

Makka Power

Tall Tubular Battery For **Solar Use**

More Power | More Performance | More Backup

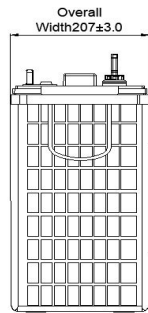
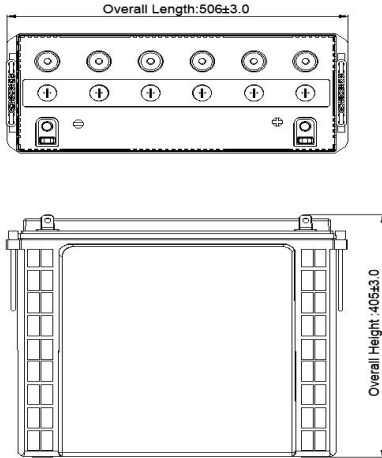
TALL TUBULAR
CONVENTIONAL BATTERY
200Ah to 300Ah



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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 recipe 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			Gross Battery Weight [Kg] [±3%]	Terminal Type
			Length (±3 mm)	Width (±3 mm)	Height (±3 mm)		
MP200 [12 V 200 AH @ C20]	12	200	506	207	405	67.60	L
MP240 [12 V 240 AH @ C20]	12	240	506	207	405	72.50	L
MP270D [12 V 270 AH @ C20]	12	270	506	207	405	75.30	L
MP300D [12 V 300 AH @ C20]	12	300	506	207	405	80.75	L

Electrical Parameters & Charging Profile

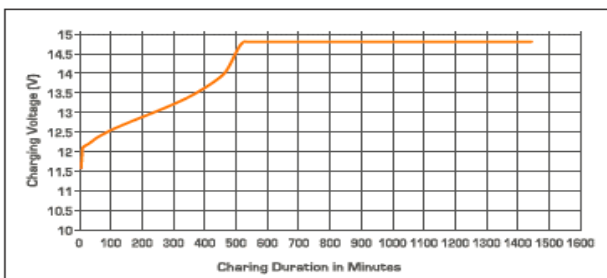
Battery Specified Capacity Test @ 27 °C						
Model	C20 @10.5V	C10 @10.5V	C7 @10.5V	C5 @10.5V	C3 @10.5V	C1 @10.5V
MP200 [12 V 200 AH @ C20]	200	180	166	150	129	90
MP240 [12 V 240 AH @ C20]	240	215	195	180	150	107
MP270D [12 V 270 AH @ C20]	270	243	223	202	174	122
MP300D [12 V 300 AH @ C20]	300	260	239	217	187	130
Ah & Wh Efficiency						
Ah Efficiency	>90%		Wh Efficiency		>75%	

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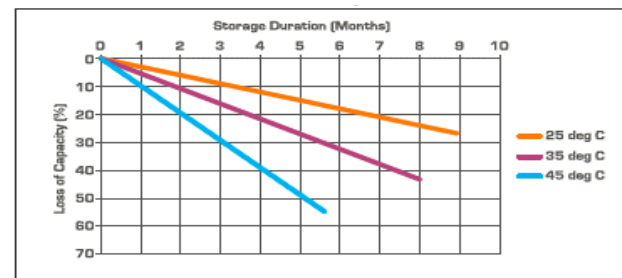
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- Poly Components Material :- Polypropylene Co Polymer
- Watering System :- Individual to every cell in Monobloc
- Color :- White
- Testing Parameters :- IS 13369:1992 & IEC 60896-11 & 61407-1

Charing Profile



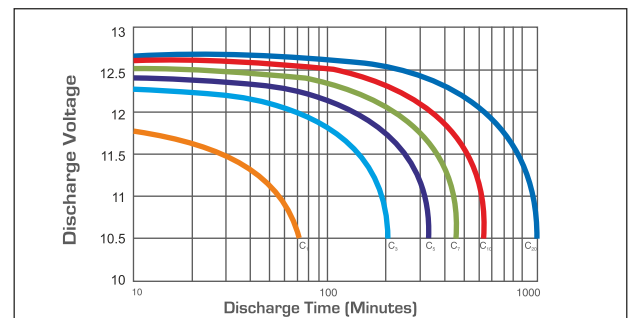
Self Discharge Characteristics@ Different Temperature



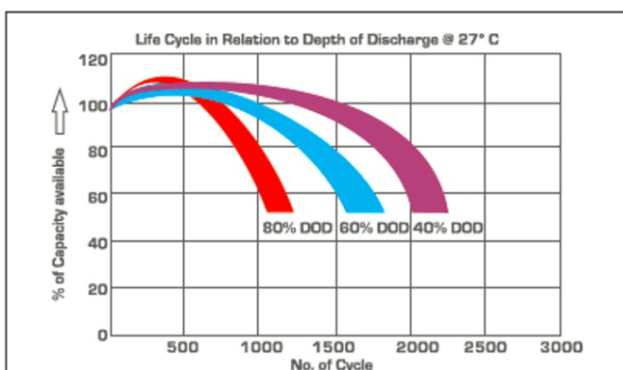
State of Charge Measure of Open-Circuit Voltage @27 C

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

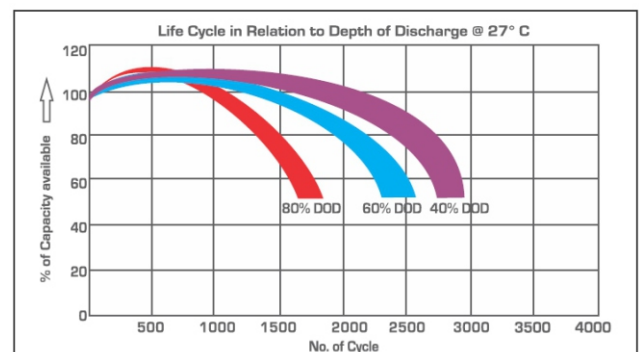
Discharging Characteristics at Various Rates@ 27 C



Service (Float) Life and Temperature



Expected Capacity vs Temperature



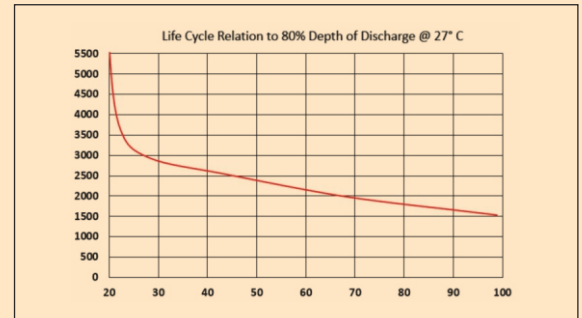
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Tall Tubular Battery For **Solar Use**

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
	-4°F to 131°F (-20°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



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
NOTE: 1) Do not install or charge batteries in sealer or non-ventilated compartment, Constant under or overcharge will damage the battery and shorten its life as any battery. 2) Maximum two strings are allowed in parallel connections			
Periodic Charge	Provide a periodic fresh charge to maintain a SOC greater than the threshold of 70%		

Comparison in Between Makka Power TTC & AGM VRLA

S.No	Parameter	Makka Power 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 Hours discharge rate	Power Backup 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	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. 80% DOD@27°C	1000-1800 cycles	450 Cycles
10	Spillage	Low Spill-proof	Spill-proof
11	Low Spill-proof	Low Fumes	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	- 20 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 :- 24mm
Torque Value :- 8-10 N.m
Bolt Type:-M8



Vent Plug Type :

M22 Coin Type



Vent Plug Type :

M30 Dummy Plug



Float Indicator



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