# Tadiran Lithium Ion Rechargeable Battery
# Model TLI-1520A

## 1. Scope

This specification apply to the 1520 size Lithium Ion Rechargeable battery supplied by Tadiran Batteries Ltd.

***Notice: Charging circuit and application load profile have to be approved by Tadiran prior to the use of this cell.***

## 2. Characteristics

### 2.1. Physical

2.1.1. Length: 20 mm Max.
2.1.2. Diameter: 14.8 ±0.3 mm.
2.1.3. Weight: 9 ±0.2 gr. Max.

### 2.2. Electrical / Charge

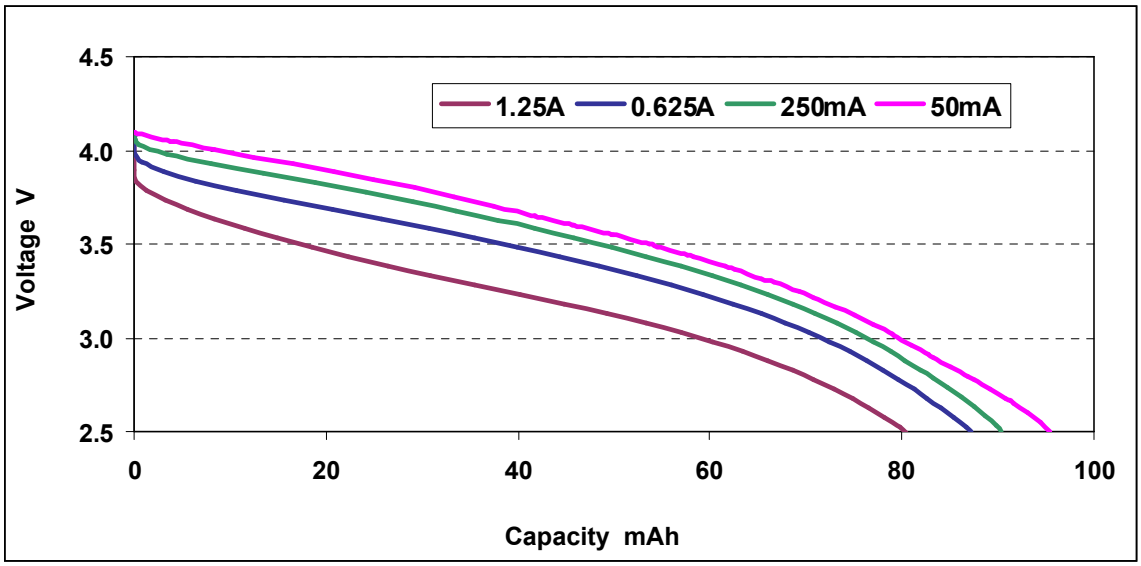
2.2.1. Charge Voltage: 4.1 V
2.2.2. Charge Current: 25 mA Max.
2.2.3. Charge Method: CCCV (Constant Current/Constant Voltage)
2.2.4. End of Charge: 5 mA Max. per cell
2.2.5. Charge Temp. Range: -20 to +50 $^{o}$C
Charge temperature can be extended to -40 ÷ +85 $^{o}$C provided that the max. charge current is limited to 5 mA.

### 2.3. Electrical / Discharge

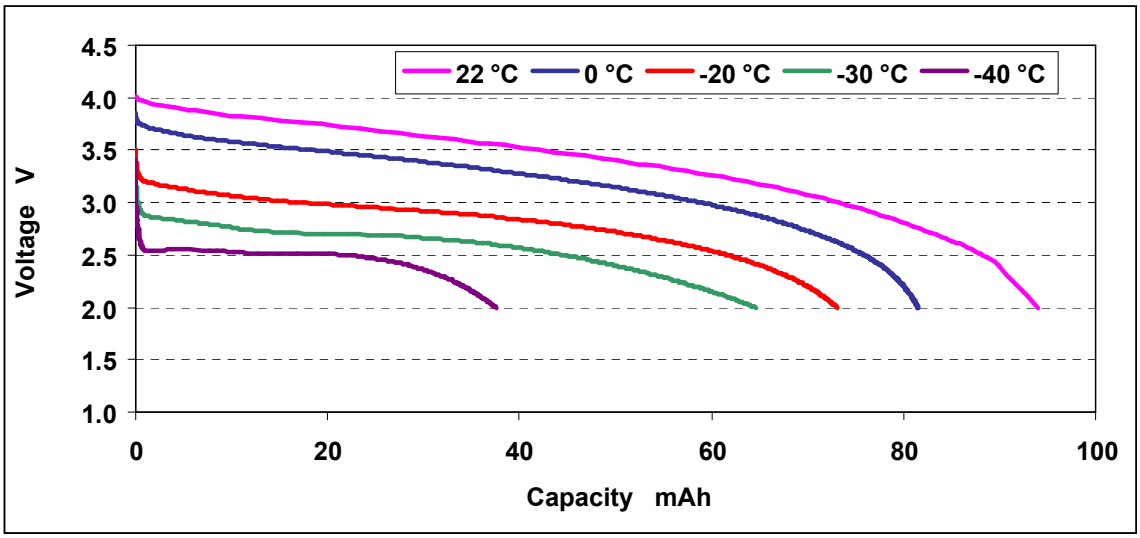
2.3.1. Nominal Current: 50 mA
2.3.2. End of Discharge: 2.5 V @ Room Temperature
2.3.3. Discharge Temp. Range: -40 to +85 $^{o}$C
2.3.4. Performance Characteristics:

| Item | Performance | Conditions |
|---|---|---|
| Battery Capacity | 90 [mAh]<br>85 [mAh] | Discharge at 25 mA<br>Discharge at 250 mA |
| Charge Discharge Cycles | 85 [mAh] | After 100 cycles Discharge at 50 mA |
| Temperature | 80 [mAh]<br>90 [mAh] | Discharge at -20 $^{o}$C at 50 mA<br>Discharge at 60 $^{o}$C at 50 mA |
| Charge Retention (reversible) | 80 [mAh] | After 5 years at RT,<br>Discharge at 50 mA |
| Impedance | Less than 250 mohm | Impedance at 1 KHz |

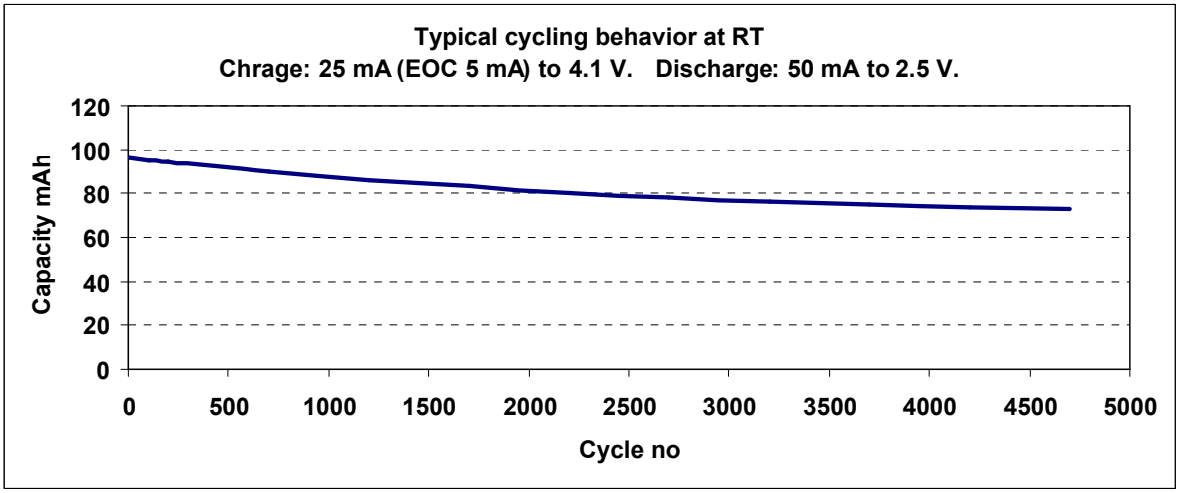
## Discharge curves at Room Temperature




## Discharge Curves at Several Temperatures, @ 0.5 A



## Charge/ Discharge Cycling Performance




2.4. Cell / Battery Protection (**to be applied by the user**)

| Item | Specifications |
|---|---|
| Over charge protection | Cell voltage should not be higher than 4.2 V |
| Over discharge protection | Cell voltage should not be lower than 2.4 V |

2.5. Safety Characteristics

The cells successfully passed the following safety tests:

- Short circuit at RT, 55 $^{o}$C and 85 $^{o}$C.
- Temperature test up to 170 $^{o}$C.
- Crush.
- Impact.
- Nail penetration.
- Over charge up to 125 mA, 12 V.
- Over discharge (300%) up to 0.5 A.

2.6. Battery pack assembly and usage considerations

- For 2 cells or more in series, voltage shall be monitored on each cell.
- For more than 2 cells in parallel, maximum charge current shall be limited to 50 mA for the whole pack.