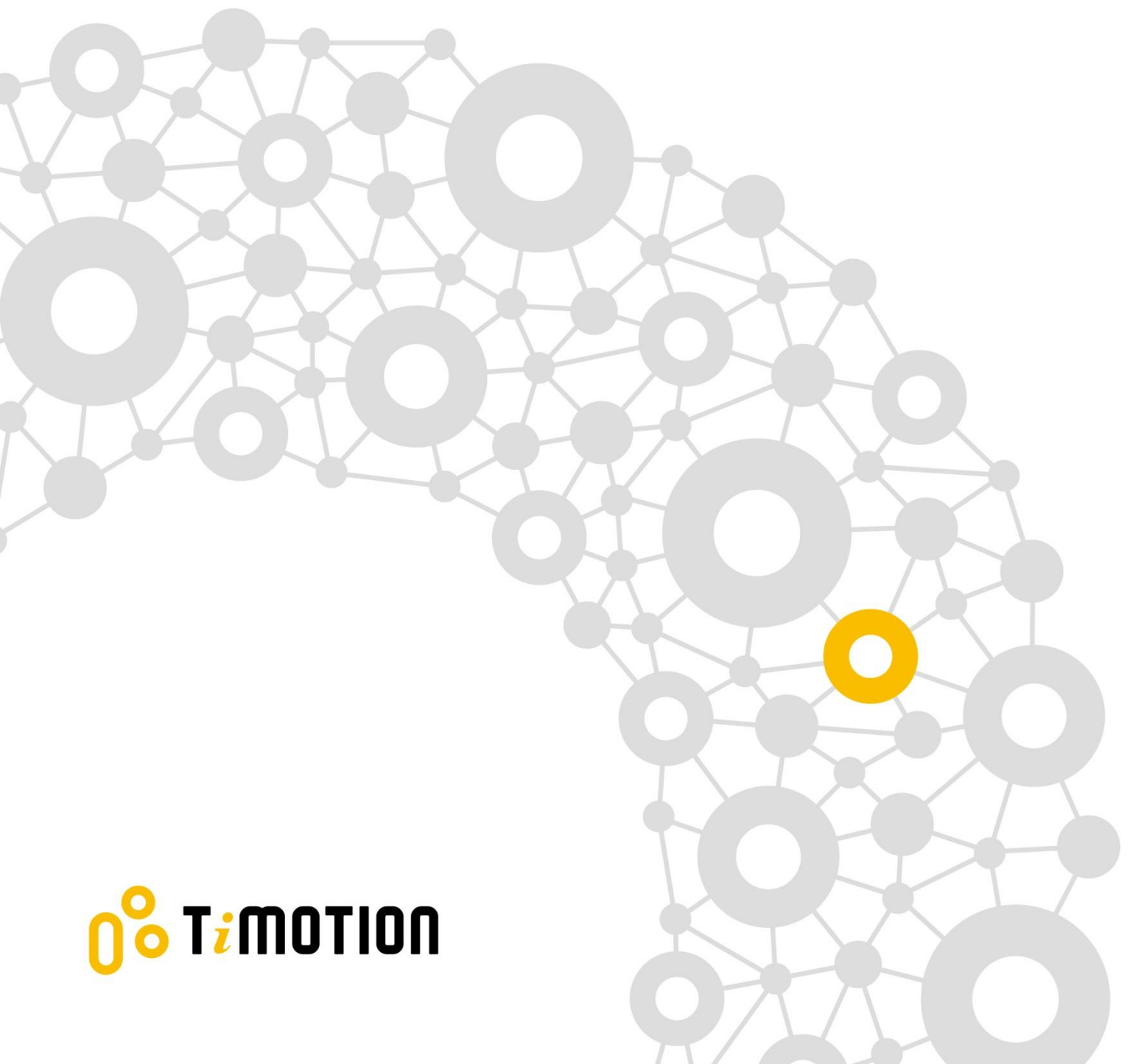


**VERSION: D**  
**20200514**

# TBB7 User Manual



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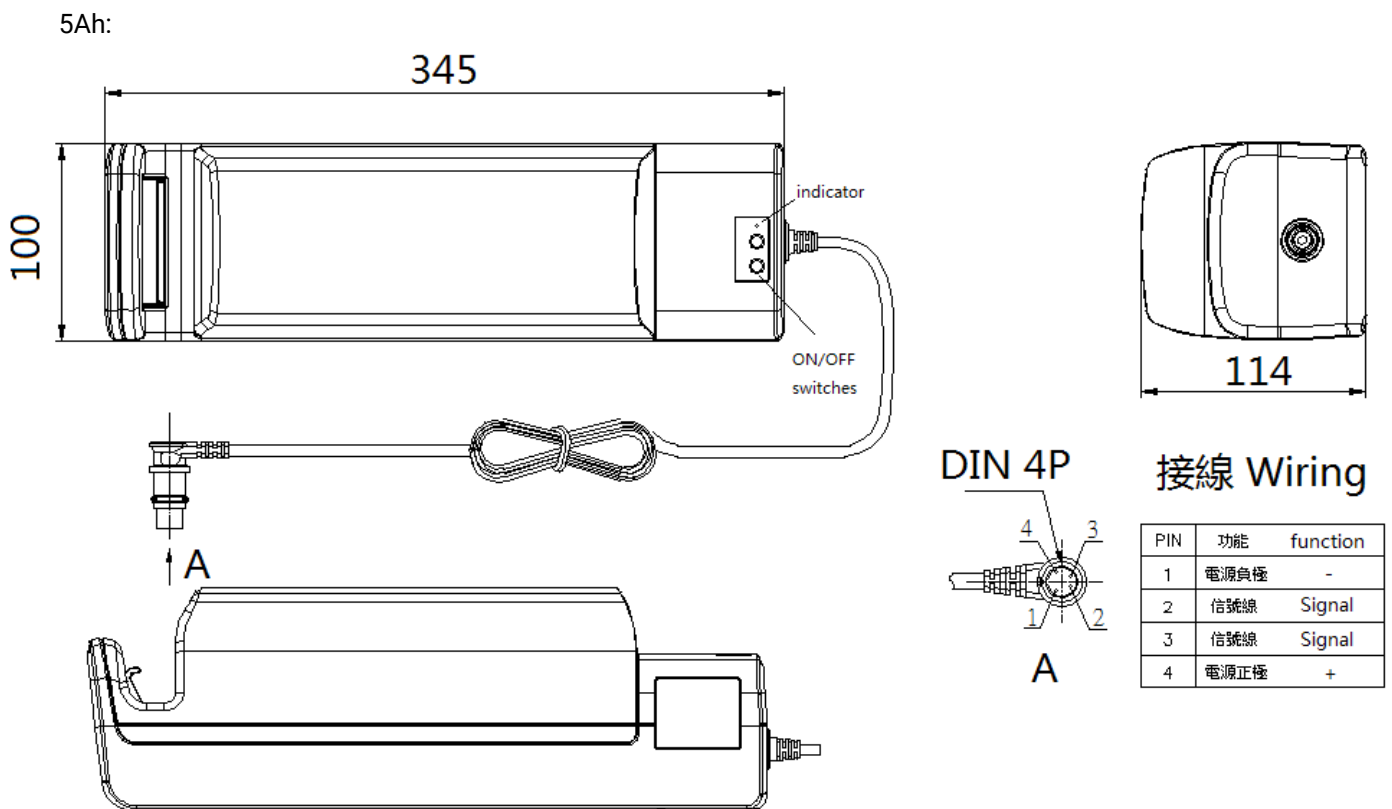
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# 1.Warning

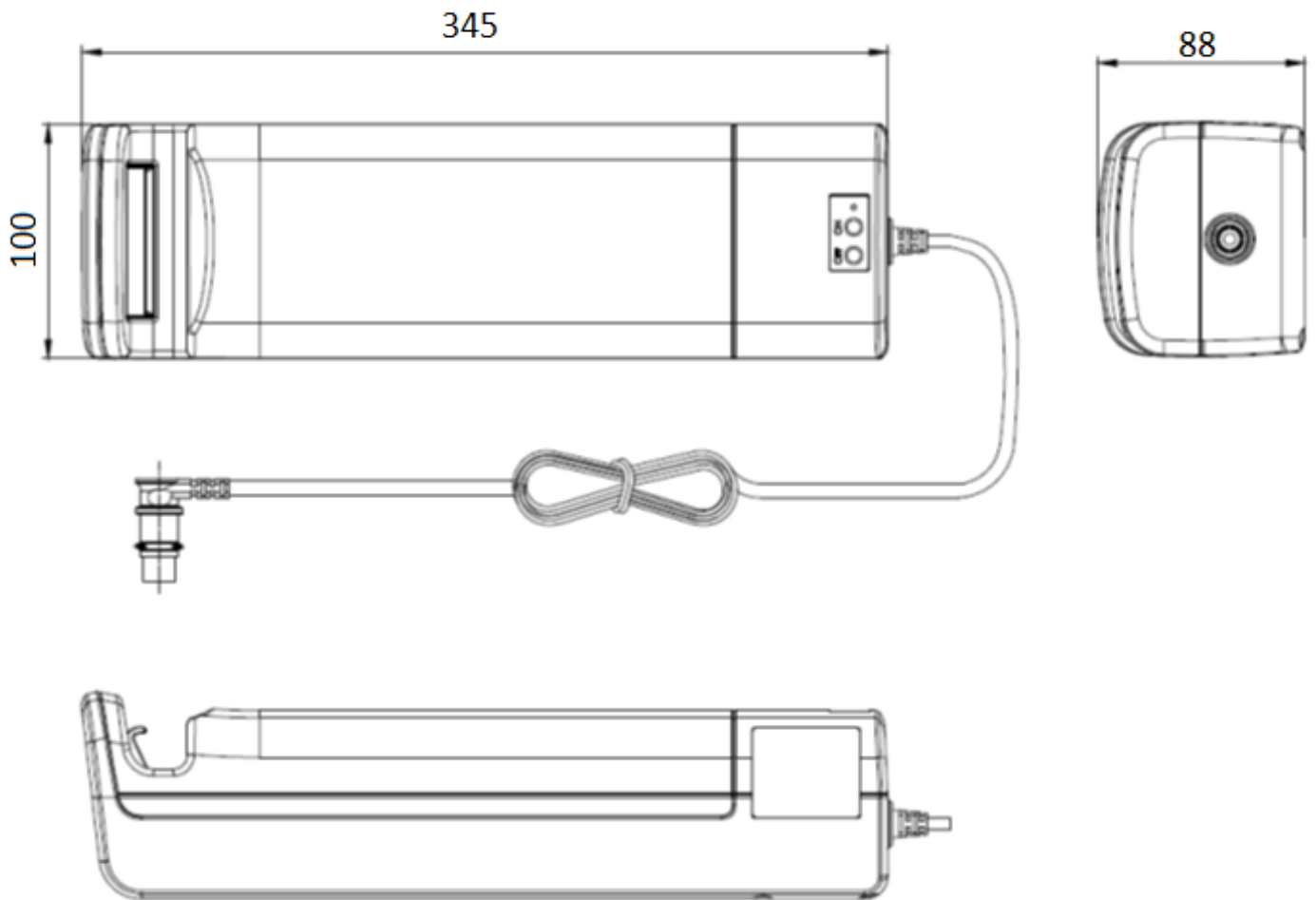
- Must follow the rated input voltage
- Don't discard or expose the products into water or heat source
- Recycle with certified depots
- Repair by authorized maintenance centers
- With certified charger from original manufactures

## 2. Specifications

Model name	TBB7	
Battery capacity	5.0Ah (0.1C discharge, 500mA)	2.9Ah (0.1C discharge, 290mA)
Input	29~45V DC	
Output	24V DC, 5.0A	24VDC, 2.9A
Duty cycle	10% (2 min on / 18 min off)	
Operation temperature	5~45°C	
IP rating	Up to IP66W	
Dimension	345 * 100 * 114 mm	345 * 100 * 88 mm
Net weight/pc	4.4kg	2.8kg
ON & OFF switches	With	
Socket for TP7C	With (optional)	



2.9Ah:



## 3. Operation

When there is no AC-in

Button	Operation	Action
ON	Press>1 sec	Turned on and discharging
OFF	Press>3 sec	Turned off and stop discharging

## 4. Indications

### 4.1 Status

Process	Status	
When charged	Hi charging	Charging
Discharging	Hi battery	Low battery
Others	Protection	Failure

### 4.2 Table

Status	Capacity	LED	
Hi charging	>80%	Green	Continuous on
Charging	<80%	Green	Short dimming (1 sec /1 sec)
Hi battery	>25%	Green	Long dimming (0.5 sec / 4 sec)
Low battery	<25%	Orange	Long dimming (0.5 sec / 4 sec)
Protection	<20%	-	Off
Failure	-	Orange	Continuous on

### 4.3 Table (TP7C)

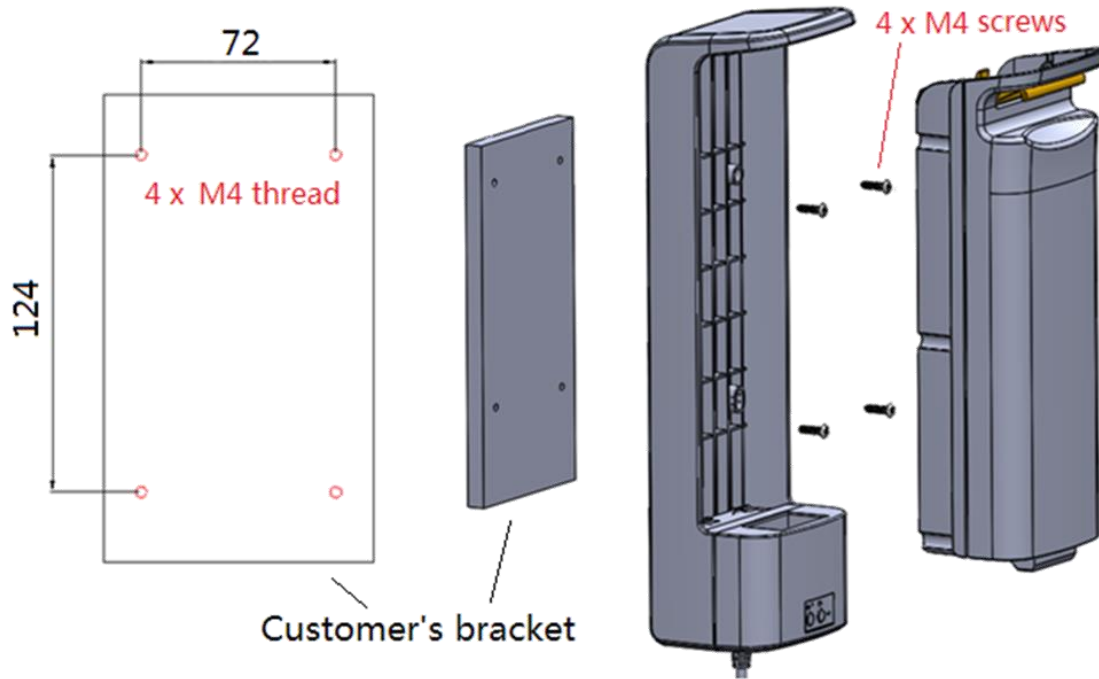
When charge by TP7C, TBB7 LED become off, and the status only shown on TP7C-

Status	Capacity	LED	
Hi charging	>80%	Green	continuous on
Charging	<80%	Orange	continuous on

### 4.4 Remarks

- From Hi charging status (around 80%) to fully charged (in warranty period > 90% max capacity), it needs around additional 10hrs charging
- When seeing the failure status indication- please liaise with the seller

# 5. Installation



## 6. Protections

Under below protection status- LED continuous off

Protection type	When	Lasting for
Discharge- Over current protect	Current > 10.0A	10 sec.
Discharge- Low voltage protect	Voltage <16.0VDC	15 sec.
Standby - Low voltage protect	Voltage <22.5VDC	10 min.

## 7. Maintenance

The product should be charged continuously at least 24hrs under following circumstances-

- First operation
- Before long period storage without AC-in
- First operation after long period storage

### 7.1 Storage 1

Storage period when without AC-in V.S estimated capacity (100% capacity when shipped out from factory)

Period (including shipping)	Capacity	Status
3 months	79%	Usable
6 months	58%	Please charge before use
>6 months	<58%	Too long storage period, battery capacity harmed * Be sure to charge 24hrs every 6 months least

### 7.2 Transportation

By sea or inland shipment

### 7.3 Storage 2

- Temperature: 0 ~40°C
- Humidity: 10% ~ 93%
- Atmosphere: 86kPa ~ 106kPa

### 7.4 Repair

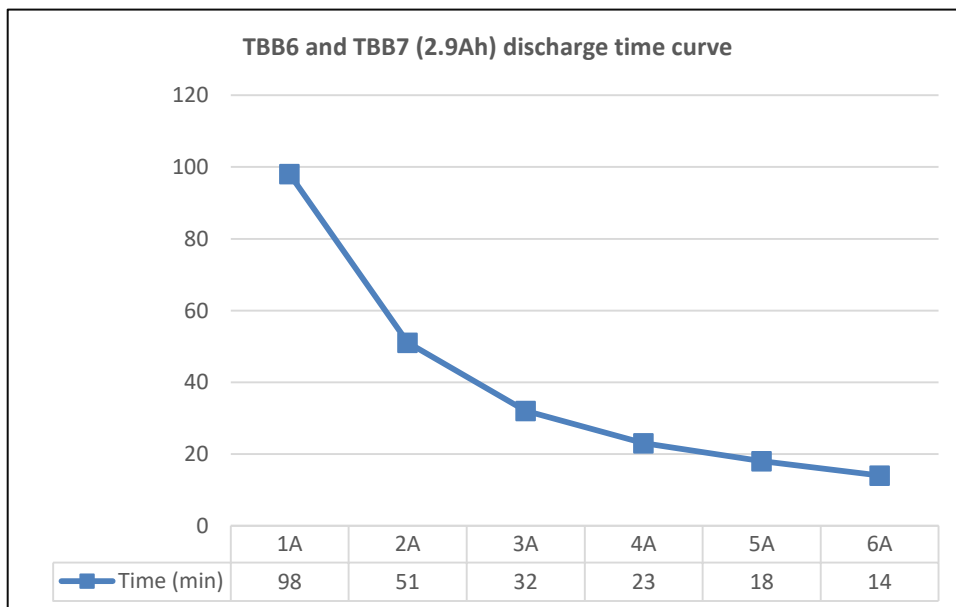
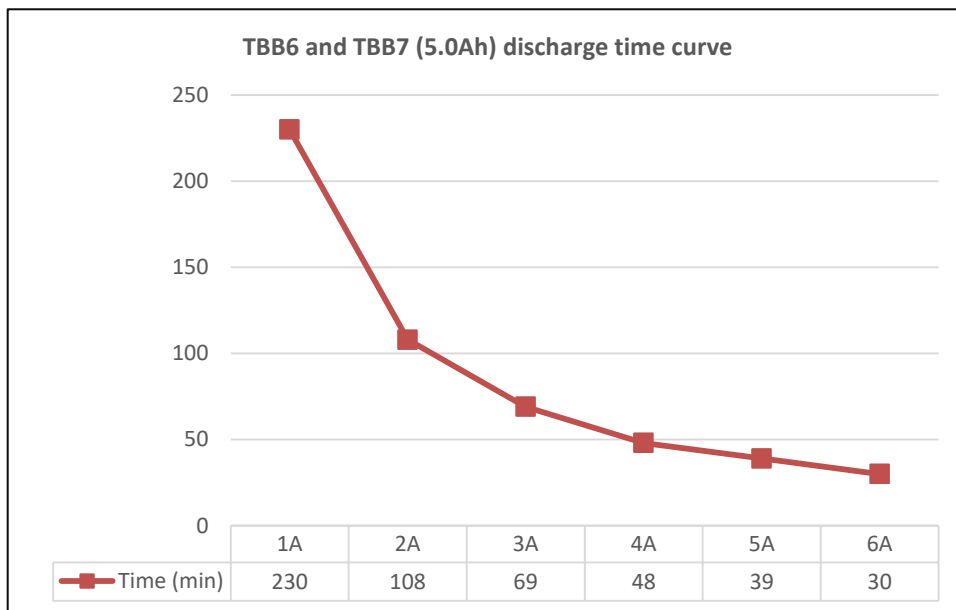
Same spec/dimension, lead-acid maintenance free battery cell. Please consult to the seller.



## 8. Appendix

### 8.1 Discharge time curve

Sample	12V battery cell
Status	From full capacity (100%) to protect (20%)
X axis	Discharge current (A)
Y axis	Discharge time (min)
Remark	In real situation the discharge varies- this test is only for reference



## 8.2 Cycle test curve

Sample	12V battery cell	Steps	1-49 <sup>th</sup> times	5.0Ah	2.9Ah
Cycle	300 times (memo each 50 <sup>th</sup> times)		Discharge for 2hrs	1250mA	720mA
X axis	Cycle (times)		Charge for 6hrs	500mA	290mA
Y axis	Max capacity (Ah)		50 <sup>th</sup> times	5.0Ah	2.9Ah
Remark	In real situation the discharge/ charge varies- this test is only for reference		Discharge until protect	1250mA	720mA
			Charge until max capacity	500mA	290mA
			*Repeat since 51 <sup>th</sup> times		

