

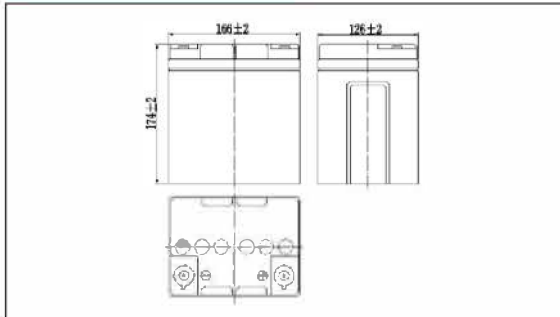
## HR12110W-FR (12V110 Watts/cell)

### ● Specifications

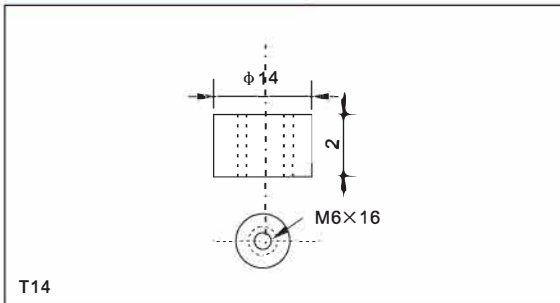
Nominal Voltage		12V
Number of cell		6 cells
Rated capacity(15min.rat)		110 Watts/cell
Dimensions	Length	166±2mm(6.54inch)
	Width	126±2mm(4.96inch)
	Height	174±2mm(6.85inch)
	Total Height	174±2mm(6.85inch)
Approx. Weight		8.8kg(19.4lbs)±3%



### ● Outer dimensions (mm)



### ● Terminal Type (mm)



### ● Characteristics

Capacity(20HR,25°C)		28Ah
Capacity(15min.rate,25°C)		110 Watts/cell
Terminal type		T14
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)		13.50 to 13.80V Temperature compensation: -18mV/°C
Cyclic charging voltage(25°C)		14.50 to 15.00V Temperature compensation: -30mV/°C
Maximum charging current		8.4A
Maximum discharge current		300A(5 sec.)
Designed floating life(20°C)		5years

### ● 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:A(25°C,77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h
1.60V/cell	119	73.3	57.6	45.6	30.9	22.9	18.7	10.3	7.31	5.88	5.06
1.67V/cell	114	70.0	55.6	43.7	29.9	22.1	18.2	10.2	7.25	5.83	5.01
1.70V/cell	111	68.2	54.1	42.8	29.3	21.7	18.0	10.1	7.22	5.81	4.99
1.75V/cell	106	65.2	52.3	41.4	28.6	21.2	17.6	9.98	7.17	5.77	4.96
1.80V/cell	100	61.6	49.5	39.2	27.6	20.4	17.1	9.73	6.95	5.59	4.81

### ● Constant Power Discharge Characteristics Unit:W(25°C,77°F)

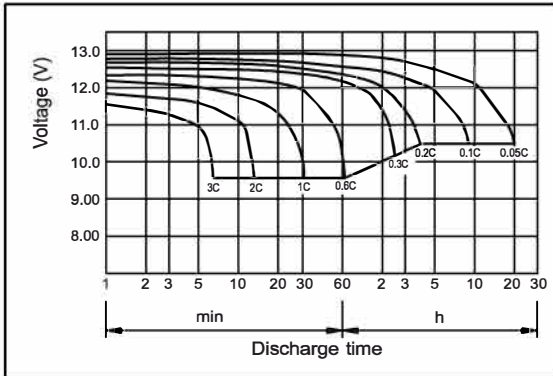
F.V/Time	5min	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h
1.60V/cell	229	142	114	90.2	61.1	45.3	37.0	20.5	14.7	11.8	10.2
1.67V/cell	218	136	110	86.6	59.2	43.8	36.1	20.3	14.6	11.7	10.1
1.70V/cell	213	132	107	84.8	58.1	43.0	35.5	20.2	14.5	11.7	10.0
1.75V/cell	203	127	104	81.9	56.7	41.9	34.8	19.9	14.4	11.6	9.96
1.80V/cell	192	119	98.0	77.6	54.6	40.4	33.8	19.4	14.0	11.2	9.66

Note: The above characteristics data can be obtained within three charge or discharge cycles.

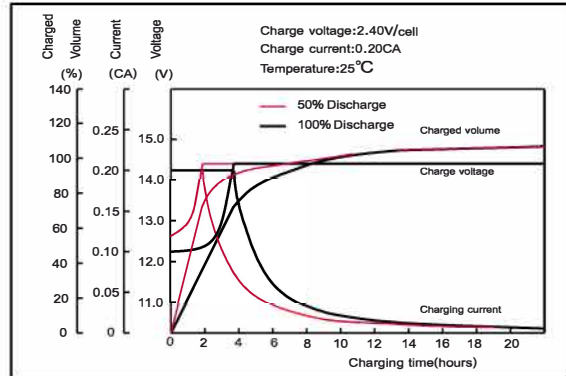


**HR12110W-FR (12V110 Watts/cell)**

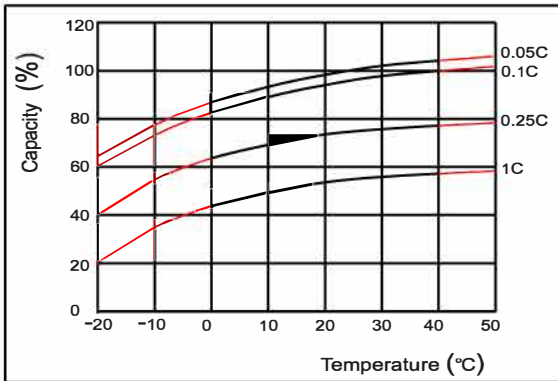
● **Discharge characteristics(25°C)**



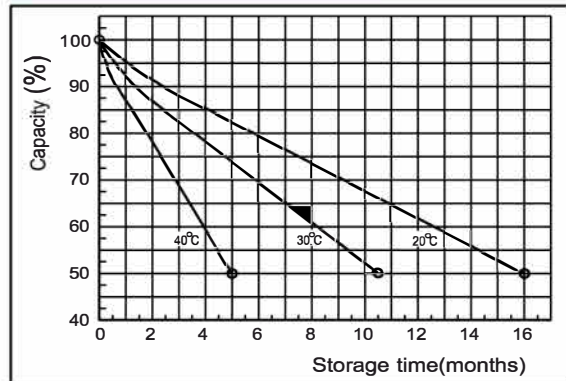
● **Charging characteristics (25°C)**



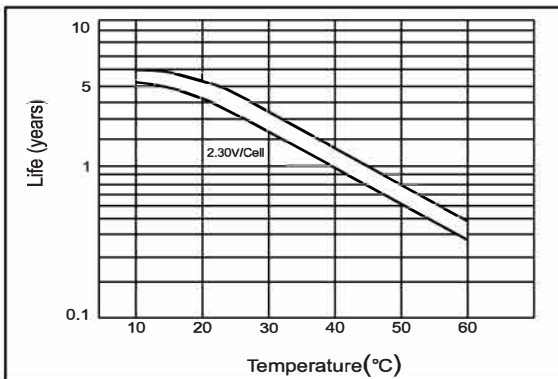
● **Effect of Temperature on Capacity**



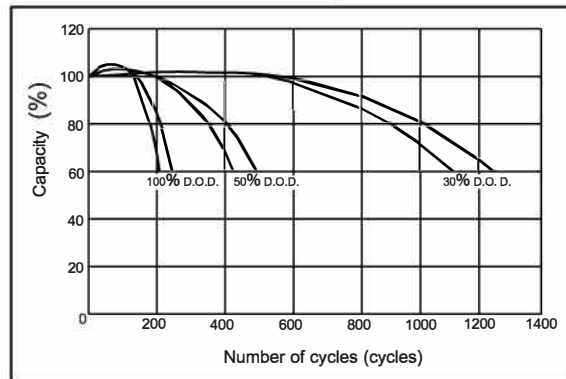
● **Self-discharge characteristics**



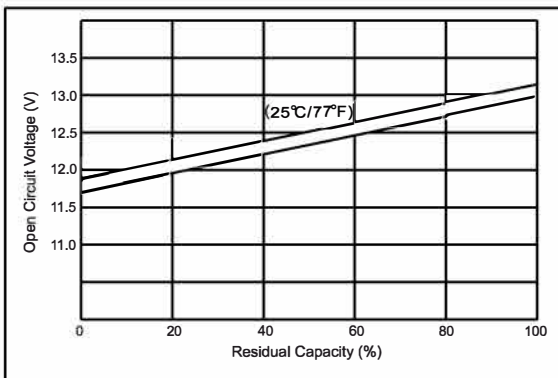
● **Floating Life on Temperature**



● **Cycle service Life on D.O.D (25°C)**



● **The relationship for OCV and Capacity (25°C)**



● **The relationship for Charging voltage and Temperature**

