

# STARMAX

The world's leading battery brand



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

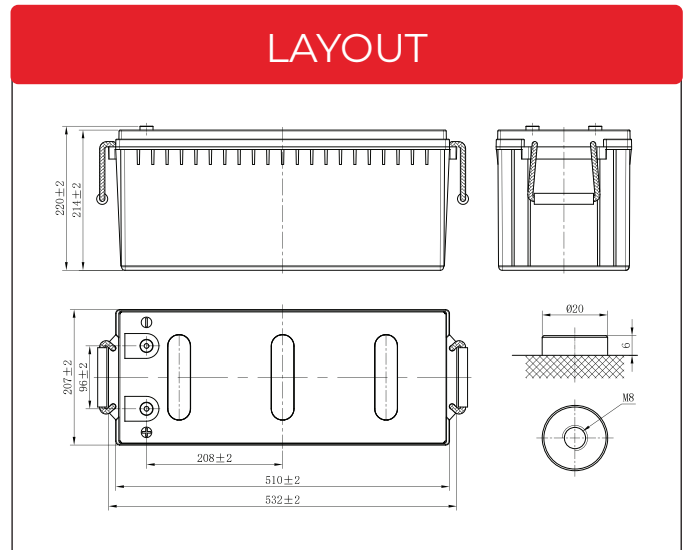
HRL 12605W(A)



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

# HRL Series

## HRL 12605W(A)



## 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
- ✓ 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)	605W/cell	
Nominal Capacity	(C <sub>10</sub> ,1.80V/cell)	140Ah	
Dimensions	Length	532±2mm (20.9 inches)	
	Width	207±2mm (8.14 inches)	
	Container height	214±2mm (8.42 inches)	
	Total height	220±2mm (8.66 inches)	
Approx. weight	55.0kg (121.3 lbs)		
Terminal	M8		
Container material	ABS: UL 94 HB or V-0 optional		
Rated capacity (25°C)	160.0 Ah	C10(16.0A,1.80V/cell)	
	148.8 Ah	C8(18.6A,1.80V/cell)	
	141.0 Ah	C5(28.2A,1.75V/cell)	
	124.8 Ah	C3(41.6A,1.75V/cell)	
	101.8 Ah	C1(101.8A,1.60V/cell)	
Max. discharge current	1600A (5s)		
Internal resistance (25°C)	Approx 3.3mΩ		
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)	40.0A		
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		

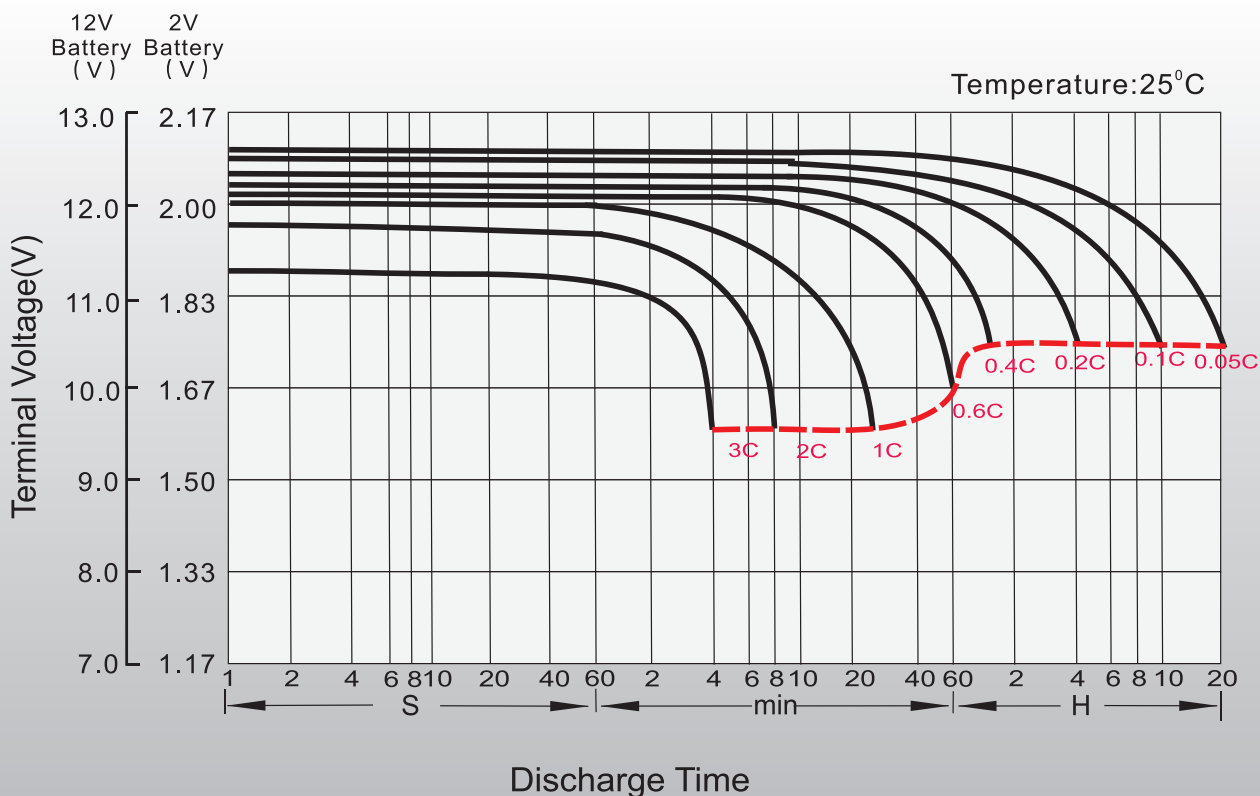
## Constant Current Discharge (Amperes) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	8h	10h
1.85V/cell	361.9	288.9	250.5	197.0	136.5	108.7	88.1	64.7	52.9	39.4	31.1	26.3	18.2	15.6
1.80V/cell	411.6	328.0	283.9	222.7	153.9	115.4	91.0	66.6	56.0	40.7	32.3	27.4	18.6	16.0
1.75V/cell	447.5	356.1	307.7	240.7	165.7	122.3	94.8	69.4	58.1	41.6	33.4	28.2	18.8	16.1
1.70V/cell	477.9	379.2	326.4	255.0	175.5	129.2	98.9	72.2	59.5	42.5	34.2	28.8	19.1	16.2
1.67V/cell	494.6	391.2	335.9	261.9	179.7	132.1	100.0	74.2	60.9	43.4	34.6	29.2	19.3	16.4
1.60V/cell	512.1	404.6	346.4	268.6	184.1	135.6	101.8	76.6	62.1	44.5	35.4	29.8	19.4	16.5

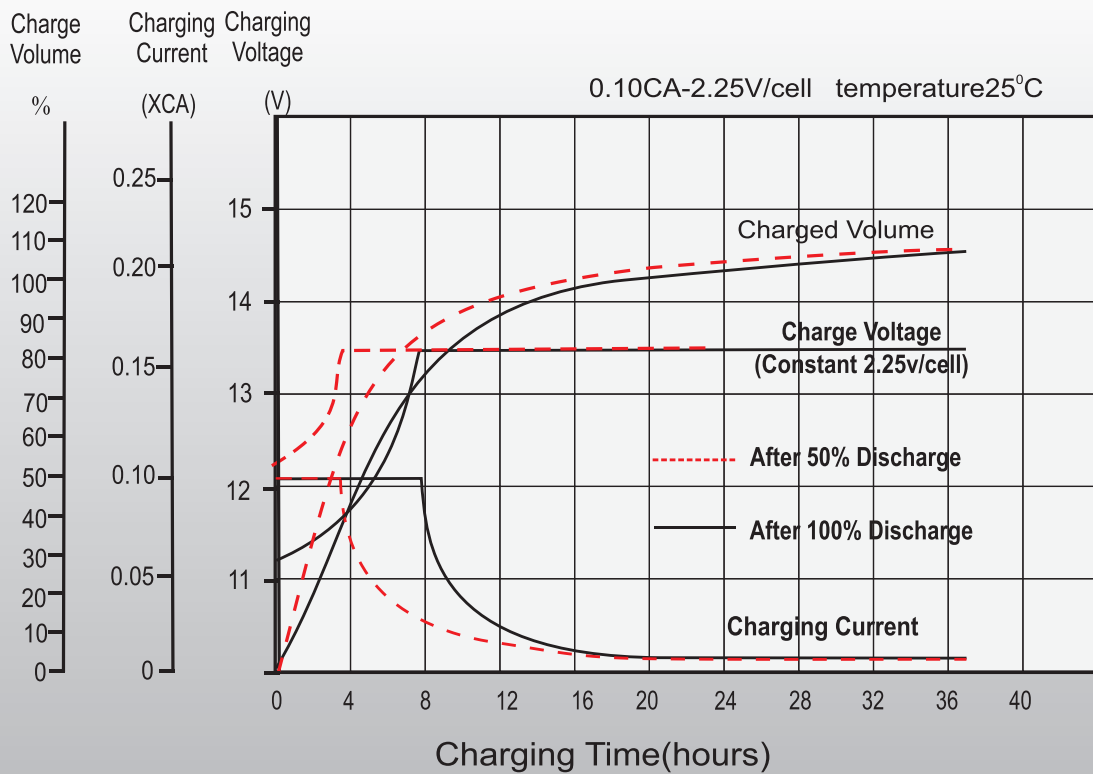
## Constant Power Discharge (Watts/cell) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	8h	10h
1.85V/cell	675.9	543.6	474.3	374.7	260.9	208.9	170.3	125.4	102.9	76.9	61.1	51.9	36.1	30.9
1.80V/cell	756.1	608.1	530.6	419.2	291.8	220.4	175.1	128.5	108.4	79.1	63.1	53.7	36.8	31.8
1.75V/cell	807.8	649.7	566.9	447.8	311.8	232.3	181.5	133.2	112.1	80.6	65.0	55.1	37.0	31.9
1.70V/cell	848.3	682.2	595.3	470.3	327.4	243.7	188.4	138.0	114.3	82.1	66.3	56.2	37.6	32.1
1.67V/cell	862.1	693.3	605.0	478.0	332.8	247.7	189.4	141.0	116.5	83.5	66.9	56.7	37.9	32.5
1.60V/cell	874.2	703.0	613.5	484.6	337.4	251.8	191.5	144.7	118.1	85.2	68.2	57.6	38.0	32.6

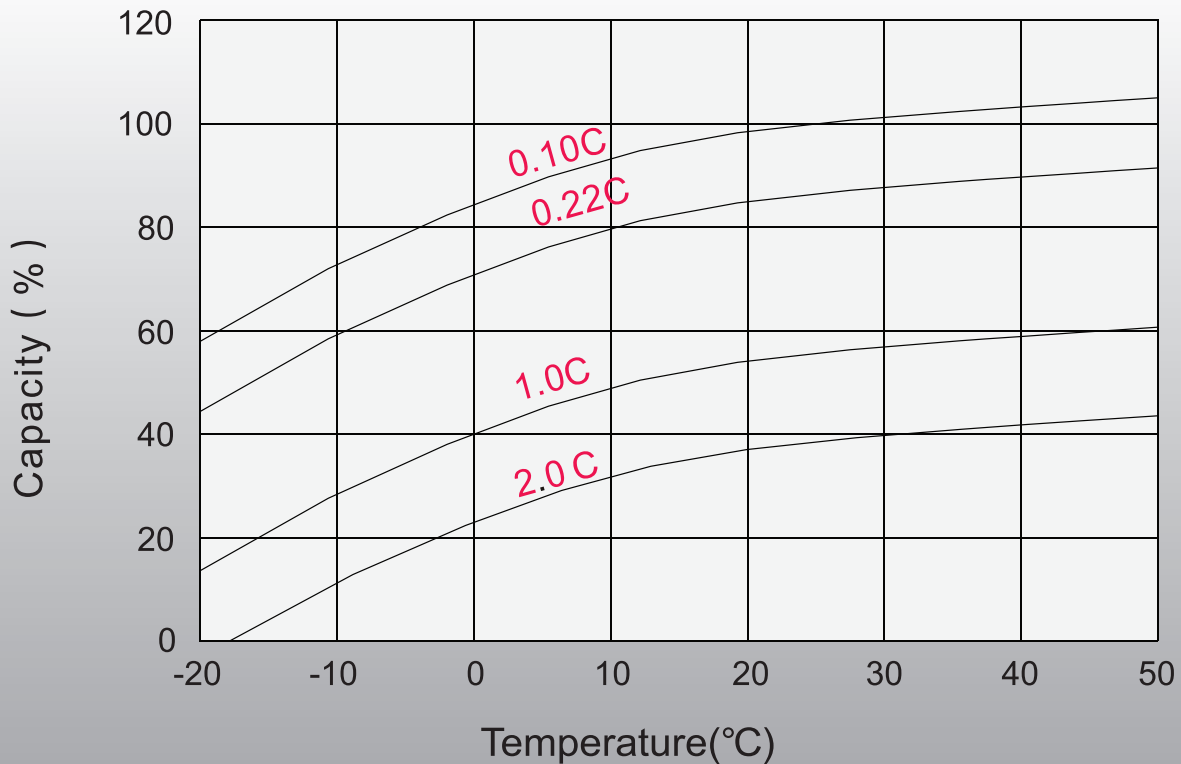
## Discharge Characteristics



# Float Charging Characteristics

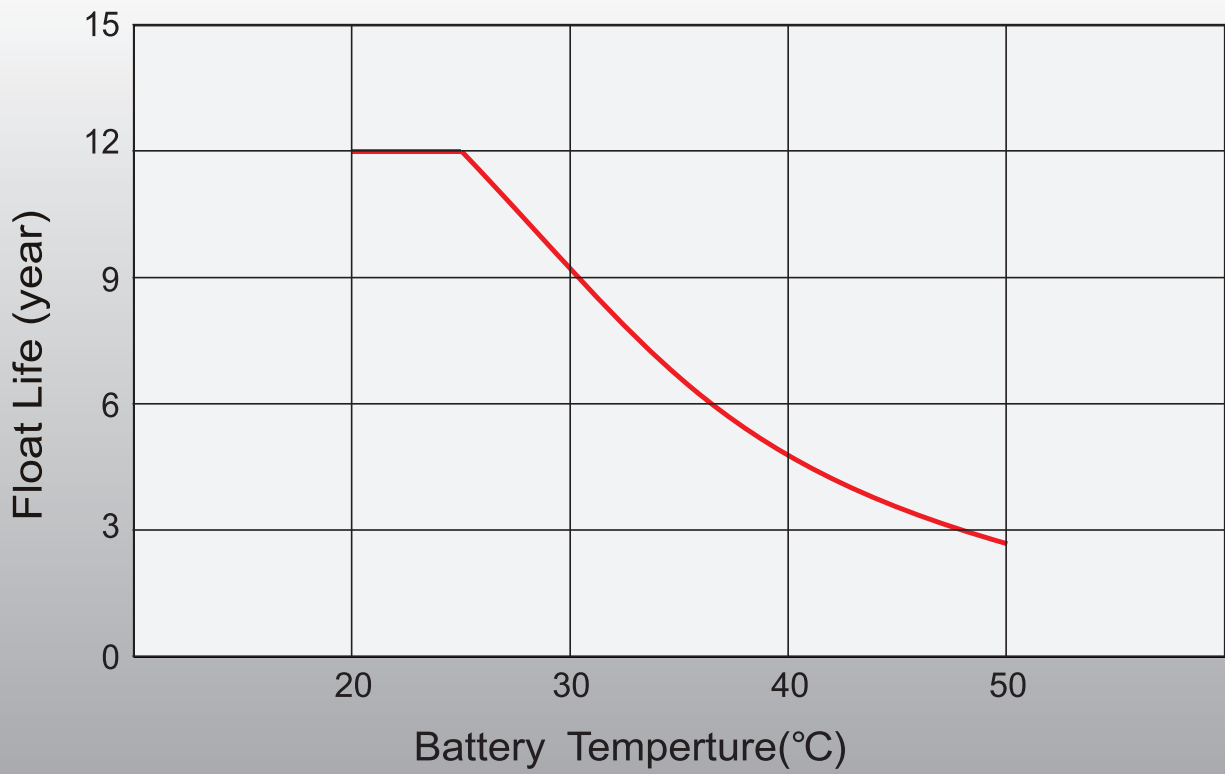


# Temperature Effects in Relation to Battery Capacity





# Effect of Temperature on Long Time Float Life





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