



# HR12-450WL

## Specification

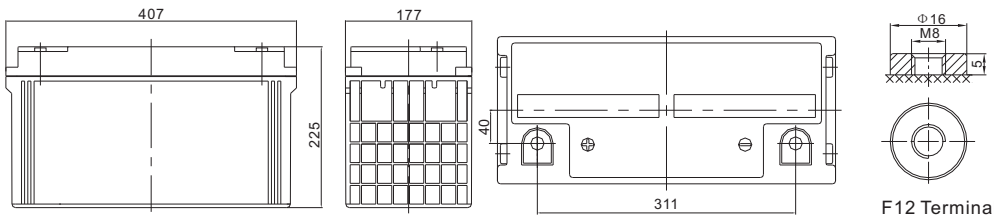


The HR (High Rate) series Valve Regulated Lead Acid (VRLA) battery is designed for heavy load discharge applications with 15 years design life in float service. By using strong grids and specially designed active material the HR series is with lower I.R, lower self discharge rate, high power, and longer service life performance. Generally the HR series offers 30% more power output than the standard range. Suitable for high power standby and cycling situation, such as UPS, datacenter, electric tools et al.

Cells Per Unit	6
Voltage Per Unit	12
Capacity	450W@15min-rate to 1.67V per cell @25°C
Weight	Approx. 38.0 Kg (Tolerance ±2.0%)
Internal Resistance	Approx. 4.0 mΩ
Terminal	F12(M8)
Max. Discharge Current	1200A (5 sec)
Short Circuit Current	3000A
Design Life	Could Reach 15 years
Recommended Maximum Charging Current	36 A
Reference Capacity	C10 113.2AH C20 120.0AH
Standby Use Voltage	13.6 V~13.8 V @ 25°C
Cycle Use Voltage	14.6 V~14.8 V @ 25°C
Operating Temperature Range	Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C
Normal Operating Temperature Range	25°C ±5°C
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C. Please charge batteries before using.
Constainer Material	A.B.S. UL94-HB, UL94-V0 Optional.



## Dimensions



Length	407±1mm (16.0 inches)
Width	177±1mm (6.97 inches)
Height	225±1mm (8.86 inches)
Total Height	225±1mm (8.86 inches)
Terminal	Value
M5	6~7 N*m
M6	8~10 N*m
M8	10~12 N*m

F12 Terminal

Unit: mm

### Constant Current Discharge Characteristics : A (25°C)

F.V/Time	5MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	424.2	363.3	326.7	259.5	208.5	152.8	87.9	65.1
1.67V	392.5	340.8	306.6	246.0	194.5	145.7	83.7	62.0
1.70V	376.2	328.8	295.5	238.4	187.1	141.6	81.3	60.1
1.75V	355.3	312.3	277.5	227.3	181.9	137.6	80.0	58.7
1.80V	334.2	295.9	259.3	215.9	176.6	133.4	78.4	57.3
1.85V	311.9	278.2	240.4	203.6	170.4	128.4	76.5	55.6

### Constant Power Discharge Characteristics : WPC (25°C)

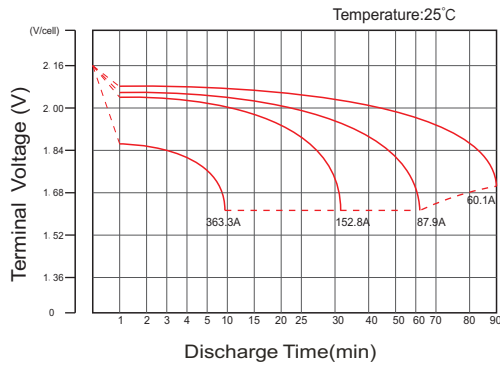
F.V/Time	5MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	757	657	595	475	383	282	162	121
1.67V	707	623	563	455	361	271	156	116
1.70V	686	608	550	446	351	266	154	114
1.75V	656	585	523	431	346	262	153	113
1.80V	626	562	496	415	341	258	152	112
1.85V	596	539	469	399	335	253	152	111

(Note) The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values.

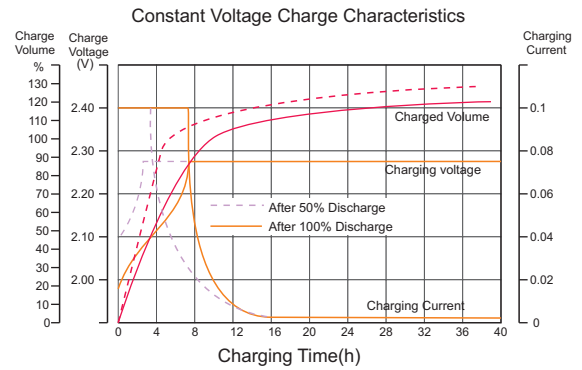
# HR12-450WL



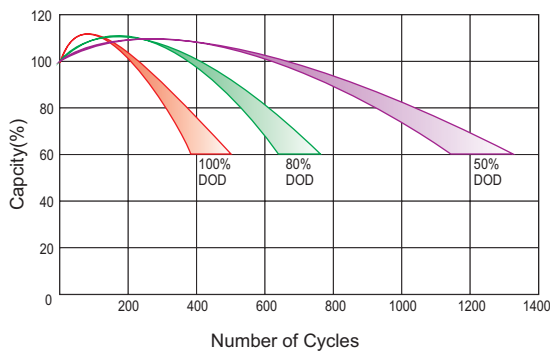
## Discharge Characteristics Curve



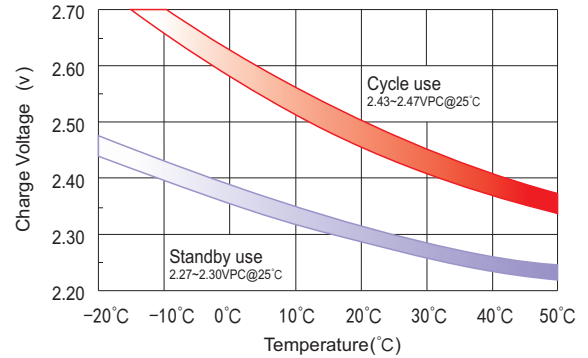
## Charge Characteristic Curve For Standby Use



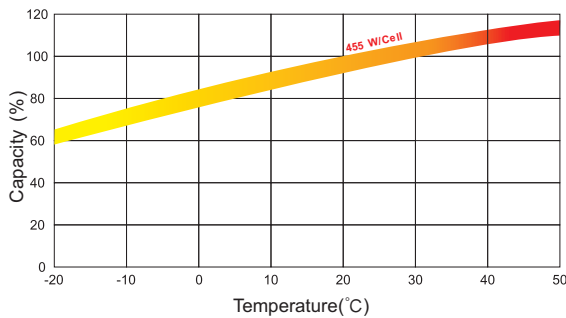
## Cycle Life In Relation To Depth Of Discharge



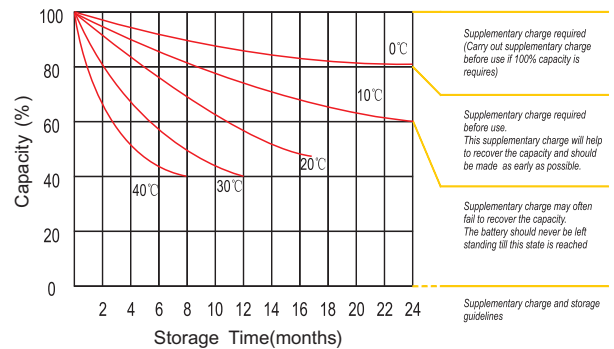
## Relationship Between Charging Voltage And Temperature



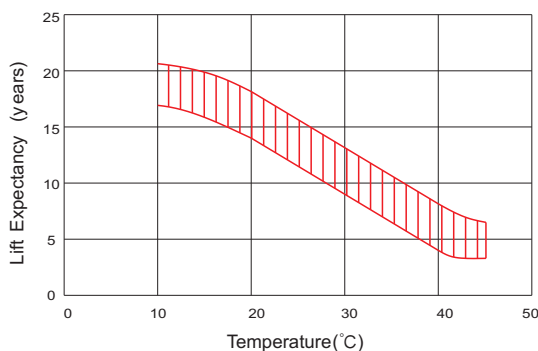
## Temperature Effects On Capacity



## Storage Characteristics



## Effect Of Temperature On Long Term Life



## Life Characteristics Of Standby Use

