



The world's leading battery brand



HRL SERIES-LONG LIFE BATTERIES

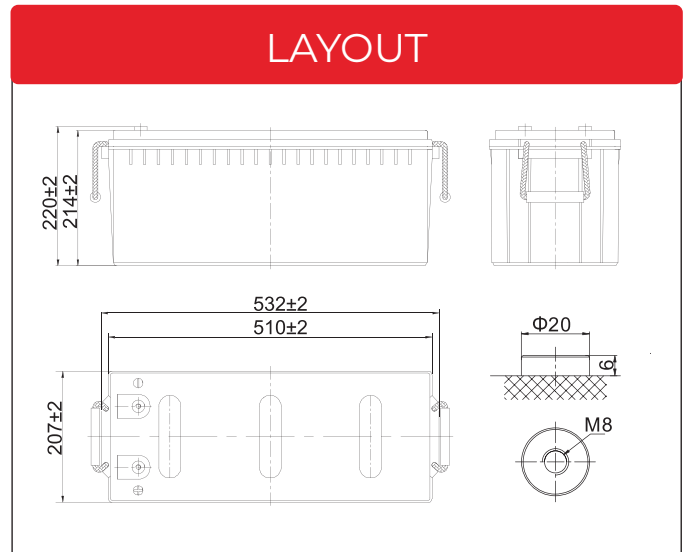
HRL 12705W



www.starmaxbatteries.com

HRL Series

HRL 12705W



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 ₁₅ ,1.67V/cell)	705W/cell	
Nominal Capacity	(C ₁₀ ,1.80V/cell)	190Ah	
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	59.0kg (130.1 lbs)		
Terminal	M8		
Container material	ABS: UL 94 HB or V-0		
Rated capacity (25°C)	190.0 Ah	C10(19.0A,1.80V/cell)	
	176.8 Ah	C8(22.1A,1.80V/cell)	
	167.5 Ah	C5(33.5A,1.75V/cell)	
	147.9 Ah	C3(49.3A,1.75V/cell)	
	120.9 Ah	C1(120.9A,1.60V/cell)	
Max. discharge current	1900A (5s)		
Internal resistance (25°C)	Approx 3.0mΩ		
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)	47.5A		
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		

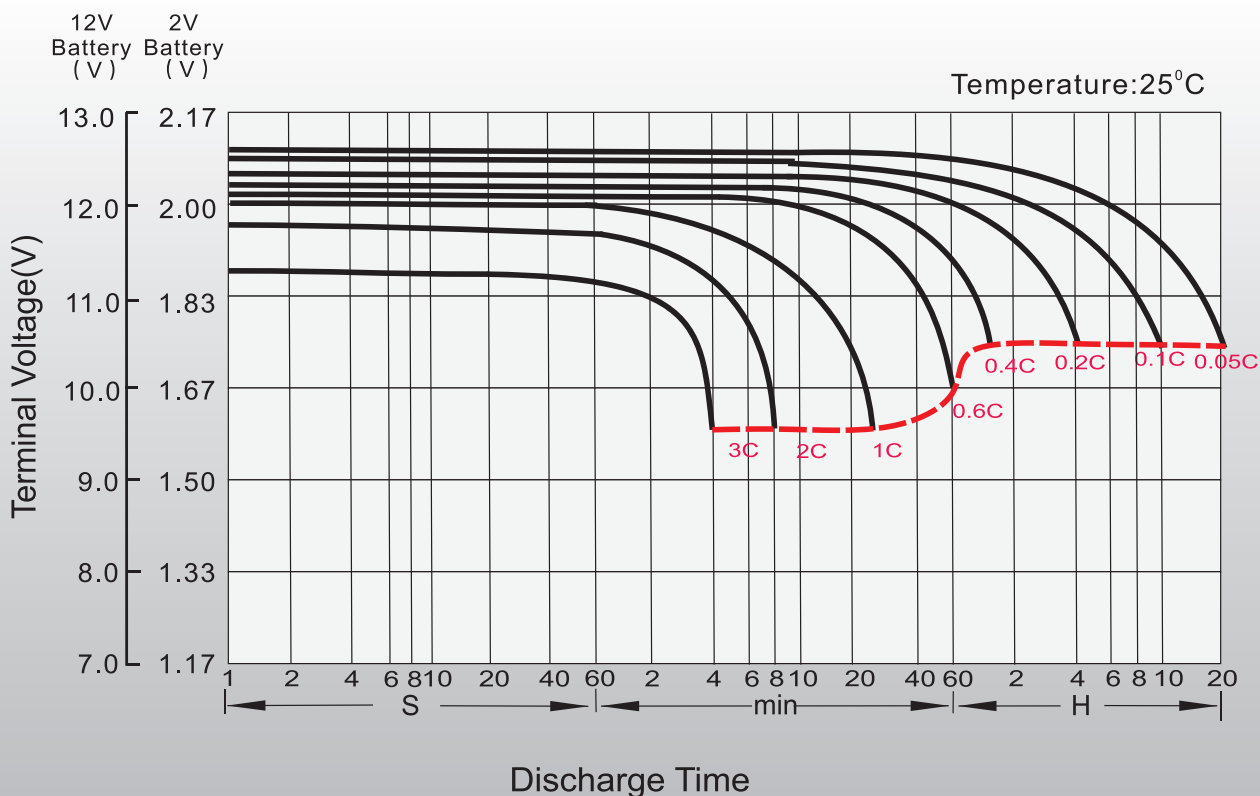
Constant Current Discharge (Amperes) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	8h	10h
1.85V/cell	418.7	334.3	289.8	227.9	157.9	129.0	104.6	76.8	62.8	46.8	37.0	31.3	21.6	18.5
1.80V/cell	476.2	379.5	328.5	257.7	178.1	137.0	108.1	79.1	66.5	48.3	38.3	32.5	22.1	19.0
1.75V/cell	517.3	411.5	355.6	278.2	191.5	145.3	112.5	82.4	69.0	49.3	39.6	33.5	22.3	19.1
1.70V/cell	553.0	438.8	377.7	295.0	203.1	152.5	117.5	85.8	70.7	50.4	40.6	34.2	22.6	19.2
1.67V/cell	572.3	452.7	388.7	303.0	207.9	156.6	118.7	88.1	72.4	51.5	41.1	34.7	22.9	19.5
1.60V/cell	592.5	468.2	400.7	310.8	213.0	160.5	120.9	91.0	73.8	52.8	42.0	35.3	23.0	19.6

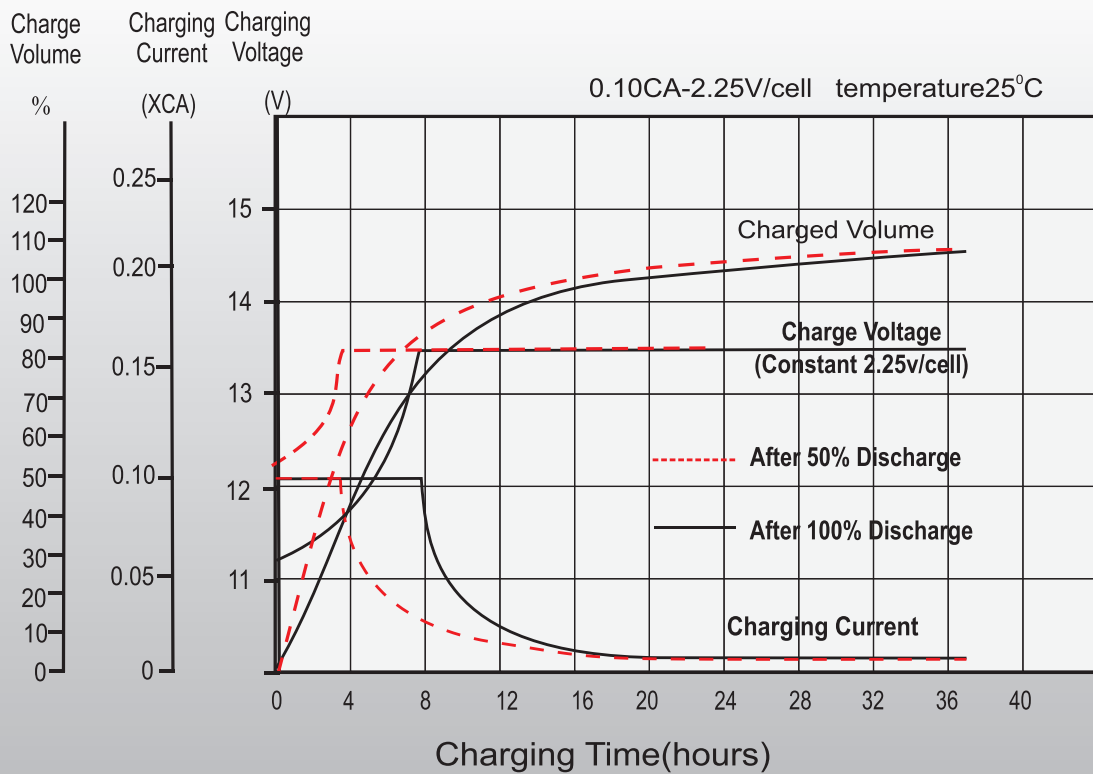
Constant Power Discharge (Watts/cell) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	8h	10h
1.85V/cell	782.0	628.9	548.8	433.6	301.8	248.1	202.3	148.9	122.2	91.4	72.5	61.6	42.9	36.8
1.80V/cell	874.8	703.5	613.9	485.0	337.6	261.7	207.9	152.5	128.7	94.0	75.0	63.8	43.7	37.7
1.75V/cell	933.7	750.9	655.2	517.6	360.4	275.8	215.5	158.1	133.1	95.7	77.2	65.4	44.0	37.8
1.70V/cell	981.5	789.4	688.8	544.2	378.8	287.5	223.7	163.9	135.7	97.5	78.7	66.7	44.6	38.1
1.67V/cell	997.5	802.2	700.0	553.0	385.0	293.7	224.9	167.4	138.4	99.1	79.5	67.3	45.0	38.6
1.60V/cell	1011.5	813.4	709.8	560.7	390.4	298.1	227.4	171.8	140.2	101.2	80.9	68.4	45.2	38.7

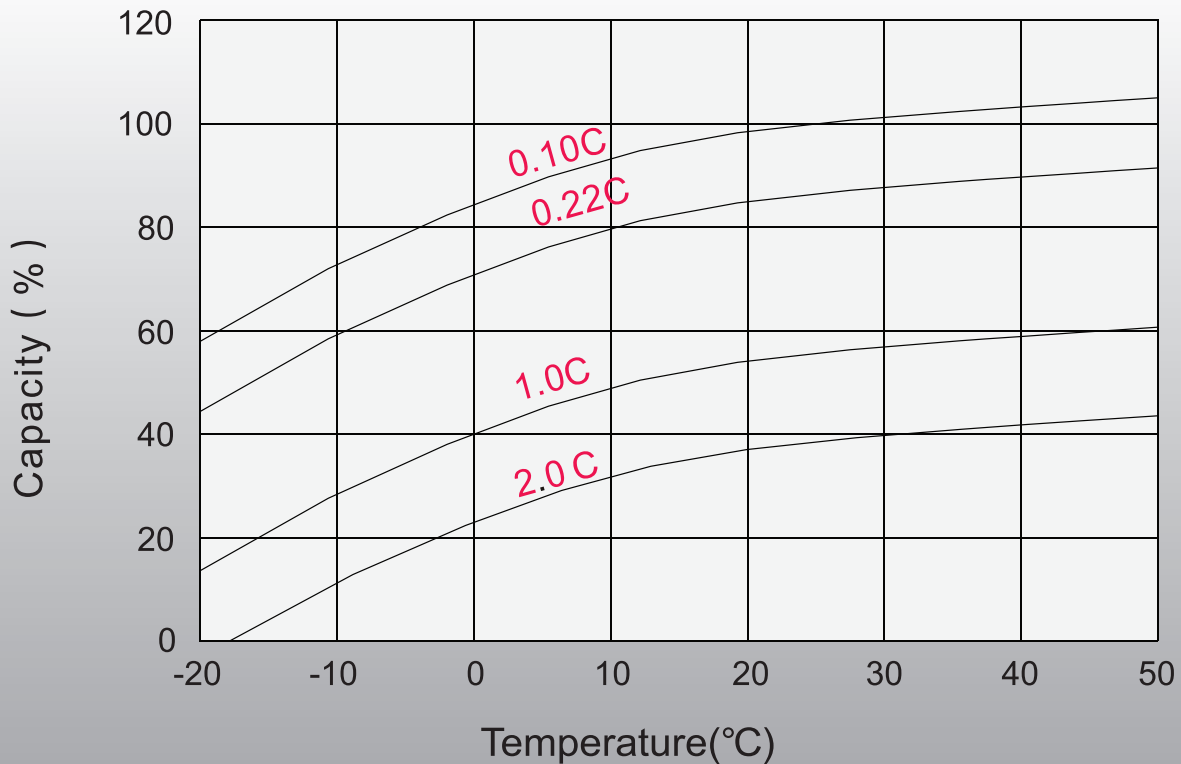
Discharge Characteristics



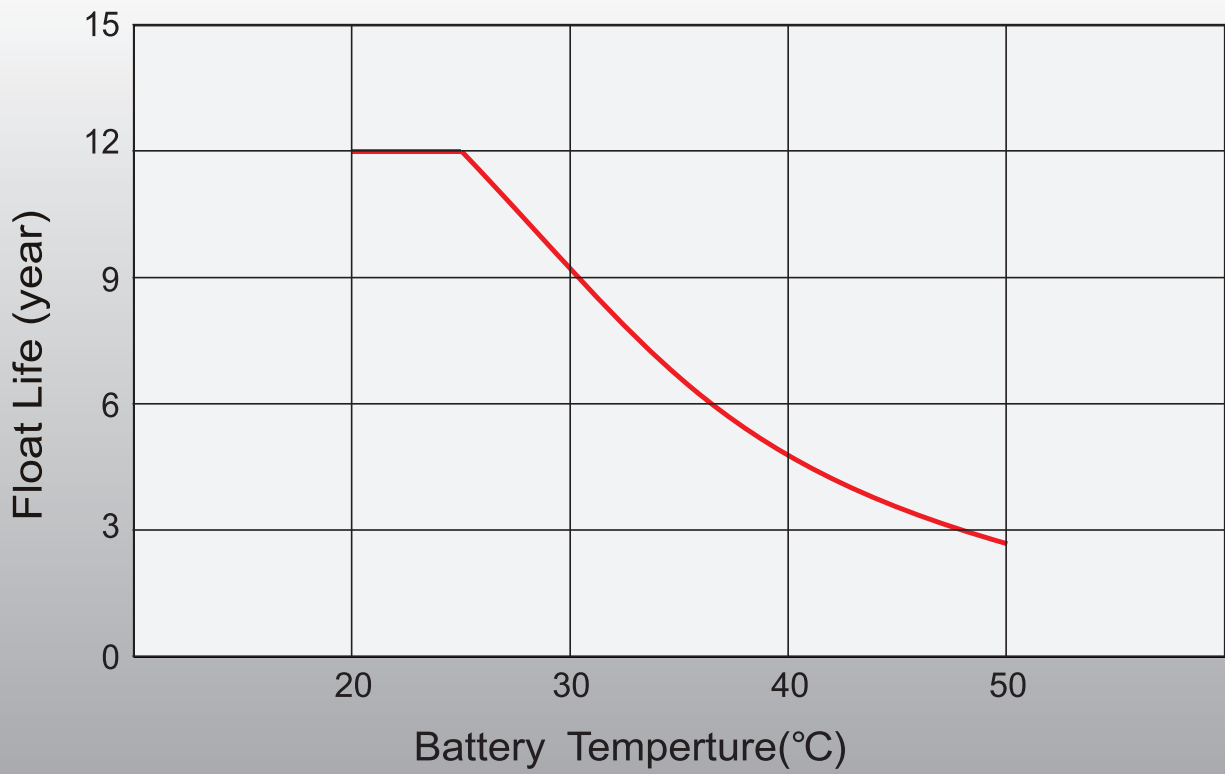
Float Charging Characteristics



Temperature Effects in Relation to Battery Capacity



Effect of Temperature on Long Time Float Life





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