334	298	230	186	138	99.6	78.9	56.8	
1.70V	504	428	395	367	320	288	224	183	137	98.6	78.2	56.4	
1.75V	463	384	354	330	296	266	212	174	132	96.1	76.7	55.7	
1.80V	382	330	310	296	266	239	197	163	125	91.8	73.8	54.2	
1.85V	296	285	270	253	228	210	175	147	114	84.9	68.8	51.2	

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	5767	4830	4543	4188	3683	3299	2550	2083	1566	1142	913	666	
1.67V	5312	4557	4197	3919	3518	3141	2483	2039	1545	1130	906	663	
1.70V	5049	4348	4030	3787	3434	3048	2440	2010	1529	1122	900	660	
1.75V	4583	3970	3736	3555	3190	2861	2348	1943	1488	1098	885	653	
1.80V	4044	3587	3451	3253	2893	2641	2215	1843	1423	1059	858	639	
1.85V	3486	3160	2959	2804	2576	2412	2006	1690	1328	996	812	609	

Please refer to the official site for the latest rating confirmation. URL: [www.csb-battery.com](http://www.csb-battery.com) Issued: 180205

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