

### UL40-12



### Physical Specification

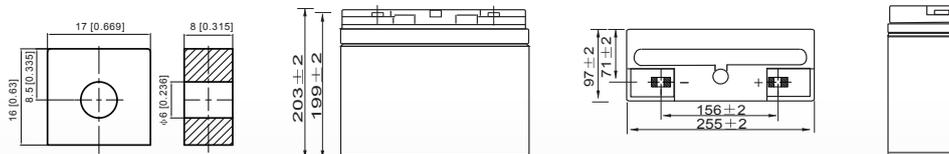
Part Number:	<b>UL40-12</b>
Length:	<b>197 ± 2 mm (7.76 inches)</b>
Width:	<b>165 ± 2 mm (6.49 inches)</b>
Container Height:	<b>170 ± 2 mm (6.69 inches)</b>
Total Height (with terminal):	<b>170 ± 2 mm (6.69 inches)</b>
Approx Weight:	<b>Approx 13kg (28.66lbs)</b>

### Specifications

	Normal Voltage	12V
	Normal Capacity (20HR)	40AH
<b>Terminal Type</b>	Standard Terminal	F10
	Optional Terminal	-
<b>Container Material</b>	Standard Option	ABS
	Flame Retardant Option (FR)	UL94:VO
<b>Rated Capacity</b>	40.0 AH/4.08A	(20hr, 1.80V/cell, 25°C / 77°F)
	38.5 AH/4.00A	(10hr, 1.80V/cell, 25°C / 77°F)
	31.5 AH/6.89A	(5hr, 1.75V/cell, 25°C / 77°F)
	31.2 AH/10.4A	(3hr, 1.75V/cell, 25°C / 77°F)
	24.4 AH/24.4A	(1hr, 1.60V/cell, 25°C / 77°F)
<b>Max Discharge Current</b>	480A (5s)	
<b>Internal Resistance</b>	Approx 9mΩ	
<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 12.0A. Voltage 14.4V ~ 15.0V at 25°C (77°F) Temp. Coefficient -30mV/°C
	Standby Use	No limit on Initial Charging Current Voltage 13.5V ~ 13.8V at 25°C (77°F) Temp. Coefficient -20mV/°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(°77F) and then a refresh charge is required. For higher temperatures the time interval will be shorter.	

### Dimensions

#### F10 Terminal



ALL DATA IS SUBJECT TO CHANGE WITHOUT NOTICE

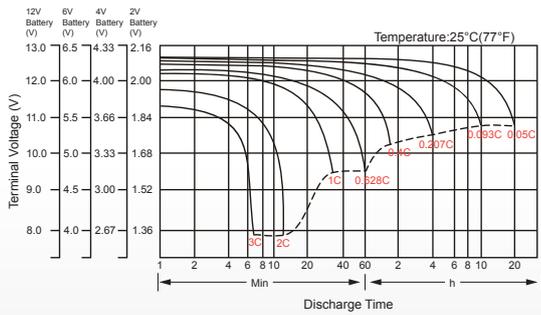
### Constant Current Discharge (Amperes) at 25°C (77°F)

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	68.5	53.8	45.8	38.3	30.4	23.0	18.9	12.0	9.50	7.76	6.25	5.44	4.42	3.78	2.06
1.80V/cell	91.9	68.8	55.3	45.3	35.9	26.8	21.1	13.1	10.2	8.28	6.72	5.84	4.69	4.00	2.08
1.75V/cell	103.6	75.6	60.4	48.7	37.3	27.8	22.1	13.6	10.4	8.47	6.88	6.00	4.77	4.04	2.10
1.70V/cell	114.1	82.4	64.5	51.2	38.8	28.9	22.8	14.1	10.7	8.69	7.06	6.12	4.84	4.08	2.14
1.65V/cell	125.8	88.9	68.6	54.4	40.9	29.6	23.6	14.5	11.2	8.99	7.26	6.26	4.91	4.16	2.17
1.60V/cell	138.8	96.5	73.3	57.9	43.2	30.9	24.4	15.0	11.5	9.27	7.50	6.40	4.96	4.21	2.18

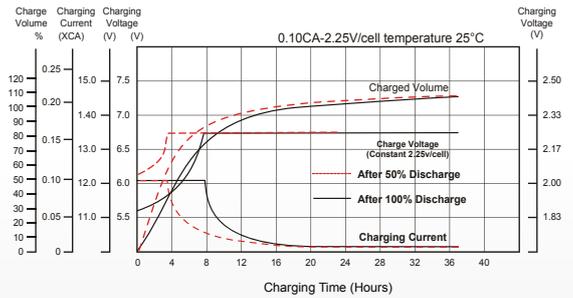
### Constant Power Discharge (Watts) at 25°C (77°F)

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	125.2	99.4	85.4	72.2	58.0	44.3	36.4	23.3	18.5	15.2	12.3	10.7	8.73	7.47	4.08
1.80V/cell	166.2	125.5	101.8	84.1	67.4	51.1	40.5	25.3	19.8	16.1	13.1	11.4	9.23	7.90	4.11
1.75V/cell	183.4	135.7	109.8	89.6	69.4	52.5	42.2	26.1	20.1	16.4	13.4	11.7	9.36	7.97	4.15
1.70V/cell	196.4	144.6	115.6	93.4	71.8	54.4	43.4	27.1	20.6	16.8	13.7	11.9	9.49	8.05	4.23
1.65V/cell	213.5	154.6	122.0	98.5	75.1	55.3	44.5	27.7	21.4	17.3	14.0	12.2	9.61	8.20	4.28
1.60V/cell	230.0	164.0	128.3	103.8	78.8	57.3	45.9	28.5	22.0	17.8	14.5	12.4	9.69	8.27	4.29

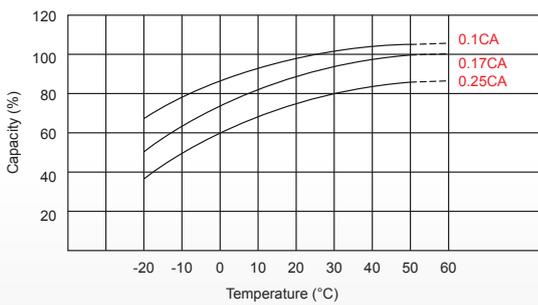
### Discharge Characteristics



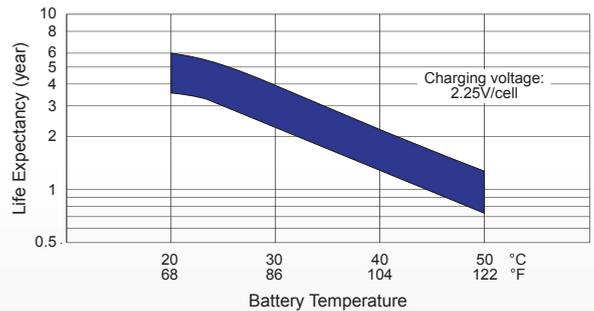
### Float Charging Characteristics



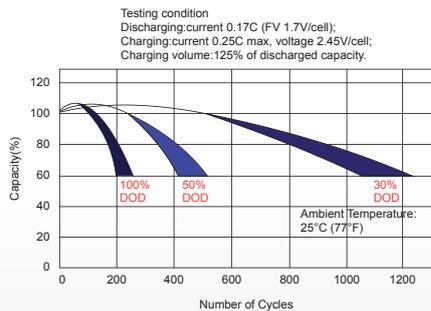
### Temperature Effects in Relation to Battery Capacity



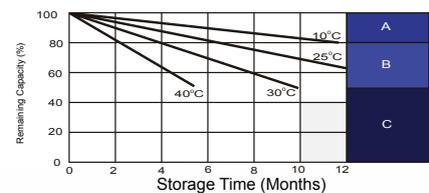
### Effect of Temperature on Long Term Float Life



### 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.

ALL DATA IS SUBJECT TO CHANGE WITHOUT NOTICE