

### FEATURES

ES12-12 is a standby using battery with 3~5 years service life under normal float charge at 25°C. LCB batteries are rechargeable Seal Lead highly efficient, leak proof and maintenance free.

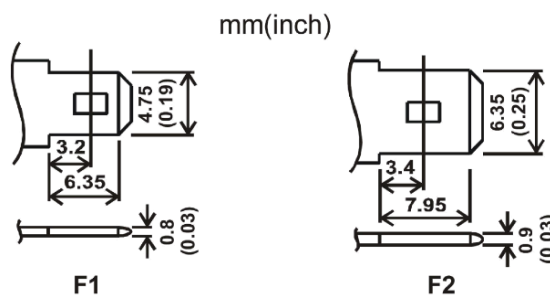
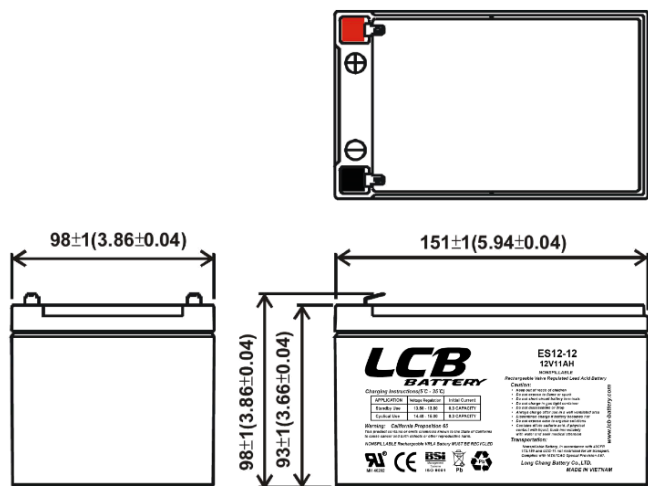


### SPECIFICATION

|                            |                                                  |                     |                                 |
|----------------------------|--------------------------------------------------|---------------------|---------------------------------|
| Cell per unit              | 6                                                | Ambient temperature |                                 |
| Nominal Voltage (V)        | 12                                               | Charge              | 0°C (32°F) to 40°C (104°F)      |
| Nominal Capacity (Ah)      | 12Ah@ 20hour rate F.V(1.75/cell)                 | Discharge           | -15°C (5°F) to 50°C (122°F)     |
| Weight                     | Approx3.75kg                                     | Storage             | -15°C (5°F) to 40°C (104°F)     |
| Internal Resistance (1KHz) | 25mΩ                                             | Max charge Current  |                                 |
| Max Discharge Current (5s) | 165A                                             |                     | Max charge current : 3.3A       |
| Battery Life :             | Stand by : 3~5 years                             | Cycle use :         | Charge voltage: 14.4 to 15.0V   |
| Terminal Type              | F1/F2                                            | Stand by :          | Charge voltage: 13.50 to 13.80V |
| Container Material         | ABS(Option : 94-HB & 94V-0 flame retardant case) |                     |                                 |



| DIMENSIONS | Length    | Width     | Height    | Total Height |
|------------|-----------|-----------|-----------|--------------|
| Unit: mm   | 151±1     | 98±1      | 93±1      | 98±1         |
| Unit: inch | 5.94±0.04 | 3.86±0.04 | 3.66±0.04 | 3.86±0.04    |



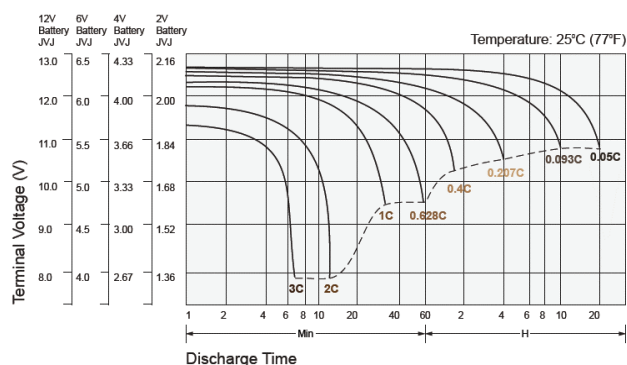
### Constant current discharge characteristics Unit:A(25°C 77°F)

| F.V/Time | 5MIN | 15MIN | 30MIN | 60MIN | 2HR  | 3HR  | 5HR  | 8HR  | 10HR | 20HR |
|----------|------|-------|-------|-------|------|------|------|------|------|------|
| 1.60V    | 50.6 | 24.5  | 13.40 | 8.74  | 4.90 | 3.35 | 2.21 | 1.38 | 1.22 | 0.67 |
| 1.67V    | 49.1 | 23.8  | 12.90 | 8.68  | 4.85 | 3.17 | 2.16 | 1.38 | 1.20 | 0.66 |
| 1.70V    | 47.7 | 23.5  | 11.70 | 8.52  | 4.80 | 3.00 | 2.11 | 1.37 | 1.16 | 0.64 |
| 1.75V    | 44.5 | 22.4  | 11.10 | 8.40  | 4.74 | 2.93 | 2.05 | 1.36 | 1.14 | 0.61 |
| 1.80V    | 41.4 | 21.6  | 10.30 | 6.26  | 4.70 | 2.86 | 2.02 | 1.36 | 1.13 | 0.60 |

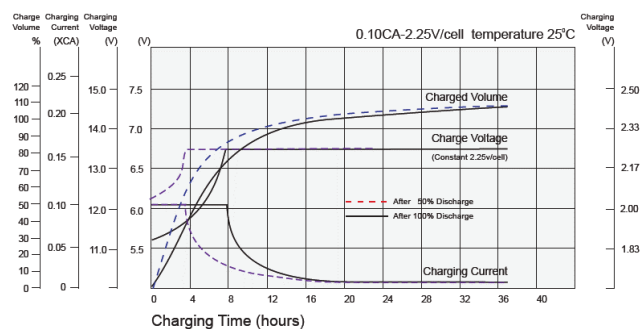
### Constant power discharge characteristics Unit:W(25°C 77°F)

| F.V/Time | 5MIN  | 15MIN | 30MIN | 60MIN | 2HR  | 3HR  | 5HR  | 8HR  | 10HR | 20HR |
|----------|-------|-------|-------|-------|------|------|------|------|------|------|
| 1.60V    | 561.6 | 280.8 | 160.0 | 91.3  | 55.0 | 35.5 | 24.7 | 15.4 | 13.4 | 7.07 |
| 1.67V    | 542.6 | 275.3 | 159.0 | 90.4  | 54.7 | 35.4 | 24.7 | 15.4 | 13.4 | 7.07 |
| 1.70V    | 520.2 | 269.1 | 154.0 | 89.3  | 54.2 | 35.1 | 24.6 | 15.3 | 13.4 | 7.06 |
| 1.75V    | 489.6 | 261.1 | 151.1 | 87.7  | 54.3 | 34.8 | 24.4 | 15.2 | 13.3 | 7.02 |
| 1.80V    | 423.0 | 249.6 | 145.0 | 85.2  | 53.8 | 34.1 | 24.1 | 15.0 | 13.1 | 6.88 |

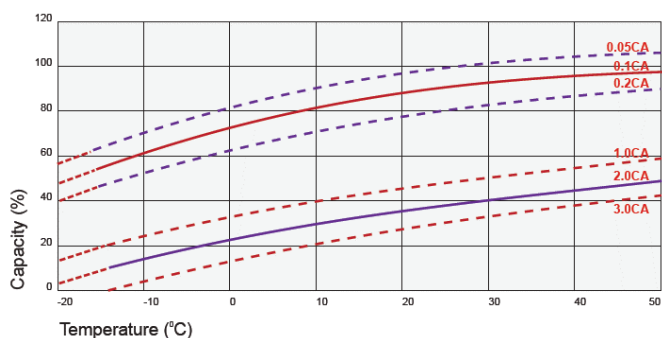
## Battery Discharge Characteristics (25°C/77°F)



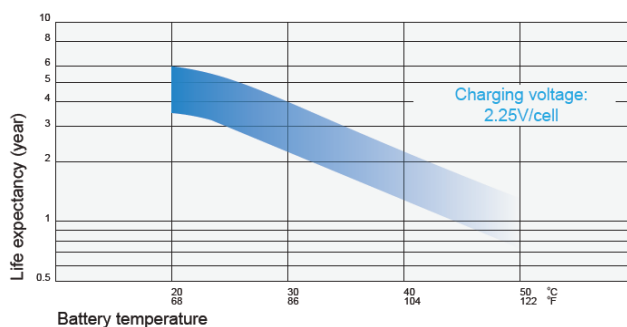
## Battery Charge Characteristic for standby use



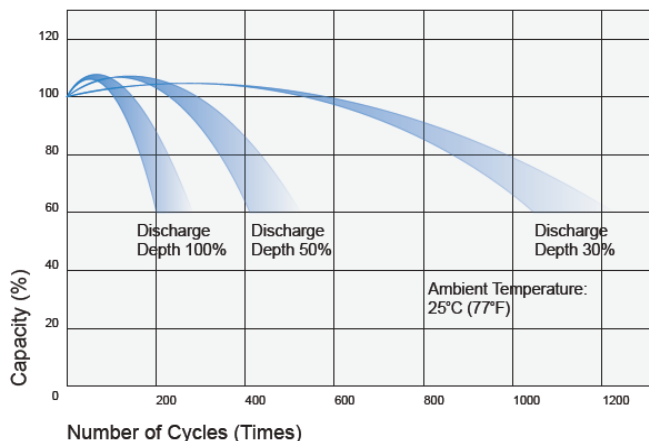
## Temperature Effects in Relation to Battery Capacity



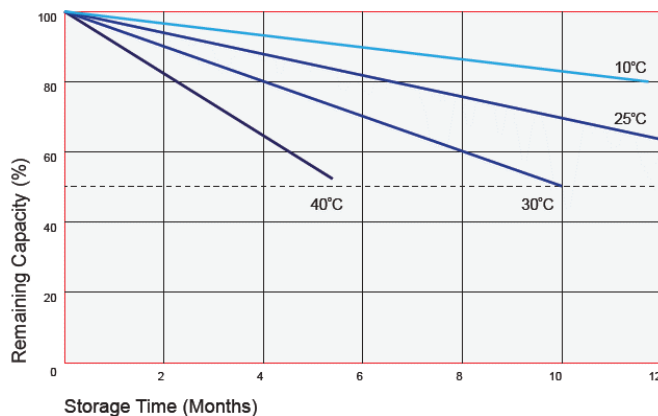
## Temperature Effects on Long Term Float Life



## Cycle Service Life



## Self Discharge Characteristics



## Charging Procedures

| Application | Charge Voltage(V/cell) |           |                 | Max. Charge Current |
|-------------|------------------------|-----------|-----------------|---------------------|
|             | Temperature            | Set Point | Allowable Range |                     |
| Cycle Use   | 25°C(77°F)             | 2.45      | 2.40~2.50       | 0.25C               |
| Standby     | 25°C(77°F)             | 2.275     | 2.25~2.30       |                     |

## Discharge Current VS. Discharge Voltage

|                                |            |            |            |            |
|--------------------------------|------------|------------|------------|------------|
| Final Discharge Voltage V/cell | 1.75       | 1.70       | 1.65       | 1.60       |
| Discharge Current (A)          | 0.2C > (A) | 0.2C < (A) | 0.5C < (A) | (A) > 1.0C |

Taiwan HQ: LONG CHANG BATTERY CO.,LTD

NO.336,Sec. 1, Yanco Rd. , Fenyuan Shiang,  
Changhua County 502, Taiwan(R.O.C.)

TEL:+886-49-2510088

Web: www.lcb.tw

FAX:+886-49-2510099

E-mail: lcb@lcb.tw

Vietnam Factory: SHENG CHANG TECH. CO., LTD

Lot I 1A –CN- My Phuoc Industrial II, Ben Cat District, Binh  
Duong Province, Vietnam

TEL: +84-2743553577

FAX: +84-2743553576