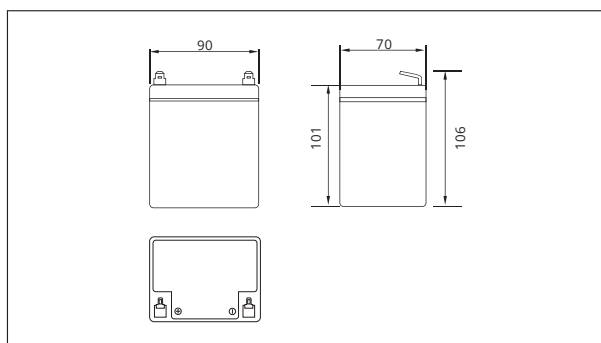


HR1221W-FR (12V21 Watts/cell)

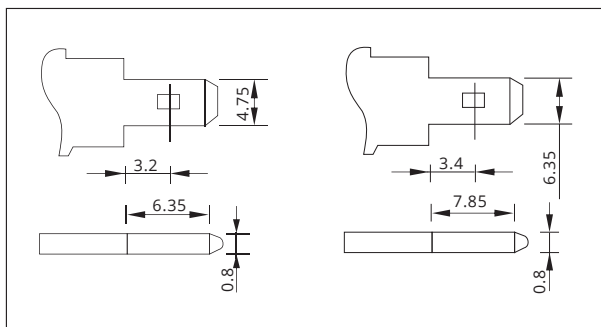
Specifications

Nominal Voltage		12V
Number of cells		6 cells
Rated capacity (15 min.)		21 watts/cell
Dimensions	Length	90+/-1mm
	Width	70+/-1mm
	Height	101+/-1mm
	Total height	107+/-1mm
Approximated weight		1.70kgs+/-5%

Outer dimensions (mm)



Terminal Type (mm)



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	22.8	17.4	12.9	10.4	7.29	5.37	4.02	2.84	2.31	2.05	1.90
1.67V/cell	21.7	17.1	12.5	10.1	7.18	5.23	4.00	2.82	2.29	2.04	1.89
1.70V/cell	21.2	16.8	12.3	9.93	7.14	5.15	3.99	2.81	2.29	2.04	1.89
1.75V/cell	20.3	16.3	12.1	9.70	7.07	5.05	3.98	2.78	2.28	2.03	1.89
1.80V/cell	19.1	15.7	11.8	9.51	7.00	4.90	3.95	2.74	2.24	2.00	1.89

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

F.V/Time	5min	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h
1.60V/cell	48.8	32.8	26.8	22.8	16.8	13.8	12.8	8.8	7.8	6.8	5.8
1.67V/cell	46.7	31.7	26.0	21.7	16.3	13.7	11.7	8.7	7.7	6.7	5.7
1.70V/cell	45.2	30.2	25.2	21.2	16.1	13.2	11.2	8.2	7.2	6.2	5.2
1.75V/cell	43.3	29.3	24.3	20.3	15.3	12.3	10.3	7.3	6.3	5.3	4.3
1.80V/cell	41.1	27.1	23.1	19.1	15.1	12.1	10.1	7.1	6.1	5.1	4.1

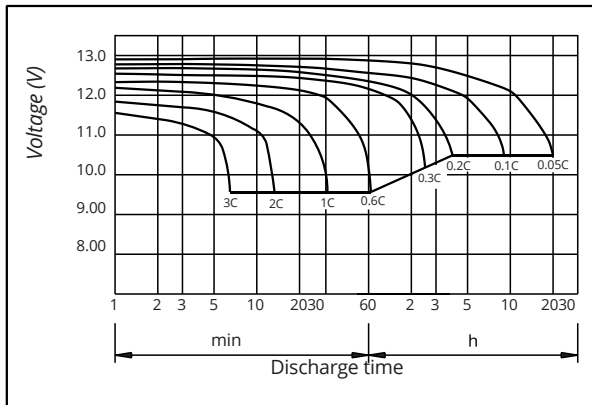


Characteristics

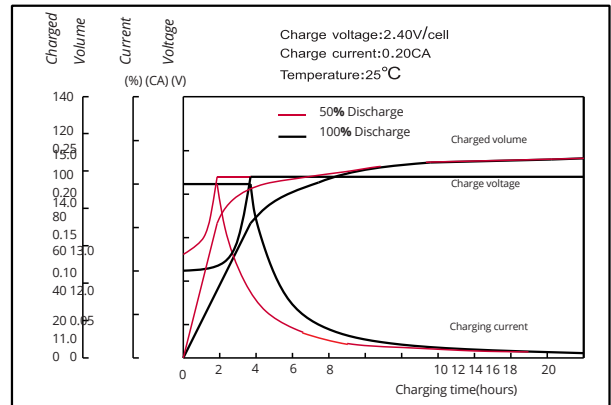
Capacity (20HR,25°C)		5Ah
Capacity (15min.rate,25°C)		21W/Cell
Terminal type		T1/T2
Internal resistance (Fully charged @ 25°C)		23mΩ
Capacity affected by temperature (10HR)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self-discharge (25°C)	3 months	Remaining capacity 91%
	6 months	Remaining capacity 82%
	12 months	Remaining capacity 65%
Nominal operating temperature		25°C ± 3°C
Operating temperature range	Discharge	-15°C - 50°C
	Charge	-15°C - 50°C
	Storage	-20°C - 50°C
Float charging voltage (25°C)		13.5 to 13.80V Temp. compensation -18mV/°C
Cyclic charging voltage (25°C)		14.5 to 15.00V Temp. compensation -30mV/°C
Maximum charging current		1.5A
Terminal material		Copper
Maximum discharge current		90A (5 sec.)
Designed floating life (20°C)		10 years

HR1221W-FR (12V21 Watts/cell)

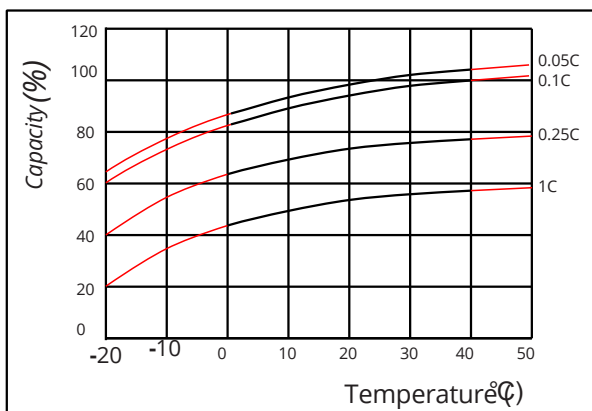
Discharge characteristics(25°C)



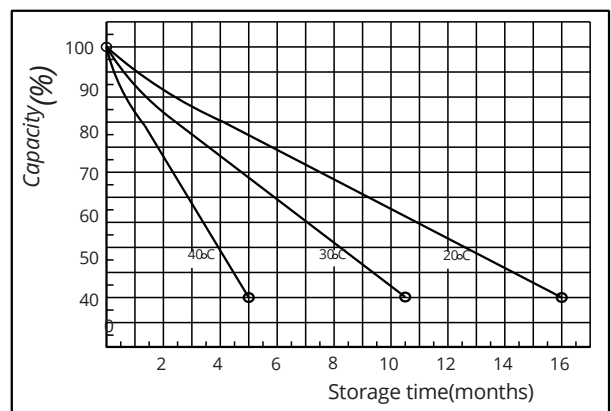
Charging characteristics (25°C)



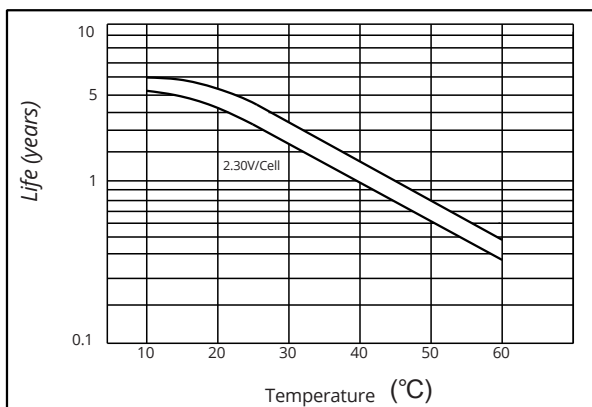
Effect of Temperature on Capacity



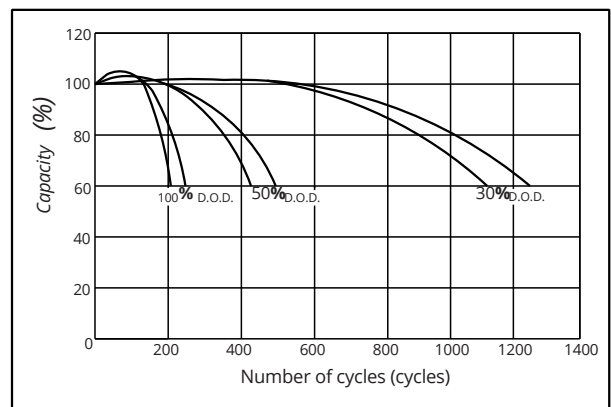
Self-discharge characteristics



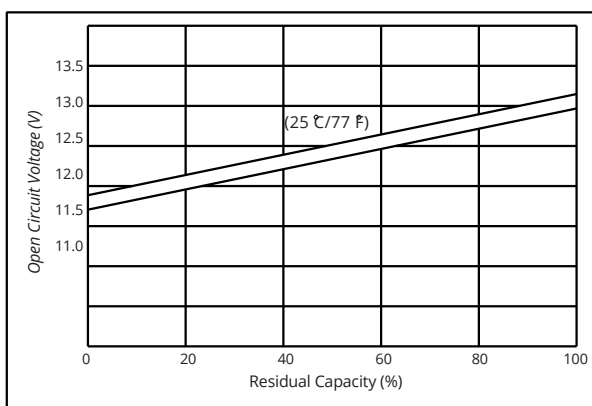
Floating Life on Temperature



Cycle service Life on D.O.D



The relationship for OCV and Capacity (25°C)



The relationship for Charging voltage and Temperature

