

## TM12-650W

12V 150Ah(20hr)

### High Rate Discharge

The ABT Thunder TM...W VRLA are batteries according to Eurobat Classification and specially designed for applications which need high power backup.

Thunder TM...W is the premium plus VRLA battery for UPS and diesel start application.

### Mechanical Characteristics

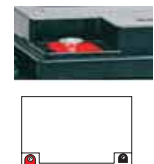
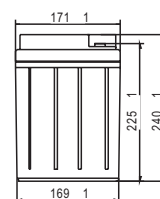
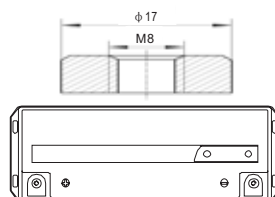
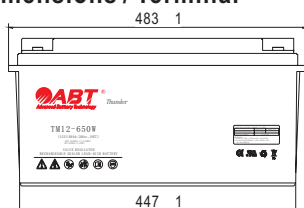
	SI Units	English Units
Length	483mm	19.02inch
Width	171mm	6.73inch
Height	240mm	9.45inch
Total Height	240mm	9.45inch
Approx. Weight	48.9kg	107.82lbs

Type of material for box and lids :  
ABS Standard (FV0 Optional)

### Product Characteristics

- Positive and negative grids in lead-calcium tin alloy
- Superior energy density
- More than 40% power output than ABT standard SGP series
- Operates at a low internal pressure
- Usable in any orientation
- A recognized component of UL
- Range of 6V and 12V monobloc from 160W to 1000W per cell for 10' @ 1.60Vpc
- 6 months shelf life at 20°C
- 10 years design life

### Dimensions / Terminal



### Performance Characteristics

Nominal Voltage	12V
Number of cell	6
Nominal Capacity 68°F(20°C)	10 min wattage @1.60V650W per cell 1 hour rate (101.0A, 1.60V per cell)101.0Ah 10 hour rate (14.12A, 1.75V per cell)141.2Ah 20 hour rate (7.5A, 1.75V per cell) 150Ah
Internal Resistance	Fully Charged battery 68°F(20°C) 2.9 mOhms
Mass Energy(Wh/kg)	36.77
Volumic energy(Wh/L)	90.81
Self-Discharge	3% of capacity declined per month at 20°C(average)
Operating Temperature Range	Discharge -20~60°C Charge -10~60°C Storage -20~60°C
Max. Discharge Current	1200A(5s)
Short circuit current	4100A
Charge Methods:	Constant Voltage Charge 68°F(20°C) Cycle use 14.4-15.0V/unit Temperature compensation -30mV/°C/unit Standby use 13.5-13.8V/unit Temperature compensation -20mV/°C/unit Maximum charging current 45 A of rated capacity
Terminal Type	Inserted Thread and bolt M8X φ 17
Torque strength in Nm	12~16
Handle Type	Rope
Flame arrestor	Yes

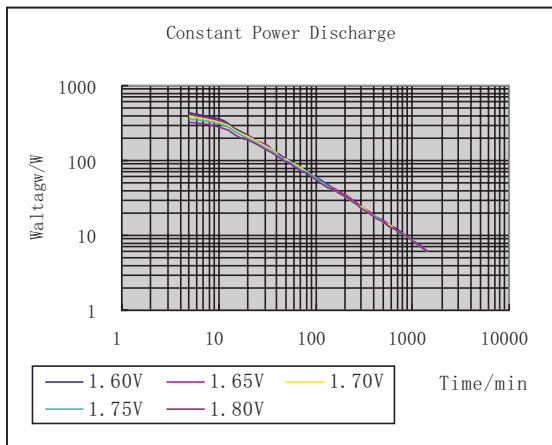
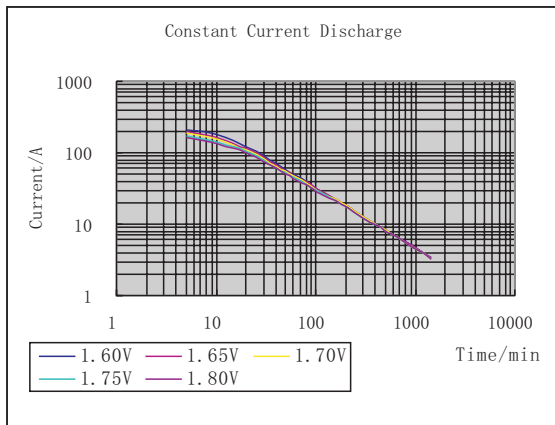
**Constant Current Discharge Data ( Amperes at 20°C )**

End Volt. Per Cell	5min	10min	15min	20min	25min	30min	35min	40min	45min	50min	1h	1.5h	2h	2.5h	3h	4h	5h	6h	7h	8h	9h	10h	12h	24h
1.60V	495	378	289	233	198	169	152	139	129	118	101	73.3	57.7	47.7	40.5	31.7	26.2	22.5	19.8	17.8	16.08	14.56	12.48	6.79
1.65V	466	355	275	223	191	163	146	134	125	115	98	71.2	56.2	46.0	39.7	31.3	25.8	22.2	19.6	17.5	15.90	14.39	12.36	6.76
1.70V	437	335	260	214	184	158	141	130	121	110	94	69.3	55.0	44.9	38.7	30.6	25.4	21.9	19.4	17.4	15.76	14.26	12.27	6.73
1.75V	413	313	245	205	177	152	136	125	116	106	91	66.9	53.7	43.7	37.7	30.0	25.0	21.5	19.2	17.2	15.60	14.12	12.13	6.70
1.80V	390	289	232	196	169	146	130	120	111	103	89	64.8	52.4	42.6	36.9	29.4	24.5	21.2	18.9	17.0	15.44	14.03	12.00	6.68

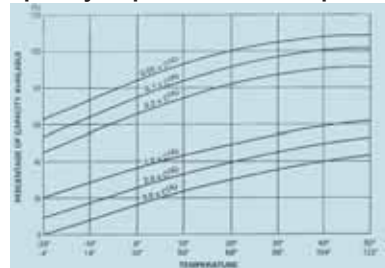
**Constant Power Discharge Data ( Watts per cell at 20°C )**

End Volt. Per Cell	5min	10min	15min	20min	25min	30min	35min	40min	45min	50min	1h	1.5h	2h	2.5h	3h	4h	5h	6h	7h	8h	9h	10h	12h	24h
1.60V	840	650	526	438	376	330	295	265	242	223	192	139.3	109.7	91.8	77.5	62.4	51.9	44.1	38.4	34.0	30.66	27.9	24.21	12.89
1.65V	792	629	505	425	366	321	287	260	238	220	187	136.7	107.9	90.5	76.2	60.9	50.9	43.4	37.8	33.6	30.39	27.64	23.89	12.85
1.70V	758	605	487	412	354	312	280	254	233	216	183	134.1	106.0	89.0	74.8	59.7	49.9	42.5	37.4	33.2	30.12	27.38	23.68	12.80
1.75V	730	570	464	397	342	301	273	248	228	212	177	130.1	103.7	87.3	73.3	58.4	48.8	41.8	36.8	32.8	29.82	27.16	23.44	12.62
1.80V	700	531	445	381	330	293	266	243	223	208	172	126.4	100.9	85.3	72.0	57.1	47.7	41.1	36.2	32.5	29.47	26.94	23.23	12.56

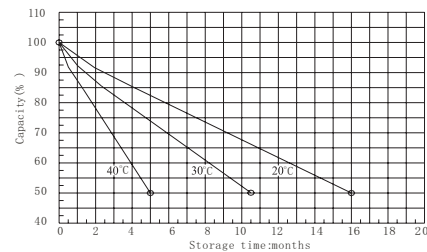
**Performance drawing**



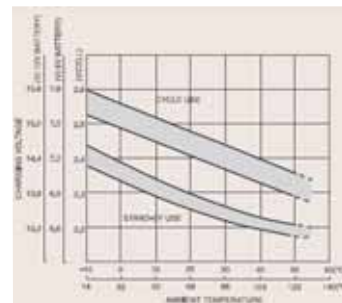
**Capacity depend on the temperature**



**Capacity Retention Characteristic**



**Charge voltage depend on the temperature**



**Contact information**

Shandong Sacred Sun Power Sources Industry Co., Ltd.  
 Add: No1, Shengyang Road, Qufu City, Shandong Province, China 273100  
 Tel: +86-537-4438 666 extn 6027 Fax: +86-537-4411 936  
 Website: <http://www.abtbatt.com> E-mail: [sales@abtbatt.com](mailto:sales@abtbatt.com)

*ABT VRLA Battery: Available Power Range From 7Ah to 3000Ah*

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