

General Application

The Solar Series is highly suited for cyclic applications such as Wheelchair, Solar, Marine or Wind Turbine power systems applications. By combining the newly developed Gel Electrolyte with high density paste, VCELL created an innovative range of Solar Batteries. The range offers high recharge efficiency at very low charge current. The acid Stratification is highly depressed by adding of Gel.

Specification

• NOMINAL VOLTAGE(V)	: 12
• CAPACITY(25°C)	: 40.0Ah@20HR-rate (2.0A , 1.80V) : 37.2Ah@10HR-rate (3.72A, 1.75V) : 32.0Ah@5HR-rate (6.4A, 1.75V) : 27.8Ah@3HR-rate (9.26A, 1.75V) : 22.0Ah@1HR-rate (22.0A, 1.67V)
• DIMENSIONS	
TOTAL HEIGHT	: 170 mm (6.69 inches)
CONTAINER HEIGHT	: 170 mm (6.69 inches)
LENGTH	: 197 mm (7.76 inches)
WIDTH	: 165 mm (6.50 inches)
• WEIGHT	: APPROX 13.5 Kg (29.77lbs)
• CONTAINER MATERIAL	: ABS
• INTERNAL RESISTANCE(25°C)	: Approx.0.012 Ω
• MAX. DISCHARGE CURRENT(5S)	: 400A
• CAPACITY AFFECTED BY TEMP.	
40°C	: ~103%
25°C	: ~100%
0 °C	: ~86%

Characteristics

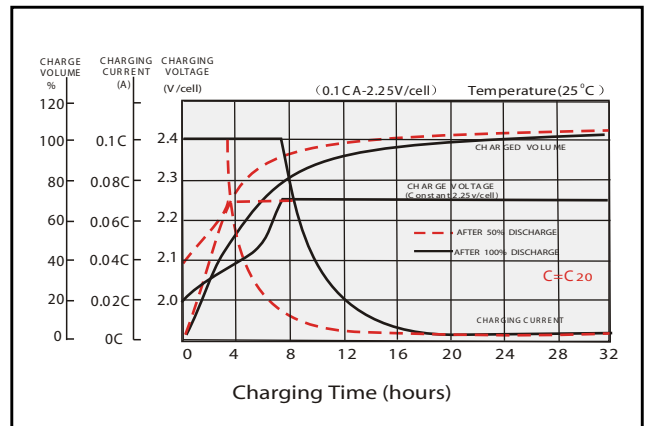
• CYCLE USE CHARGE VOLTAGE(25 °C)	: 14.4~15.0V (-30mV/°C), initial charging current less than 9.5A
• STANDBY USE CHARGE VOLTAGE(25°C)	: 13.5~13.8V (-20mV/°C)
• SELF DISCHARGE:	Solar series batteries may be stored for up to 9 months at 25°C and then a freshening charge is required. For higher temperature the time interval will be shorter.

Operating Temperature

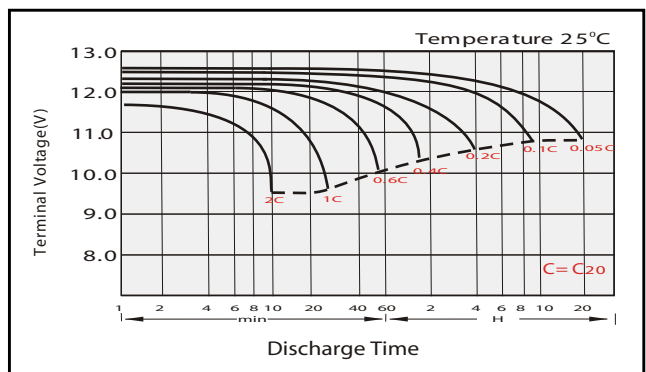
• Operating Temp. Range	
Discharge	: -20~55°C
Charge	: 0~40 °C
Storage	: -20~50°C
• Nominal Operating Temp. Range	: 25±3 °C

SOLAR12-40 12V40Ah

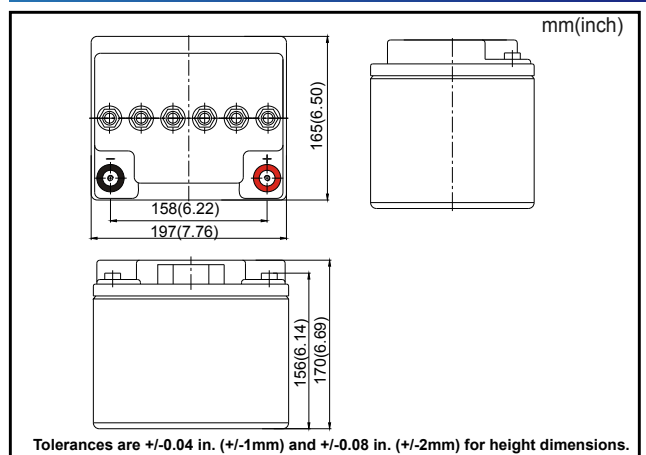
Float Charging Characteristic



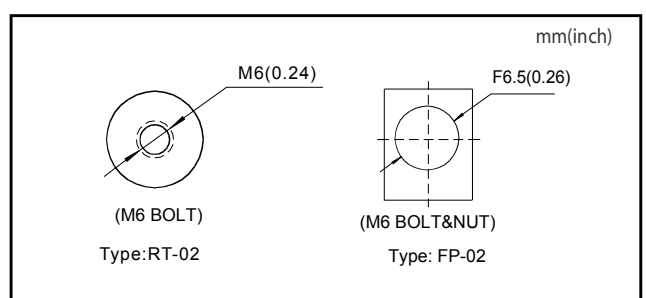
Discharge Characteristics @25 °C



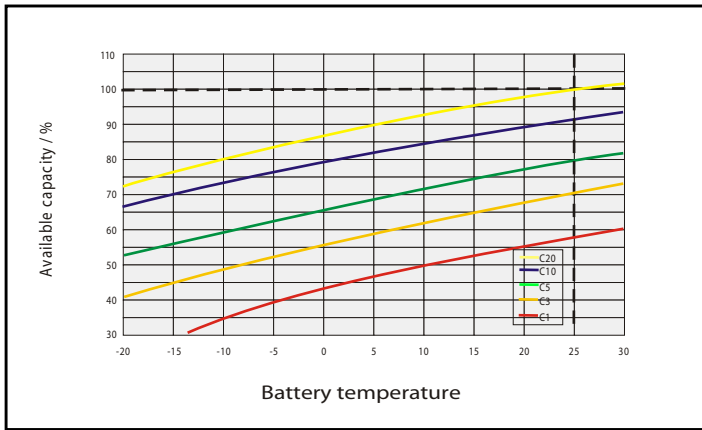
Dimensions



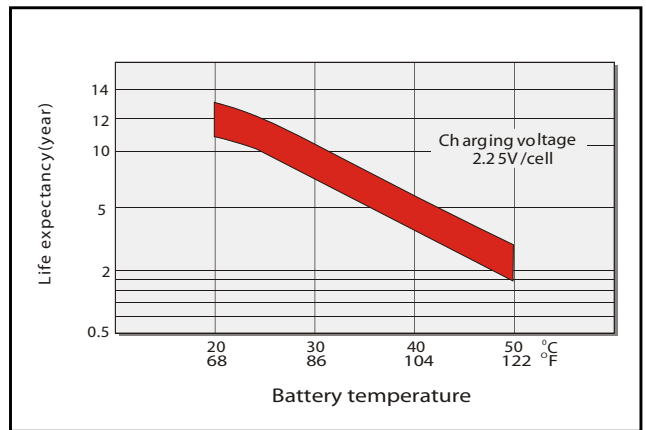
Terminal



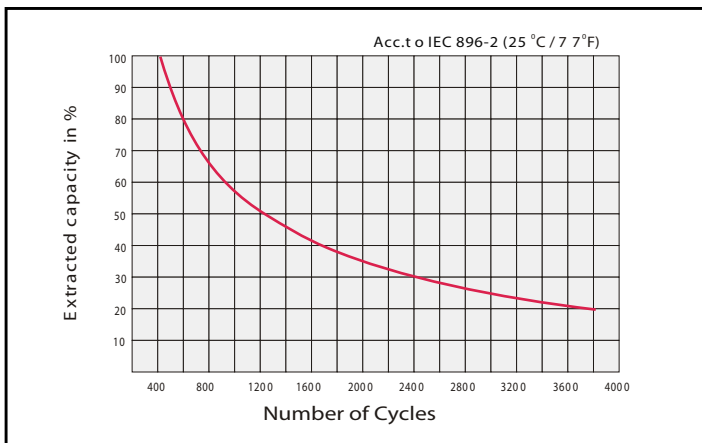
Temperature vs Battery capacity



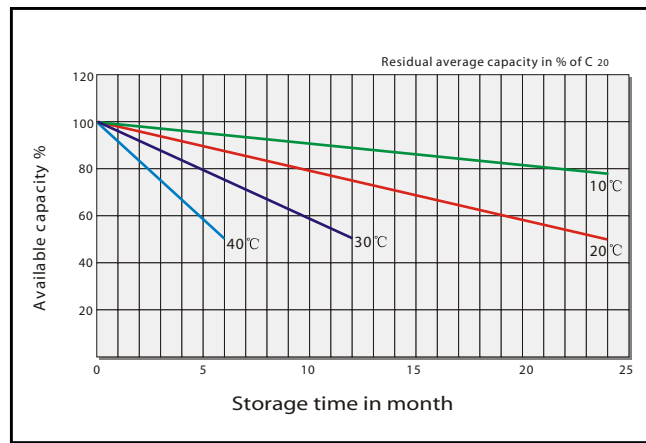
Temperature vs Float life



Depth of Discharge VS Cycle Life @25 °C



Capacity vs Storage Time



Constant Current Discharge (Amperes) @ 25 °C(77 °F)

F.V/Time	20min	30min	45min	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	20h
1.85V/cell	33.83	26.57	20.29	16.97	10.74	8.23	6.80	5.89	5.06	4.48	4.04	3.69	3.49	1.92
1.80V/cell	38.74	29.66	22.34	18.74	11.66	8.80	7.20	6.17	5.31	4.69	4.23	3.89	3.65	2.00
1.75V/cell	43.54	32.63	24.17	20.06	12.34	9.26	7.54	6.40	5.50	4.86	4.37	4.00	3.72	2.04
1.70V/cell	46.91	34.97	25.66	21.20	13.09	9.66	7.77	6.63	5.69	5.02	4.50	4.11	3.81	2.07
1.67V/cell	48.86	36.34	26.57	22.00	13.43	10.00	8.00	6.74	5.77	5.09	4.57	4.16	3.85	2.09
1.60V/cell	52.91	38.86	28.51	23.37	13.94	10.40	8.29	6.97	5.94	5.20	4.65	4.25	3.93	2.11

Constant Power Discharge (Watts/cell) @ 25 °C(77 °F)

F.V/Time	20min	30min	45min	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	20h
1.85V/cell	64.74	51.20	39.31	33.03	21.03	16.06	13.37	11.60	10.00	8.91	8.06	7.37	6.97	3.83
1.80V/cell	73.20	56.69	43.03	36.29	22.63	17.14	14.11	12.11	10.51	9.26	8.40	7.71	7.26	3.99
1.75V/cell	81.37	61.71	46.17	38.63	23.94	18.06	14.74	12.57	10.86	9.60	8.63	7.94	7.37	4.06
1.70V/cell	86.69	65.54	48.69	40.63	25.26	18.80	15.20	12.91	11.20	9.89	8.91	8.17	7.54	4.11
1.67V/cell	89.26	67.37	50.06	41.89	25.77	19.31	15.49	13.14	11.31	10.00	9.03	8.23	7.66	4.14
1.60V/cell	95.60	71.49	53.37	44.29	26.69	19.94	16.06	13.49	11.54	10.17	9.14	8.40	7.77	4.20