

UL9-12



Physical Specification

Part Number	UL9-12
Length	151 ± 2 mm
Width	65 ± 1 mm
Container Height	93.5 ± 1 mm
Total Height (with terminal)	99 ± 1 mm
Approx Weight	2.66 kg

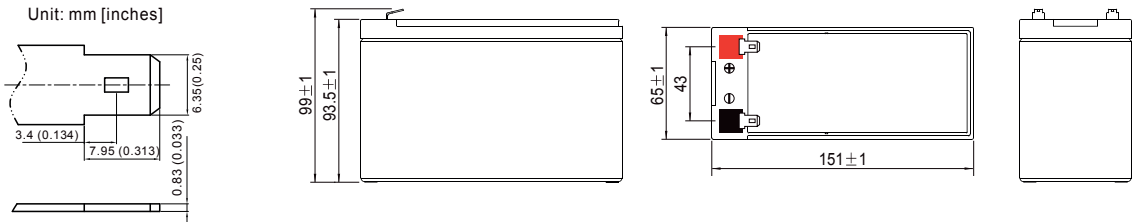
Specifications

	Nominal Voltage	12V
	Nominal Capacity (20HR)	8.6AH
Terminal Type	Standard Terminal	F2
	Optional Terminal	F1
Container Material	Standard Option	ABS
	Flame Retardant Option (FR)	ABS (UL94:VO)
Rated Capacity	20hr, 1.80V/cell, 25°C	8.60 AH/0.430A
	10hr, 1.80V/cell, 25°C	7.86 AH/0.786A
	5hr, 1.75V/cell, 25°C	7.00 AH/1.40A
	3hr, 1.75V/cell, 25°C	6.36 AH/2.12A
	1hr, 1.60V/cell, 25°C	5.84 AH/5.84A
Max Discharge Current	129A (5s)	
Internal Resistance	Approx 19mΩ	
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 2.58A. 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 affected 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

F2 Terminal

Unit: mm [inches]



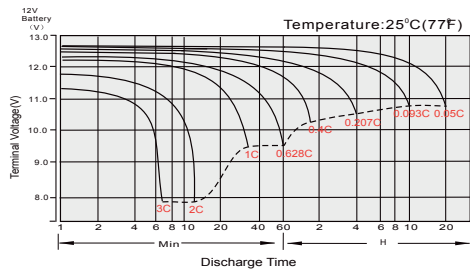
Constant Current Discharge (Amperes) at 25°C

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	28.0	18.7	14.7	12.2	9.06	6.57	5.13	2.80	2.00	1.58	1.32	1.14	0.913	0.764	0.417
1.80V/cell	31.5	20.5	15.9	12.9	9.46	6.81	5.32	2.89	2.06	1.62	1.36	1.18	0.941	0.786	0.430
1.75V/cell	34.6	21.6	16.9	13.6	9.83	7.05	5.50	2.98	2.12	1.68	1.40	1.21	0.979	0.807	0.432
1.70V/cell	36.8	22.8	17.6	14.0	10.2	7.28	5.64	3.07	2.18	1.72	1.44	1.24	0.988	0.822	0.438
1.65V/cell	38.5	23.6	18.2	14.5	10.5	7.44	5.74	3.12	2.22	1.76	1.47	1.26	1.01	0.830	0.440
1.60V/cell	39.7	24.5	18.5	14.8	10.7	7.57	5.84	3.17	2.25	1.78	1.49	1.28	1.02	0.838	0.443

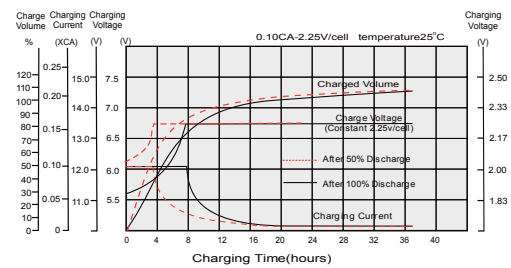
Constant Power Discharge (Watts) at 25°C

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	51.8	34.9	27.6	23.0	17.2	12.6	9.90	5.42	3.89	3.09	2.59	2.24	1.80	1.51	0.827
1.80V/cell	57.3	37.7	29.5	24.2	17.8	13.0	10.2	5.57	4.00	3.15	2.65	2.31	1.85	1.55	0.851
1.75V/cell	62.1	39.3	31.0	25.2	18.4	13.3	10.5	5.73	4.09	3.25	2.73	2.38	1.92	1.59	0.854
1.70V/cell	65.2	41.0	32.0	25.8	19.0	13.7	10.7	5.88	4.21	3.34	2.80	2.43	1.94	1.62	0.863
1.65V/cell	67.0	41.7	32.6	26.4	19.4	13.9	10.9	5.96	4.27	3.40	2.85	2.46	1.97	1.63	0.868
1.60V/cell	68.1	42.8	32.9	26.7	19.6	14.0	11.0	6.02	4.30	3.42	2.87	2.49	1.98	1.64	0.872

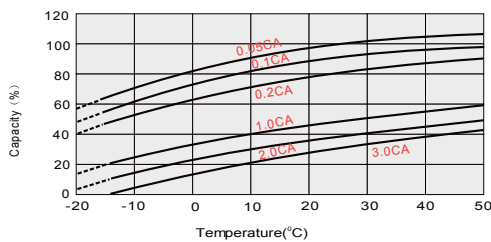
Discharge Characteristics



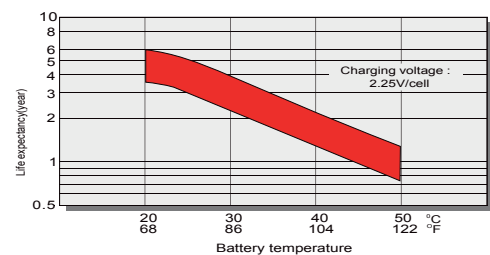
Float Charging Characteristics



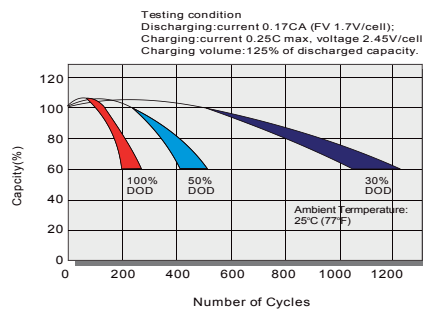
Temperature Effects in Relation to Battery Capacity



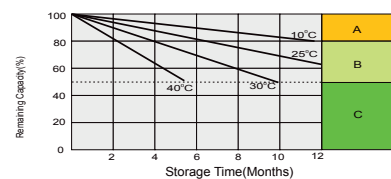
Effect of Temperature on Long Term Float Life



Cycle Life in Relation to Depth of Discharge



Self Discharge Characteristics



- A** No supplementary charge required (Carry out supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Optimal charging way as below:
1. Charged for a above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
2. Charged for a above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.
3. Charged for 8-10 hours at limited current 0.05CA.
- C** Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this is reached.