

GTP FOR 12V EST SERIES BATTERIES

GENERAL CHARACTERISTICS							
Battery Type	Lead Acid Tubular Battery						
Nominal Voltage	12V						
No. of Cells	6						
Design life for Solar Application	10 - 12 years						
Design life for UPS Application	3 - 5 years						
Applicable Standards	IS 13369:1992						
Ampere Hour Efficiency	> 90%						
Watt Hour Efficiency	> 80%						
Self Discharge	Approx 1 - 2% of capacity declined per month 27 deg. C						
Storage Period	Max. 3 months						
Electrolyte Specific Gravity of the fully charged battery	1.240 +-0.005 at 27 deg. C						
Electrolyte Specific Gravity at the end of discharge	1.130 Approx						
Short circuit current of the battery	10 times of the AH capacity						
Short circuit current withstand time	< 2 second						
CHARGING CHARACTERISTICS							
Float Charging	2.16 to 2.20 Volts per cell at 27 deg. C						
Boost Charging	Constant current of 0.1C for a period of 10 to 12 hours. Voltage of cell at the end of full charge: 2.25 to 2.65V						
Normal Charging	For Cyclic Use: @0.1C till cell voltage reaches to 2.4V/cell. For Standby Use: 0.07C till voltage reaches to 2.55 to 2.65V/cell						
BATTERY TYPE CONSTRUCTION							
Material of battery container	Polypropylene (PP)						
Type of Positive plate	Tubular Positive with Lead Oxide - Red						
Type of Negative plate	Flat pasted with Lead Oxide - Grey						
Terminals	Selenium Lead Alloys/Tin coated nut bolts						
Material of Separator	Polyethylene Envelope (PE) cross ribbed Micro Porous separator						
Electrolyte	Sulphuric Acid (H ₂ SO ₄) conforming to IS : 266						
Sealing method	Heat Sealing						
DIMENSIONS							
BATTERY TYPE 12 V RANGE	NOMINAL CAPACITY @10Hr RATE	OVERALL DIMENSIONS in (mm)			BATTERY WEIGHT		ELECTROLYTE VOLUME (APPROX LTRS)
		LENGTH	WIDTH	HEIGHT	DRY	WET	
EST 20 – 12	20	260	173	235	8	14	6
EST 40 – 12	40	404	175	255	14	21	8
EST 60 – 12	60	404	175	255	20	26	7
EST 80 – 12	80	504	218	266	25	40	15
EST 100 – 12	100	504	218	266	31	44	13
EST 100 – 12 B	100	517	273	266	32	49	17
EST 130 – 12	130	517	273	266	35	51	16
EST 150 – 12	150	517	273	266	37	59	22

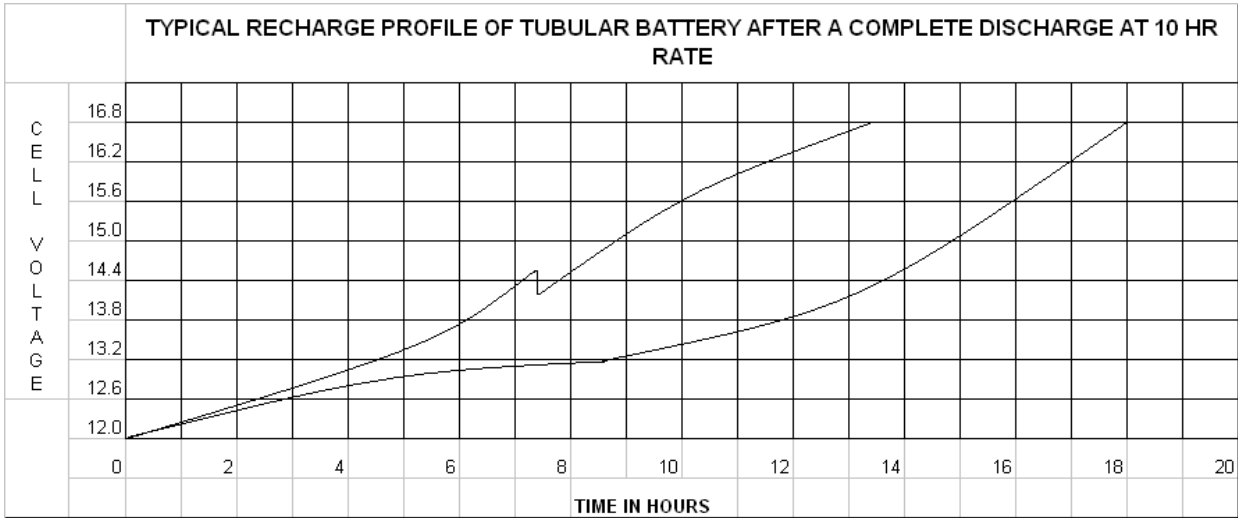
BATTERY AH EFFICIENCY DURING DIFFERENT RATES OF DISCHARGE							
Capacity	20Ah	40Ah	60Ah	80Ah	100Ah	130Ah	150Ah
10Hr. rate	20Ah	40Ah	60Ah	80Ah	100Ah	130Ah	150Ah
5 Hr. rate	15Ah	31Ah	46Ah	60Ah	75Ah	98Ah	113Ah
3 Hr. rate	12Ah	24Ah	36Ah	48Ah	60Ah	78Ah	90Ah
1 Hr. rate	10Ah	20Ah	30Ah	40Ah	50Ah	65Ah	75Ah
Internal Resistance	9.10 mohm	4.75 mohm	3.20 mohm	2.38 mohm	1.90 mohm	1.60 mohm	1.18 mohm

MAX. DISCHARGE CURRENT AT 25 DEG. C							
Discharge Current for 5 seconds (Amperes)	20Ah	40Ah	60Ah	80Ah	100Ah	130Ah	150Ah
	220	440	660	880	1100	1430	1650

OPERATING TEMPERATURE RANGE		
	Minimum	Maximum
Discharge	-15 Deg. C	+55 Deg. C
Charge	-10 Deg. C	+60 Deg. C
Storage	+15 Deg. C	+50 Deg. C

DISCHARGE CONSTANT CURRENT (AMPERES AT 27 DEG. C)							
CAPACITY AH	DIFFERENT RATES OF DISCHARGE / TIME						
	10 MIN.	20 MIN.	30 MIN.	1 HR.	3 HR.	5 HR.	10 HR.
	END CELL VOLTAGE (ECV)						
	1.63 V	1.67 V	1.69 V	1.75 V	1.8 V	1.82 V	1.85 V
20	25.50	20.50	16.0	10.0	4.78	3.32	2.0
40	50.5	41.00	32.0	20.0	9.66	6.66	4.00
60	75.6	61.50	48.00	30.00	14.34	9.99	6.00
80	100.80	82.00	64.00	40.00	19.12	13.32	8.00
100	126.00	102.00	80.00	50.00	23.90	16.65	10.00
130	151.20	123.00	96.00	60.00	28.68	19.98	12.00
150	170.00	138.00	108.00	67.00	32.00	23.00	13.50

- SALIENT FEATURES OF ROCKET TUBULAR BATTERIES**
1. Leak proof design with heat sealed Polypropylene (PP) container and cover
 2. Thro' partition welded for short electrical path – reduces internal resistance and increased performance.
 3. Micro porous aqua-trap ceramic float guide vent plug – environment friendly, free from acid fumes and minimizes the water loss.
 4. Tubular positive plates with low antimony alloy to reduce frequency of topping-up intervals.
 5. Active material is poured in the tubes; therefore, minimizes the possibility of shedding.
 6. Flat negative plates are of pasted grid type with lead calcium alloy and, special additives and expanders for better charge and discharge cycle.
 7. DRAMIC (France) Polyethylene Envelope (PE) envelop separator by virtue of high porosity, low electrical resistance and excellent oxidation resistance, serve as a perfect separation medium.
 8. Specially designed for long life in deep discharge cycle.
 9. Superior active material for excellent discharge performance.
 10. Pure laboratory grade additives and chemicals used for reliable output.



DISCHARGE CHARACTERISTICS CURVES OF TUBULAR CELLS

