# TNEP 12-50 [12V50Ah]

TIANNENG




## Product Features

**Deep Cycle Long Life Series** 400~600 Cycle Times @100%DOD

| | | |
|---|---|---|
| ↑10% Capacity<br>Improve the content and utilization of active substances、Direct Bar-welding | Carbon Fiber | Rare-earth alloy |
| | ↑15%<br>Discharge Power<br>Positive Carbon Fiber | ↓50%<br>Grid Corrosion<br>Rare-earth patent alloy |

## Product Applications

Electric Tricycle, Low-speed EV, Golf cart, Electric four-wheel, Wheelchair

Sweeper, Electric Forklift, Lift Truck, Water Scooter, Snowmobile

## Physical Specification

| Model | Dimensions (mm/inch) | | | | Weight(kg/lbs) ±3% | Terminal | Container |
|---|---|---|---|---|---|---|---|
| | Length | Width | Height | Total Height | | | |
| TNEP12-50 | 198.5/7.81 | 166/6.54 | 174/6.85 | 174/6.85 | 13.9/30.65 | I3 | ABS UL94-HB (Optional: FR ABS UL94-V0) |

## Product Specifications

| Nominal Voltage | Rated Capacity25℃/77℃ | Opreating Temp.Range | Capacity Effected Temp | Capacity vs Storge Time (25℃/77℉) |
|---|---|---|---|---|
| 12V | 50Ah 20hr Rate (1.80V/cell)<br>45Ah 10hr Rate (1.75V/cell)<br>43Ah 5hr Rate (1.75V/cell)<br>41Ah 3hr Rate (1.75V/cell) | Discharge:-15℃~50℃ (5℉~122℉)<br>Charge:0℃~40℃ (32℉~104℉)<br>Storage:-15℃~40℃ (5℉~104℉)<br>Optimum:25℃±2℃ (77℉±5℉) | 40℃ (104℉):106%<br>25℃ (77℉):100%<br>0℃ (32℉):85%<br>-15℃ (5℉):72% | Three months : 90%<br>Six months : 80% |

## Constant Current Discharge (A)@25℃ (77℉)

| F.V/Time | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 48.9 | 34.8 | 27.9 | 16.0 | 12.7 | 9.89 | 8.04 | 6.81 | 5.21 | 4.24 | 2.42 |
| 1.80V/cell | 50.6 | 35.9 | 28.8 | 16.5 | 13.2 | 10.2 | 8.35 | 7.06 | 5.37 | 4.36 | 2.50 |
| 1.75V/cell | 52.0 | 37.2 | 29.8 | 17.6 | 13.7 | 10.6 | 8.56 | 7.22 | 5.53 | 4.46 | 2.55 |
| 1.70V/cell | 53.3 | 38.2 | 30.9 | 17.8 | 14.0 | 10.9 | 8.87 | 7.52 | 5.66 | 4.57 | 2.61 |
| 1.67V/cell | 54.4 | 39.4 | 32.0 | 18.0 | 14.1 | 11.0 | 9.04 | 7.58 | 5.76 | 4.64 | 2.63 |
| 1.60V/cell | 55.8 | 40.6 | 32.6 | 18.6 | 14.6 | 11.3 | 9.25 | 7.79 | 5.90 | 4.78 | 2.65 |

## Constant Power Discharge (W/cell)@25℃ (77℉)

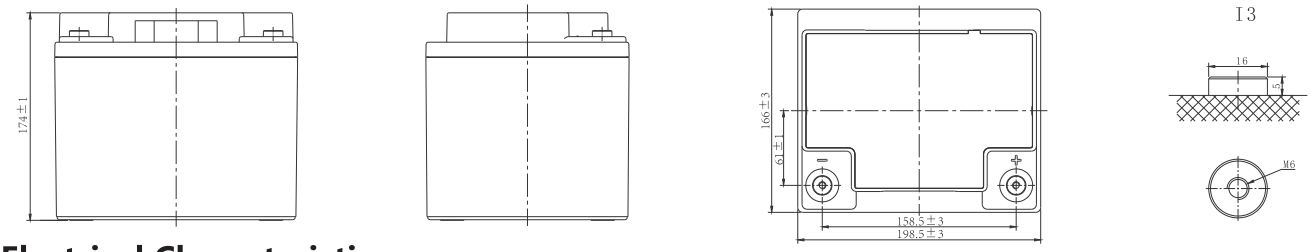
| F.V/Time | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 95.5 | 68.5 | 55.2 | 31.8 | 25.5 | 19.9 | 16.2 | 13.7 | 10.6 | 8.61 | 4.92 |
| 1.80V/cell | 98.5 | 70.3 | 56.7 | 32.8 | 26.3 | 20.5 | 16.8 | 14.2 | 10.8 | 8.82 | 5.07 |
| 1.75V/cell | 101 | 72.7 | 58.6 | 34.8 | 27.2 | 21.1 | 17.1 | 14.5 | 11.1 | 8.99 | 5.15 |
| 1.70V/cell | 103 | 74.1 | 60.3 | 35.1 | 27.6 | 21.6 | 17.6 | 15.0 | 11.3 | 9.16 | 5.24 |
| 1.67V/cell | 104 | 75.9 | 62.1 | 35.3 | 27.8 | 21.7 | 17.9 | 15.0 | 11.4 | 9.23 | 5.25 |
| 1.60V/cell | 106 | 77.6 | 62.7 | 36.1 | 28.5 | 22.2 | 18.1 | 15.3 | 11.6 | 9.43 | 5.28 |

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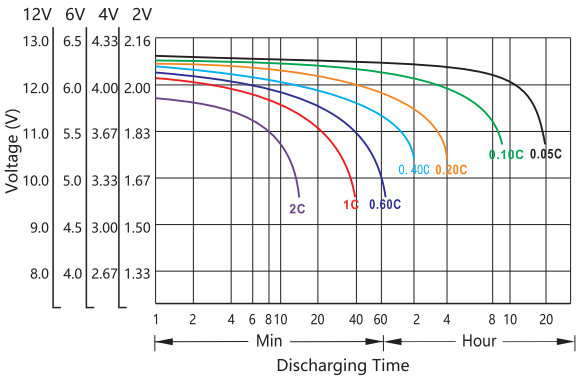
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## Battery Dimensions(mm)

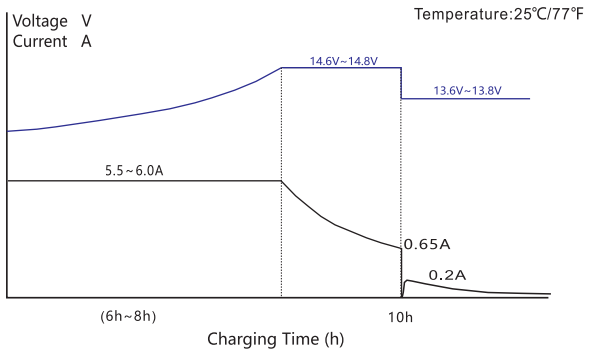



## Electrical Characteristics

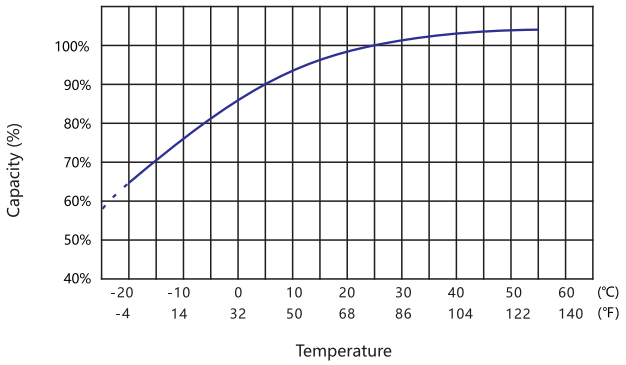
### Discharging Characteristics@25℃(77℉)



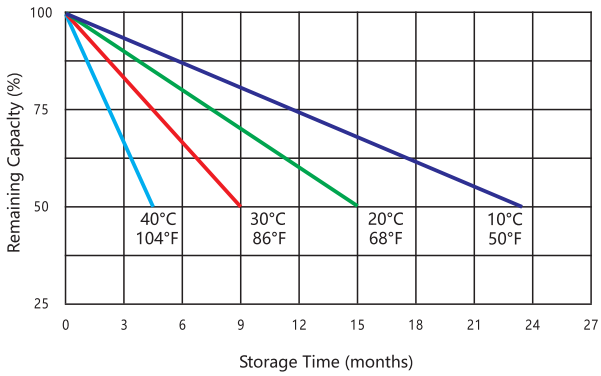

### Charging Characteristics@25℃(77℉)



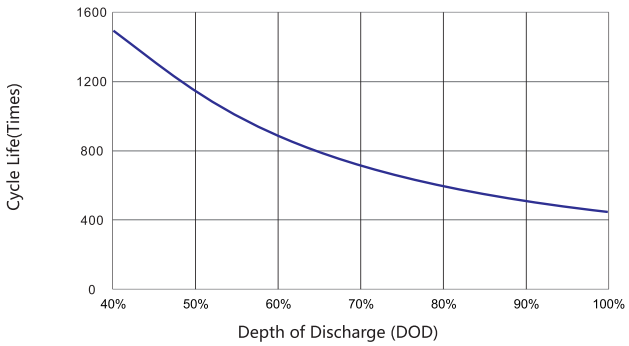

### Capacity vs Temperature



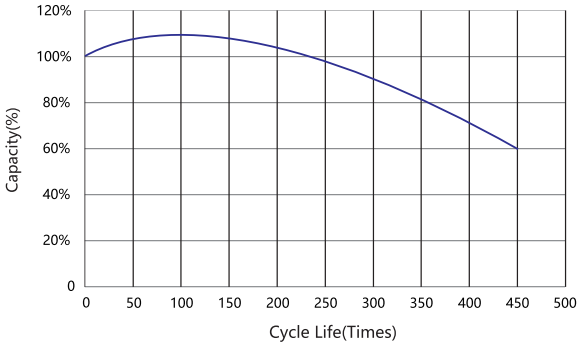

### Self-discharge vs Time




### Cycle Life vs Depth of Discharge@25℃(77℉)




### Cycle Life vs Remaining Capacity@25℃(77℉)




## Usage and Maintenance

| Limited Current | Limited Voltage | Floating Voltage |
|---|---|---|
| Limited current: ≤0.15$C_3$A | 14.6V~14.8V @25℃(77℉)<br>Temp.Coefficient:-24mV/℃ | 13.6V~13.8V@25℃(77℉)<br>Temp.Coefficient:-18mV/℃ |

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