

UL2.8-12

12V 2.8AH

General

Ultracell®

Quality in Every Language

UL2.8-12



Physical Specification

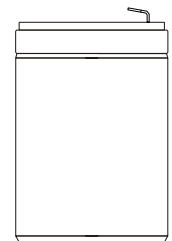
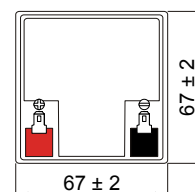
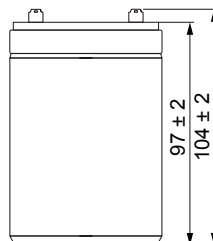
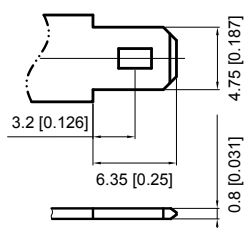
Part Number	UL2.8-12
Length	132 ± 2 mm
Width	33 ± 2 mm
Container Height	98 ± 2 mm
Total Height (with terminal)	104 ± 2 mm
Approx Weight	1.18 kg

Specifications

	Nominal Voltage	12V
	Nominal Capacity (20HR)	2.8AH
Terminal Type	Standard Terminal	F1
	Optional Terminal	
Container Material	Standard Option	ABS
	Flame Retardant Option (FR)	UL94:VO
Rated Capacity	20hr, 1.80V/cell, 25°C	2.80 AH/0.14A
	10hr, 1.80V/cell, 25°C	2.60 AH/0.26A
	5hr, 1.75V/cell, 25°C	2.40 AH/0.48A
	1hr, 1.60V/cell, 25°C	1.76 AH/1.76A
Max Discharge Current	42.0A (5s)	
Internal Resistance	Approx 55mΩ	
Discharge Characteristics	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 0.84A. Voltage 14.4V ~ 15.0V Temp. Coefficient -30mV/°C
	Standby Use	No limit on Initial Charging Current Voltage 13.5V ~ 13.8V Temp. Coefficient -20mV/°C
Capacity affect by Temperature	40°C	103%
	25°C	100%
	0°C	86%
Design Floating Life at 20°C	5 Years	
Self Discharge	Ultracell batteries may be stored for up to 6 months at 25°C(77°F) and then a refresh charge is required. For higher temperatures the time interval will be shorter.	

Dimensions

F1 Terminal



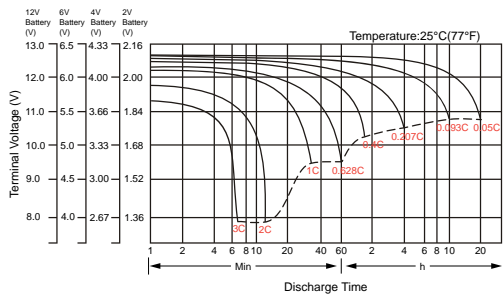
Constant Current Discharge (Amperes) at 20°C

F.V/Time	5 min	10 min	15 min	20 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	5.33	4.09	3.39	2.93	2.27	1.67	1.41	0.83	0.65	0.53	0.432	0.375	0.302	0.253	0.139
1.80V/cell	7.16	5.23	4.10	3.47	2.68	1.94	1.58	0.91	0.70	0.57	0.464	0.402	0.321	0.260	0.140
1.75V/cell	8.07	5.75	4.48	3.73	2.78	2.02	1.65	0.94	0.71	0.58	0.476	0.413	0.326	0.267	0.141
1.70V/cell	8.89	6.27	4.78	3.92	2.89	2.10	1.70	0.97	0.73	0.59	0.488	0.422	0.331	0.273	0.144
1.65V/cell	9.80	6.76	5.08	4.16	3.05	2.15	1.74	0.98	0.77	0.61	0.501	0.431	0.336	0.278	0.146
1.60V/cell	10.81	7.34	5.43	4.44	3.22	2.24	1.76	1.02	0.79	0.63	0.518	0.440	0.339	0.281	0.147

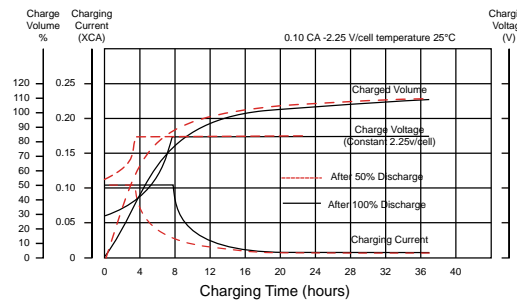
Constant Power Discharge (Watts) at 20°C

F.V/Time	5 min	10 min	15 min	20 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	9.75	7.56	6.33	5.53	4.32	3.21	2.72	1.62	1.27	1.04	0.847	0.737	0.597	0.500	0.275
1.80V/cell	12.9	9.55	7.54	6.44	5.02	3.71	3.03	1.75	1.36	1.10	0.905	0.787	0.631	0.515	0.277
1.75V/cell	14.3	10.3	8.14	6.86	5.17	3.81	3.15	1.81	1.38	1.12	0.926	0.806	0.641	0.528	0.279
1.70V/cell	15.3	11.0	8.57	7.16	5.35	3.95	3.24	1.85	1.41	1.15	0.948	0.822	0.649	0.538	0.284
1.65V/cell	16.6	11.8	9.04	7.54	5.60	4.01	3.29	1.87	1.47	1.18	0.970	0.837	0.658	0.548	0.288
1.60V/cell	17.9	12.5	9.51	7.95	5.87	4.16	3.31	1.94	1.51	1.22	0.999	0.853	0.663	0.553	0.289

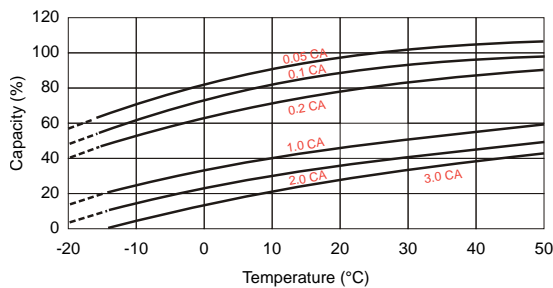
Discharge Characteristics



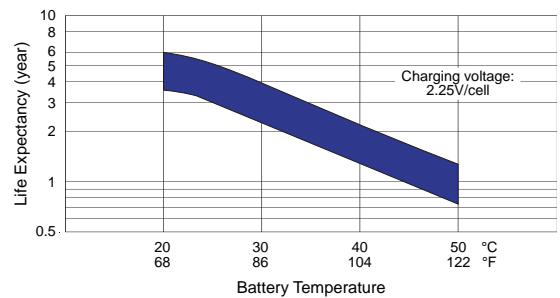
Float Charging Characteristics



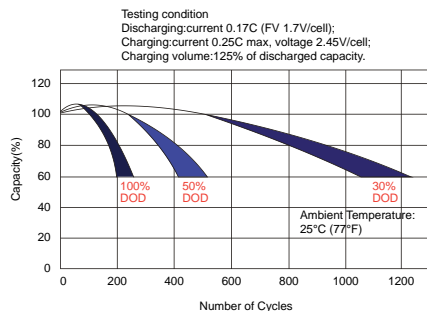
Temperature Effects in Relation to Battery Capacity



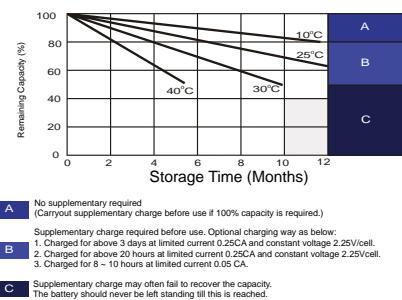
Effect of Temperature on Long Term Float Life



Cycle Life in Relation to Depth of Discharge



General Relation of Capacity VS. Storage Time



- 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 2.25V/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.