

# KBHR12450 12V 45Ah



The Kaise HR batteries were specially designed for applications that demand a very high energy output. With an optimized design of the grids and an excellent formula for pasting the plates, the HR series can deliver up to 40% more than the standard series.

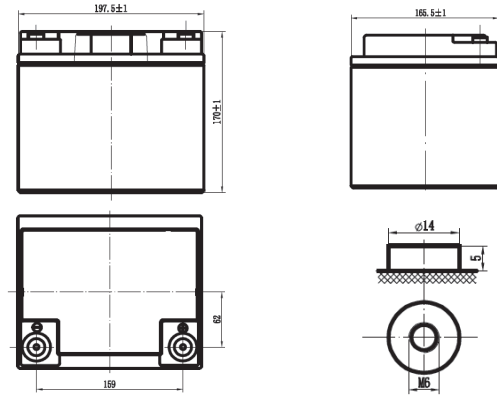
## Performance Characteristics

Nominal Voltage	12V	
Dimensions	Length (mm / inch)	197.5 / 7.78
	Width (mm / inch)	165.5 / 6.52
	Height (mm / inch)	170 / 6.69
	Total Height (mm / inch)	170 / 6.69
Approx Weight	(Kg / lbs) 14.6 / 32.2	
Design Life	10 years	
Terminal	M6	
Container Material	ABS UL94:HB (Flame Retardant Option UL94:V0)	
Rated Capacity	29.6Ah / 29.6A	(1hr, 1.70V / cell, 25°C / 77°F)
	21.95Ah / 43.9A	(30min, 1.70V / cell, 25°C / 77°F)
	18.25Ah / 73.0A	(15min, 1.70V / cell, 25°C / 77°F)
Max. Discharge Current	450A (5s)	
Internal Resistance	Approx 8 mΩ	
Operating Temp. Range	Discharge : -15 ~ 55°C (5 ~ 131°F)	
	Charge : 0 ~ 40°C (32 ~ 104°F)	
	Storage : -15 ~ 40°C (5 ~ 104°F)	
Nominal Operating Temp. Range	25 ± 3°C (77 ± 5°F)	
Cycle Use	Initial Charging Current less than 9.0A.	
	Voltage: 14.4V ~ 14.7V at 25°C (77°F)	
	Temp. Coefficient: -30mV/°C	
Standby Use	Initial Charging Current less than 9.0A	
	13.5V ~ 13.8V at 25°C (77°F)	
	Temp. Coefficient: -20mV/°C	
Capacity affected by Temperature	40°C (104°F)	103%
	25°C (77°F)	100%
	0°C (32°F)	86%
Self Discharge	Fully charged Kaise High Rate Series batteries may be stored for up to 6 months at 25°C (77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter.	

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

Volts/cell	10min	15min	20min	30min	1h
1.80V	97.1	76.9	61.7	46.5	27.5
1.75V	101	79.7	63.7	47.8	28.1
1.70V	107	84.6	67.6	50.7	29.6
1.60V	121	94.4	75.5	56.5	32.6

## Dimensions and Terminal (Unit: mm (inches))



## Applications

UPS  
High power backup supply  
Electric facilities  
Power tools

## Certifications

ISO 9001:2008 ISO 14001:2008



## Discharge Current vs. Discharge Voltage

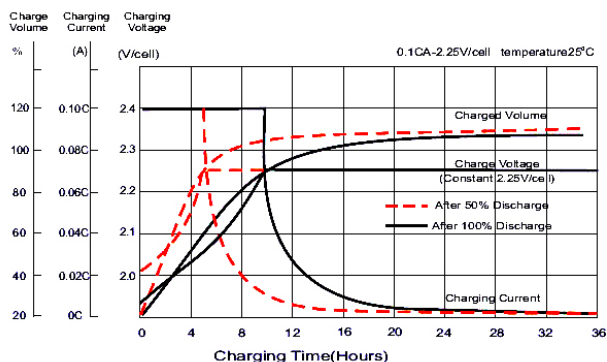
Final discharge voltage V/CELL	1.8	1.75	1.7	1.6
Discharge current (A)	$I \leq 0.1CA$	$0.25CA \geq I > 0.1CA$	$0.55CA \geq I > 0.25CA$	$I > 0.55CA$

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

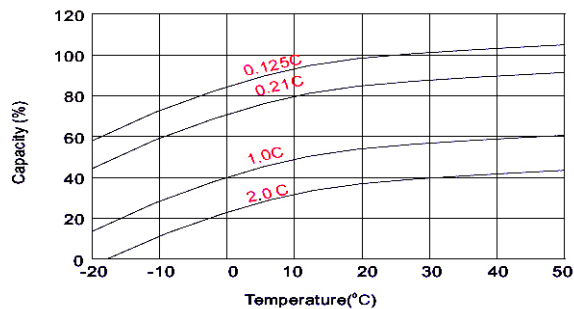
Volts/cell	10min	15min	20min	30min	1h
1.80V	179	145	116	86.4	51.6
1.75V	187	151	120	89.6	53.2
1.70V	195	157	125	92.9	54.8
1.60V	211	168	134	99.3	58.0

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

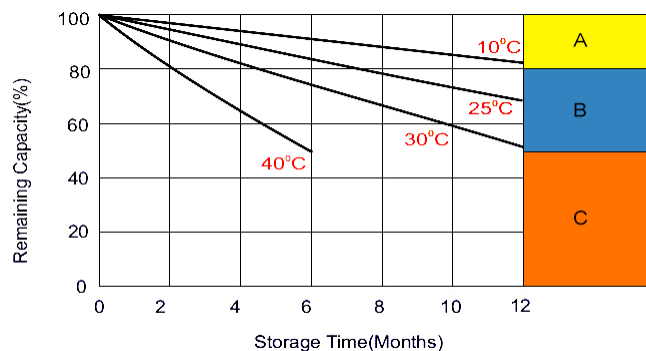
## Charging Characteristics (cycle use)



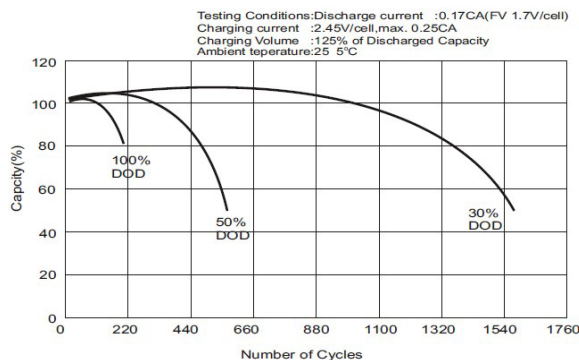
## Temperature Effects in Relation to Battery Capacity



## Self Discharge Characteristics



## Cycle Life in Relation to Depth of Discharge



- A** No supplementary charge required  
(carry out supplementary charge before use if 100% capacity is required)
- B** Supplementary charge required before use . Optional charging way a below:
  1. Charged for above 3 days at limited current 0.25 CA and constant voltage 2.25V / cell.
  2. Charged fo above 20 hours limited current 0.25CA and constant voltage 2.45V / cell.
  3. Charged for 8-10 hours ar limited current 0.05 CA.
- C** Supplementary charge often fail to recover the capacity.  
The battery should never be left standing till this is reached.

IMPORTANT NOTE: The specifications presented herein are subject to revision without notice.

