# UL 7.5-12
12V 7.5AH
General

Ultracell®
'Quality in Every Language'

## UL7.5-12


## Physical Specification

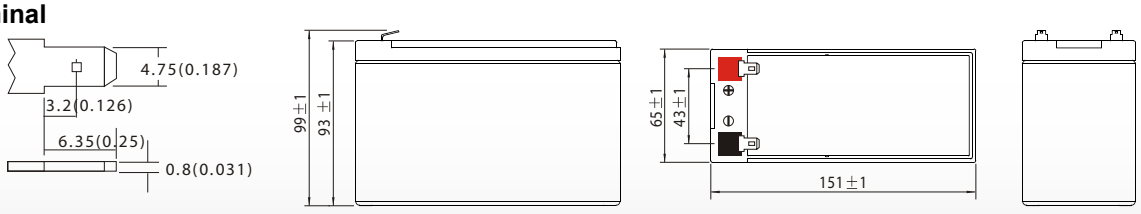
| | |
|---|---|
| Part Number: | **UL7.5-12** |
| Length: | **151 ± 2 mm ( 5.95 inches)** |
| Width: | **65 ± 2 mm ( 2.56 inches)** |
| Container Height: | **93.5 ± 2 mm ( 3.68 inches)** |
| Total Height (with terminal): | **99 ± 2 mm ( 3.90 inches)** |
| Approx Weight: | **Approx 2.30 kg** |

## Specifications

| | | |
|---|---|---|
| | Nominal Voltage | 12V |
| | Nominal Capacity (20HR) | 7.5AH |
| **Terminal Type** | Standard Terminal | F1 |
| | Optional Terminal | F2 |
| **Container Material** | Standard Option | ABS |
| | Flame Retardant Option (FR) | ABS (UL94:VO) |
| **Rated Capacity** | 7.50 AH/0.375A | (20hr,1.80V/cell, 25°C / 77°F) |
| | 6.98 AH/0.698A | (10hr,1.80V/cell, 25°C / 77°F) |
| | 6.37 AH/1.28A | (5hr,1.75V/cell, 25°C / 77°F) |
| | 5.74 AH/1.91A | (3hr,1.75V/cell, 25°C / 77°F) |
| | 4.71 AH/4.71A | (1hr,1.60V/cell, 25°C / 77°F) |
| **Max Discharge Current** | 112.5A (5s) | |
| **Internal Resistance** | Approx 20mΩ | |
| **Discharge Characteristics** | Operating Temp. Range | Discharge: -15 ~ 50°C (5 ~ 122°F) |
| | | Charge: 0 ~ 40°C (5 ~ 104°F) |
| | | Storage: -15 ~ 40°C (5 ~ 104°F) |
| | Nominal Operating Temp. Range | 25 ± 3°C (77 ± 5°F) |
| | Cycle Use | Inital Charging Current less than 2.25A.Voltage 14.4V ~ 15.0V at 25°C (77°F) Temp. Coefficient -30mV/°C |
| | Standby Use | No limit on Initial Charging Current Voltage 13.5V ~ 13.8V at 25°C (77°F) Temp. Coefficient -20mV/°C |
| | Capacity affected by Temperature | 40°C (104°F) 103% |
| | | 25°C (77°F) 100% |
| | | 0°C (32°F) 86% |
| **Design Floating Life at 20°C** | 5 Years | |
| **Self Discharge** | Ultracell batteries may be stored for up to 6 months at 25°C(°77F) and then a refresh charge is required. For higher temperatures the time interval will be shorter. | |

## Dimensions

### F1 Terminal



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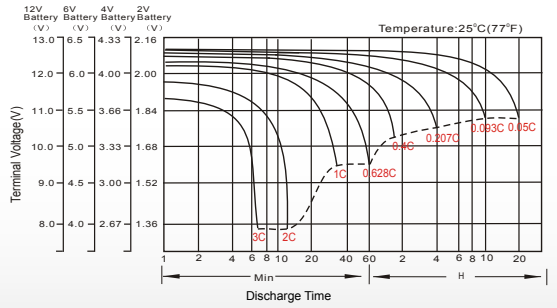
## Constant Current Discharge (Amperes) at 25 °C (77°F )

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 14.3 | 11.0 | 9.09 | 7.86 | 6.07 | 4.47 | 3.77 | 2.23 | 1.75 | 1.42 | 1.16 | 1.00 | 0.810 | 0.677 | 0.371 |
| 1.80V/cell | 19.2 | 14.0 | 11.0 | 9.3 | 7.17 | 5.20 | 4.22 | 2.43 | 1.88 | 1.52 | 1.24 | 1.08 | 0.859 | 0.698 | 0.375 |
| 1.75V/cell | 21.6 | 15.4 | 12.0 | 10.0 | 7.44 | 5.40 | 4.42 | 2.52 | 1.91 | 1.55 | 1.28 | 1.11 | 0.874 | 0.716 | 0.379 |
| 1.70V/cell | 23.8 | 16.8 | 12.8 | 10.5 | 7.74 | 5.62 | 4.56 | 2.59 | 1.97 | 1.59 | 1.31 | 1.13 | 0.886 | 0.731 | 0.386 |
| 1.65V/cell | 26.2 | 18.1 | 13.6 | 11.2 | 8.17 | 5.76 | 4.67 | 2.63 | 2.05 | 1.64 | 1.34 | 1.15 | 0.900 | 0.746 | 0.391 |
| 1.60V/cell | 29.0 | 19.7 | 14.6 | 11.9 | 8.63 | 6.00 | 4.71 | 2.74 | 2.11 | 1.70 | 1.39 | 1.18 | 0.909 | 0.754 | 0.393 |

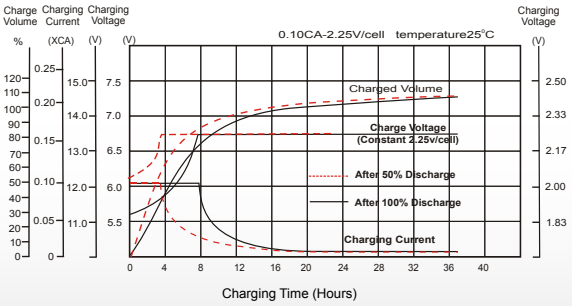
## Constant Power Discharge (Watts) at 25 °C (77°F )

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 26.1 | 20.3 | 17.0 | 14.8 | 11.6 | 8.60 | 7.28 | 4.33 | 3.40 | 2.77 | 2.27 | 1.97 | 1.60 | 1.34 | 0.735 |
| 1.80V/cell | 34.7 | 25.6 | 20.2 | 17.2 | 13.5 | 9.93 | 8.11 | 4.70 | 3.64 | 2.95 | 2.42 | 2.11 | 1.69 | 1.38 | 0.742 |
| 1.75V/cell | 38.3 | 27.7 | 21.8 | 18.4 | 13.8 | 10.2 | 8.44 | 4.85 | 3.69 | 3.00 | 2.48 | 2.16 | 1.72 | 1.41 | 0.748 |
| 1.70V/cell | 41.0 | 29.5 | 23.0 | 19.2 | 14.3 | 10.6 | 8.68 | 4.96 | 3.79 | 3.08 | 2.54 | 2.20 | 1.74 | 1.44 | 0.761 |
| 1.65V/cell | 44.5 | 31.5 | 24.2 | 20.2 | 15.0 | 10.7 | 8.82 | 5.00 | 3.93 | 3.17 | 2.60 | 2.24 | 1.76 | 1.47 | 0.771 |
| 1.60V/cell | 48.0 | 33.4 | 25.5 | 21.3 | 15.7 | 11.1 | 8.85 | 5.19 | 4.03 | 3.26 | 2.68 | 2.28 | 1.77 | 1.48 | 0.774 |

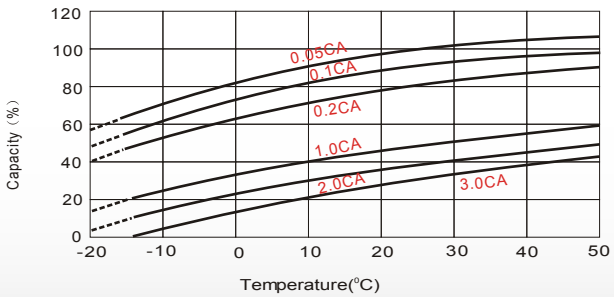
### Discharge Characteristics



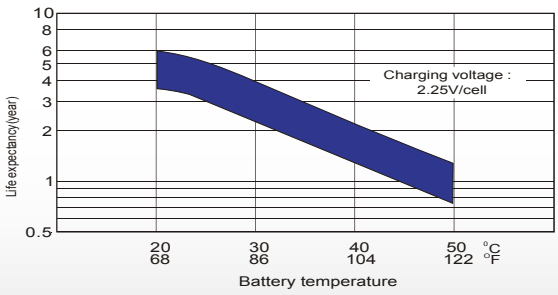

### Float Charging Characteristics



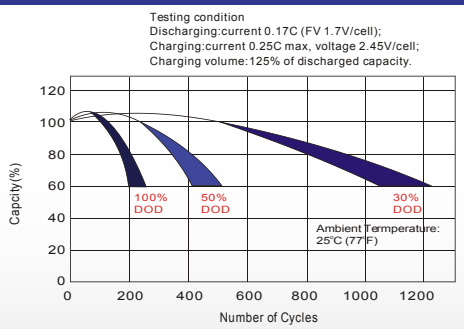

### Temperature Effects in Relation to Battery Capacity



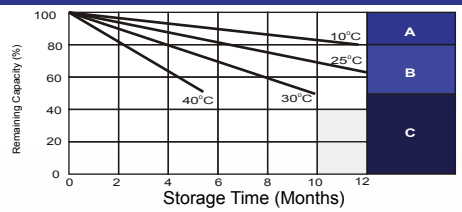

### Effect of Temperature on Long Term Float Life




### Cycle Life in Relation to Depth of Discharge




### Self Discharge Characteristics




**A** No supplementary required
(Carryout supplementary charge before use if 100% capacity is required.)

**B** Supplementary charge required before use. Optional charging way as below:
1. Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
2. Charged for above 20 hours at limited current 0.25CA and constant voltage 2.25Vcell.
3. Charged for 8 ~ 10 hours at limited current 0.05 CA.

**C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.



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