

TM12-440W

12V 90Ah(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

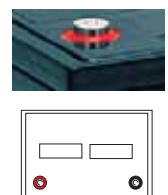
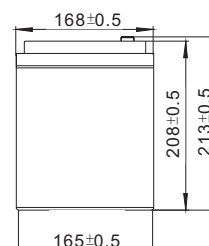
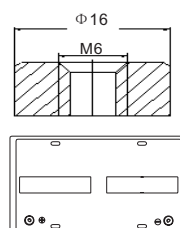
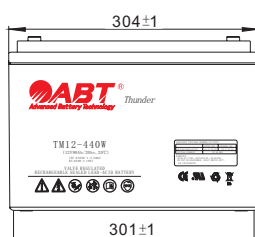
	SI Units	English Units
Length	304mm	11.97inch
Width	168mm	6.61inch
Height	208mm	8.19inch
Total Height	213mm	8.39inch
Approx. Weight	31.25kg	68.91lbs

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 @1.60V440W per cell 1 hour rate (59.00A, 1.60V per cell)59.00 Ah 10 hour rate (8.375A, 1.75V per cell) 83.75Ah 20 hour rate (4.50A, 1.75V per cell) 90Ah
Internal Resistance	Fully Charged battery 68°F(20°C) 3.98 mOhms
Mass Energy(Wh/kg)	34.56
Volumic energy(Wh/L)	101.67
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	800A(5s)
Short circuit current	3015A
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 27 A of rated capacity
Terminal Type	Inserted Thread and bolt M6X φ 16
Torque strength in Nm	8~10
Handle Type	Plastic
Flame arrestor	Yes

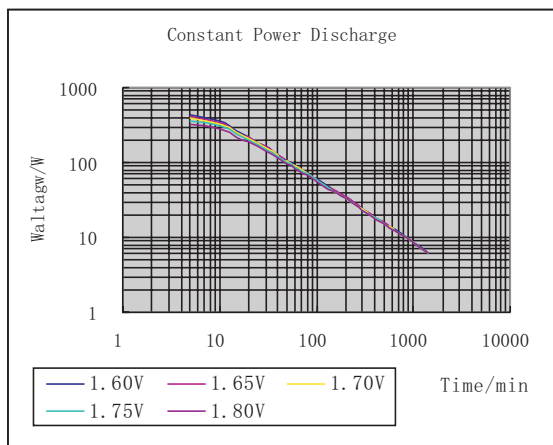
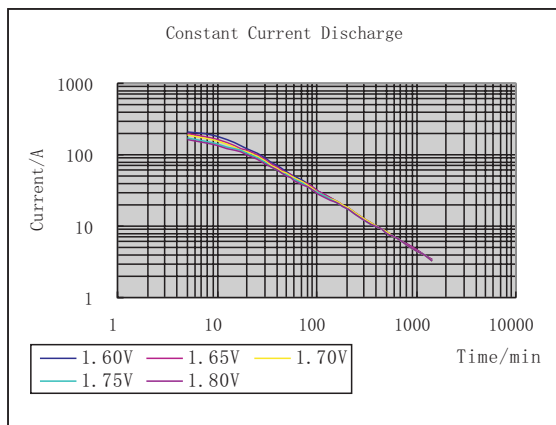
Constant Current Discharge Data (Amperes at 20°C)

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	302.0	217.0	171.0	143.0	120.0	103.0	90.00	78.00	73.00	67.00	59.00	42.96	33.90	27.90	23.30	17.90	15.40	13.20	11.60	10.45	9.452	8.600	7.394	3.860
1.65V	278.0	204.0	165.0	137.0	118.5	100.0	88.00	76.70	72.00	66.00	57.50	42.30	33.20	27.50	23.00	17.67	15.32	13.10	11.50	10.37	9.400	8.520	7.350	3.850
1.70V	250.5	193.0	155.8	131.0	113.3	96.00	86.00	74.70	70.00	64.00	56.00	41.18	32.45	26.90	22.60	17.45	15.26	12.95	11.40	10.27	9.320	8.450	7.290	3.840
1.75V	225.0	181.0	149.3	124.0	108.0	90.00	82.00	72.30	68.01	62.00	54.00	39.77	31.50	26.20	22.10	17.20	15.10	12.80	11.27	10.15	9.225	8.375	7.206	3.830
1.80V	200.0	166.9	141.0	117.0	100.0	85.00	78.00	69.70	65.30	59.50	52.00	38.20	30.70	25.30	21.50	16.90	14.70	12.60	11.10	10.00	9.125	8.300	7.110	3.820

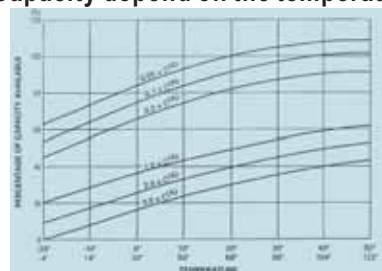
Constant Power Discharge Data (Watts per cell at 20°C)

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	549.6	440.0	328.7	274.5	230.4	199.9	178.7	161.3	145.4	133.9	114.8	82.41	64.95	53.97	46.35	36.41	30.15	25.83	22.64	20.20	18.26	16.67	14.24	7.77
1.65V	526.1	429.3	324.3	270.6	227.3	198.2	177.5	159.6	143.7	132.3	113.9	81.81	64.48	53.58	46.03	36.16	29.95	25.66	22.50	20.08	18.15	16.58	14.16	7.74
1.70V	493.5	411.8	320.3	263.8	222.7	194.0	174.3	157.8	141.1	130.2	112.2	80.75	63.73	53.02	45.60	35.85	29.72	25.48	22.35	19.95	18.04	16.48	14.09	7.71
1.75V	454.5	389.4	304.7	252.1	214.9	187.2	168.6	153.0	137.7	127.1	109.7	79.29	62.76	52.31	45.05	35.50	29.47	25.29	22.21	19.83	17.94	16.40	14.02	7.68
1.80V	397.7	352.3	279.9	234.0	200.8	175.9	159.0	144.7	130.6	120.8	104.6	76.21	60.65	50.75	43.86	34.69	28.89	24.85	21.86	19.55	17.71	16.20	13.88	7.64

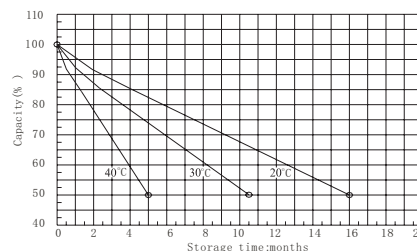
Performance drawing



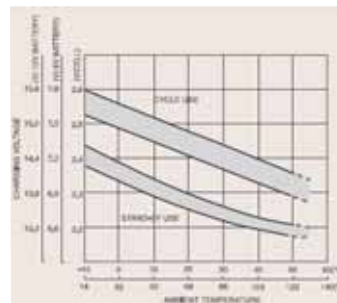
Capacity depend on the temperature



Capacity Retention Characteristic



Charge voltage depend on the temperature



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ABT VRLA Battery: Available Power Range From 0.8Ah to 3000Ah

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