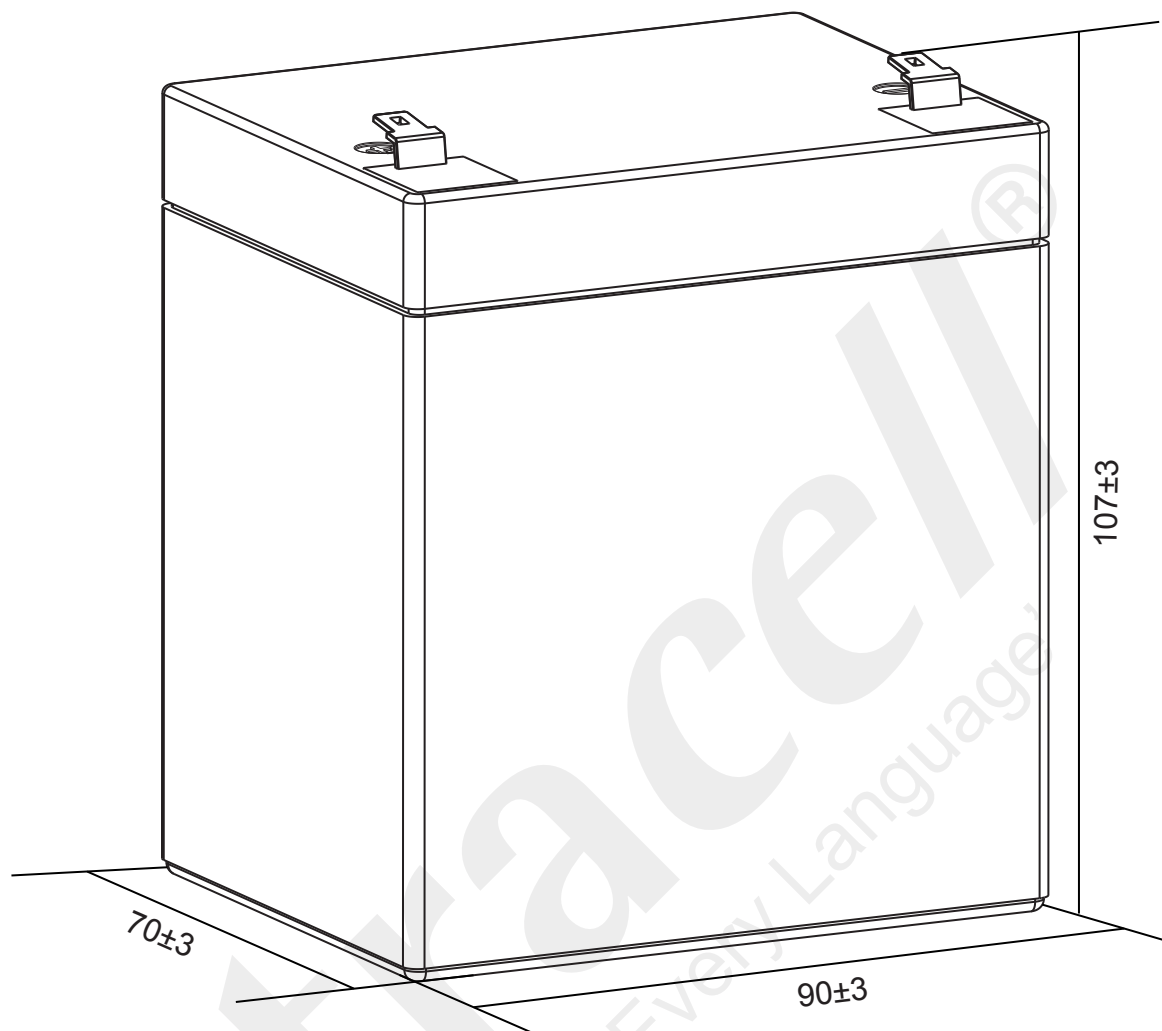


# Ultracell®

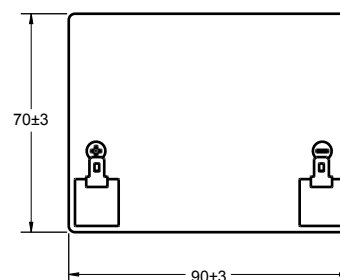
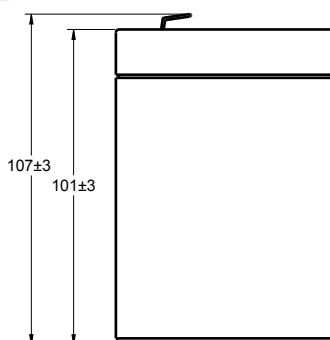
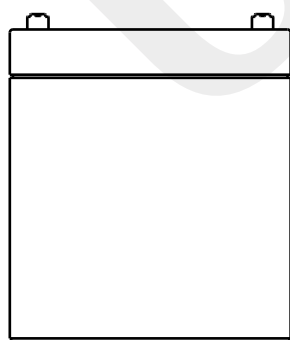
'Quality in Every Language'

UL5-12  
12V 5Ah  
General Series

Art.-Nr. 2010869



Technical Dimensions (mm)



1

distributed by

Swiss Point AG | Moospark 10 | 6221 Rickenbach  
Tel. +41 62 721 82 82 | info@swiss-point.ch  
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UL-V2-REV1 09/21  
ALL DATA IS SUBJECT TO CHANGE WITHOUT NOTICE



MH 29410



EMC 1188-C



IEC 60896  
IEC 62321

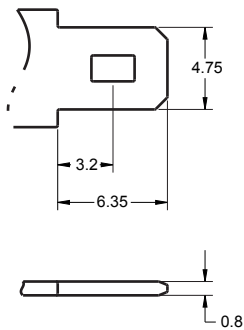


Image

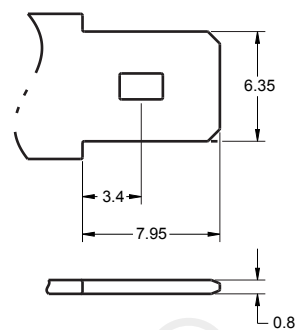


Terminal Dimensions (mm)

Standard Terminal: F1



Optional Terminal: F2



Technical Specification

|                                     |                                  |   |
|-------------------------------------|----------------------------------|---|
| <b>Output</b>                       | Nominal Voltage                  | 12V   |
|                                     | Nominal Capacity (20HR)          | 5Ah   |
| <b>Terminal Type</b>                | Standard Terminal                | F1  |
|                                     | Optional Terminal                | F2  |
| <b>Container Material</b>           | Standard Option                  | ABS   |
|                                     | Flame Retardant Option (FR)      | ABS (UL94:VO)   |
| <b>Rated Capacity</b>               | (20HR 1.75V/cell, 25°C)          | 5.00 Ah/0.250A  |
|                                     | (10HR 1.75V/cell, 25°C)          | 4.73 Ah/0.473A  |
|                                     | (5HR 1.75V/cell, 25°C)           | 4.32 Ah/0.861A  |
|                                     | (3HR 1.75V/cell, 25°C)           | 3.84 Ah/1.28A   |
|                                     | (1HR 1.60V/cell, 25°C)           | 3.29 Ah/3.29A   |
| <b>Max Discharge Current</b>        | 75A (5s)                         |   |
| <b>Internal Resistance</b>          | Approx 35mΩ                      |   |
| <b>Discharge Characteristics</b>    | Operating Temp Range             | Discharge: -15 ~ 50°C<br>Charge: 0 ~ 40°C<br>Storage: -15 ~ 40°C                                    |
|                                     | Nominal Operating Temp Range     | 25 ± 3°C  |
|                                     | Cycle Use                        | Initial Charging Current less than 1.5A.<br>Voltage 14.4V ~ 15.0V @ 25°C Temp. Coefficient -30mV/°C |
|                                     | Standby Use                      | Initial Charging Current less than 1.5A.<br>Voltage 13.5V ~ 13.8V @ 25°C Temp. Coefficient -20mV/°C |
|                                     | Capacity affected by Temperature | 40°C 103%<br>25°C 100%<br>0°C 86%   |
| <b>Design Floating Life at 20°C</b> | 5 Years                          |   |

Self Discharge

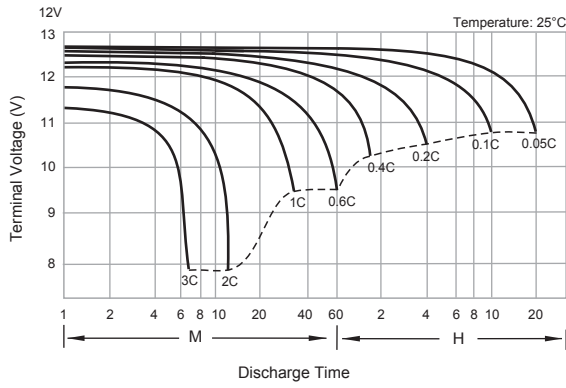
Ultracell® UL batteries may be stored for up to 6 months at 25°C and then a refresh charge is required. For higher temperatures the time intervals will be shorter.

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

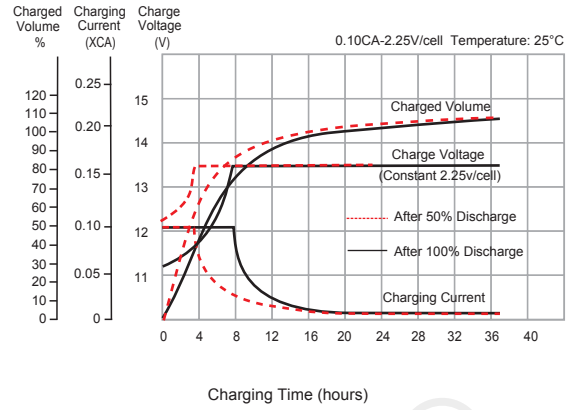
A = Amperes W = Watts

| F.V/TIME   | 5 min | 10 min | 15 min | 20 min | 30 min | 45 min | 60 min | 90 min | 2 hours | 3 hours | 4 hours | 5 hours | 6 hours | 8 hours | 10 hours | 20 hours |
|------------|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|----------|----------|
| A          | 16.4  | 10.9   | 8.33   | 6.75   | 4.97   | 3.63   | 2.97   | 2.18   | 1.71    | 1.24    | 0.984   | 0.838   | 0.717   | 0.565   | 0.462    | 0.244    |
| W          | 30.9  | 20.8   | 15.9   | 13.0   | 9.60   | 7.04   | 5.78   | 4.25   | 3.35    | 2.43    | 1.94    | 1.65    | 1.42    | 1.12    | 0.918    | 0.489    |
| 1.85V/cell | 17.6  | 11.6   | 8.74   | 7.02   | 5.12   | 3.73   | 3.05   | 2.22   | 1.74    | 1.26    | 1.00    | 0.850   | 0.729   | 0.573   | 0.468    | 0.247    |
| 1.80V/cell | 33.0  | 21.9   | 16.6   | 13.4   | 9.85   | 7.21   | 5.91   | 4.33   | 3.41    | 2.46    | 1.96    | 1.68    | 1.44    | 1.14    | 0.930    | 0.495    |
| 1.75V/cell | 18.5  | 12.1   | 9.03   | 7.21   | 5.25   | 3.81   | 3.11   | 2.26   | 1.77    | 1.28    | 1.01    | 0.861   | 0.737   | 0.579   | 0.473    | 0.250    |
| 1.70V/cell | 34.3  | 22.6   | 17.1   | 13.7   | 10.1   | 7.33   | 6.00   | 4.40   | 3.46    | 2.50    | 1.99    | 1.69    | 1.45    | 1.15    | 0.938    | 0.500    |
| 1.67V/cell | 19.4  | 12.5   | 9.33   | 7.42   | 5.39   | 3.89   | 3.17   | 2.30   | 1.80    | 1.29    | 1.03    | 0.872   | 0.746   | 0.585   | 0.478    | 0.252    |
| 1.67V/cell | 35.6  | 23.4   | 17.5   | 14.1   | 10.3   | 7.47   | 6.10   | 4.46   | 3.50    | 2.53    | 2.01    | 1.72    | 1.47    | 1.16    | 0.947    | 0.504    |
| 1.67V/cell | 20.1  | 12.9   | 9.56   | 7.57   | 5.48   | 3.96   | 3.21   | 2.33   | 1.82    | 1.31    | 1.04    | 0.880   | 0.752   | 0.590   | 0.481    | 0.254    |
| 1.60V/cell | 36.5  | 23.9   | 17.9   | 14.3   | 10.4   | 7.57   | 6.18   | 4.51   | 3.53    | 2.55    | 2.03    | 1.73    | 1.48    | 1.17    | 0.954    | 0.508    |
| 1.60V/cell | 21.3  | 13.4   | 9.89   | 7.80   | 5.63   | 4.06   | 3.29   | 2.38   | 1.86    | 1.33    | 1.05    | 0.894   | 0.763   | 0.598   | 0.487    | 0.257    |
|            | 38.0  | 24.6   | 18.4   | 14.7   | 10.7   | 7.71   | 6.29   | 4.58   | 3.59    | 2.59    | 2.06    | 1.75    | 1.50    | 1.18    | 0.965    | 0.514    |

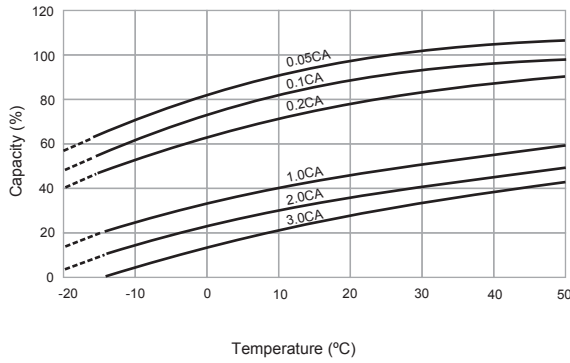
**Discharge Characteristics**



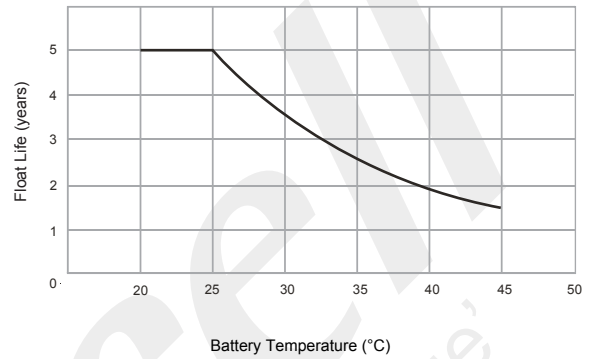
**Float Charging Characteristics**



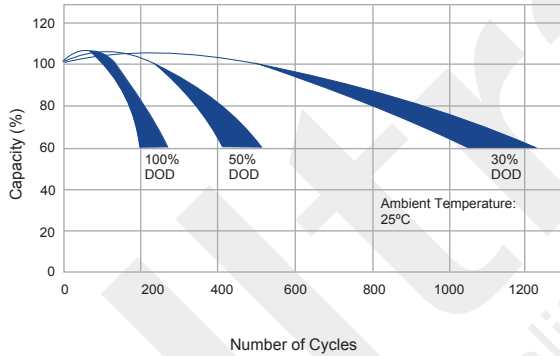
**Temperature Effects in Relation to Battery Capacity**



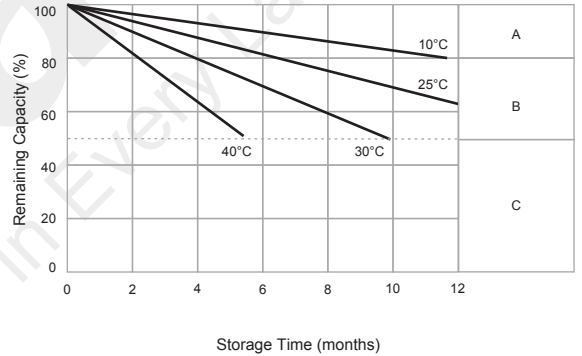
**Effects of Temperature on Long Term Float Life**



**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 2.45V/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.

UL5-12  
12V 5Ah  
General Series

