



LIVEN LEVG Series-GEL Deep Cycle

- For longer cycle live: special paste formula, over dimensioned negative plate, optimised manufacturing process, additives for deep discharge. Up to 10 years
- Special anti-vibration desing
- Thick plates, special formula of paste and plate manufacturing process for a long service life
- ABS material: increase the strenght of battery container
- Special plate desing, long cycle life
- Using special lead-calcium alloy to boost up the grid anti-corrosive performance and extend the battery using life
- Special separators boost up the battery internal performance
- High ternal capacity, reduce the risk of thermal runaway and drying up, can be used in por environment
- High gas recombination efficiency
- Little wáter losing, no electrolyte stratification phenomenon
- Long storage time
- Good deep discharge resilience performance

Application:

- Railway and marine systems
- Electric tools
- Vehicle in place of walking
- Lawn mowers
- Golf trolleys and golf cart
- Electric toys
- Portable power
- Wheelchairs
- Medical equipments.



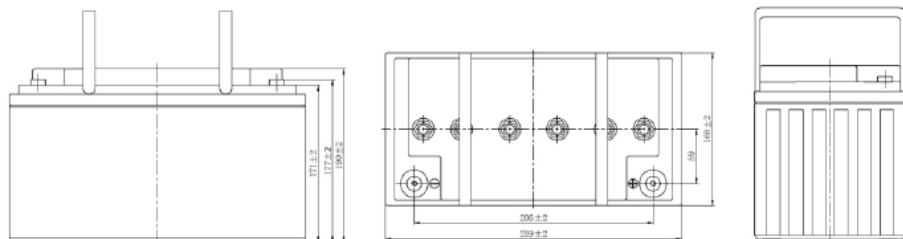
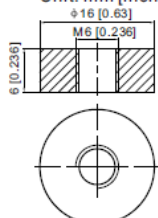
Specification:

Nominal Voltage	12V
Nominal Capacity(20HR)	60.0AH
Dimension	Length 259±3mm (10.2 inches) Width 168±2mm (6.61 inches) Container Height 190±2mm (7.48 inches) Total Height (with Terminal) 190±2mm (7.48 inches)
Approx Weight	Approx 19.7 kg (43.4lbs)
Terminal	T6
Container Material	ABS
Max. Discharge Current	600A (5s)
Internal Resistance	Approx 8.2mΩ
Operating Temp.Range	Discharge : -20~55°C (-4~131°F) Charge : 0~40°C (32~104°F) Storage : -20~50°C (-4~122°F)
Nominal Operating Temp. Range	25±3°C (77±5°F)
Cycle Use	Initial Charging Current less than 12A.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%
Self Discharge	LIVEN LEVG series batteries may be stored for up to 9 months at 25°C(77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter.

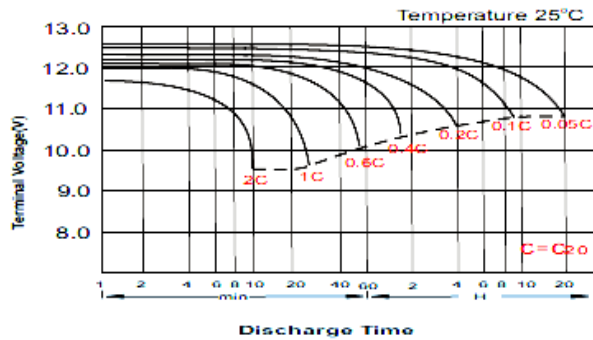
Outer Dimensions:

■ T6 Terminal

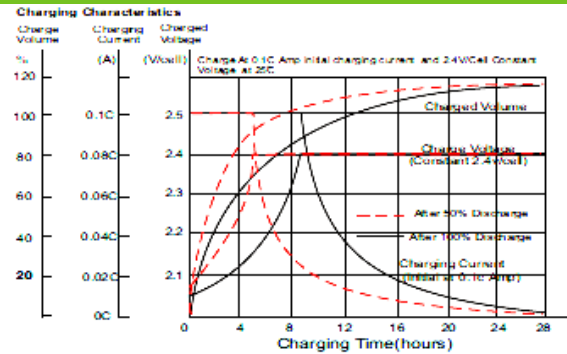
Unit: mm [inches]



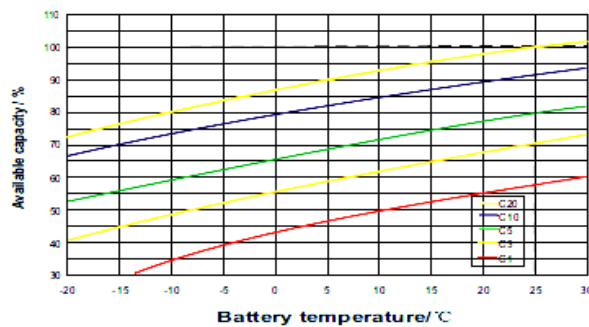
Discharge Characteristics



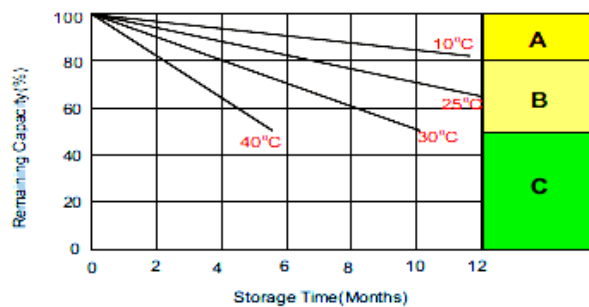
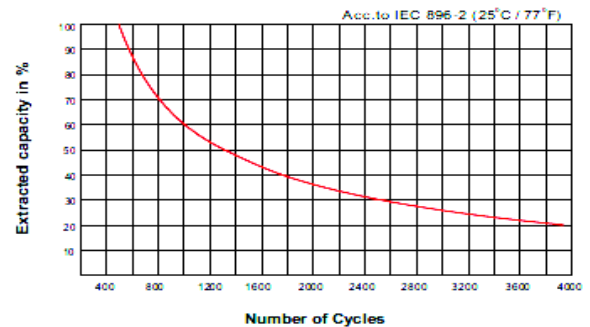
Capacity Retention Characteristic



Temperature Effects in Relation to Capacity



Cycle Life in Relation to Depth of Discharge



Self Discharge Characteristics

- A** No supplementary charge required
(Carry out 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 20hours at limited current 0.25CA and constant voltage 2.45V/cell.
 3. Charged for 8-10hours at limited current 0.05CA.
- C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.

Constant Current Discharge (CC, Unit: A) at 25°C (77°F)

F.V/Time	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	67.8	58.7	52.8	42.0	32.0	26.7	16.8	12.6	10.3	8.86	7.68	6.20	5.26	2.93
1.80V/cell	81.5	67.9	60.1	46.8	35.9	29.7	18.2	13.6	11.1	9.41	8.15	6.54	5.54	3.00
1.75V/cell	94.5	77.3	66.8	51.0	38.3	31.4	19.1	14.3	11.5	9.71	8.41	6.70	5.62	3.04
1.70V/cell	105.0	84.1	71.6	54.0	40.0	32.8	20.0	14.7	11.8	9.98	8.64	6.85	5.71	3.09
1.67V/cell	112.4	88.4	74.7	56.1	41.6	34.0	20.6	15.2	12.1	10.2	8.81	6.95	5.80	3.13
1.60V/cell	122.5	94.6	79.9	59.4	43.9	35.6	21.3	15.7	12.5	10.5	9.01	7.05	5.89	3.16

Constant Power Discharge (CP, Unit: W) at 25°C (77°F)

F.V/Time	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	127.4	111.2	100.8	80.8	61.9	51.9	32.7	24.7	20.3	17.4	15.2	12.3	10.5	5.85
1.80V/cell	150.8	126.6	113.1	89.1	69.0	57.4	35.3	26.5	21.6	18.5	16.1	13.0	11.0	5.99
1.75V/cell	172.3	142.4	124.5	96.3	73.1	60.5	36.9	27.7	22.5	19.0	16.5	13.2	11.1	6.07
1.70V/cell	188.6	153.5	132.5	101.4	76.1	62.9	38.6	28.6	23.0	19.5	17.0	13.5	11.3	6.16
1.67V/cell	199.6	159.5	137.0	104.6	78.6	64.8	39.5	29.3	23.5	19.9	17.3	13.7	11.5	6.22
1.60V/cell	213.7	168.2	145.1	109.7	82.4	67.5	40.7	30.1	24.1	20.4	17.6	13.9	11.6	6.27