



The world's leading battery brand



HRL SERIES-LONG LIFE BATTERIES

HRL 12390W



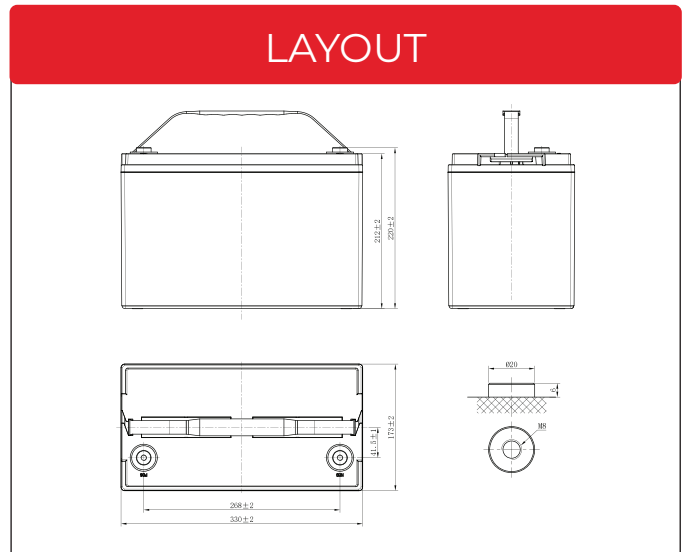
www.starmaxbatteries.com

HRL Series

HRL 12390W



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 ₁₅ ,1.67V/cell)	390W/cell	
Nominal Capacity	(C ₂₀ ,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	33.0kg (72.6 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)	
	96.8 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)	Charge voltage		Temp. Coefficient
	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		

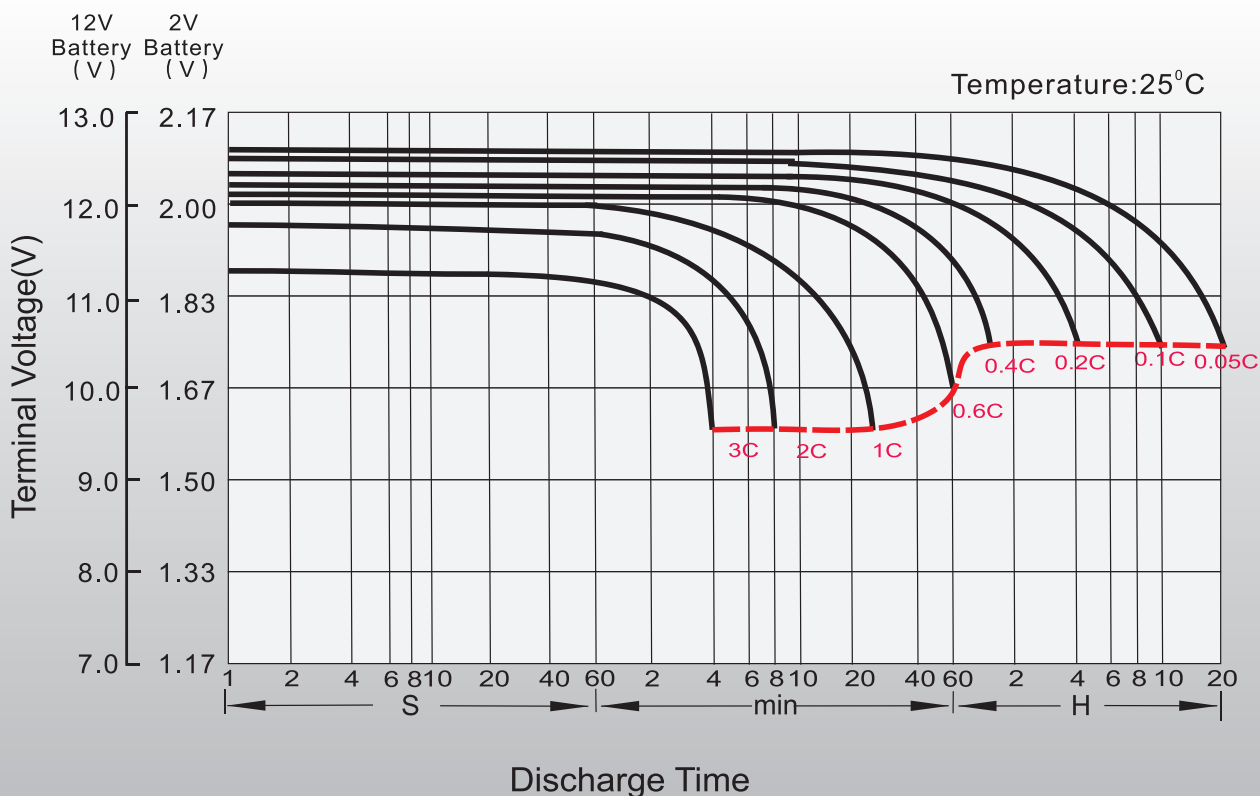
Constant Current Discharge (Amperes) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	8h	10h
1.85V/cell	233.3	186.3	161.5	127.0	88.0	67.9	55.0	40.4	33.1	24.6	19.5	16.5	11.4	9.73
1.80V/cell	265.3	211.4	183.0	143.6	99.2	72.1	56.9	41.6	35.0	25.4	20.2	17.1	11.6	10.0
1.75V/cell	288.5	229.5	198.3	155.2	106.8	76.5	59.2	43.3	36.3	26.0	20.9	17.6	11.7	10.0
1.70V/cell	308.1	244.5	210.4	164.4	113.1	80.8	61.8	45.2	37.2	26.5	21.4	18.0	11.9	10.1
1.67V/cell	318.8	252.2	216.5	168.8	115.8	82.6	62.5	46.3	38.1	27.1	21.6	18.2	12.0	10.3
1.60V/cell	330.1	260.8	223.3	173.2	118.7	84.7	63.6	47.9	38.8	27.8	22.1	18.6	12.1	10.3

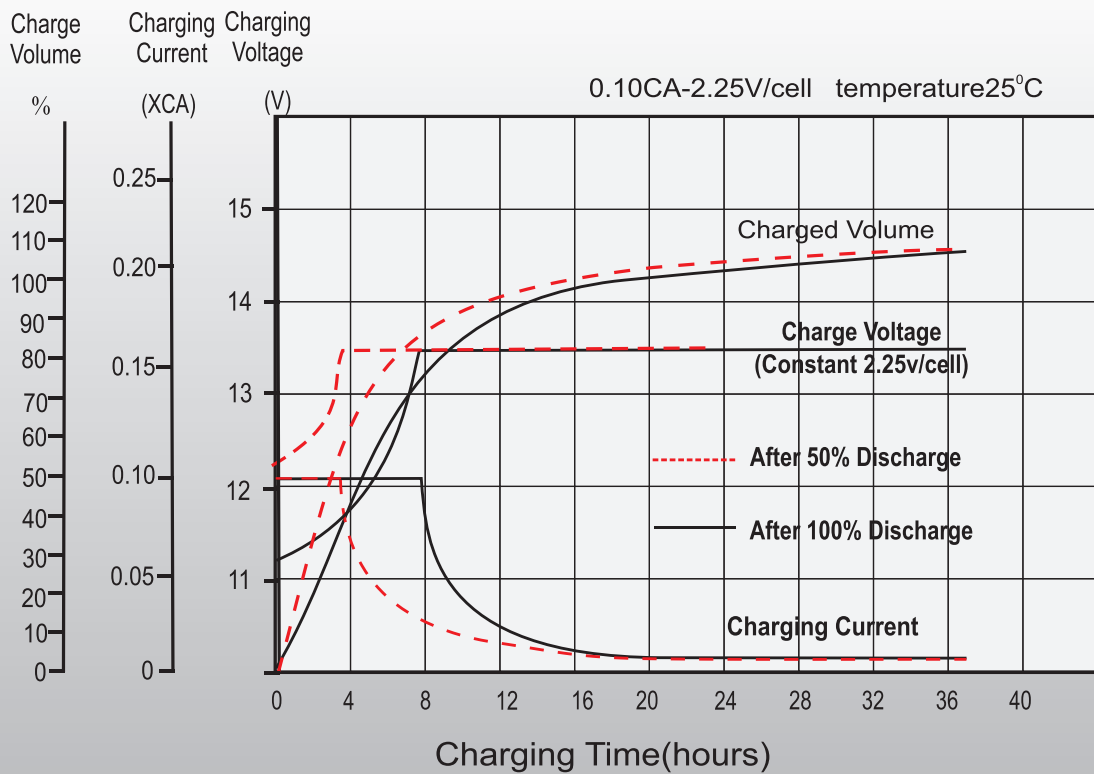
Constant Power Discharge (Watts/cell) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	8h	10h
1.85V/cell	435.7	350.4	305.8	241.6	168.2	130.6	106.5	78.3	64.3	48.1	38.2	32.4	22.6	19.3
1.80V/cell	487.4	392.0	342.0	270.2	188.1	137.7	109.4	80.3	67.7	49.5	39.4	33.6	23.0	19.9
1.75V/cell	520.7	418.8	365.4	288.7	201.0	145.2	113.4	83.2	70.0	50.4	40.6	34.4	23.1	19.9
1.70V/cell	546.9	439.8	383.8	303.2	211.1	152.3	117.8	86.3	71.4	51.3	41.4	35.1	23.5	20.0
1.67V/cell	555.8	446.9	390.0	308.1	214.5	154.8	118.4	88.1	72.8	52.2	41.8	35.4	23.7	20.3
1.60V/cell	563.5	453.2	395.5	312.4	217.5	157.4	119.7	90.4	73.8	53.2	42.6	36.0	23.8	20.4

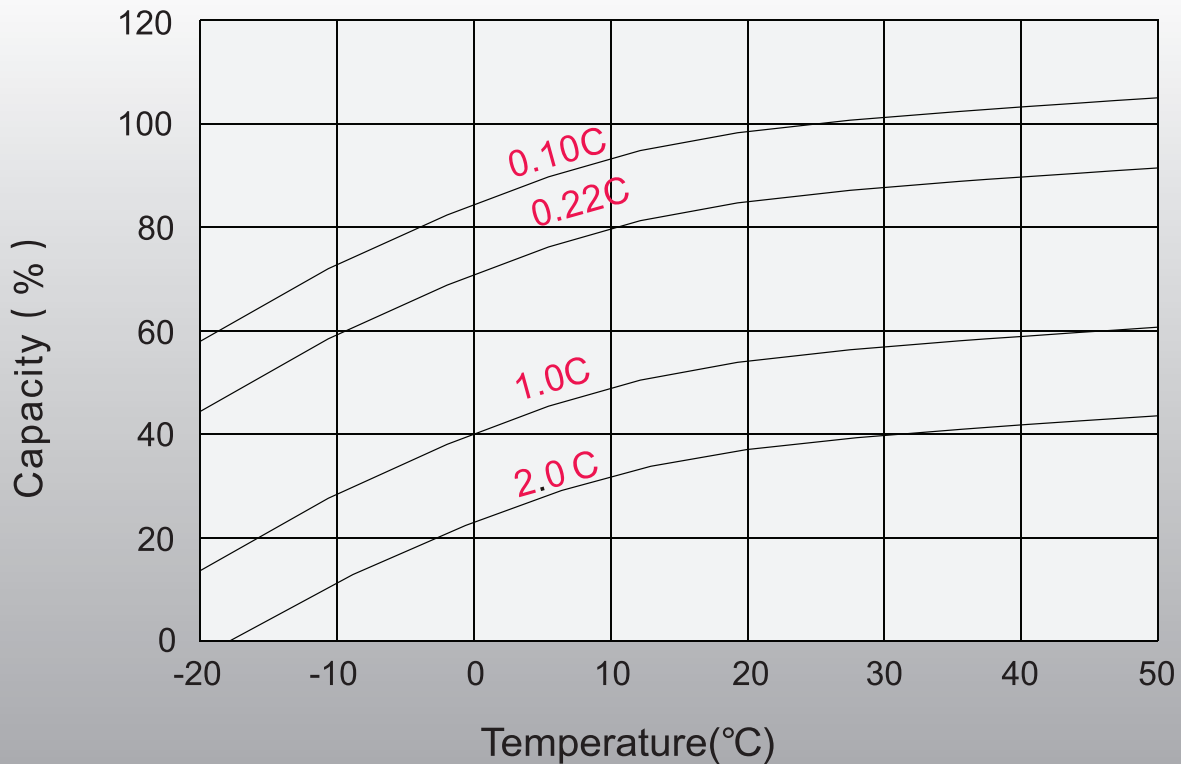
Discharge Characteristics



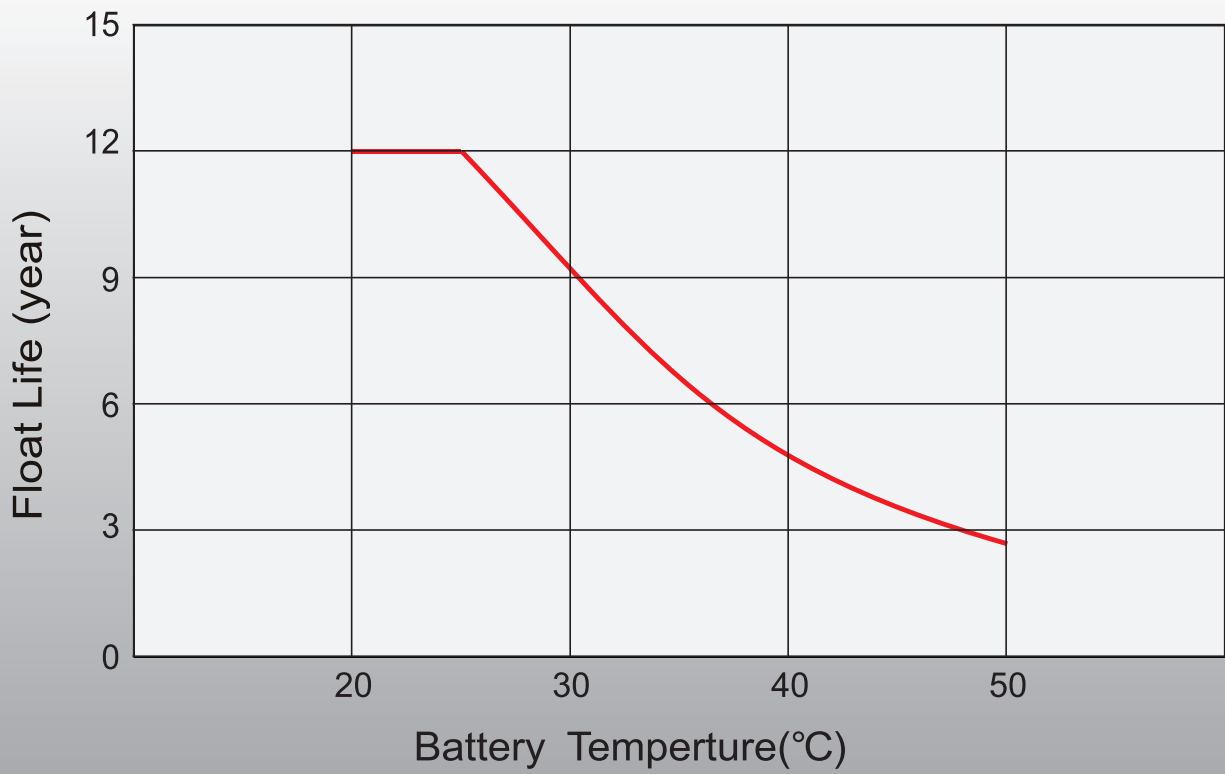
Float Charging Characteristics



Temperature Effects in Relation to Battery Capacity



Effect of Temperature on Long Time Float Life





Starmax Corporation

1585 Cliveden Avenue, Delta, British Columbia
V3M 6M1, Canada

Phone: +1 888 669 1310

Email: info@starmaxbatteries.com

Website: www.starmaxbatteries.com

