

UL45-12



Physical Specification

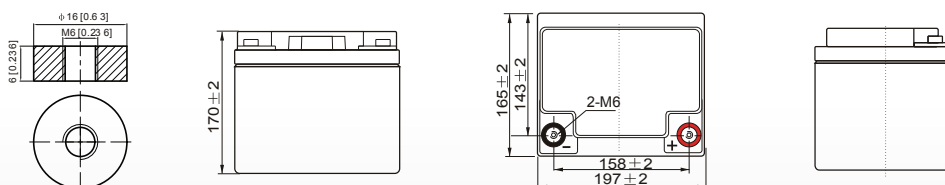
Part Number:	UL45-12
Length:	197 ± 2 mm (7.76 inches)
Width:	165 ± 2 mm (6.49 inches)
Container Height:	170 ± 2 mm (6.69 inches)
Total Height (with terminal):	170 ± 2 mm (6.69 inches)
Approx Weight:	Approx 14.2kg (31.3lbs)

Specifications

	Normal Voltage	12V
	Normal Capacity (20HR)	45AH
Terminal Type	Standard Terminal	F10
	Optional Terminal	F12
Container Material	Standard Option	ABS
	Flame Retardant Option (FR)	UL94:VO
Rated Capacity	46.8 AH/2.34A	(20hr, 1.80V/cell, 25°C / 77°F)
	45.0 AH/4.50A	(10hr, 1.80V/cell, 25°C / 77°F)
	38.7 AH/7.74A	(5hr, 1.75V/cell, 25°C / 77°F)
	35.1 AH/11.7A	(3hr, 1.75V/cell, 25°C / 77°F)
	27.5 AH/27.5A	(1hr, 1.60V/cell, 25°C / 77°F)
Max Discharge Current	540A (5s)	
Internal Resistance	Approx 9mΩ	
Discharge Characteristics	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 13.5A. 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%	
Design Floating Life at 20°C	10 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

F10 Terminal



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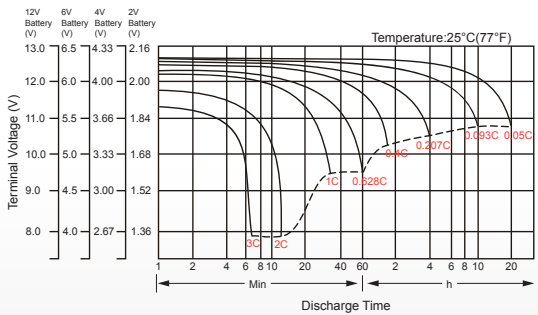
Constant Current Discharge (Amperes) at 25°C (77°F)

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	77.0	60.6	51.5	43.1	34.2	25.9	21.2	13.5	10.7	8.73	7.03	6.12	4.97	4.25	2.32
1.80V/cell	103.4	77.4	62.2	50.9	40.4	30.1	23.8	14.7	11.5	9.32	7.56	6.57	5.27	4.50	2.34
1.75V/cell	116.6	85.0	68.0	54.8	41.9	31.3	24.9	15.3	11.7	9.53	7.74	6.75	5.36	4.55	2.36
1.70V/cell	128.4	92.7	72.6	57.6	43.6	32.5	25.6	15.9	12.0	9.78	7.95	6.89	5.44	4.59	2.41
1.65V/cell	141.5	100.0	77.1	61.2	46.0	33.3	26.5	16.3	12.5	10.12	8.17	7.04	5.53	4.68	2.44
1.60V/cell	156.1	108.6	82.5	65.1	48.6	34.7	27.5	16.9	12.9	10.43	8.44	7.20	5.58	4.73	2.45

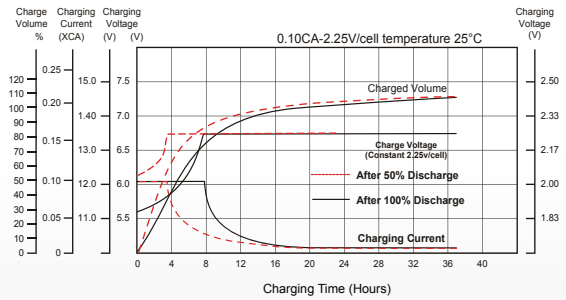
Constant Power Discharge (Watts) at 25°C (77°F)

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	140.8	111.9	96.1	81.2	65.2	49.8	40.9	26.2	20.8	17.1	13.8	12.0	9.82	8.41	4.59
1.80V/cell	187.0	141.2	114.5	94.6	75.8	57.5	45.6	28.4	22.3	18.1	14.7	12.9	10.4	8.89	4.63
1.75V/cell	206.4	152.7	123.6	100.7	78.1	59.1	47.5	29.4	22.6	18.5	15.1	13.2	10.5	8.97	4.67
1.70V/cell	220.9	162.7	130.1	105.1	80.8	61.2	48.8	30.5	23.2	18.9	15.4	13.4	10.7	9.05	4.75
1.65V/cell	240.2	173.9	137.3	110.8	84.5	62.2	50.1	31.2	24.1	19.5	15.8	13.7	10.8	9.22	4.81
1.60V/cell	258.8	184.5	144.4	116.7	88.6	64.4	51.6	32.1	24.7	20.0	16.3	13.9	10.9	9.31	4.83

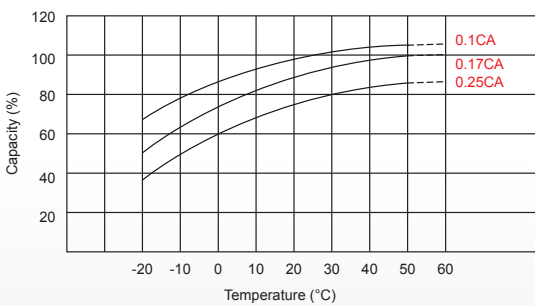
Discharge Characteristics



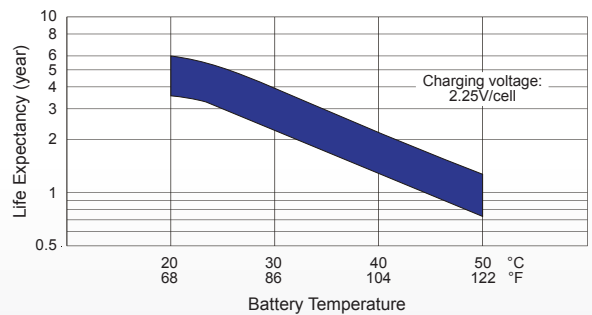
Float Charging Characteristics



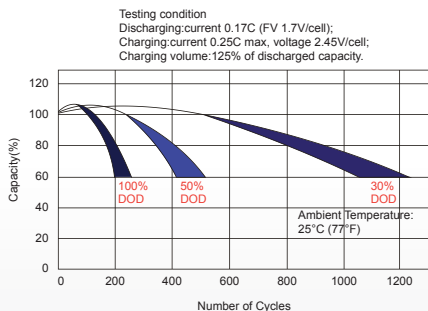
Temperature Effects in Relation to Battery Capacity



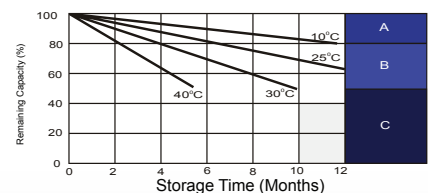
Effect of Temperature on Long Term Float Life



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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