



IEEE/UL Battery
Sizing by
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LHR Series-High Rate

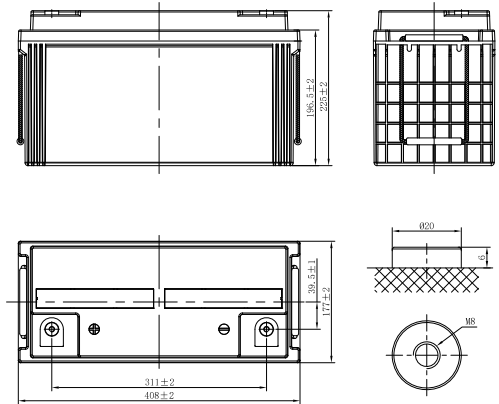
LHR12450W(12V450W)



Specifications

Rated Voltage	12V		
Nominal Rate(W ₁₅ , 1.67V/cell)	450W/cell		
Nominal Capacity(C ₁₀ , 1.80V/cell)	115Ah		
Dimension	Length	408±2mm (16.1 inches)	
	Width	177±2mm (6.97 inches)	
	Container Height	225±2mm (8.86 inches)	
	Total Height	225±2mm (8.86 inches)	
Approx Weight	37.1kg (81.8 lbs)		
Terminal	M8		
Container Material	ABS: UL 94 HB or V-0 optional		
Rated Capacity(25°C)	115.0 Ah	C10(11.5A, 1.80V/cell)	
	107.2 Ah	C8(13.4A, 1.80V/cell)	
	101.0 Ah	C5(20.2A, 1.75V/cell)	
	89.7 Ah	C3(29.9A, 1.75V/cell)	
	73.2 Ah	C1(73.2A, 1.60V/cell)	
Max. Discharge Current	1150A (5s)		
Internal Resistance(25°C)	Approx 4.0mΩ		
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)	28.75A		
Charge voltage(25°C)	Float	Charge voltage	Temp. Coefficient
	Equalization	2.25 ~ 2.30V/cell	-3mV/cell/°C
Effect of temp. to Capacity	40°C (104°F)	2.30~2.40V/cell	-4mV/cell/°C
	25°C (77°F)	106%	
	0°C (32°F)	100%	
Self Discharge	≤3%/month @ 25°C		
			86%

Layout



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	269.2	214.9	186.3	146.5	101.5	78.1	63.3	46.5	38.0	28.3	22.4	18.9	13.1	11.2
1.80V/cell	306.1	243.9	211.2	165.7	114.5	82.9	65.4	47.9	40.2	29.2	23.2	19.7	13.4	11.5
1.75V/cell	332.9	264.8	228.8	179.0	123.3	87.9	68.1	49.8	41.8	29.9	24.0	20.2	13.5	11.5
1.70V/cell	355.5	282.1	242.8	189.6	130.5	92.9	71.1	51.9	42.8	30.5	24.6	20.7	13.7	11.6
1.67V/cell	367.9	291.0	249.9	194.8	133.7	95.0	71.9	53.3	43.8	31.2	24.9	21.0	13.9	11.8
1.60V/cell	380.9	301.0	257.6	199.8	136.9	97.4	73.2	55.1	44.7	32.0	25.4	21.4	13.9	11.9

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	502.7	404.3	352.8	278.7	194.0	150.2	122.4	90.1	73.9	55.3	43.9	37.3	26.0	22.2
1.80V/cell	562.4	452.3	394.7	311.8	217.1	158.4	125.8	92.3	77.9	56.9	45.4	38.6	26.4	22.8
1.75V/cell	600.9	483.2	421.7	333.1	231.9	167.0	130.4	95.7	80.6	57.9	46.7	39.6	26.6	22.9
1.70V/cell	631.0	507.4	442.8	349.8	243.5	175.2	135.4	99.2	82.1	59.0	47.6	40.4	27.0	23.0
1.67V/cell	641.3	515.7	450.0	355.5	247.5	178.0	136.1	101.3	83.7	60.0	48.1	40.7	27.2	23.4
1.60V/cell	650.2	522.9	456.3	360.5	251.0	181.0	137.7	104.0	84.9	61.2	49.0	41.4	27.3	23.5



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Applications

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

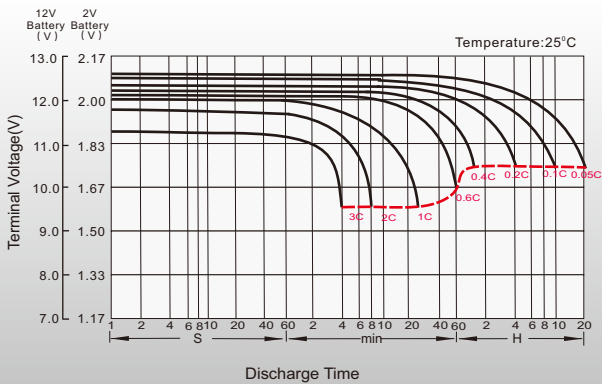
General Features

- 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

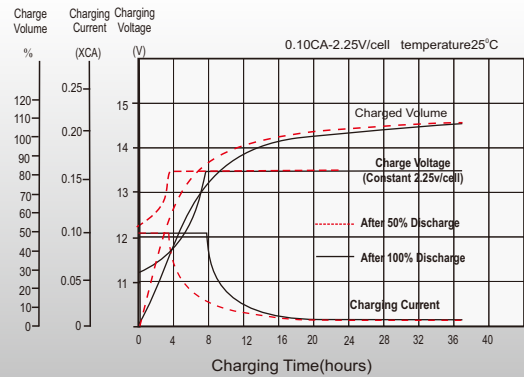
Standards

- Compliance with IEC 60896 and YD/T 3427 standards
- Manufactured in Leoch@IATF16949, ISO 45001, ISO 9001 and ISO 14001 certified production facilities

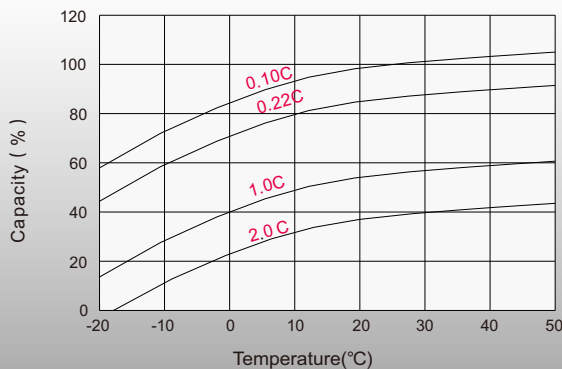
Discharge Characteristics



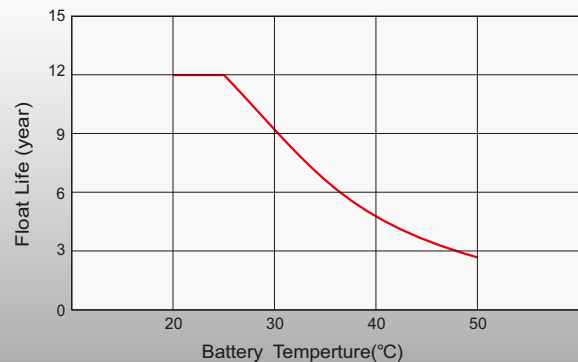
Float Charging Characteristics



Temperature Effects in Relation to Battery Capacity



Temperature Effects on Long Term Float Life



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