

HR12160W (12V160 Watts/cell)

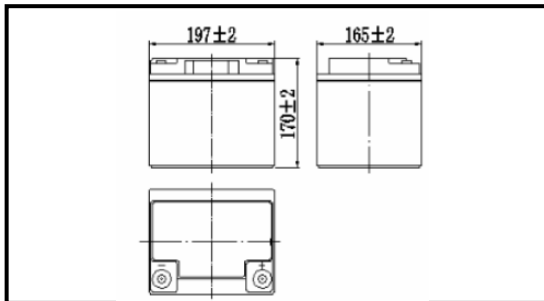
Valve Regulated Lead Acid Battery



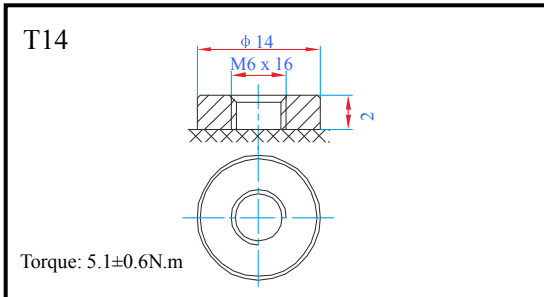
Specifications

Nominal voltage	12V (6 cells per unit)	
Rated capacity (15min. rate)	160 Watts/cell /1.67V	
Dimensions	Length	197±2mm (7.76inch)
	Width	165±2mm (6.50inch)
	Height	170±2mm (6.69inch)
	Total height	170±2mm (6.69inch)
Approx. weight	14.30kg (31.50lbs)±3%	

Outer dimensions (mm)



Terminal type (mm)



Characteristics

Capacity (25°C)	15min. rate	160 Watts/cell /1.67V
	10HR	45Ah/10.8V
Terminal type		T14
Internal resistance (Fully charged, 25°C)		Approx. 7mΩ
Capacity affected by temperature (10HR)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self-discharge (25°C)	3 months	Remaining capacity: 91%
	6 months	Remaining capacity: 82%
	12 months	Remaining capacity: 65%
Nominal operating temperature		25°C±3°C (77°F±5°F)
Operating temperature range	Discharge	-15°C~50°C (5°F~122°F)
	Charge	-10°C~50°C (14°F~122°F)
	Storage	-20°C~50°C (-4°F~122°F)
Float charging voltage (25°C)		13.50 to 13.80V Temperature compensation: -18mV/°C/Block
Cyclic charging voltage (25°C)		14.50 to 15.00V Temperature compensation: -30mV/°C/Block
Maximum charging current		12.8A
Maximum discharge current		400A (5 sec.)
Design life	10 years for floating (25°C)	
	Eurobat (20°C): 10-12 years, long life.	

Construction

Component	Positive plate	Negative plate	Container	Cover	Separator	Electrolyte	Safety valve	Terminal
Raw material	Lead dioxide	Lead	ABS	ABS	AGM	Sulfuric acid	Rubber	Copper

Constant current discharge characteristics unit: Ampere/cell (at 25°C, 77°F)

F.V/Time	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h	6h
1.60V/cell	111.38	91.57	69.08	48.88	36.10	29.40	16.40	11.80	9.50	8.26	7.07
1.67V/cell	107.10	88.79	66.26	47.37	34.90	28.70	16.30	11.70	9.42	8.19	7.01
1.70V/cell	103.99	86.00	64.94	46.46	34.30	28.30	16.20	11.60	9.38	8.16	6.98
1.75V/cell	99.60	83.11	62.72	45.35	33.40	27.70	16.00	11.60	9.32	8.10	6.93
1.80V/cell	93.93	78.72	59.39	43.63	32.20	26.80	15.60	11.20	9.04	7.86	6.72

Constant power discharge characteristics unit: Watt/cell (at 25°C, 77°F)

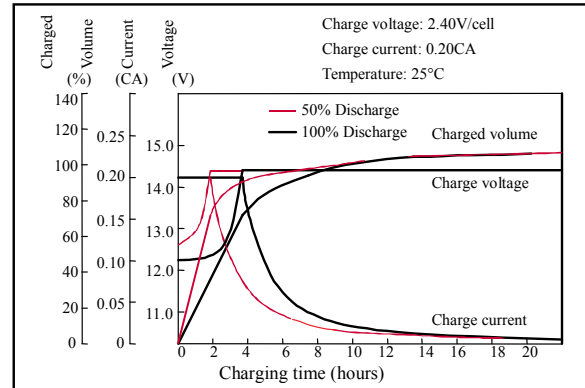
F.V/Time	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h	6h
1.60V/cell	203.91	166.65	132.00	94.44	69.60	56.80	32.10	23.20	18.70	16.40	14.00
1.67V/cell	195.59	160.00	127.00	91.41	67.40	55.40	31.80	23.00	18.60	16.20	13.90
1.70V/cell	190.39	156.55	124.00	89.69	66.20	54.50	31.60	22.90	18.50	16.20	13.80
1.75V/cell	182.07	151.50	120.00	87.47	64.60	53.50	31.10	22.80	18.40	16.00	13.70
1.80V/cell	171.66	143.42	113.00	84.34	62.20	51.80	30.30	22.10	17.80	15.60	13.30

Note 1: Above characteristics data can be obtained within three charge and discharge cycles.

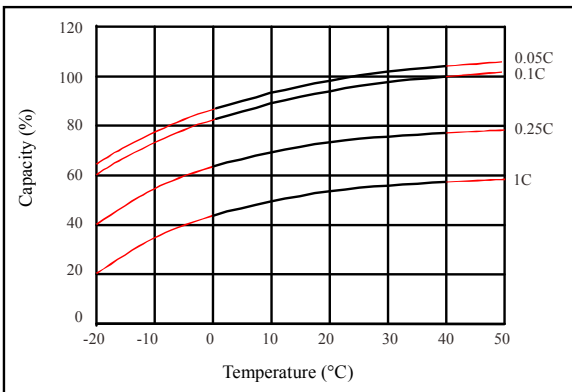
● Discharge characteristics (25°C)



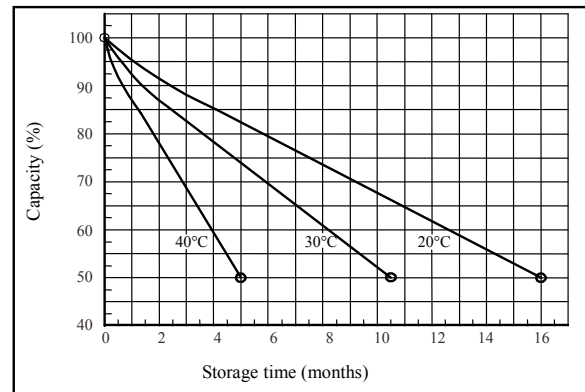
● Charging characteristics (25°C)



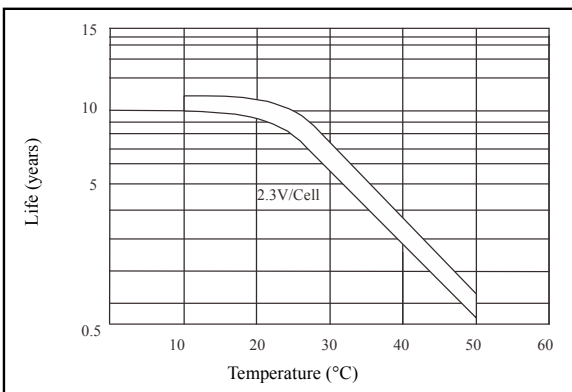
● Temperature effects on capacity



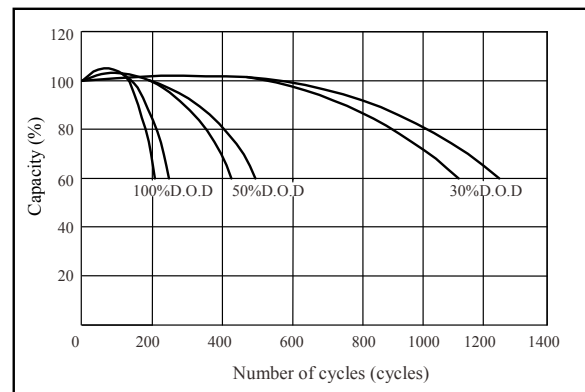
● Self-discharge characteristics



● Floating life on temperature



● Cycle life on D.O.D (25°C)



● Relationship for OCV and capacity (25°C)



● Relationship for charging voltage and temperature

