

# STARMAX

The world's leading battery brand



## HRL SERIES-LONG LIFE **BATTERIES**

HRL 12370W



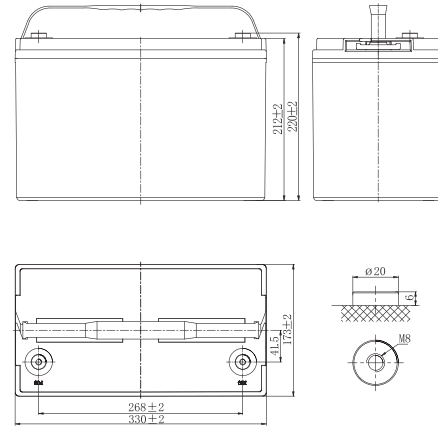
[www.starmaxbatteries.com](http://www.starmaxbatteries.com)

# HRL Series

## HRL 12370W



### LAYOUT



## General Features

- ✓ **High quality AGM separator:** Extend cycle life and prevent micro short circuit
- ✓ **PbCaSn alloy for plate grids:** Less gassing, less self-discharging
- ✓ **Unique vent valve design:** Reduce water losing and prevent air/spark going inside

## Applications

- ✓ UPS
- ✓ Hospitals & Testing Laboratories
- ✓ Emergency Power Supply
- ✓ Industrial Process Control Facilities
- ✓ Banks & Financial Markets
- ✓ Data & Network Operation Centers

## Standards

- ✓ Compliance with IEC 60896 and YD/T 3427 standards
- ✓ CE, UL, IEC Cer tified
- ✓ Manufactured in Starmax, ISO 45001, ISO 9001 and ISO 14001 certified production facilities



# SPECIFICATIONS

Rated Voltage	12V		
Nominal Rate	(W <sub>15</sub> ,1.67V/cell)	370W/cell	
Nominal Capacity	(C <sub>20</sub> ,1.75V/cell)	100Ah	
Dimensions	Length	330±2mm (13.0 inches)	
	Width	173±2mm (6.81 inches)	
	Container height	212±2mm (8.35 inches)	
	Total height	220±2mm (8.66 inches)	
Approx. weight	30.7kg (67.7 lbs)		
Terminal	M8		
Container material	ABS: UL 94 HB or V-0		
Rated capacity (25°C)	100.0 Ah	C10(10.0A,1.80V/cell)	
	92.8 Ah	C8(11.6A,1.80V/cell)	
	88.0 Ah	C5(17.6A,1.75V/cell)	
	78.0 Ah	C3(26.0A,1.75V/cell)	
	63.6 Ah	C1(63.6A,1.60V/cell)	
Max. discharge current	1000A (5s)		
Internal resistance (25°C)	Approx 5.0mΩ		
Operating temp. range	Discharge	-20~55°C (4~131°F)	
	Charge	-20~40°C (-4~104°F)	
	Storage	-15~50°C (5~122°F)	
Nominal operating temp. range	25±3°C (77±5°F)		
Max.Charging Current(25°C)	25A		
Charge voltage(25°C)	<b>Charge voltage</b>		<b>Temp. Coefficient</b>
	Float	2.25~2.30V/cell	-3mV/cell/°C
	Equalization	2.30~2.40V/cell	-4mV/cell/°C
Effect of temp. to Capacity	40°C (104°F)		106%
	25°C (77°F)		100%
	0°C (32°F)		86%
Self discharge	≤3%/month @ 25°C		

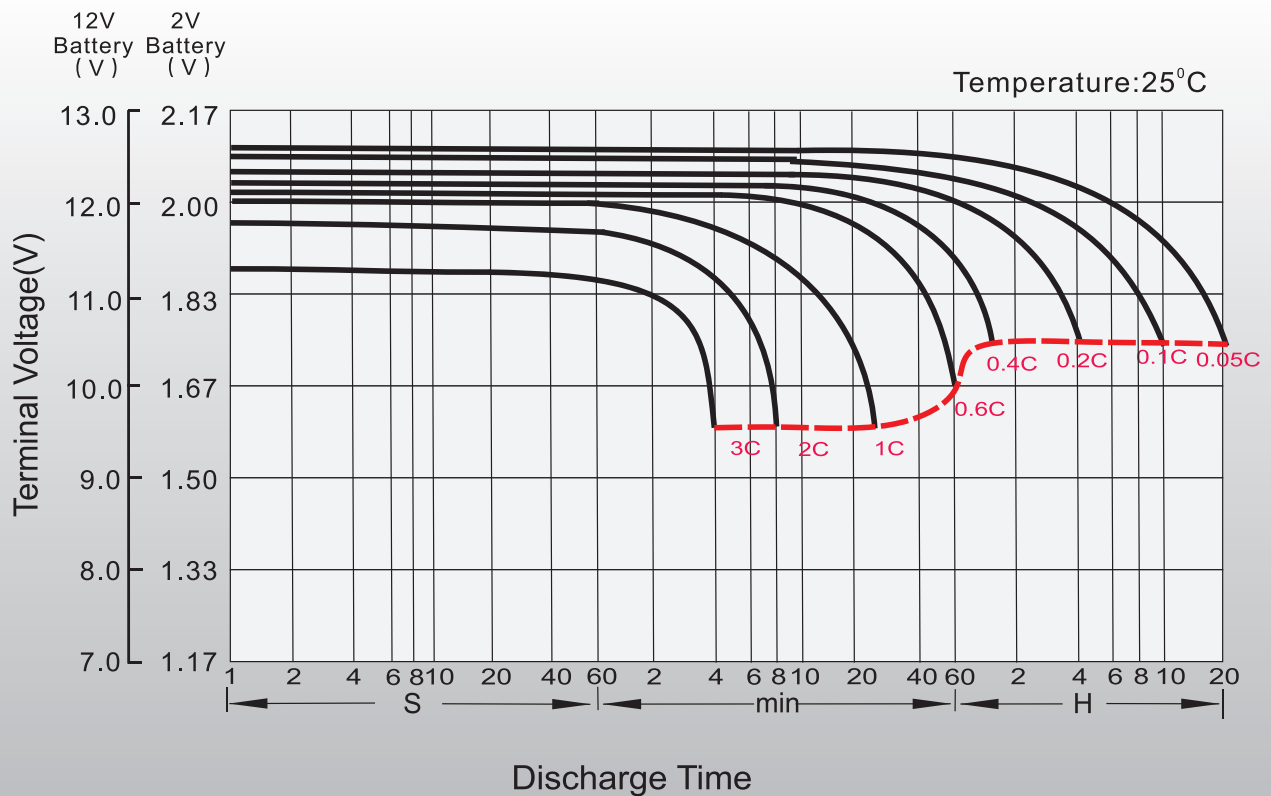
## Constant Current Discharge (Amperes) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	8h	10h
1.85V/cell	221.3	176.7	153.2	120.5	83.5	67.9	55.0	40.4	33.1	24.6	19.5	16.5	11.4	9.73
1.80V/cell	251.7	200.6	173.6	136.2	94.1	72.1	56.9	41.6	35.0	25.4	20.2	17.1	11.6	10.0
1.75V/cell	273.4	217.5	188.0	147.1	101.2	76.5	59.2	43.3	36.3	26.0	20.9	17.6	11.7	10.1
1.70V/cell	292.3	231.9	199.6	155.9	107.3	80.2	61.8	45.2	37.2	26.5	21.4	18.0	11.9	10.2
1.67V/cell	302.5	239.3	205.4	160.2	109.9	82.4	62.5	46.3	38.1	27.1	21.6	18.2	12.0	10.3
1.60V/cell	313.2	247.5	211.8	164.3	112.6	84.5	63.6	47.9	38.8	27.8	22.1	18.6	12.1	10.4

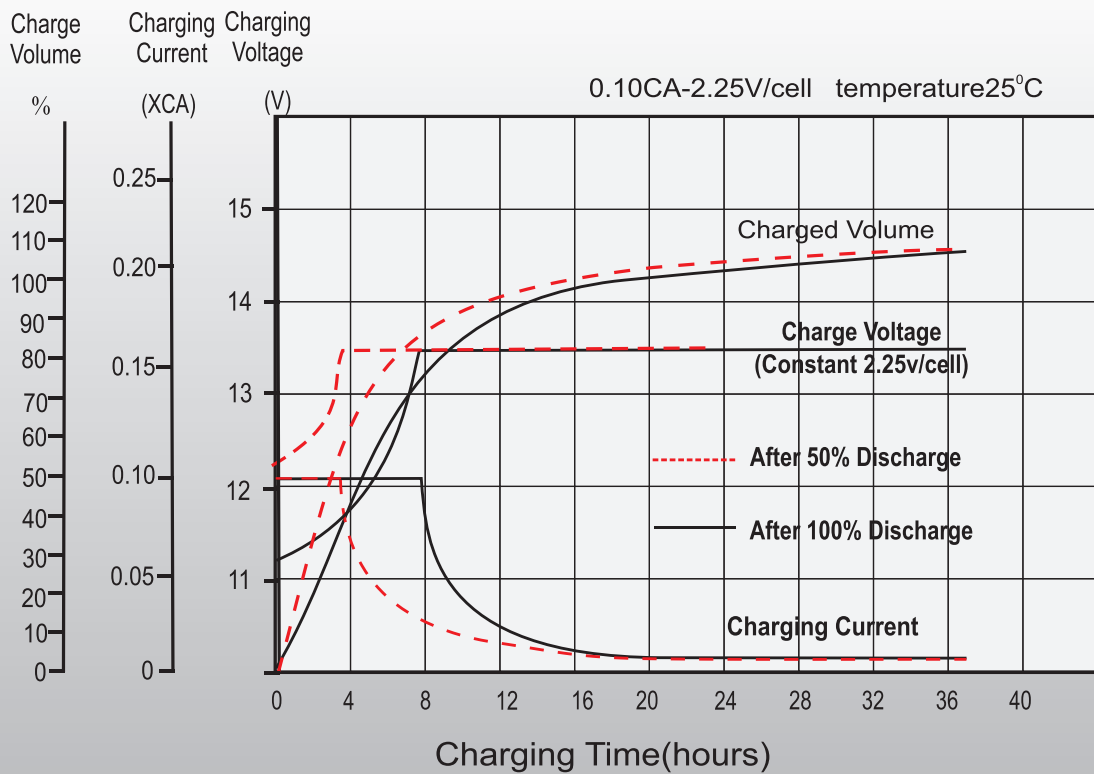
## Constant Power Discharge (Watts/cell) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	8h	10h
1.85V/cell	413.4	332.4	290.1	229.2	159.5	130.6	106.5	78.3	64.3	48.1	38.2	32.4	22.6	19.3
1.80V/cell	462.4	371.9	324.5	256.3	178.5	137.7	109.4	80.3	67.7	49.5	39.4	33.6	23.0	19.8
1.75V/cell	493.5	396.9	346.3	273.6	190.5	145.2	113.4	83.2	70.0	50.4	40.6	34.4	23.1	19.9
1.70V/cell	518.8	417.2	364.1	287.6	200.2	151.3	117.8	86.3	71.4	51.3	41.4	35.1	23.5	20.0
1.67V/cell	527.3	424.0	370.0	292.3	203.5	154.6	118.4	88.1	72.8	52.2	41.8	35.4	23.7	20.3
1.60V/cell	534.6	430.0	375.2	296.4	206.3	156.9	119.7	90.4	73.8	53.2	42.6	36.0	23.8	20.4

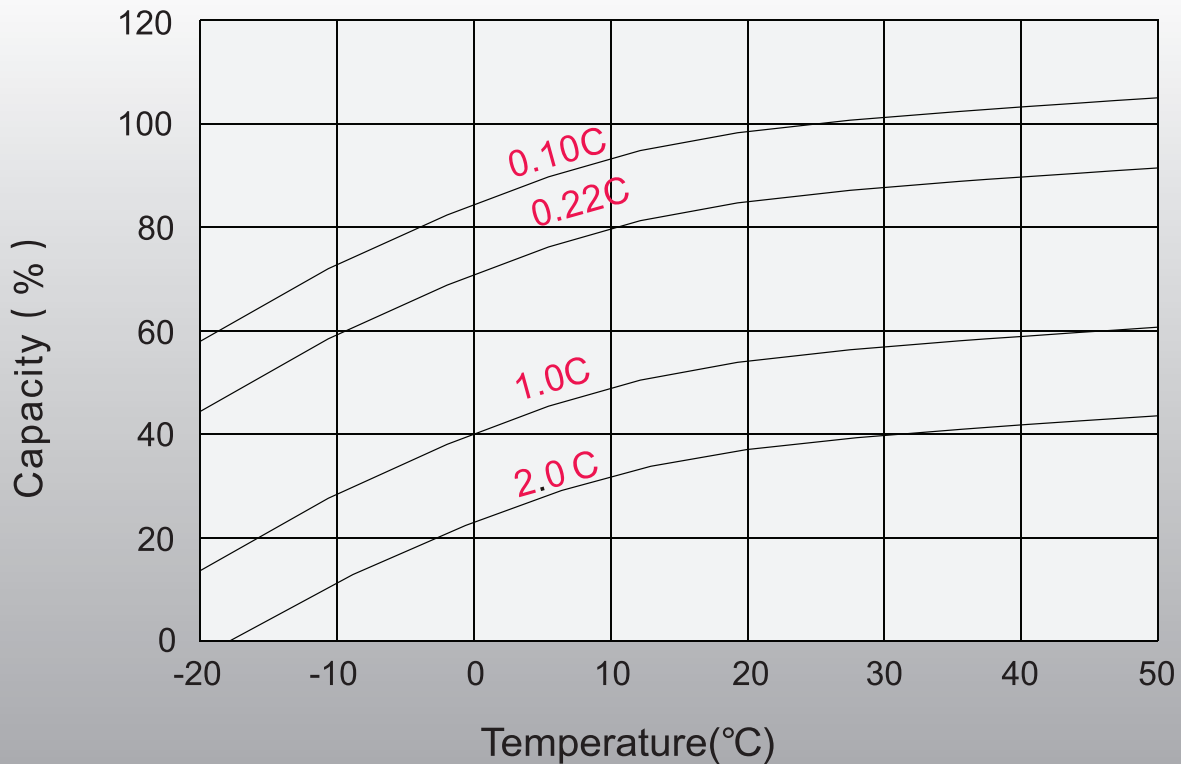
## Discharge Characteristics



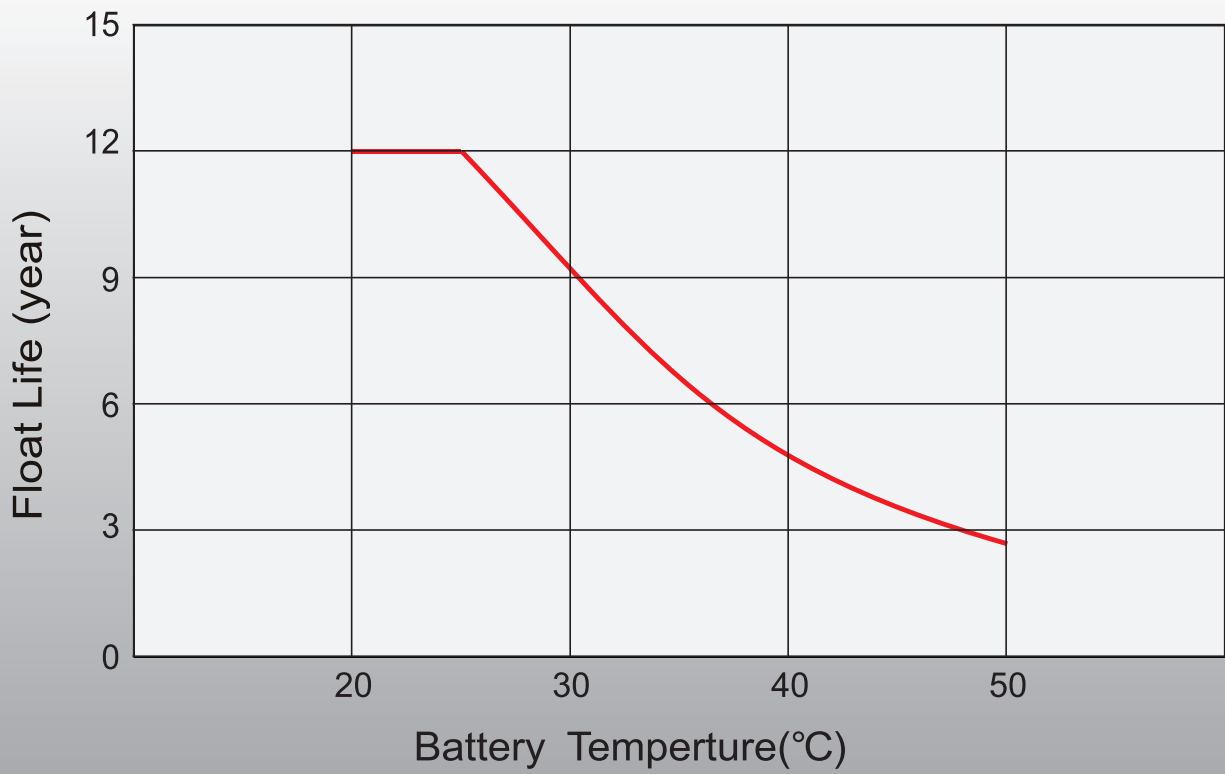
# Float Charging Characteristics



# Temperature Effects in Relation to Battery Capacity



# Effect of Temperature on Long Time Float Life







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