



Livsol Tubular Batteries are manufactured with Heat Sealed Polypropylene Co Polymer Mono-block casing material. Tubular positive plates are made of highly corrosion-resistant special lead alloy and Pasted Negative Plates with high discharge performance to ensure cycling capabilities and also reduce topping-up frequency. Individual cells are fitted with Micro Porous aqua-trap ceramic vent plugs with sealed float, which prevent acid mist coming out from the cells to make it convenient for living room ambiance.

Made with Hi-Power Selenium technology which makes it almost self-sustainable battery (Low maintenance) and more durable (Low self-discharge current). Livsol batteries are solar panel compatible. It protects you from the suffering of buying a new battery whenever you wish to switch to solar.

## TECHNICAL SPECIFICATIONS

Battery Models	Capacity at 27 Deg °C	Product Dimensions (±3MM)			Weight (kg±5%)		Initial Charge Minimum Input (AH)	Initial Charge at Constant Current (A)		Constant Potential Limiting Current (A)	Trickle Charge Current in (mA)	
		Length	Width	Height	Dry	Filled		Start (Upto 2.3Vpc)	Start (Upto 2.75Vpc)		Min.	Max
LTT1000 36	100AH	500	190	420	25	49	10	5	350	20	90	345
LTT1500 36	150AH	500	190	420	32	57	15	7.5	525	25	120	520
LTT2000 36	200AH	500	190	420	35	59	20	10	700	30	155	695
LTT2200 36	220AH	500	190	420	39	63	22	11	770	33	180	765
LTT2400 36	240AH	500	190	420	42	66	24	12	840	35	190	835
LTT2500 36	250AH	500	190	420	48	70	25	12.5	875	38	200	870
LTT2800 36	280AH	500	190	420	52	72	27	14	980	40	210	975
LTT3000 36	300AH	500	190	420	54	75	30	15	1080	45	220	1080

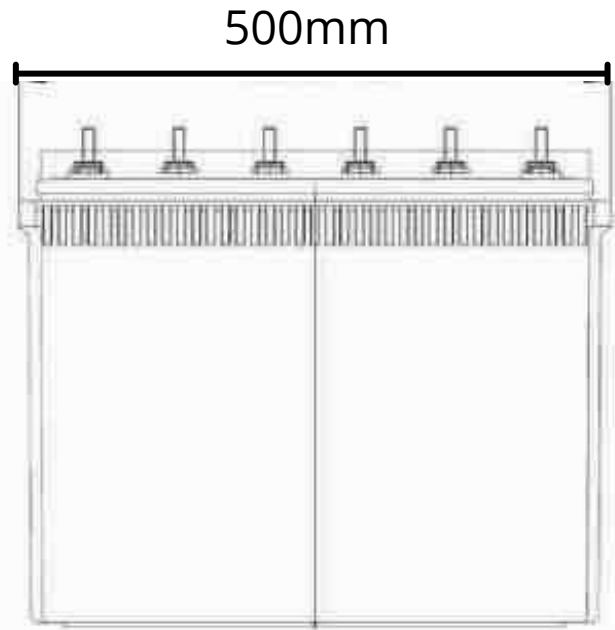
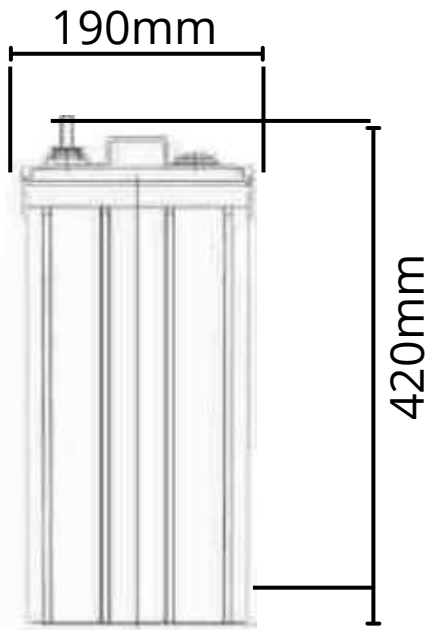
### Condition of Fully Charged Battery

- 1.3 Consecutive hourly reading of specific gravity and voltage become constant
2. Top of charge voltage will be around 16.2V - 16.5V
3. All cells should be gas freely
4. Minimum Ah has been given
5. Specific gravity at fully charged condition 1.240 +/- 0.005 at 27°C

### KEY FEATURES AND BENEFITS

- Less self discharge current
- Deep cycle solar compatible battery
- Corrosion resistant alloy for spins & grids
- High Porosity Envelope Separators
- Pasted Negative Plates
- Tubular Positive Plates
- Acid Resistant Polyester Gauntlets
- Eco friendly aqua tap vent plugs to trap electrolyte loss
- Long design life
- Very low maintenance
- Works well in extreme weather conditions
- Rugged performance
- Long shelf life when left unattended for longer time
- Suitable for frequent power cuts
- Quick Charge Acceptance
- More efficient and saves money

# Battery Dimensions



# INSIDE FEATURES

**Stronger & more reliable**

**Advanced spines** – for enhanced current flow through the grid for exceptional performance on heavy loads like an AC.  
**Thicker spines** – maintain structural design and decrease failure rate due to corrosion.  
**Thicker tubular plates** – for better performance, giving 1200 cycles @ 80% depth of discharge.



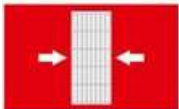
**Longer Life & Reliable backup**

**Thicker tubular plates** – give a better performance, giving 1200 cycles @ 80% depth of discharge (one cycle is one full charge state followed by full discharge).



**Less space**

**Low footprint** – of the specially designed battery container, with a lesser base, occupying less space, thus saving on costly floor space.

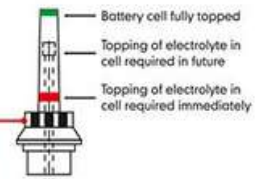


**Saves maintenance cost & time**

**Additional fluidic head space** – above battery plates serves longer between watering intervals and avoids frequent topping-up, saving on maintenance.

**Easy maintenance**

**Electrolyte level indicator** – shows the level of electrolyte in each cell, making the maintenance much easier.



**Risk-free & keeps environment clean**

**Effective fume arrester** – ensures complete safety, preventing any flame or spark from entering the battery. It saves it from the risk of explosions. It also prevents the release of gasses into the atmosphere.

**Faster electrochemical reaction**

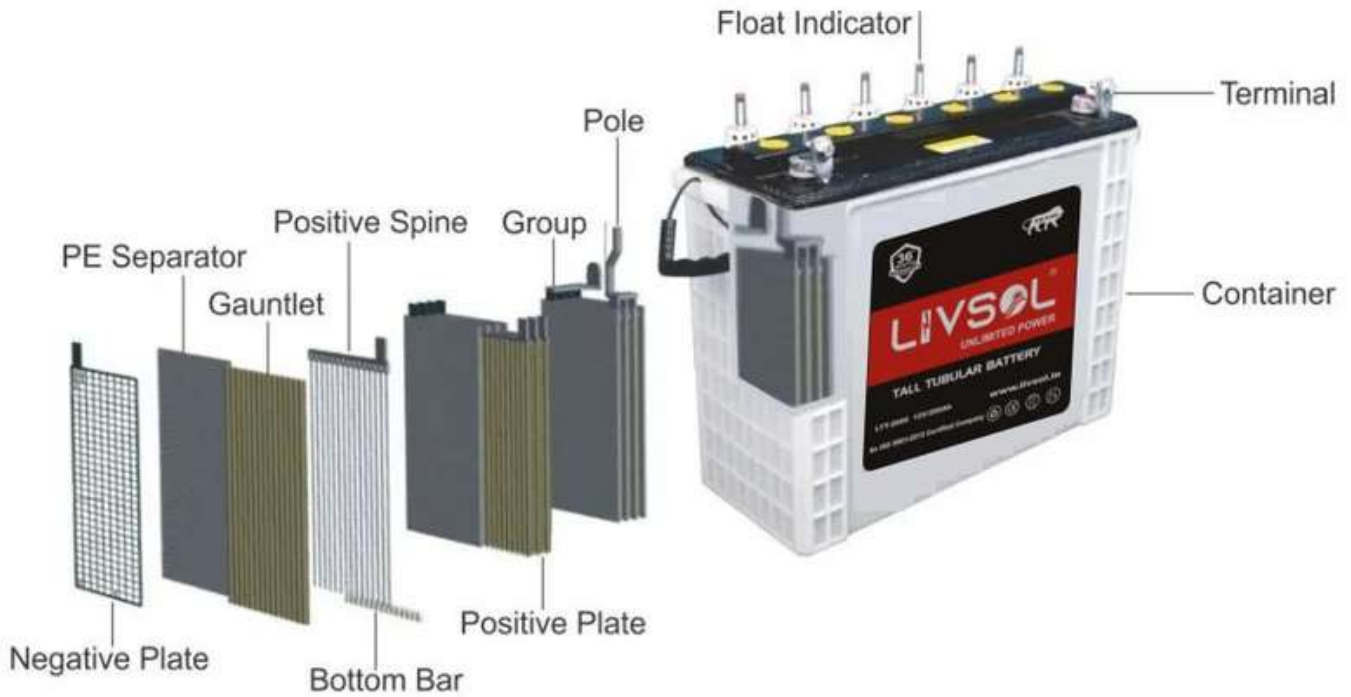
**Higher number of ribs** – on the separator keeps the acid channel open for faster and better electrochemical reaction.

**Prevents deep discharge**

**High cycle count** – from strong plates, formed by HADI machine at 150 bar pressure, prevent the battery from going in deep discharge.

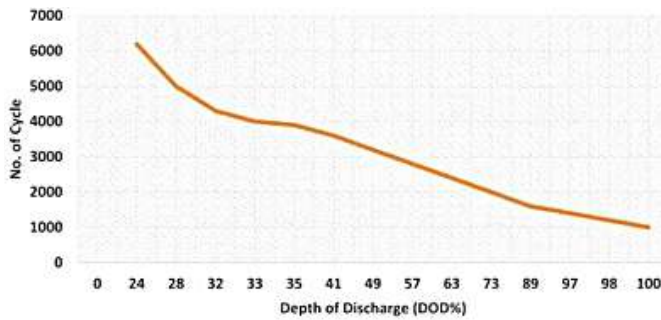


## BATTERY PARTS

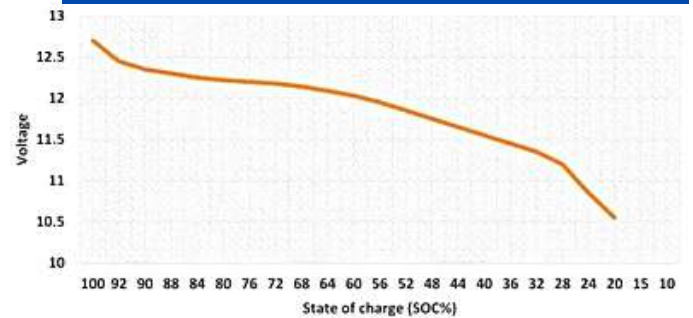


## CHARECTERISTICS CURVES

### DOD vs Cycle Life

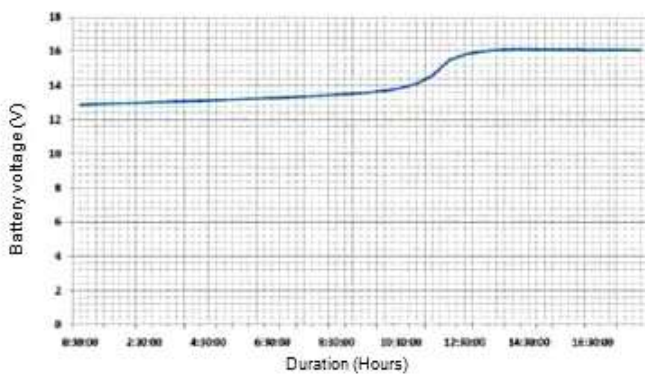


### State of Charge

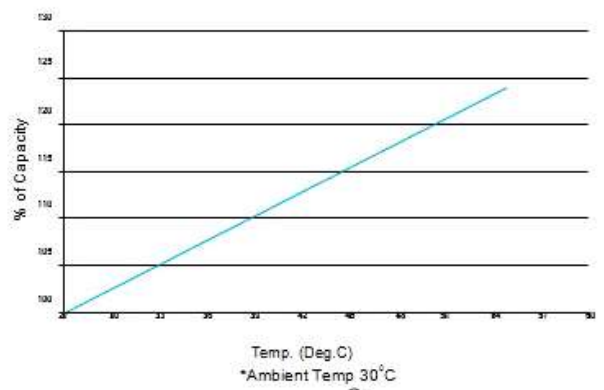


### Charge Characteristics Graph

For Boost Charging



### Temperature Vs Capacity



## NORMAL RECHARGING INSTRUCTION

Recharging through Inverter at constant potential mode of 14.2V with limited current as specified. After battery potential reaches 14.4V, the battery should continue in trickle charge mode at constant potential of 13.8V.

## Statutory Notice

All batteries contain lead, which is harmful for humans and environment. As per statutory requirements, the used battery must be returned to the authorized dealer, manufacturer or at designated collection centers.

## Discharge & Charge Scenario (80%DOD)

- 1) Cycle Method: Discharge with  $2I^{10}$  for 4 hours (80% DOD), charge with  $2I^{10}$  for 3.5 hours +  $I^{10}$  for 0.5 hour +  $0.25 I^{10}$  for 3.5 hours. This is one cycle.
- 2) Residue Capacity Determination: The batteries are discharged at 10 hour rate after every 50 cycles to test battery capacity. When residue capacity of 10 hour rate capacity is lower than 80%, test is ended. After discharge at 10 hour rate are every 50 cycles, the charge method is: charge 80% of discharged capacity with current of  $2I^{10}$  + charge 20% with current of  $I^{10}$  + charge 20% with current of  $0.41I^{10}$  (i.e. charge 120% of discharged capacity).
- 3) Temperature: 27 °C  
Advantage of Upper Constant Current Charge Model Battery; can be completely recharged within 8 hours.  
The end charge voltage will be higher than 2.6V pc, which is good for active material exchange.

\* Technical Parameters are Subject to Change due to Continuous improvements and R&D.