



# LHR Series-High Rate

## LHR12420W(12V420W)

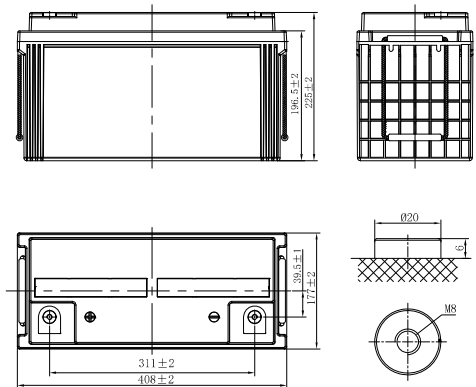


### Specifications

Rated Voltage	12V		
Nominal Rate(W <sub>15</sub> , 1.67V/cell)	420W/cell		
Nominal Capacity(C <sub>10</sub> , 1.80V/cell)	110Ah		
Dimension	Length	408±2mm (16.1 inches)	
	Width	177±2mm (6.97 inches)	
	Container Height	225±2mm (8.85 inches)	
	Total Height	225±2mm (8.85 inches)	
Approx Weight	35.3kg (77.8 lbs)		
Terminal	M8		
Container Material	ABS: UL 94 HB or V-0		
Rated Capacity(25°C)	110.0 Ah	C10(11.0A, 1.80V/cell)	
	102.4 Ah	C8(12.8A, 1.80V/cell)	
	97.0 Ah	C5(19.4A, 1.75V/cell)	
	85.8 Ah	C3(28.6A, 1.75V/cell)	
	70.0 Ah	C1(70.0A, 1.60V/cell)	
Max. Discharge Current	1100A (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)	27.5A		
Charge voltage(25°C)	Charge voltage	Temp. Coefficient	
	Float	2.25 ~ 2.30V/cell	-3mV/cell/°C
Effect of temp. to Capacity	Equalization	2.30~2.40V/cell	-4mV/cell/°C
	40°C (104°F)		106%
	25°C (77°F)		100%
Self Discharge	0°C (32°F)		86%
			≤3%/month @ 25°C



### 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	251.2	200.6	173.9	136.8	94.8	74.7	60.5	44.5	36.4	27.1	21.4	18.1	12.5	10.7
1.80V/cell	285.7	227.7	197.1	154.6	106.9	79.3	62.6	45.8	38.5	28.0	22.2	18.8	12.8	11.0
1.75V/cell	310.4	246.9	213.4	166.9	114.9	84.1	65.2	47.7	40.0	28.6	22.9	19.4	12.9	11.1
1.70V/cell	331.8	263.3	226.6	177.0	121.8	88.3	68.0	49.7	40.9	29.2	23.5	19.8	13.1	11.2
1.67V/cell	343.4	271.6	233.2	181.8	124.8	90.7	68.7	51.0	41.9	29.8	23.8	20.1	13.2	11.3
1.60V/cell	355.5	280.9	240.4	186.5	127.8	92.9	70.0	52.7	42.7	30.6	24.3	20.5	13.3	11.4

### 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	469.2	377.4	329.3	260.1	184.4	143.6	117.1	86.2	70.7	52.9	42.0	35.7	24.8	21.3
1.80V/cell	524.9	422.1	368.3	291.0	206.3	151.5	120.4	88.3	74.5	54.4	43.4	36.9	25.3	21.8
1.75V/cell	560.2	450.5	393.1	310.6	220.1	159.7	124.8	91.5	77.1	55.4	44.7	37.9	25.5	21.9
1.70V/cell	588.9	473.6	413.3	326.5	231.4	166.4	129.5	94.9	78.6	56.4	45.6	38.6	25.8	22.0
1.67V/cell	598.5	481.3	420.0	331.8	235.2	170.0	130.2	96.9	80.1	57.4	46.0	39.0	26.1	22.4
1.60V/cell	606.9	488.1	425.9	336.4	238.5	172.6	131.7	99.5	81.2	58.6	46.9	39.6	26.1	22.4



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### Applications

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

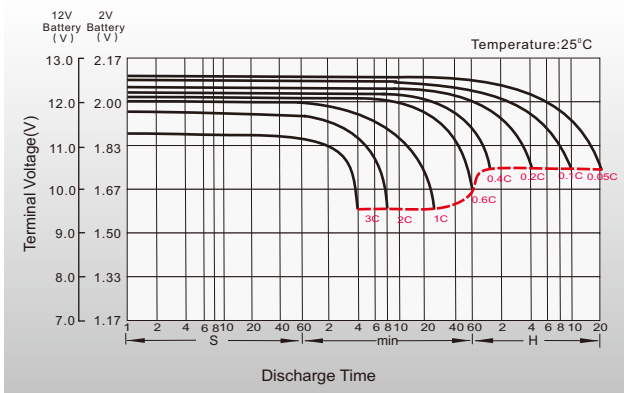
### General Features

- 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

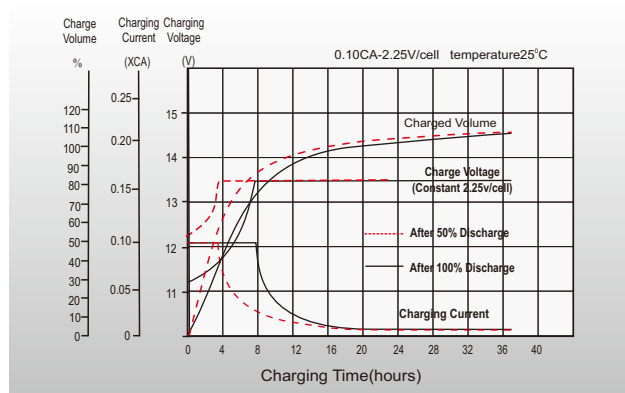
### Standards

- Compliance with IEC 60896 standards
- Classified as "Long Life" according to Eurobat
- CE, UL, IEC Certified
- Manufactured in Leoch@IATF16949, ISO 45001, ISO 9001 and ISO 14001 certified production facilities

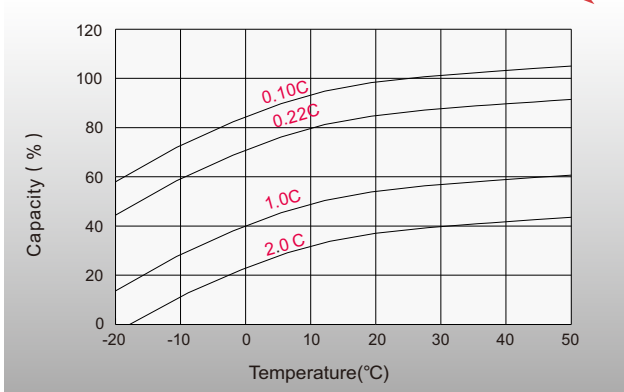
### Discharge Characteristics



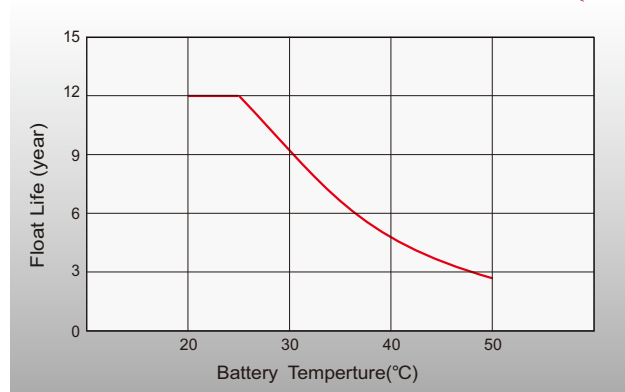
### Float Charging Characteristics



### Temperature Effects in Relation to Battery Capacity



### Effect of Temperature on Long Term Float Life



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