

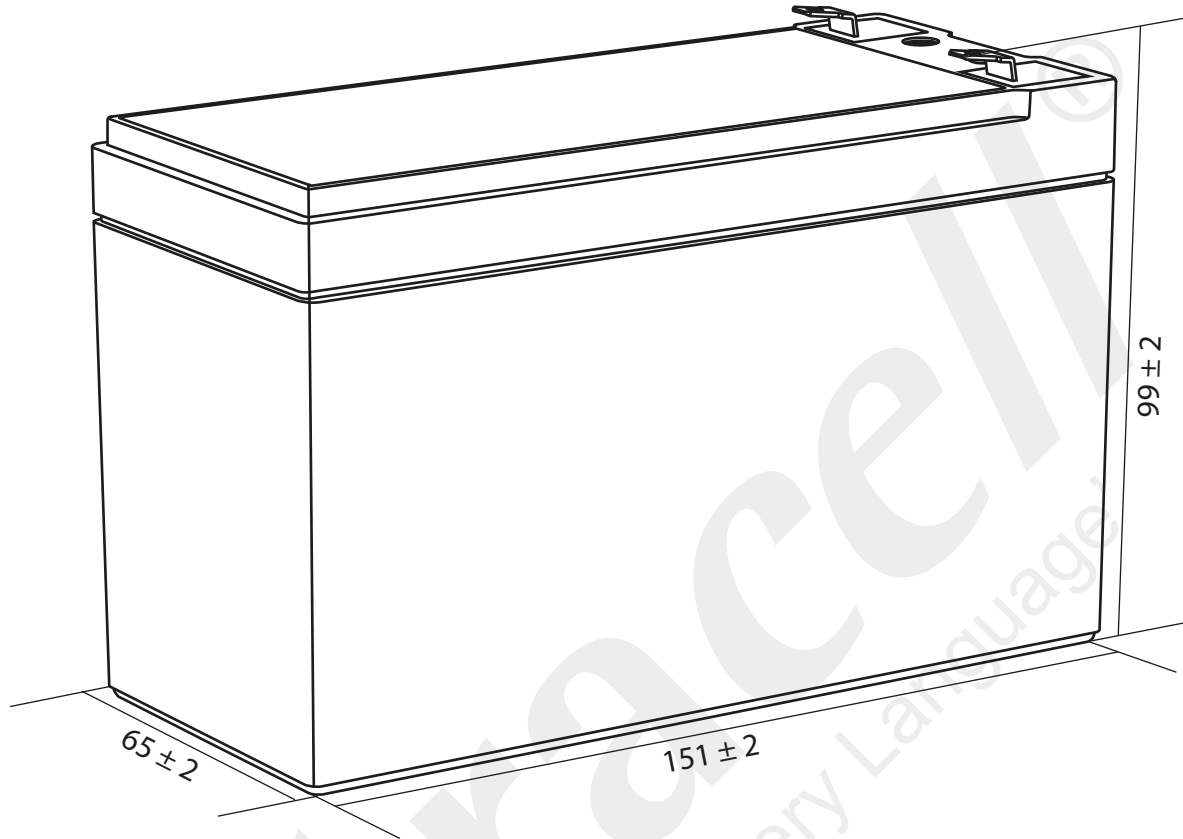
# Ultracell®

'Quality in Every Language'

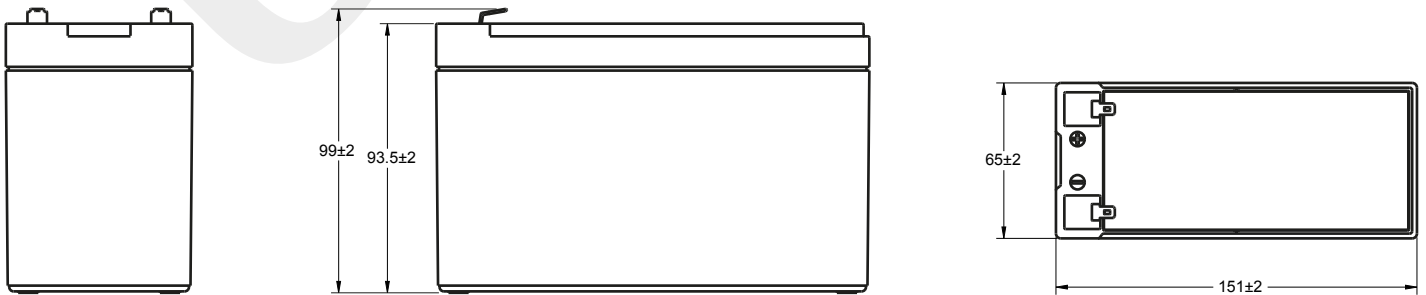
UL7-12

12V 7Ah

General Series



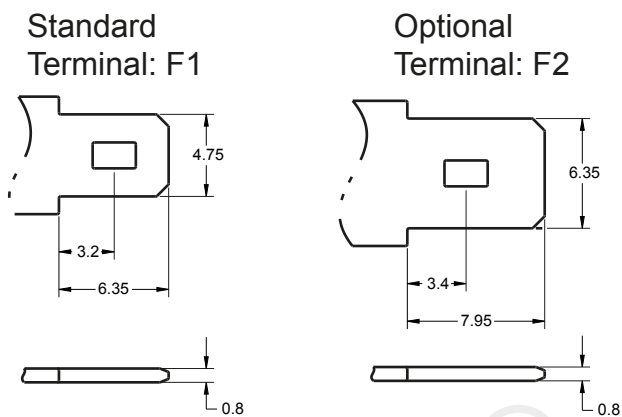
## Technical Dimensions (mm)



Image



Terminal Dimensions (mm)



Technical Specification

<b>Output</b>	Nominal Voltage	12V
	Nominal Capacity (20HR)	7Ah
<b>Terminal Type</b>	Standard Terminal	F1
	Optional Terminal	F2
<b>Container Material</b>	Standard Option	ABS
	Flame Retardant Option (FR)	ABS (UL94:VO)
<b>Rated Capacity</b>	(20HR 1.80V/cell, 25°C)	7 Ah/0.350A
	(10HR 1.80V/cell, 25°C)	6.53 Ah/0.653A
	(5HR 1.75V/cell, 25°C)	5.80 Ah/1.16A
	(3HR 1.75V/cell, 25°C)	5.13 Ah/1.71A
	(1HR 1.60V/cell, 25°C)	4.26 Ah/4.26A
<b>Max Discharge Current</b>	105A (5s)	
<b>Internal Resistance</b>	Approx 32mΩ	
<b>Discharge Characteristics</b>	Operating Temp Range	Discharge: -15 ~ 50°C Charge: 0 ~ 40°C Storage: -15 ~ 40°C
	Nominal Operating Temp Range	25 ± 3°C
	Cycle Use	Initial Charging Current less than 2.1A. Voltage 14.4V ~ 15.0V @ 25°C Temp. Coefficient -30mV/°C
	Standby Use	No limit on initial charging current. Voltage 13.5V ~ 13.8V @ 25°C Temp. Coefficient -20mV/°C
	Capacity affected by Temperature	40°C 103% 25°C 100% 0°C 86%
<b>Design Floating Life at 20°C</b>	5 Years	

Self Discharge

Ultracell® UL batteries may be stored for up to 6 months at 25°C and then a refresh charge is required. For higher temperatures the time intervals will be shorter.

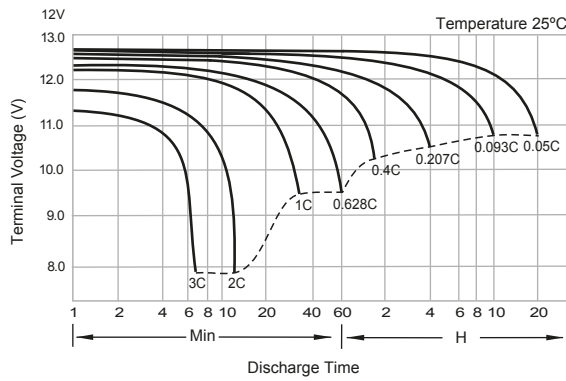
Constant Current Discharge / Constant Power Discharge At 25°C (Amperes & Watts/Cell)

A = Amperes W = Watts

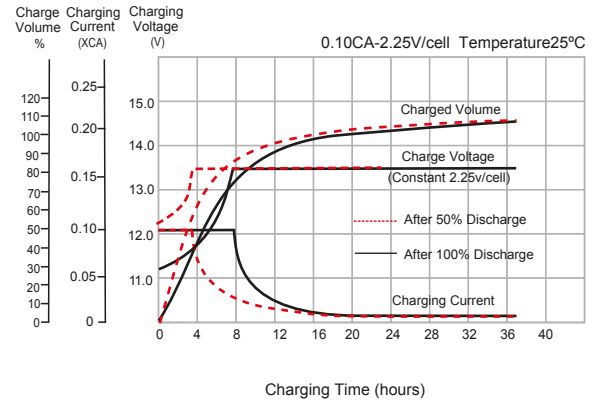
F.V/TIME	5 min	10 min	15 min	20 min	30 min	45 min	60 min	2 hours	3 hours	4 hours	5 hours	6 hours	8 hours	10 hours	20 hours
A	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
1.85V/cell	16.0	11.7	9.97	8.46	6.17	4.52	3.60	2.14	1.60	1.30	1.10	0.95	0.756	0.626	0.343
	30.3	22.3	19.2	16.4	12.0	8.86	7.09	4.23	3.17	2.59	2.20	1.91	1.52	1.26	0.694
1.80V/cell	19.2	13.7	11.3	9.20	6.65	4.80	3.83	2.24	1.66	1.35	1.14	0.99	0.783	0.653	0.350
	35.9	25.8	21.5	17.7	12.9	9.37	7.52	4.42	3.30	2.69	2.27	1.97	1.57	1.31	0.704
1.75V/cell	21.5	14.9	12.0	9.70	6.92	4.99	3.98	2.31	1.71	1.38	1.16	1.01	0.795	0.663	0.357
	39.8	28.0	22.8	18.6	13.4	9.72	7.79	4.55	3.37	2.74	2.31	2.00	1.59	1.33	0.716
1.70V/cell	23.4	15.9	12.8	10.2	7.18	5.12	4.05	2.36	1.75	1.41	1.19	1.03	0.812	0.672	0.361
	42.8	29.5	24.0	19.3	13.8	9.89	7.88	4.61	3.42	2.78	2.34	2.03	1.61	1.33	0.718
1.65V/cell	25.5	16.8	13.4	10.6	7.43	5.28	4.17	2.40	1.77	1.43	1.21	1.04	0.823	0.680	0.365
	45.7	30.7	24.8	19.8	14.1	10.1	8.02	4.65	3.45	2.80	2.36	2.05	1.62	1.34	0.720
1.60V/cell	26.8	17.6	13.8	10.9	7.64	5.42	4.26	2.46	1.81	1.46	1.23	1.06	0.837	0.690	0.371
	47.0	31.5	25.1	20.1	14.3	10.3	8.13	4.73	3.50	2.83	2.39	2.07	1.63	1.35	0.728



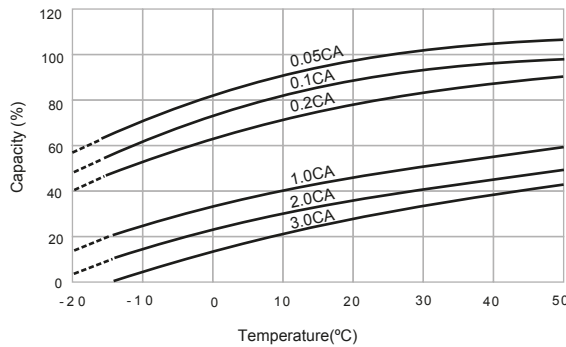
**Discharge Characteristics**



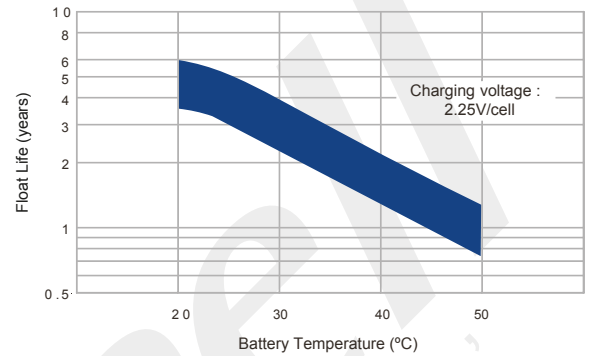
**Float Charging Characteristics**



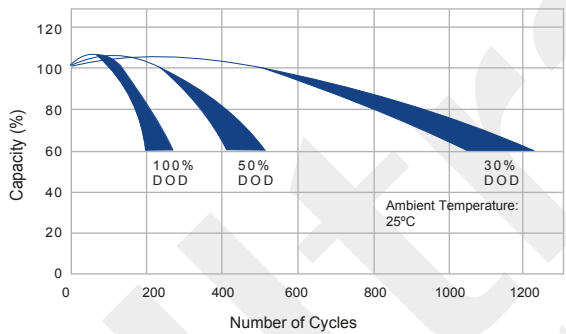
**Temperature Effects in Relation to Battery Capacity**



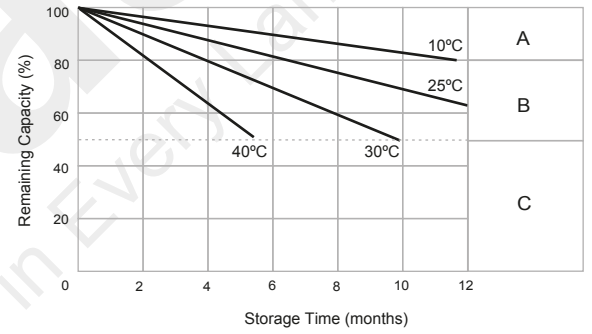
**Effects of Temperature on Long Term Float Life**



**Cycle Life in Relation to Depth of Discharge**



**General Relation of Capacity vs. Storage Time**



**General Relation of Capacity vs. Storage Time (Notes)**

- A) No supplementary charge 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 2.25V/cell.
  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.

**UL7-12**  
**12V 7Ah**  
General Series

