



The **Wise** Choice



Completely
Maintenance Free



Negligible Fumes,
No Health Hazards



Full Rated Backup
till 85% of life



Low Cost of
Ownership



Safe
Operation



Hassle Free
Transportation

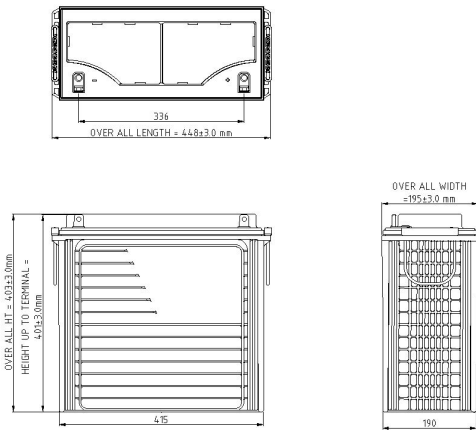
TALL TUBULAR GEL BATTERY (200Ah)



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Technical Specification - Tall Tubular Gel Battery



Product

1. Robust Tubular with high pressure diecasted spine - rate of spine corrosion is very low as compare to AGM VRLA
2. Gelled electrolyte - no stratification and no failure due to PSOC
3. Valve regulated - no water top up during service life
4. Antimony free alloy - Low Self Discharge
5. Very good design & high service life as compared to AGM VRLA
6. Good for cyclic & float applications
7. Wide operating temperature range.

Technical Specifications

Model	Nominal Voltage	Rated Capacity 10 Hr @ 27°C (Ah)	Dimensions in mm			Gross Weight [kg] (±3%)	Terminal Type
			Length (±3mm)	Width (±3mm)	Height (±3mm)		
EM200PT-NA (12 V 200AH @ C20)	12	180	448	195	403	61.8	L

Electrical Parameters & Charging Profile

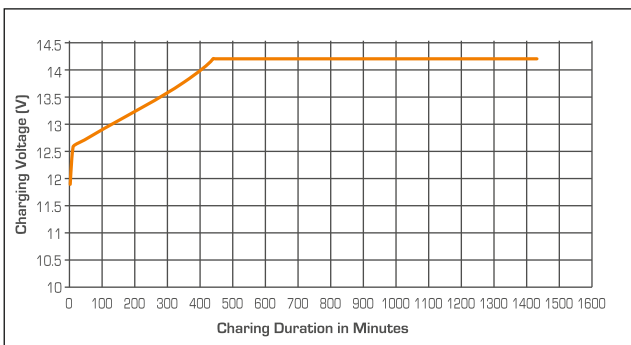
Battery Specified Capacity Test @ 27 °C						
Model	C20 @ 10.5V	C10 @ 10.5V	C7 @ 10.5V	C5 @ 10.5V	C3 @ 10.5V	C1 @ 10.5V
EM200PT-NA (12 V 200AH @ C20)	200	180	166	150	129	90
Ah & Wh Efficiency						
Ah Efficiency	>96%		Wh Efficiency		>84%	

- Poly Components Material :- Polypropylene (FR V2)
- Color :- Blue
- Testing parameters:- IS 13369:1992, IEC 60896-21 & IEC 61427-1, UL 1989

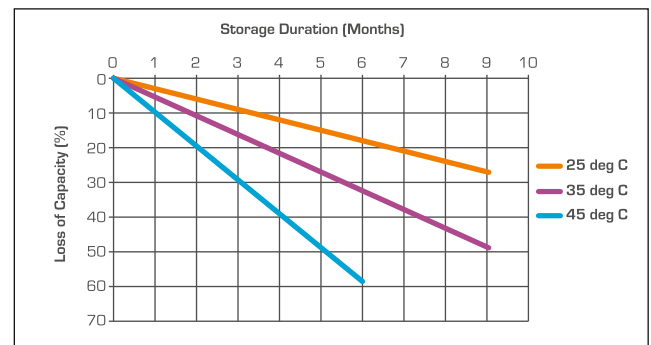
WARNING:

Risk of fire, explosion, or burns.
Do not disassemble, heat above 60°C, or incinerate.

Charging Profile



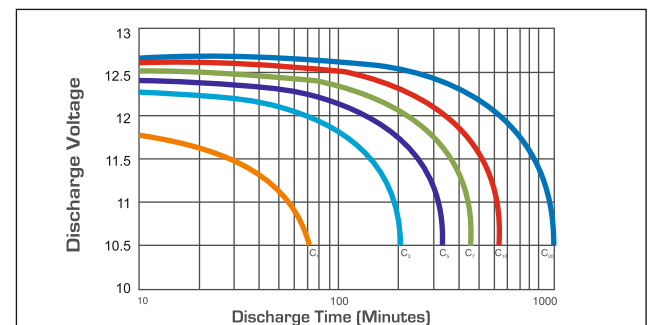
Self Discharge Characteristics @ Different Temperature



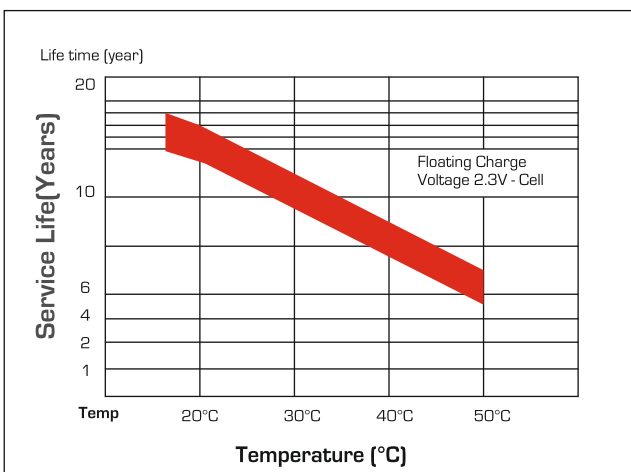
State of Charge Measure of open-circuit voltage @27°C

State of Charge	Specific Gravity	Voltage
100%	NA	12.90-13.10V
75%	NA	≤ 12.75V
50%	NA	≤ 12.45V
25%	NA	≤ 12.1V
0%	NA	11.9V

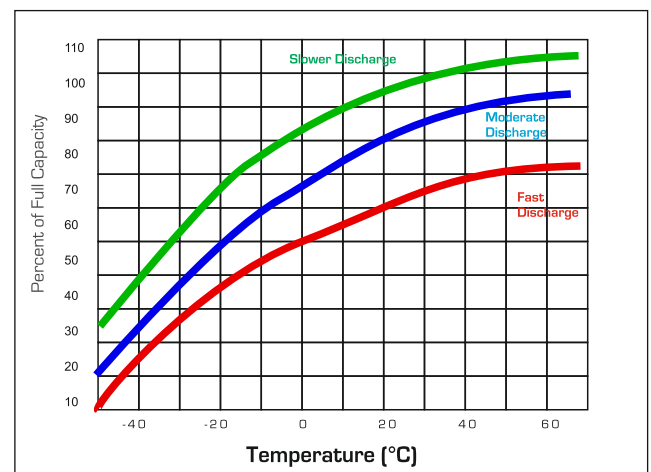
Discharging characteristics at various rates @27°C



Service (Float) Life and Temperature



Expected Capacity vs Temperature

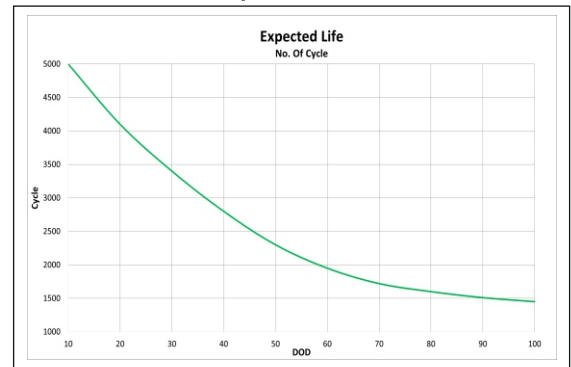


IMS Integrated Management System Certified with TUV & APAVE India for Design & Manufacturing of Lead Acid Battery

Specific Gravity & Self Discharge w.r.t Temperature

Charging Temperature Compensation	Add	Subtract
	0.005 volt per cell for every 1°C below 25°C 0.0028 volt per cell for every 1°F below 77°F	0.005 volt per cell for every 1°C above 25°C or 0.0028 volt per cell for every 1°F above 77°F
Operational Data	Operating Temperature	Self Discharge
	5°F to 131°F (-15°C to +55°C) At temperatures below 32°F (0°C) maintain a state of charge greater than 60%	As per discharge Graph

Expected Life



Instruction during installation of Tubular Gel

1. Please check the inverter settings, it should be as mentioned in Table -1.
2. Maximum 48 V series string allowed.
3. No parallel string allowed.
4. Always keep ideal settings on the Inverter.
5. Always use sine wave Inverter with flexible charging settings.
6. Wire gauge should be as per current standard gauge requirements.
7. No loose connections allowed.
8. The distance between inverter & battery should be 1 meter maximum, long wire length may drop the backup & charging efficiency.
9. Don't open the vent plugs (during maintenance and equalization process).

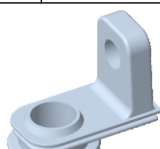
Table - 1

RECOMMENDED BATTERY IDEAL SETTINGS BY EASTMAN (48 V System)			
Battery Type Gel	Absorption Stage 14.4V (57.6V)	Float Stage 13.8 (55.2V)	Torque Values (Every 30 Days 3 Hrs) 15V (60V)
*Absorption Voltage :- 14.4V individual battery x N (No. of battery) * Float Voltage :- 13.8V individual battery x N (No. of battery) Torque (Equalization Voltage) :- 15V individual battery x N (No. of battery)			
RECOMMENDED BATTERY HIGHEST SETTINGS BY EASTMAN (48v System)			
Battery Type Gel	Absorption Stage 14.6V (58.4V)	Float Stage 14.0V (56.0V)	Torque Values (Every 30 Days 3 Hrs) 15.2V (60.8V)
*Absorption Voltage :- 14.60V individual battery x N (No. of battery) *Float Voltage :- 14.0V individual battery x N (No. of battery) Torque (Equalization Voltage) :- 15.20V individual battery x N (No. of battery)			

Comparison in between Eastman Tall Tubular Gel & AGM Gel VRLA

S.No	Parameter	Eastman Tall Tubular Gel	AGM VRLA
1	Plate technology	Tall Tubular Plate	Flat Pasted Plate
2	Life W.R.T. Application	Excellent performance on cyclic application	Not good for deep cycle application
3	Application	Power Backup solution-solar/Inverter/UPS suitable for float application above 1 Hour discharge rate	Power Backup Inverter/UPS good for float & Stand by application
4	Electrolyte	Electrolyte in between gel	Electrolyte in Between AGM
5	Water Loss	Negligible	Negligible
6	Water Top up	No water top up throughout warranty life	No water top up throughout warranty life
7	Life Extension	Not Applicable	Not Applicable
8	Self Discharge	Very Low < 2.0%	Very Low < 2.0%
9	Life Cycle w.r.t. 80% DOD@27°C	1600 cycles	450 Cycles
10	Spillage	Spill-proof	Spill-proof
11	Fumes	No	No
12	Recovery in PSOC	Excellent	Low
13	Charger Setting	Generic set point for charger	Required special set point for chargers
14	Operating Temperature Range	- 15 Degrees to + 55 Degree	- 15 Degrees to + 40 Degree
15	Terminal type	L- Type Terminal	Stud Type Terminal

Terminal Configuration:-
 Terminal Type:- L
 Terminal Height :- 25mm
 Torque Value :- 8-10 N.m
 Bolt Type:-M8



Vent Plug Type :
 M18 with vent valve & flame arrestor assembly



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