

STARMAX

The world's leading battery brand



HRL SERIES-LONG LIFE **BATTERIES**

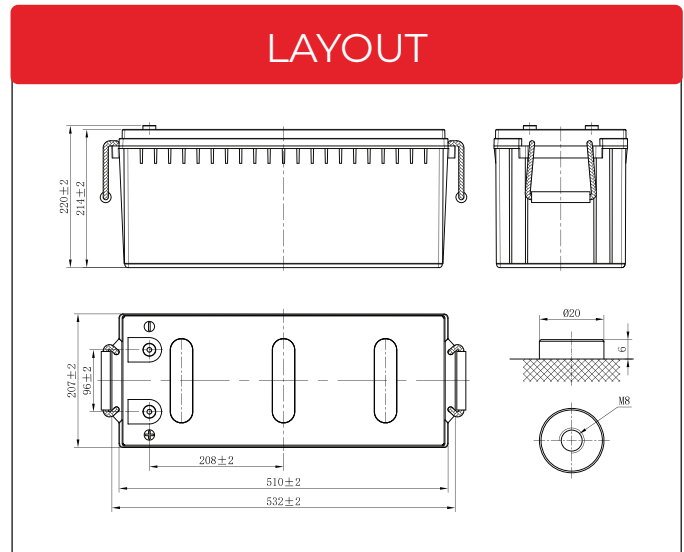
HRL 12650W



www.starmaxbatteries.com

HRL Series

HRL 12650W



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)	605W/cell	
Nominal Capacity	(C ₁₀ ,1.80V/cell)	170Ah	
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	57.0kg (125.7 lbs)		
Terminal	M8		
Container material	ABS: UL 94 HB or V-0 optional		
Rated capacity (25°C)	170.0 Ah	C10(17.0A,1.80V/cell)	
	157.6 Ah	C8(19.7A,1.80V/cell)	
	149.5 Ah	C5(29.9A,1.75V/cell)	
	132.6 Ah	C3(44.2A,1.75V/cell)	
	108.2 Ah	C1(108.2A,1.60V/cell)	
Max. discharge current	1700A (5s)		
Internal resistance (25°C)	Approx 3.2mΩ		
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)	42.5A		
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		

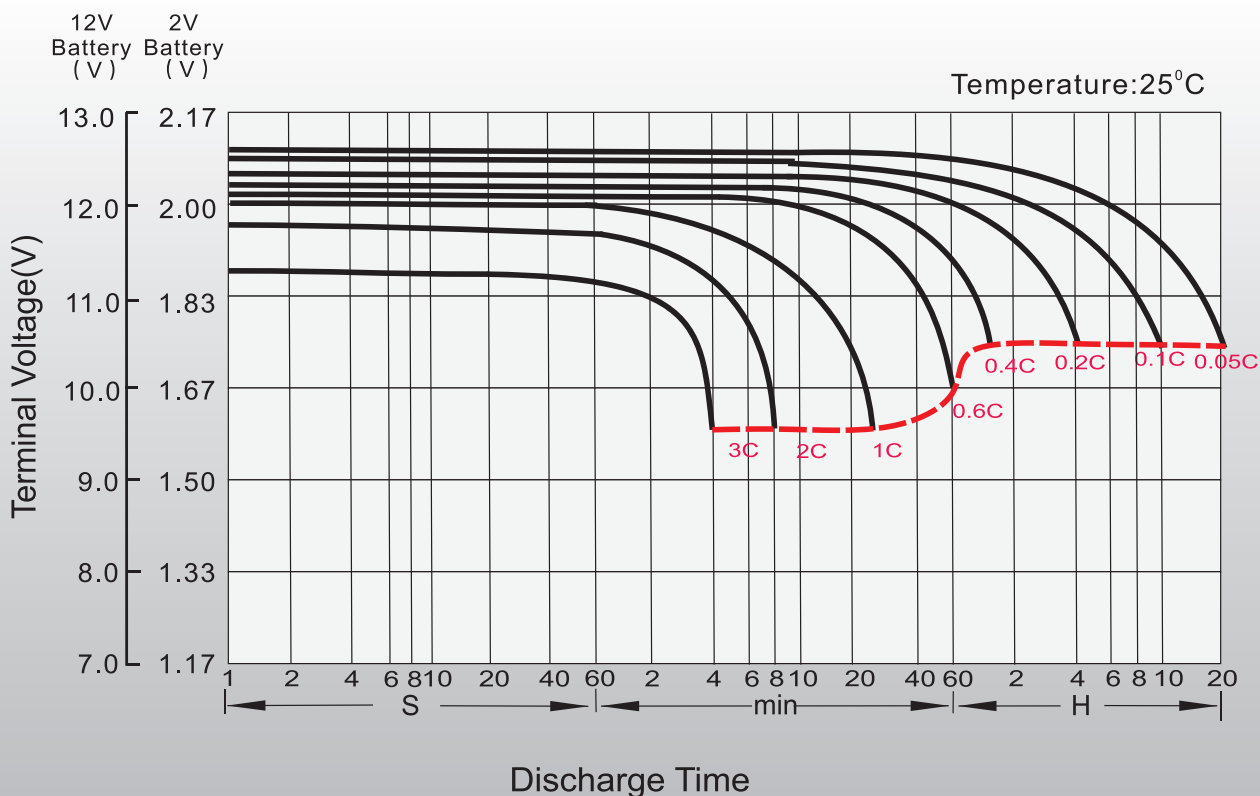
Constant Current Discharge (Amperes) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	8h	10h
1.85V/cell	388.8	310.4	269.1	211.7	146.7	115.5	93.6	68.7	56.2	41.8	33.1	28.0	19.3	16.5
1.80V/cell	442.2	352.4	305.0	239.3	165.4	122.6	96.7	70.8	59.5	43.2	34.3	29.1	19.7	17.0
1.75V/cell	480.8	382.6	330.5	258.6	178.1	130.0	100.7	73.7	61.8	44.2	35.5	29.9	19.9	17.1
1.70V/cell	513.5	407.4	350.7	273.9	188.6	137.3	105.1	76.8	63.2	45.1	36.3	30.6	20.2	17.2
1.67V/cell	531.4	420.3	360.9	281.4	193.1	140.4	106.2	78.8	64.8	46.1	36.8	31.0	20.5	17.5
1.60V/cell	550.2	434.7	372.1	288.6	197.8	144.0	108.2	81.4	66.0	47.3	37.6	31.6	20.6	17.5

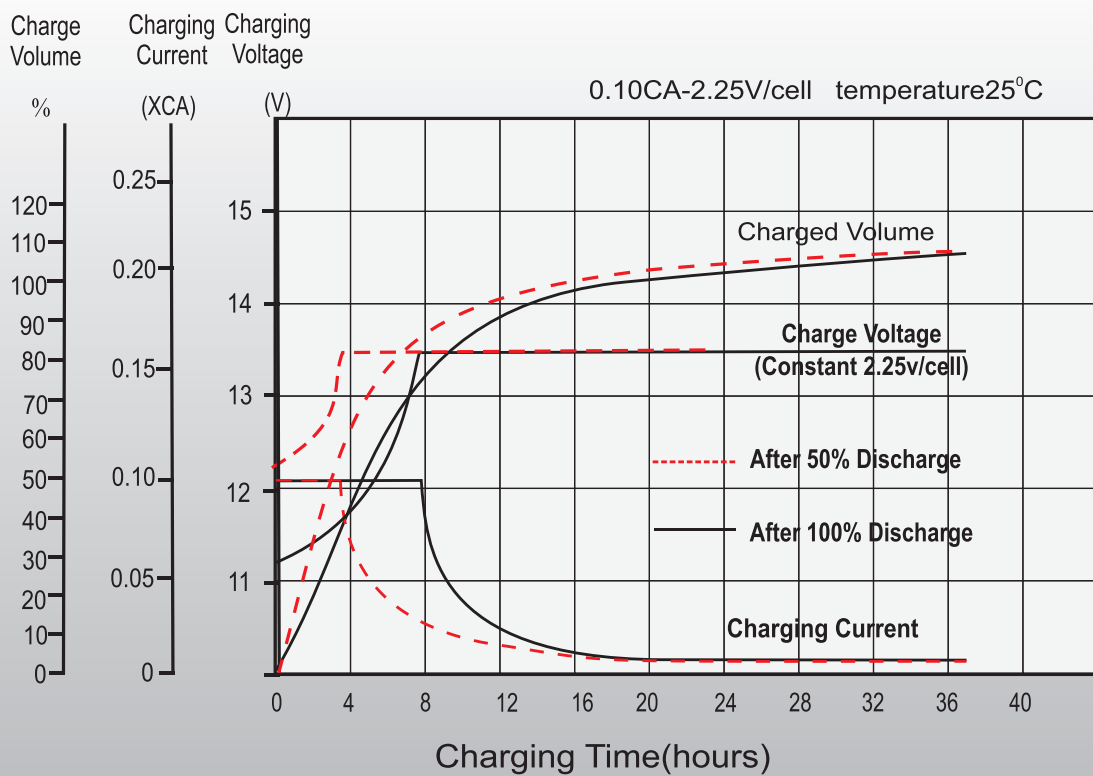
Constant Power Discharge (Watts/cell) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	8h	10h
1.85V/cell	726.2	584.0	509.6	402.6	280.3	222.0	181.0	133.2	109.3	81.8	64.9	55.1	38.4	32.9
1.80V/cell	812.3	653.3	570.1	450.3	313.5	234.2	186.0	136.5	115.2	84.1	67.1	57.1	39.1	33.8
1.75V/cell	867.9	698.0	609.1	481.1	335.0	246.8	192.8	141.5	119.1	85.7	69.1	58.5	39.3	33.9
1.70V/cell	911.4	733.0	639.6	505.3	351.8	258.9	200.2	146.7	121.4	87.2	70.4	59.7	39.9	34.1
1.67V/cell	926.3	744.9	650.0	513.5	357.5	263.2	201.2	149.8	123.8	88.7	71.1	60.2	40.3	34.5
1.60V/cell	939.2	755.3	659.1	520.7	362.5	267.6	203.5	153.7	125.4	90.5	72.4	61.2	40.4	34.7

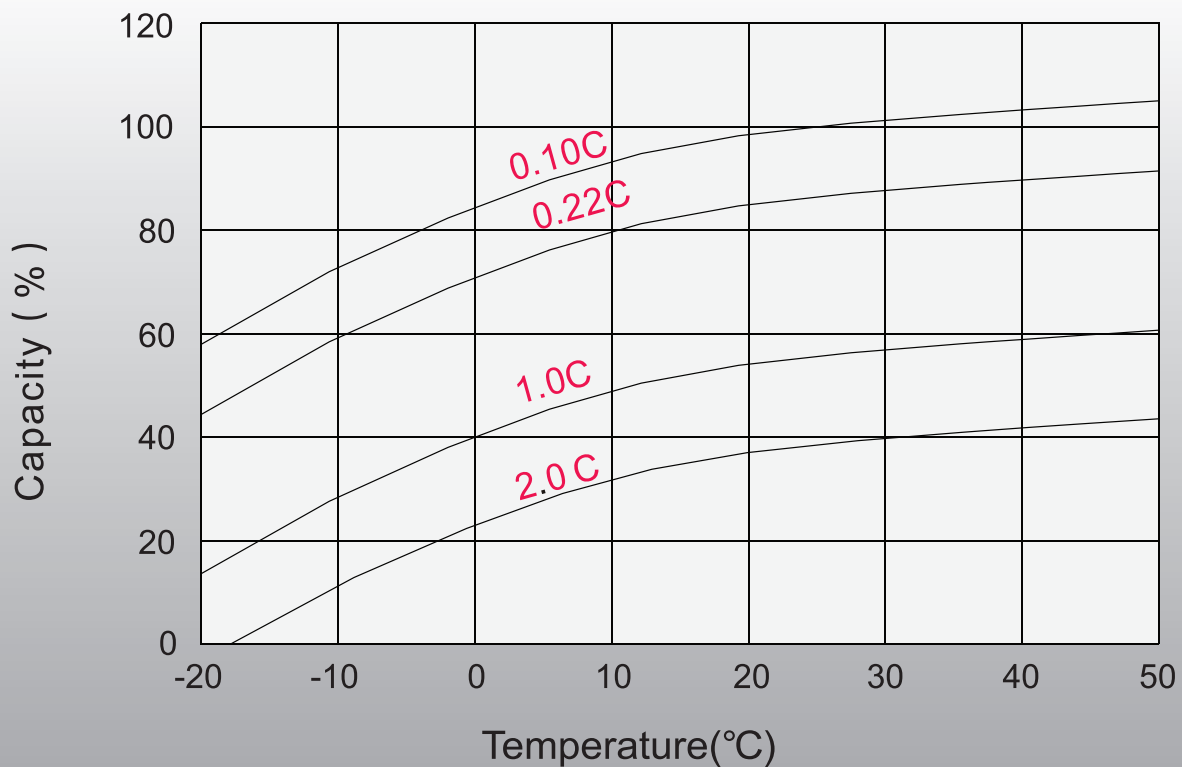
Discharge Characteristics



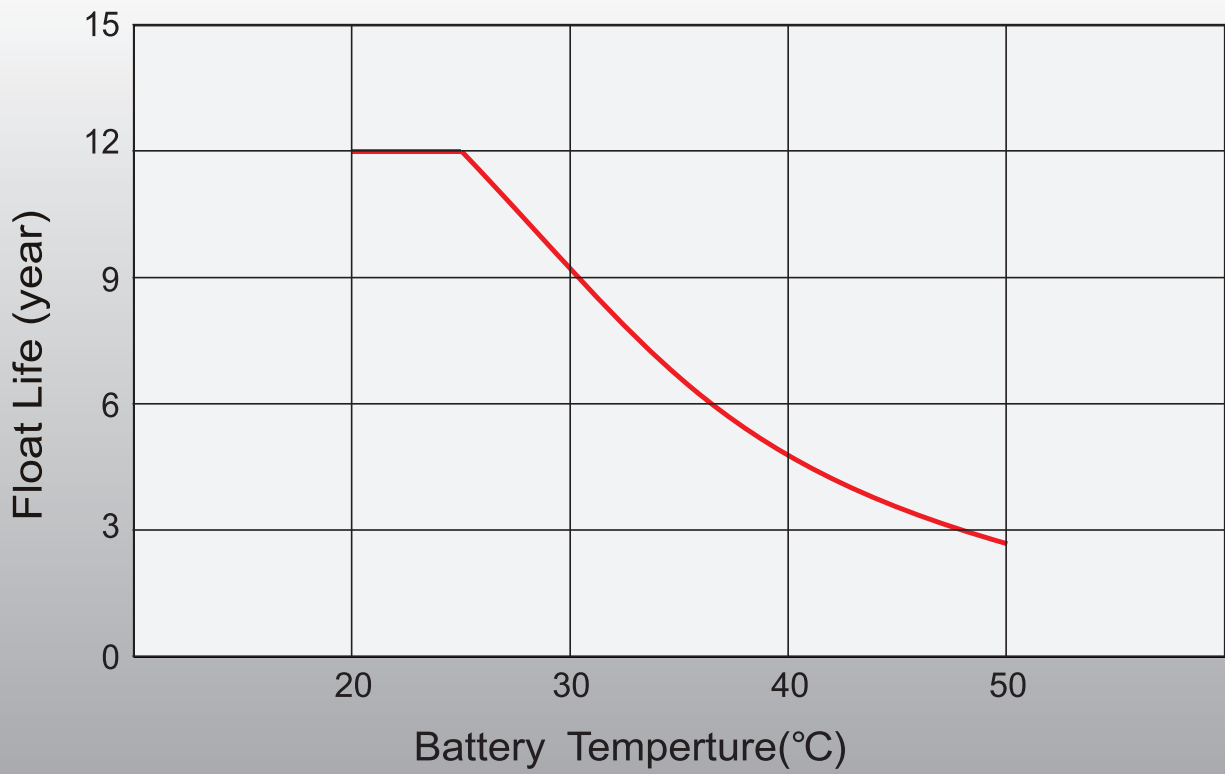
Float Charging Characteristics



Temperature Effects in Relation to Battery Capacity



Effect of Temperature on Long Time Float Life





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