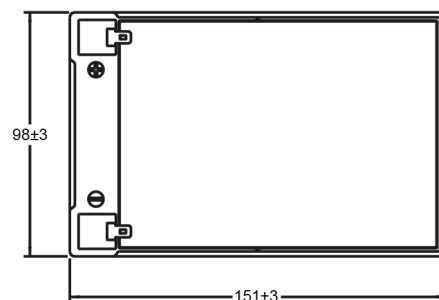
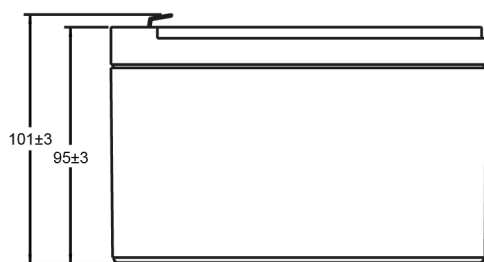
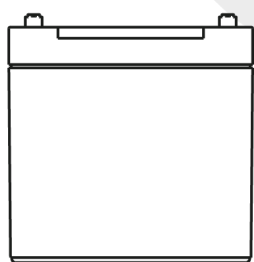


### Technical Dimensions (mm)

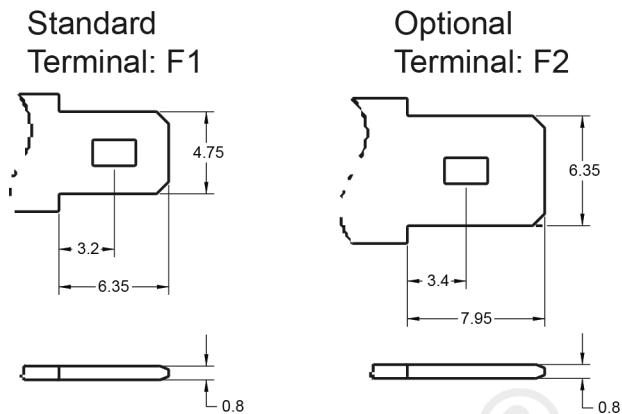




Image



Terminal Dimensions (mm)



Technical Specification

<b>Output</b>	Nominal Voltage	12V
	Nominal Capacity (20HR)	13Ah
<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)	13.9 Ah/0.70A
	(10HR 1.80V/cell, 25°C)	13.0 Ah/1.30A
	(5HR 1.75V/cell, 25°C)	11.4 Ah/2.28A
	(3HR 1.75V/cell, 25°C)	10.3 Ah/3.45A
	(1HR 1.60V/cell, 25°C)	8.40 Ah/8.40A
<b>Max Discharge Current</b>	195A (5s)	
<b>Internal Resistance</b>	Approx 14mΩ	
<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 3.6A. 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>	10 Years	

Self Discharge

Ultracell® UCG 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.

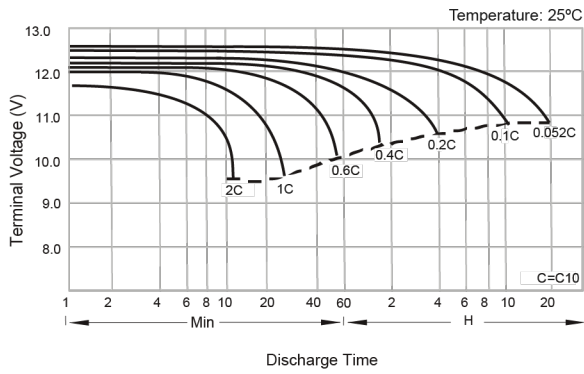
Constant Current Discharge / Constant Power Discharge At 25°C (Amperes & Watts/Cell)

A = Amperes W = Watts

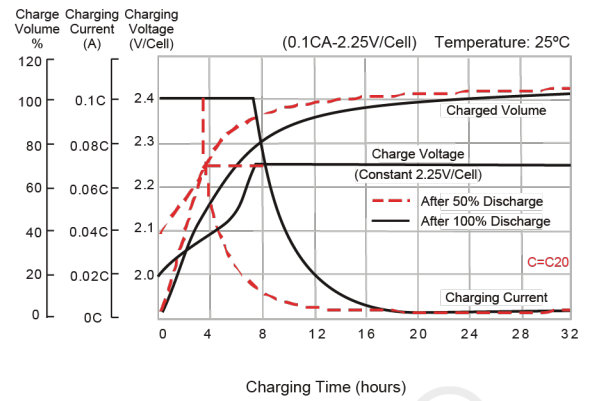
F.V/TIME	10 min	15 min	20 min	30 min	45 min	60 min	2 hours	3 hours	4 hours	5 hours	6 hours	8 hours	10 hours	20 hours
A	W	W	W	W	W	W	W	W	W	W	W	W	W	W
1.85V/cell	19.0	16.0	14.0	10.1	8.00	6.49	4.03	3.14	2.55	2.07	1.81	1.47	1.23	0.690
		35.5	30.2	26.7	19.4	15.5	12.6	7.86	6.14	4.99	4.06	3.57	2.43	1.381
1.80V/cell	24.3	19.4	16.5	11.9	9.30	7.27	4.40	3.38	2.72	2.22	1.94	1.56	1.30	0.697
		44.8	35.9	31.0	22.6	17.8	14.0	8.52	6.58	5.30	4.35	3.81	3.09	1.392
1.75V/cell	26.7	21.1	17.8	12.3	9.65	7.61	4.56	3.45	2.78	2.28	1.99	1.59	1.31	0.703
		48.6	38.9	33.1	23.3	18.4	14.6	8.81	6.68	5.41	4.46	3.91	3.14	1.404
1.70V/cell	29.1	22.6	18.7	12.8	10.0	7.85	4.75	3.54	2.85	2.34	2.03	1.61	1.33	0.716
		52.2	41.2	34.6	24.2	19.1	15.0	9.14	6.85	5.54	4.56	3.98	3.18	1.429
1.65V/cell	31.4	24.0	19.9	13.5	10.3	8.11	4.88	3.69	2.95	2.40	2.07	1.64	1.35	0.725
		56.0	43.5	36.6	25.4	19.5	15.5	9.37	7.12	5.72	4.68	4.07	3.23	1.445
1.60V/cell	34.1	25.7	21.2	14.3	10.7	8.40	5.04	3.81	3.04	2.48	2.12	1.65	1.37	0.729
		59.7	46.0	38.6	26.5	20.2	15.9	9.63	7.30	5.87	4.81	4.15	3.25	1.451



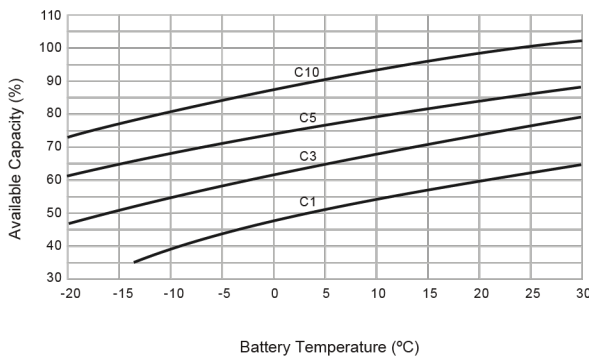
### Discharge Characteristics



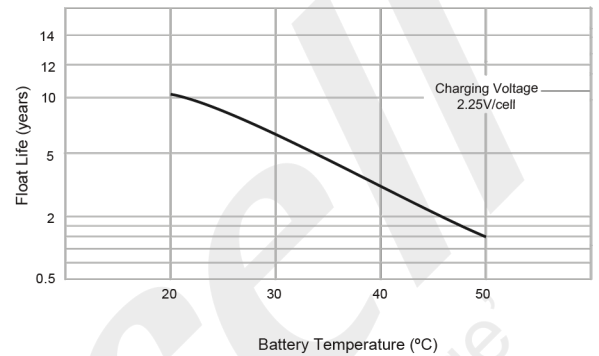
### Float Charging Characteristics



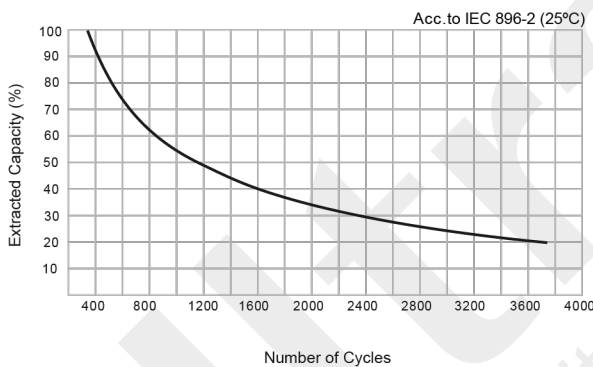
### Temperature Effects in Relation to Battery Capacity



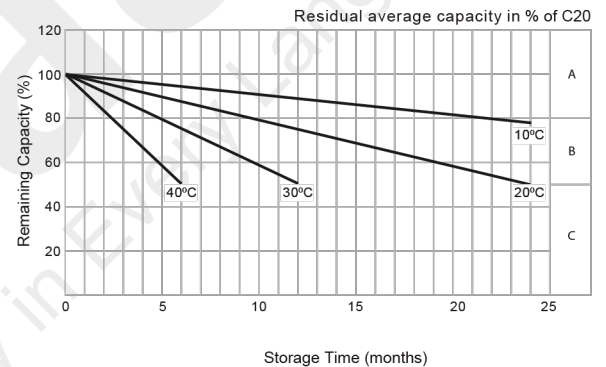
### Effect of Temperature on Long Term Float Life



### Cycle Life in Relation to Depth of Discharge



### 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 2.45V/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.