

# MAXXMAN

## TALL TUBULAR CONVENTIONAL BATTERY (150Ah to 240Ah)

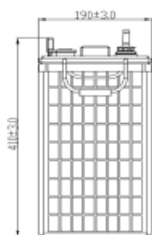
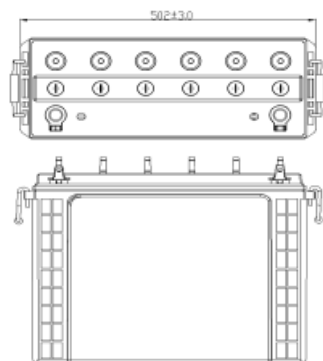


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## TECHNICAL SPECIFICATION - Tall Tubular Conventional Battery



### Product Features :-

1. Robust Tubular with High Pressure diecasted spine- resulting low rate of spine corrosion.
2. Spill Proof Vent plug – resulting in no spillage on top and low controlled acid fumes.
3. Optimized Negative paste receipt for fast charge acceptance
4. Consistent backup throughout life
5. Excellent behavior in PSOC condition as compare
6. Low Self Discharge
7. Excellent performance on deep cyclic application
8. Very High Design & Service Life
9. Low water loss

### Technical Specifications

| Model                               | Nominal Voltage | Rated Capacity 20 Hr @ 27°C (Ah) | Dimensions in mm |                |                 | Net Battery Weight [Kg] [±3%] | Terminal Type |
|-------------------------------------|-----------------|----------------------------------|------------------|----------------|-----------------|-------------------------------|---------------|
|                                     |                 |                                  | Length [± 3 mm]  | Width [± 3 mm] | Height [± 3 mm] |                               |               |
| <b>MM150</b><br>[12 V 150 AH @ C20] | 12              | 150                              | 505              | 190            | 410             | 55.00                         | L             |
| <b>MM200</b><br>[12 V 200 AH @ C20] | 12              | 200                              | 505              | 190            | 410             | 64.50                         | L             |
| <b>MM220</b><br>[12 V 220 AH @ C20] | 12              | 220                              | 505              | 190            | 410             | 66.00                         | L             |
| <b>MM240</b><br>[12 V 240 AH @ C20] | 12              | 240                              | 505              | 190            | 410             | 72.50                         | L             |

### Electrical Parameters & Charging Profile

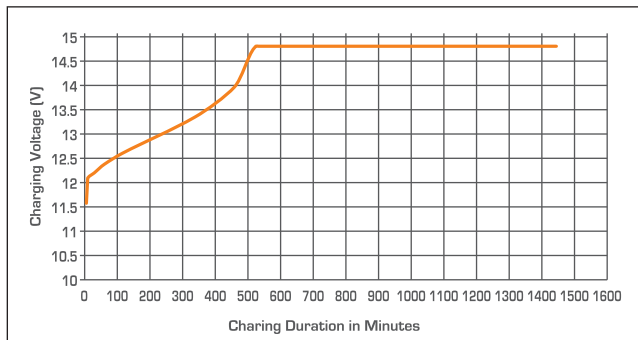
| Battery Specified Capacity Test @ 27 °C |            |            |           |           |           |           |
|---|------------|------------|-----------|-----------|-----------|-----------|
|   | C20 @10.5V | C10 @10.5V | C7 @10.5V | C5 @10.5V | C3 @10.5V | C1 @10.5V |
| <b>MM150</b><br>[12 V 150 AH @ C20]     | 150        | 135        | 124       | 112       | 97        | 68        |
| <b>MM200</b><br>[12 V 200 AH @ C20]     | 200        | 180        | 166       | 150       | 129       | 90        |
| <b>MM220</b><br>[12 V 220 AH @ C20]     | 220        | 206        | 180       | 166       | 143       | 100       |
| <b>MM240</b><br>[12 V 240 AH @ C20]     | 240        | 215        | 195       | 180       | 150       | 107       |

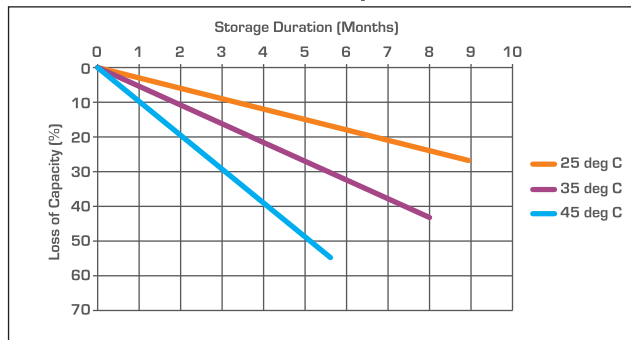
| Ah & Wh Efficiency |      |               |      |
|--------------------|------|---------------|------|
| Ah Efficiency      | >90% | Wh Efficiency | >75% |

- Poly Components Material :- Polypropylene Co polymer
- Watering system :- Individual to every cell in Monobloc
- Color :- Blue
- Testing Parameters :- IS 13369:1992

**Charging Profile**



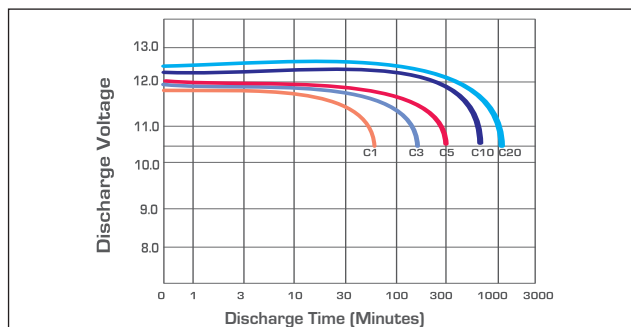
**Self Discharge Characteristics @ Different Temperature**



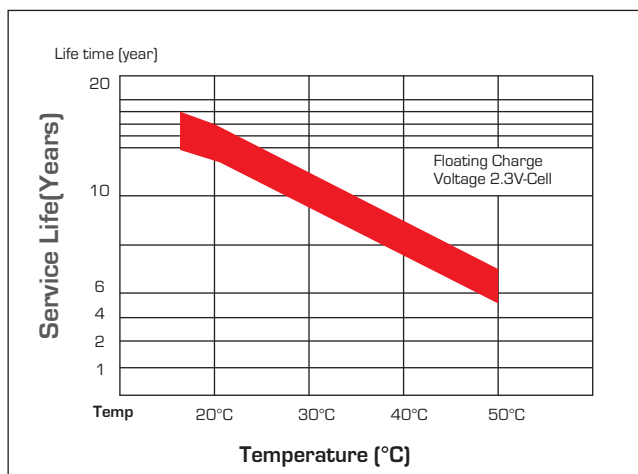
**State of Charge Measure of Open-circuit Voltage @ 27°C**

| State of Charge | Specific Gravity | Voltage       |
|-----------------|------------------|---------------|
| 100%            | 1.245-1.275      | 12.55V-12.70V |
| 75%             | ≤ 1.225          | ≤ 12.4V       |
| 50%             | ≤ 1.190          | ≤ 12.1V       |
| 25%             | ≤ 1.155          | ≤ 12.0V       |
| 0%              | 1.120            | 11.8V         |

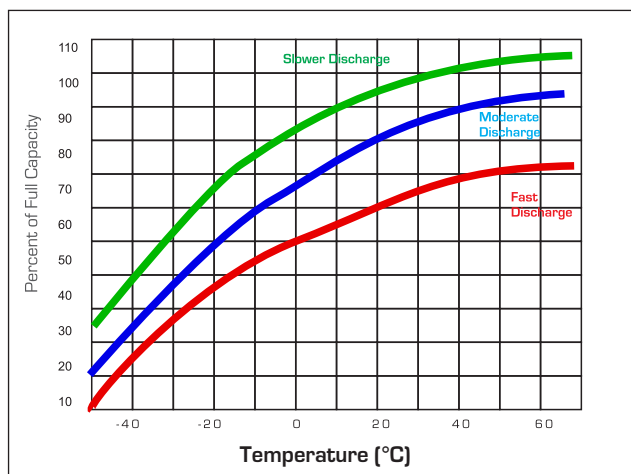
**Discharging Characteristics at various rates @ 27°C**



**Service (Float) Life and Temperature**



**Expected Capacity vs Temperature**



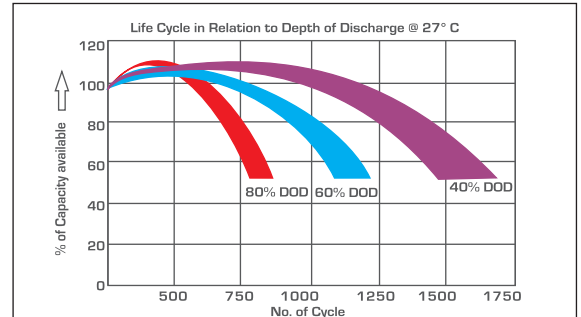
Eastman Battery Manufacturing Certified by Vincotte for



### Specific Gravity & Self Discharge w.r.t. Temperature

|                                   | Add  | Subtract   |
|-----------------------------------|--|--|
| CHARGING TEMPERATURE COMPENSATION | 0.005 volt per cell for every 1°C below 25°C<br>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<br>0.0028 volt per cell for every 1°F above 77°F |
| OPERATIONAL DATA                  | Operating Temperature<br>-4°F to 131°F (-20°C to +55°C)<br>At temperatures below 32°F (0°C) maintain a state of charge greater than 60%. | Self Discharge<br>As per discharge Graph   |

### Expected Life



### Charging Instructions

| Charger Voltage Settings (at 77° F/ 25°C)  |  |      |      |
|--|--|------|------|
| System Voltage   | 12V  | 24V  | 48V  |
| Maximum Charge Current   | 0.2C10   |      |      |
| Maximum Absorption Phase Time (hours)  | 4  |      |      |
| Absorption Voltage   | 14.4   | 28.8 | 57.6 |
| Float Voltage  | 13.6   | 27.2 | 54.4 |
| Equalization Voltage   | 16   | 32   | 64   |
| Do not install or charge batteries in a sealer or non-ventilated compartment. Constant under or overcharging will damage the battery and shorten its life as with any battery. |  |      |      |
| Periodic Charge  | Provide a periodic freshening charge to maintain a SOC greater than the threshold of 70% |      |      |

### Comparison in between Maxxman TTC & AGM VRLA

| S.No | Parameter                             | Maxxman Tall Tubular Conventional   | 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 Back up - Inverter/UPS Good for float & stand by application" |
| 4    | Electrolyte                           | Free Flow Electrolyte   | Electrolyte in-between AGM   |
| 5    | Water Loss                            | Low   | Negligible   |
| 6    | Water Top up                          | Low water top up  | No water top up throughout Warranty Life                             |
| 7    | Life Extension                        | Long life with regular water top up   | Not Applicable   |
| 8    | Self Discharge                        | Low <3.0%   | Very Low < 2.0%  |
| 9    | Life Cycle w.r.t DOD @27° C @ 80% DoD | 900 Cycle   | 450 Cycle  |
| 10   | Spillage                              | Low Spill-proof   | Spill-proof  |
| 11   | Fumes                                 | Low Fumes   | No   |
| 12   | Recovery in PSOC                      | Excellent   | Low  |
| 13   | Charger Settings                      | Generic set point for chargers  | Required special set point for chargers                              |
| 14   | Operating Temperature Range           | -20 Degrees to +55 Degrees  | -15 Degrees to +40 Degrees   |
| 15   | Terminal Type                         | L-Type Terminal   | Stud Type Terminal   |

Terminal Configuration :-  
Terminal Type :- L  
Terminal Height :- 24 mm  
Torque Value :- 8-10 N.m  
Bolt Type :- M8

Vent Plug Type :-  
M22 coin type

Vent Plug Type :-  
M30 Dummy Plug

