

HR12110W (12V110 Watts/cell)

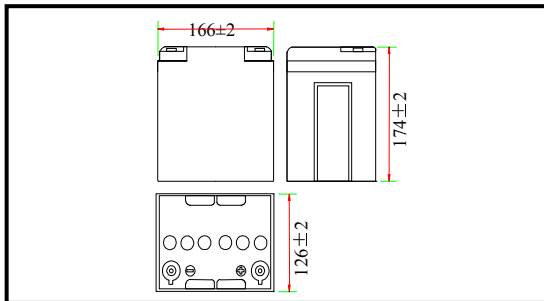
Valve Regulated Lead Acid Battery



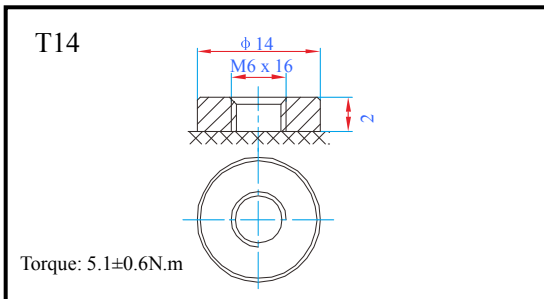
Specifications

Nominal voltage	12V (6 cells per unit)	
Rated capacity (15min. rate)	110 Watts/cell /1.67V	
Dimensions	Length	166±2mm (6.54inch)
	Width	126±2mm (4.96inch)
	Height	174±2mm (6.85inch)
	Total height	174±2mm (6.85inch)
Approx. weight	8.80kg (19.40lbs)±3%	

Outer dimensions (mm)



Terminal type (mm)



Characteristics

Capacity (25°C)	15min. rate	110 Watts/cell /1.67V
	20HR	28Ah/10.5V
Terminal type		T12
Internal resistance (Fully charged, 25°C)		Approx. 9mΩ
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)		13.60 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		8.8A
Maximum discharge current		300A (5 sec.)
Design life	5 years for floating (25°C)	
	Eurobat (20°C): 3-5 years, standard commercial	

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)

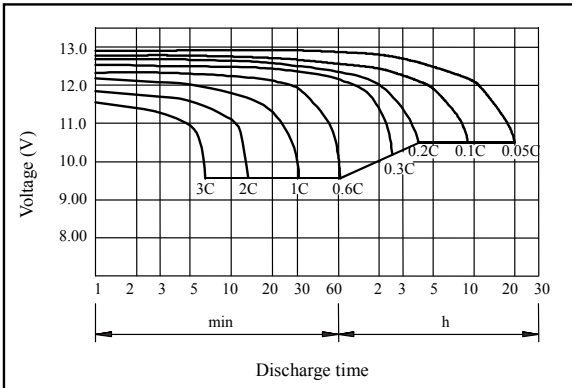
F.V/Time	5min	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h
1.60V/cell	128.70	80.04	59.33	47.42	32.45	22.90	18.70	10.30	7.31	5.88	5.06
1.67V/cell	123.29	76.44	57.27	45.45	31.40	22.10	18.20	10.20	7.25	5.83	5.01
1.70V/cell	120.05	74.47	55.72	44.51	30.77	21.70	18.00	10.10	7.22	5.81	4.99
1.75V/cell	114.64	71.20	53.87	43.06	30.03	21.20	17.60	9.98	7.17	5.77	4.96
1.80V/cell	108.15	67.27	50.99	40.77	28.98	20.40	17.10	9.73	6.95	5.59	4.81

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

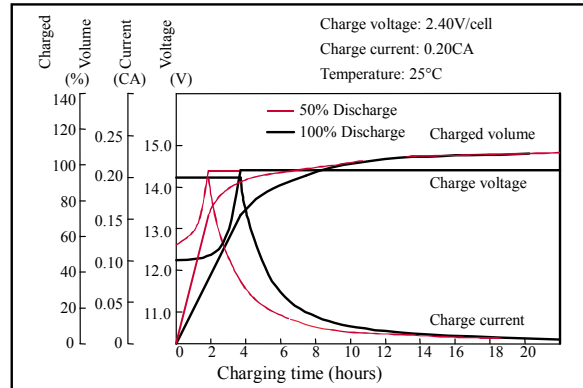
F.V/Time	5min	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h
1.60V/cell	229.00	146.26	114.00	90.20	61.10	45.30	37.00	20.50	14.70	11.80	10.20
1.67V/cell	218.00	140.08	110.00	86.60	59.20	43.80	36.10	20.30	14.60	11.70	10.10
1.70V/cell	213.00	135.96	107.00	84.80	58.10	43.00	35.50	20.20	14.50	11.70	10.00
1.75V/cell	203.00	130.81	104.00	81.90	56.70	41.90	34.80	19.90	14.40	11.60	9.96
1.80V/cell	192.00	122.57	98.00	77.60	54.60	40.40	33.80	19.40	14.00	11.20	9.66

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

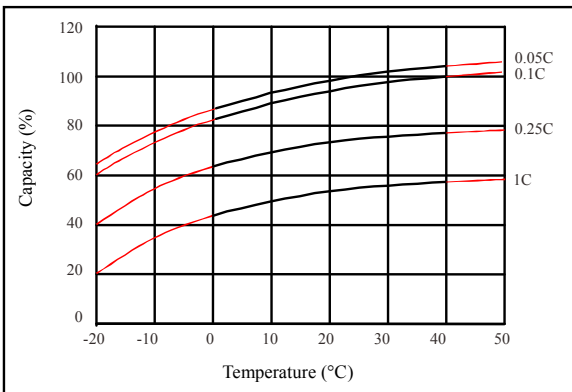
● Discharge characteristics (25°C)



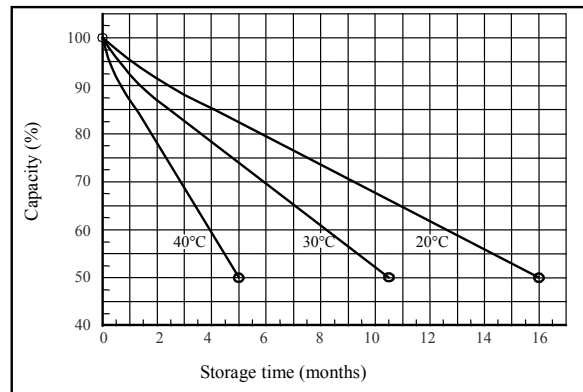
● Charging characteristics (25°C)



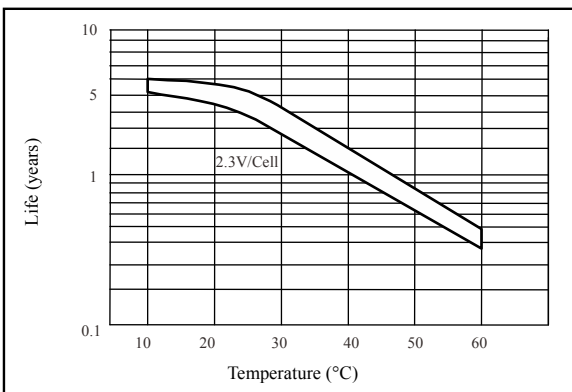
● Temperature effects on capacity



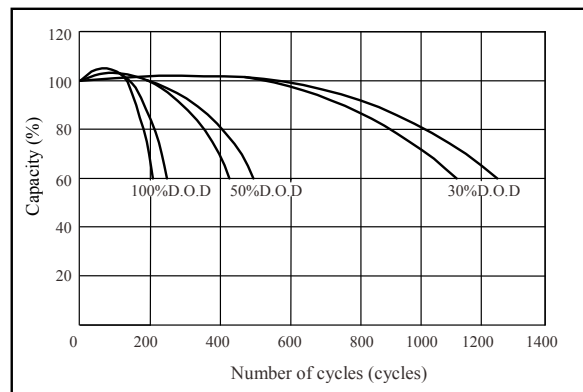
● Self-discharge characteristics



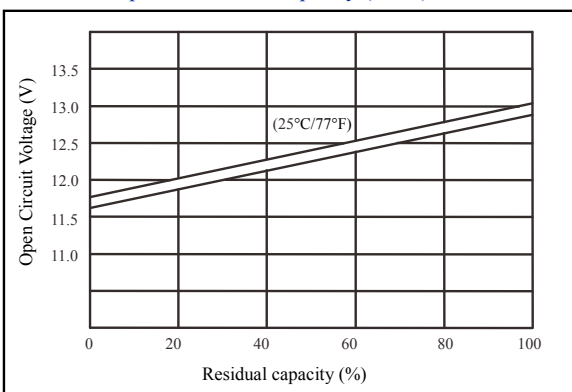
● Floating life on temperature



● Cycle life on D.O.D (25°C)



● Relationship for OCV and capacity (25°C)



● Relationship for charging voltage and temperature

