

### ⚡ Specifications

#### Nominal Voltage(V)

12V

#### Nominal Capacity

|              |        |    |         |         |
|--------------|--------|----|---------|---------|
| 10 hour rate | (13A   | to | 10.80V) | 130Ah   |
| 5 hour rate  | (22.1A | to | 10.20V) | 110.5Ah |
| 1 hour rate  | (78A   | to | 9.60V)  | 78Ah    |
| 1C           | (130A  | to | 9.60V)  | 82.33Ah |

#### Weight

Approx. 43.0kg(94.6Lbs.)

#### Internal Resistance (at 1KHz)

Approx. 5 mΩ

#### Maximum Discharge Current for

5 seconds:1300A

#### Charging Methods at 25°C(77°F)

|                            |                |
|----------------------------|----------------|
| Cycle use:                 |                |
| Charging Voltage           | 14.4 to 15.0V  |
| Coefficient                | -5.0mV/°C/cell |
| Maximum Charging Current : | 39A            |
| Standby use:               |                |
| Float Charging Voltage     | 13.5 to 13.8V  |
| Coefficient                | -3.0mV/°C/cell |

#### Operating Temperature Range

|           |            |    |             |
|-----------|------------|----|-------------|
| Charge    | -15°C(5°F) | to | 40°C(104°F) |
| Discharge | -15°C(5°F) | to | 50°C(122°F) |
| Storage   | -15°C(5°F) | to | 40°C(104°F) |

#### Charge Retention (shelf life) at 20°C(68°F)

|         |     |
|---------|-----|
| 1 month | 98% |
| 3 month | 94% |
| 6 month | 85% |

#### Case Material

ABS UL94 HB  
Option: Flammability resistance of (UL94 V-0)

#### Design Life

12 Years.

#### Terminal

F8



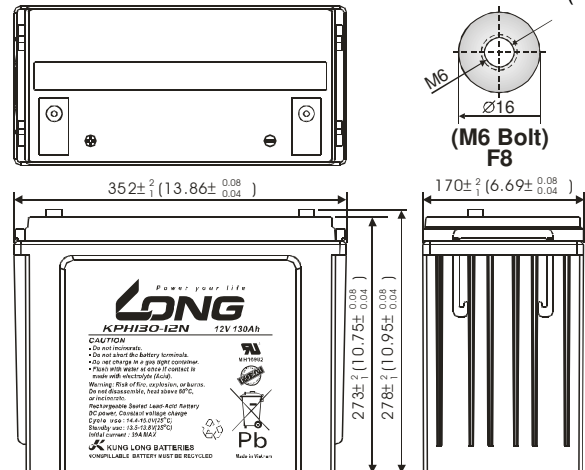
### ⚡ Dimensions

|                     |                           |
|---------------------|---------------------------|
| Length (L)          | 352+2-1 (13.86+0.08-0.04) |
| Width (W)           | 170+2-1 (6.69+0.08-0.04)  |
| Height (H)          | 273+2-1 (10.75+0.08-0.04) |
| Overall Height (HT) | 278+2-1 (10.95+0.08-0.04) |

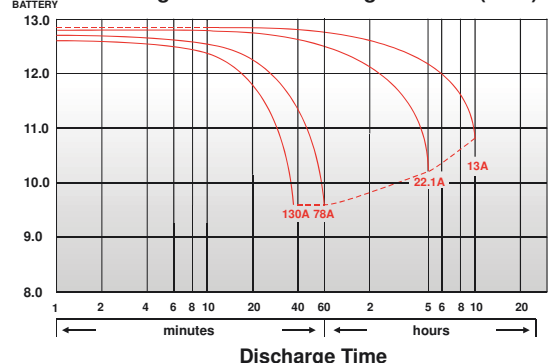
#### Description of torque value of hard ware for the terminals:

|                                |                        |
|--------------------------------|------------------------|
| Recommended torque value       | M6: 7 N-m (71kgf-cm)   |
| Maximum allowable torque value | M6: 10 N-m (102kgf-cm) |

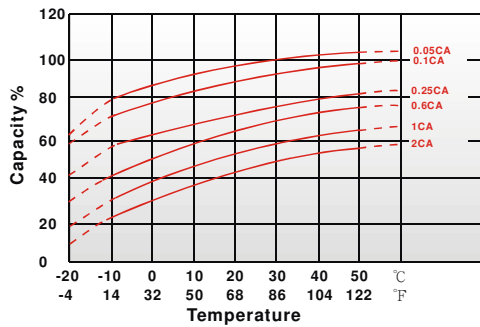
mm(inch)



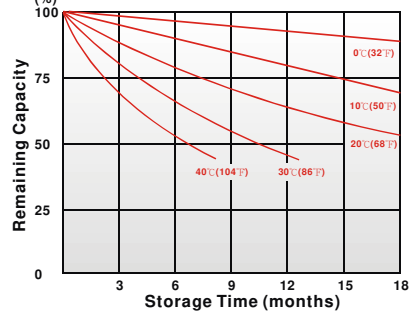
(V) FOR 12V BATTERY Discharge Time VS. Discharge Current (25°C)



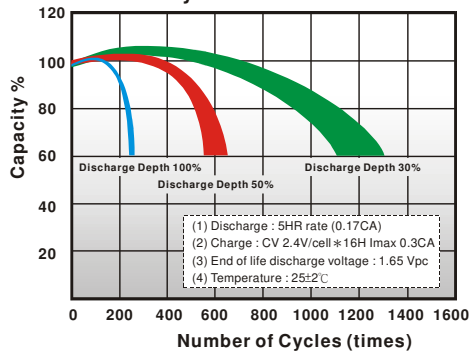
Effect of Temperature on Capacity 25°C(77°F)



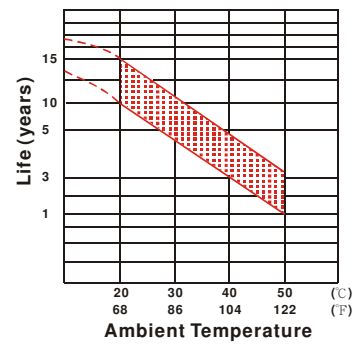
Capacity Retention Characteristic



Cycle Service Life



Trickle (or float) Service Life



### - PERFORMANCE DATA

Discharge Rates in Watts to Various End Voltages at 25°C(77°F)

| Time | End Voltage | 1.85V | 1.80V | 1.75V | 1.70V | 1.67V | 1.65V | 1.60V |
|------|-------------|-------|-------|-------|-------|-------|-------|-------|
| 10   | min         | 409   | 470   | 495   | 518   | 528   | 539   | 559   |
| 15   | min         | 345   | 364   | 389   | 408   | 415   | 423   | 435   |
| 30   | min         | 223   | 257   | 261   | 271   | 275   | 278   | 283   |
| 60   | min         | 143   | 149   | 155   | 159   | 160   | 161   | 163   |
| 120  | min         | 82.0  | 85.2  | 88.2  | 90.7  | 91.7  | 92.8  | 94.5  |
| 180  | min         | 62.7  | 65.0  | 67.3  | 69.2  | 70.0  | 71.0  | 72.3  |
| 240  | min         | 48.7  | 51.7  | 53.5  | 55.0  | 55.5  | 56.2  | 57.2  |
| 300  | min         | 42.3  | 44.7  | 46.2  | 47.3  | 47.7  | 48.2  | 48.8  |
| 600  | min         | 24.3  | 25.3  | 26.0  | 26.7  | 26.8  | 27.2  | 27.5  |
| 1200 | min         | 12.0  | 12.5  | 12.9  | 13.2  | 13.3  | 13.5  | 13.5  |

- Discharge Rates in Amperes to Various End Voltages at 25°C(77°F)

| Time | End Voltage | 1.85V | 1.80V | 1.75V | 1.70V | 1.67V | 1.65V | 1.60V |
|------|-------------|-------|-------|-------|-------|-------|-------|-------|
| 10   | min         | 229   | 260   | 292   | 308   | 316   | 324   | 340   |
| 15   | min         | 182   | 211   | 232   | 247   | 250   | 256   | 262   |
| 30   | min         | 113   | 128   | 136   | 143   | 145   | 147   | 152   |
| 60   | min         | 57.8  | 66.4  | 73.5  | 78.9  | 80.1  | 81.4  | 83.6  |
| 120  | min         | 37.4  | 42.4  | 44.7  | 45.8  | 46.5  | 47.3  | 48.6  |
| 180  | min         | 28.4  | 31.3  | 34.4  | 35.0  | 35.5  | 36.2  | 37.2  |
| 240  | min         | 22.4  | 24.6  | 27.1  | 27.7  | 28.0  | 28.4  | 28.9  |
| 300  | min         | 20.7  | 22.0  | 22.9  | 23.5  | 23.7  | 23.9  | 24.2  |
| 600  | min         | 12.0  | 13.0  | 13.1  | 13.1  | 13.2  | 13.2  | 13.3  |
| 1200 | min         | 6.00  | 6.50  | 6.57  | 6.63  | 6.70  | 6.74  | 6.78  |

All data on the spec. sheet is an average value:

The tolerance range :  $X < 6\text{min}$ (+15%~-15%),  $6\text{min} \leq X < 10\text{min}$ (+12%~-12%),  $10\text{min} \leq X < 60\text{min}$ (+8%~-8%),  $X \geq 60\text{min}$ (+5%~-5%)

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