

**UL4-2**

Awaiting Image

**Physical Specification**

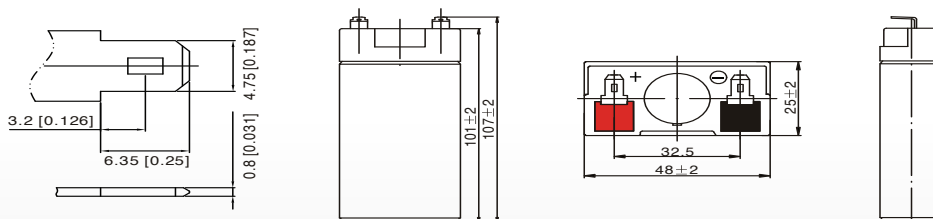
Part Number:	<b>UL4-2</b>
Length:	<b>48 ± 2 mm (1.89 inches)</b>
Width:	<b>25 ± 2 mm (0.98 inches)</b>
Container Height:	<b>101 ± 2 mm (3.98 inches)</b>
Total Height (with terminal):	<b>107 ± 2 mm (4.21 inches)</b>
Approx Weight:	<b>Approx 0.28 kg (0.62 lbs)</b>

**Specifications**

	Normal Voltage	2V
	Normal Capacity (20HR)	4AH
<b>Terminal Type</b>	Standard Terminal	F1
	Optional Terminal	-
<b>Container Material</b>	Standard Option	ABS
	Flame Retardant Option (FR)	UL94:VO
<b>Rated Capacity</b>	4.00 AH/0.20A	(20hr, 1.80V/cell, 25°C / 77°F)
	3.72 AH/0.372A	(10hr, 1.80V/cell, 25°C / 77°F)
	3.40 AH/0.68A	(5hr, 1.75V/cell, 25°C / 77°F)
	3.06 AH/1.02A	(3hr, 1.75V/cell, 25°C / 77°F)
	2.51 AH/2.51A	(1hr, 1.60V/cell, 25°C / 77°F)
<b>Max Discharge Current</b>	60A (5s)	
<b>Internal Resistance</b>	Approx 10mΩ	
<b>Discharge Characteristics</b>	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	Initial Charging Current less than 1.2A.Voltage 2.24V ~ 2.5V at 25°C (77°F) Temp. Coefficient -5mV/°C
	Standby Use	No limit on Initial Charging Current Voltage 2.25V ~ 2.3V at 25°C (77°F) Temp. Coefficient -3mV/°C
Capacity affected by Temperature	40°C (104°F) 103%	
	25°C (77°F) 100%	
	0°C (32°F) 86%	
<b>Design Floating Life at 20°C</b>	10 Years	
<b>Self Discharge</b>	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**



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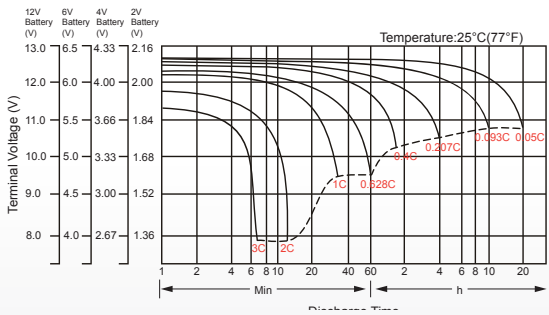
### Constant Current Discharge (Amperes) at 25°C (77°F)

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	7.68	5.35	4.42	3.83	3.07	2.36	1.93	1.18	0.899	0.739	0.627	0.543	0.432	0.359	0.198
1.80V/cell	9.44	6.39	5.12	4.33	3.40	2.58	2.08	1.25	0.945	0.777	0.654	0.567	0.448	0.372	0.200
1.75V/cell	11.2	7.22	5.65	4.72	3.63	2.74	2.19	1.31	0.979	0.801	0.672	0.581	0.460	0.379	0.202
1.70V/cell	12.7	7.97	6.11	5.06	3.82	2.84	2.28	1.36	1.01	0.821	0.689	0.595	0.467	0.386	0.206
1.65V/cell	14.0	8.57	6.46	5.32	3.98	2.95	2.38	1.40	1.04	0.838	0.704	0.607	0.475	0.391	0.208
1.60V/cell	14.7	8.93	6.74	5.48	4.09	3.02	2.43	1.45	1.06	0.859	0.718	0.619	0.485	0.398	0.210

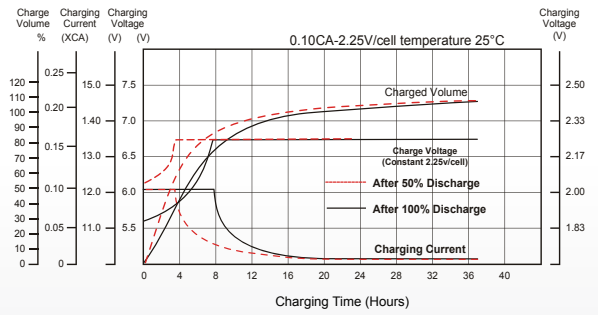
### Constant Power Discharge (Watts) at 25°C (77°F)

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	14.5	10.2	8.49	7.42	5.99	4.63	3.81	2.34	1.79	1.47	1.26	1.09	0.869	0.724	0.400
1.80V/cell	17.6	12.0	9.76	8.33	6.59	5.02	4.07	2.47	1.87	1.54	1.30	1.13	0.896	0.745	0.402
1.75V/cell	20.6	13.5	10.7	9.00	6.99	5.30	4.26	2.56	1.92	1.58	1.33	1.15	0.914	0.755	0.403
1.70V/cell	23.1	14.7	11.4	9.59	7.29	5.47	4.42	2.65	1.97	1.61	1.35	1.17	0.922	0.763	0.408
1.65V/cell	25.1	15.6	12.0	10.0	7.53	5.65	4.57	2.71	2.01	1.63	1.38	1.19	0.933	0.770	0.412
1.60V/cell	26.0	16.1	12.3	10.2	7.67	5.72	4.64	2.78	2.05	1.66	1.40	1.21	0.947	0.779	0.412

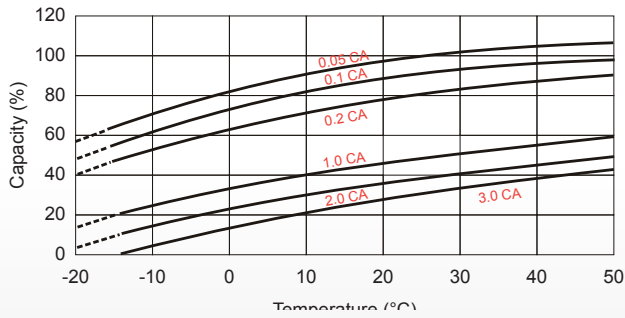
### Discharge Characteristics



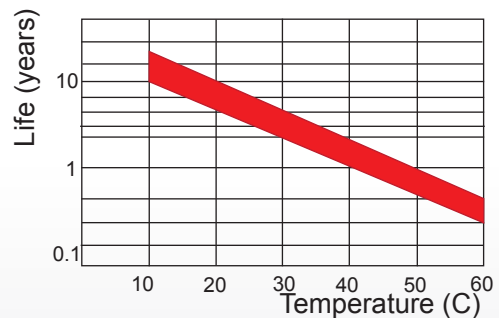
### Float Charging Characteristics



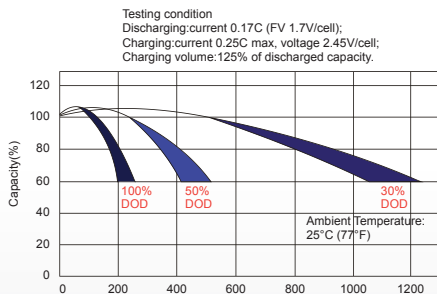
### Temperature Effects in Relation to Battery Capacity



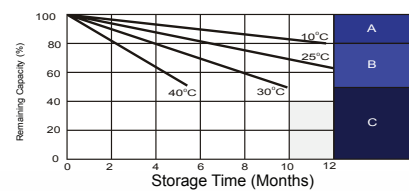
### Effect of Temperature on Long Term Float Life



### 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 2.25V/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.

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