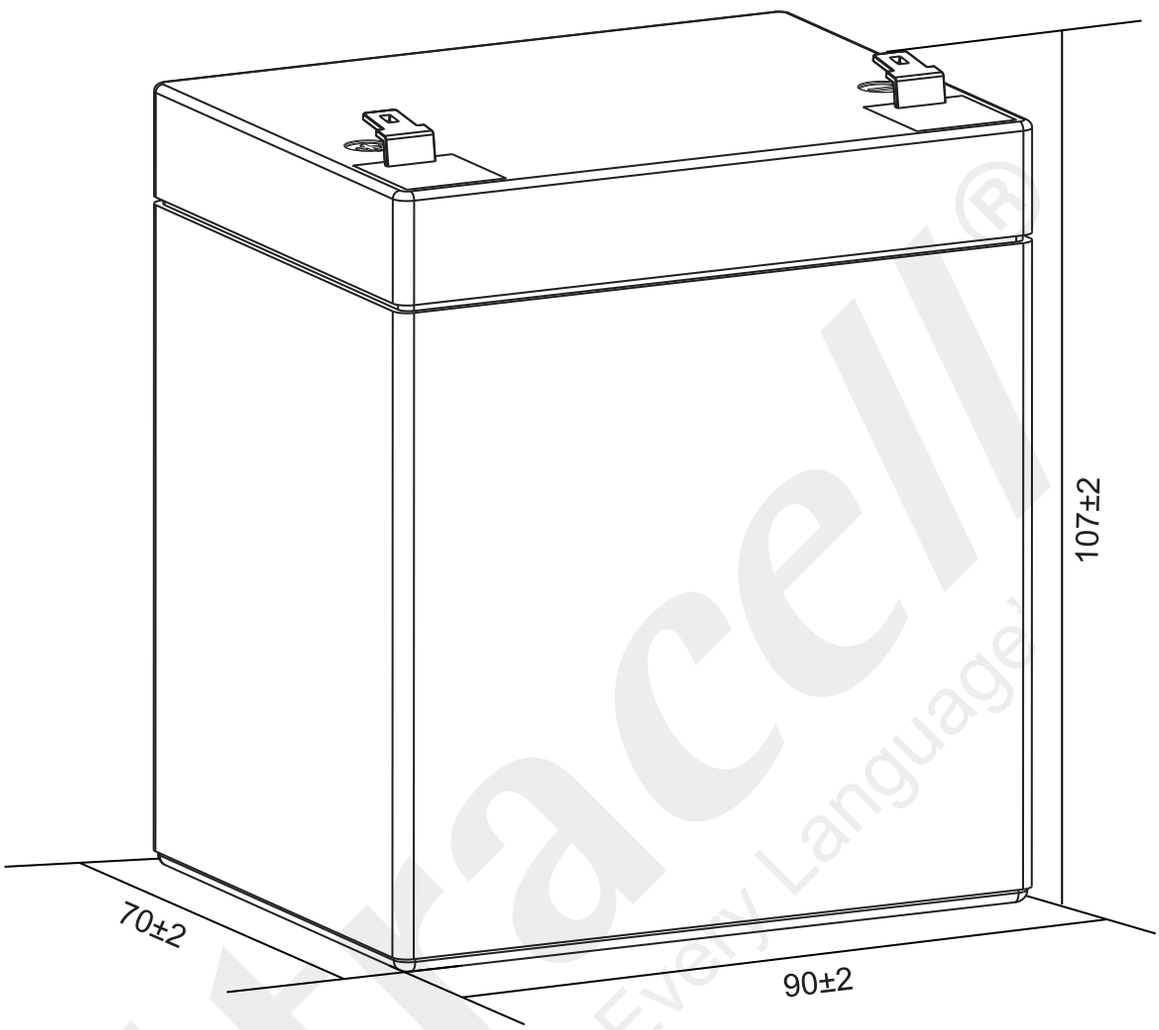
Ultracell®

'Quality in Every Language'

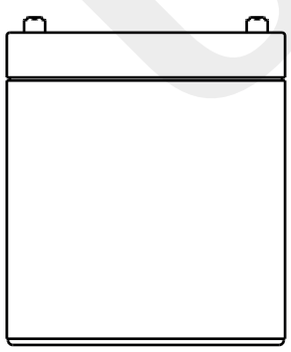
UL4-12

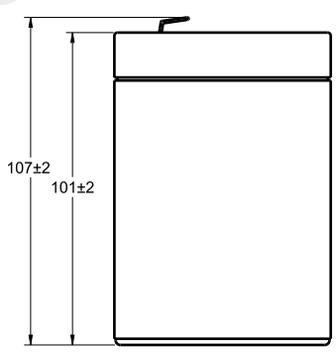
12V 4Ah

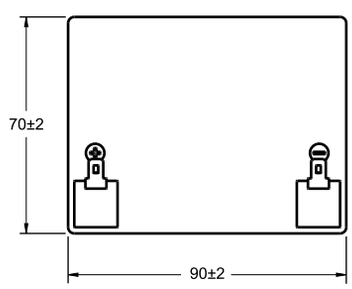
General Series



Technical Dimensions (mm)







Ultracell (UK) Ltd | Vesty Business Park, Vesty Road, Liverpool, L30 1NY, United Kingdom
Tel: +44 (0) 151 523 2777 | Fax: +44 (0) 151 523 0855 | Email: info@ultracell.co.uk
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TechData

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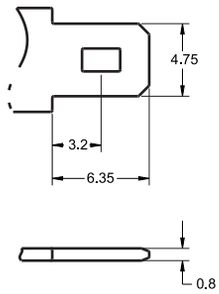
Image

Terminal Dimensions (mm)

Standard
Terminal: F1



Technical Specification

Output	Nominal Voltage	12V
	Nominal Capacity (20HR)	4Ah
Terminal Type	Standard Terminal	F1
Container Material	Standard Option	ABS
	Flame Retardant Option (FR)	ABS (UL94:VO)
Rated Capacity	(20HR 1.80V/cell, 25°C)	4.00 Ah/0.200A
	(10HR 1.80V/cell, 25°C)	3.72 Ah/0.372A
	(5HR 1.75V/cell, 25°C)	3.36 Ah/0.672A
	(3HR 1.75V/cell, 25°C)	2.94 Ah/0.979A
	(1HR 1.60V/cell, 25°C)	2.43 Ah/2.43A
Max Discharge Current	60A (5s)	
Internal Resistance	Approx 40.0mΩ	
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 1.2A. Voltage 14.4V ~ 15.0V @ 25°C Temp. Coefficient -30mV/°C
	Standby Use	No limit on initial charging current. Voltage 13.5V ~ 13.8V @ 25°C 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® UL batteries may be stored for up to 6 months at 25°C and then a refresh charge is required. For higher temperatures the time intervals will be shorter.

Constant Current Discharge / Constant Power Discharge At 25°C (Amperes & Watts/Cell)

A = Amperes W = Watts

F.V/TIME	5 min	10 min	15 min	20 min	30 min	45 min	60 min	2 hours	3 hours	4 hours	5 hours	6 hours	8 hours	10 hours	20 hours
A / W															
1.85V/cell	7.68 14.5	5.35 10.2	4.42 8.49	3.83 7.42	3.07 5.99	2.36 4.63	1.93 3.81	1.18 2.34	0.899 1.79	0.739 1.47	0.627 1.26	0.543 1.09	0.432 0.869	0.359 0.724	0.198 0.400
1.80V/cell	9.44 17.6	6.39 12.0	5.12 9.76	4.33 8.33	3.40 6.59	2.58 5.02	2.08 4.07	1.25 2.47	0.945 1.87	0.777 1.54	0.654 1.30	0.567 1.13	0.448 0.896	0.372 0.745	0.200 0.402
1.75V/cell	11.2 20.6	7.22 13.5	5.65 10.7	4.72 9.00	3.63 6.99	2.74 5.30	2.19 4.26	1.31 2.56	0.979 1.92	0.801 1.58	0.672 1.33	0.581 1.15	0.460 0.914	0.379 0.755	0.202 0.403
1.70V/cell	12.7 23.1	7.97 14.7	6.11 11.4	5.06 9.59	3.82 7.29	2.84 5.47	2.28 4.42	1.36 2.65	1.01 1.97	0.821 1.61	0.689 1.35	0.595 1.17	0.467 0.922	0.386 0.763	0.206 0.408
1.65V/cell	14.0 25.1	8.57 15.6	6.46 12.0	5.32 9.96	3.98 7.53	2.95 5.65	2.38 4.57	1.40 2.71	1.04 2.01	0.838 1.63	0.704 1.38	0.607 1.19	0.475 0.933	0.391 0.770	0.208 0.412
1.60V/cell	14.7 26.0	8.93 16.1	6.74 12.3	5.48 10.2	4.09 7.67	3.02 5.72	2.43 4.64	1.45 2.78	1.06 2.05	0.859 1.66	0.718 1.40	0.619 1.21	0.485 0.947	0.398 0.779	0.210 0.412

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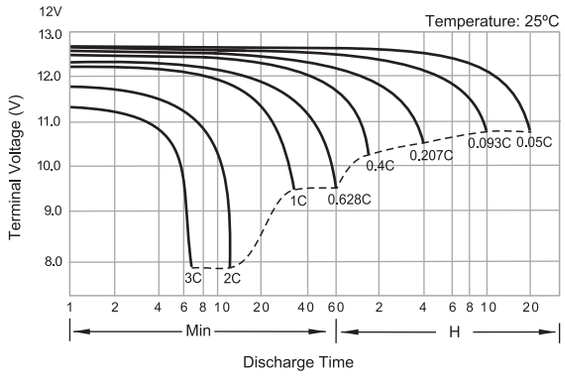
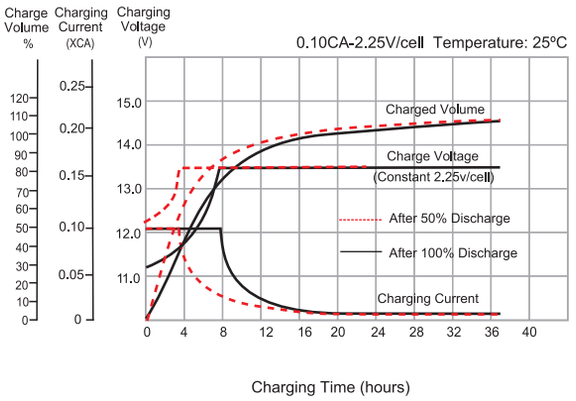
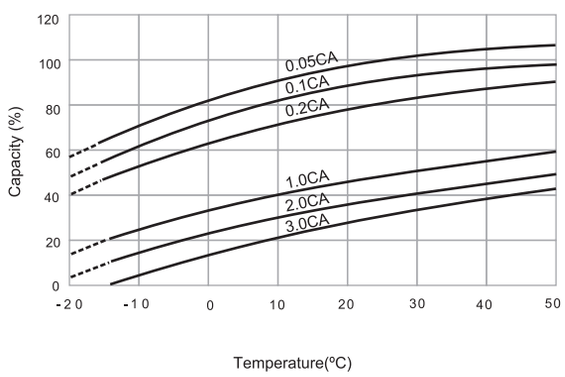
Discharge Characteristics



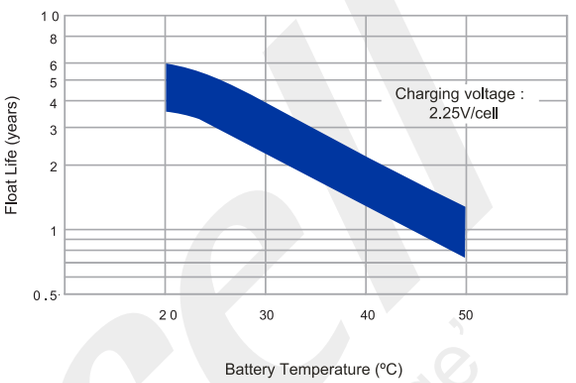
Float Charging Characteristics



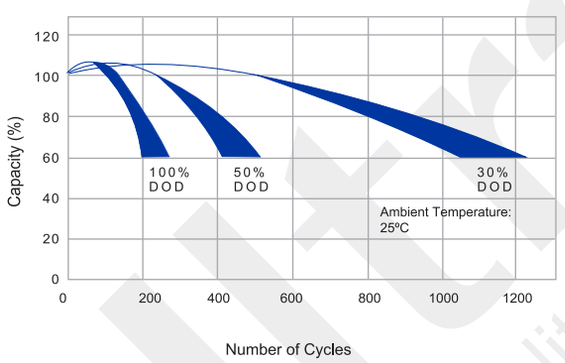
Temperature Effects in Relation to Battery Capacity



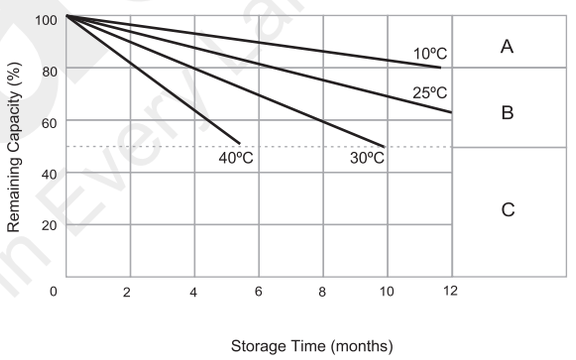
Effects of Temperature on Long Term Float Life



Cycle Life in Relation to Depth of Discharge



General Relation of Capacity vs. Storage Time



General Relation of Capacity vs. Storage Time (Notes)

A) No supplementary charge 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 2.25Vcell.
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.

MH 29410

CE 1188

ISO9001 CERTIFIED

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