

### ⚡ Specifications

#### Nominal Voltage(V)

12V

#### Nominal Capacity

|              |       |    |         |         |
|--------------|-------|----|---------|---------|
| 20 hour rate | (2A   | to | 10.50V) | 40Ah    |
| 5 hour rate  | (6.8A | to | 10.20V) | 34Ah    |
| 1 hour rate  | (22A  | to | 9.60V)  | 22Ah    |
| 1 C          | (40A  | to | 9.60V)  | 21.33Ah |

#### Weight

Approx. 13.3kg(29.3Lbs.)

#### Internal Resistance (at 1KHz)

Approx. 8 mΩ

#### Maximum Discharge Current for

5 seconds:480A

#### Charging Methods at 25°C(77°F)

|                            |               |
|----------------------------|---------------|
| Cycle use:                 |               |
| Charging Voltage           | 13.8 to 14.4V |
| Coefficient -5.0mV/°C/cell |               |
| Maximum Charging Current : | 12A           |
| 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 | 92% |
| 3 month | 90% |
| 6 month | 80% |

#### Case Material

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

#### Design Life

7-10 Years.

#### Terminal

F8



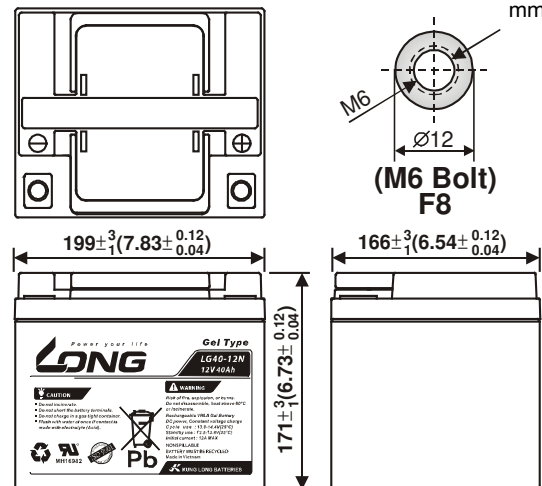
### ⚡ Dimensions

|                     |                          |
|---------------------|--------------------------|
| Length (L)          | 199+3-1 (7.83+0.12-0.04) |
| Width (W)           | 166+3-1 (6.54+0.12-0.04) |
| Height (H)          | 171+3-1 (6.73+0.12-0.04) |
| Overall Height (HT) | 171+3-1 (6.73+0.12-0.04) |

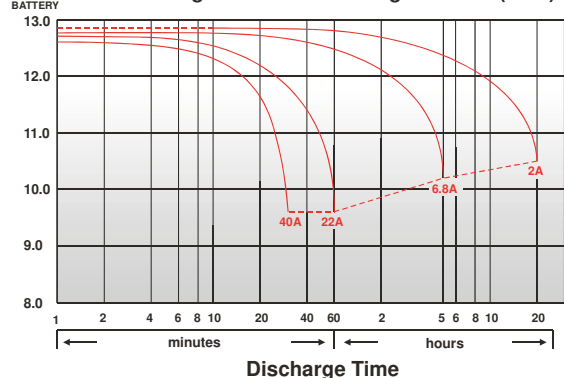
#### Description of torque value of hard ware for the terminals:

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

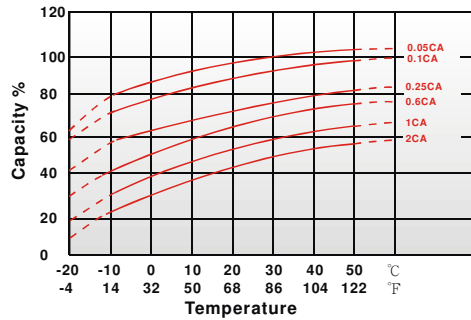
mm(inch)



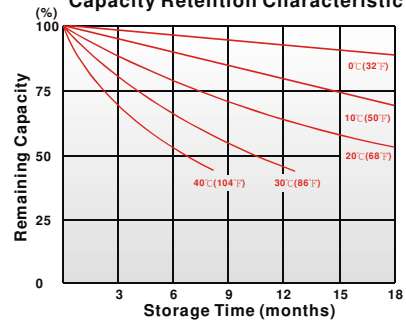
(V) FOR 12V BATTERY Discharge Time VS. Discharge Current (25°C)



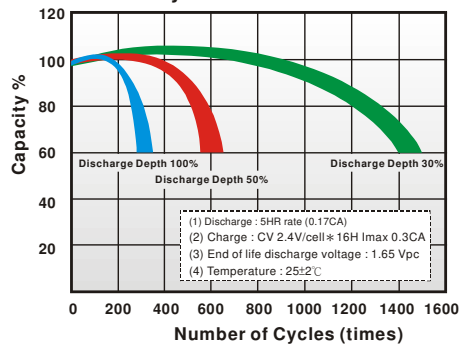
Effect of Temperature on Capacity 25°C (77°F)



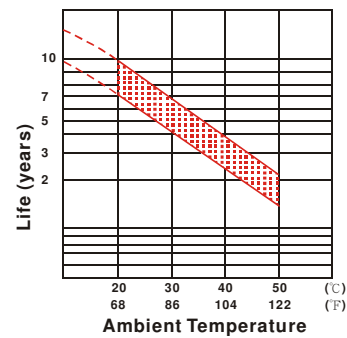
Capacity Retention Characteristic



Cycle Service Life



Trickle (or float) Service Life



### - PERFORMANCE DATA

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

| End Voltage |     | 1.85V | 1.80V | 1.75V | 1.70V | 1.67V | 1.65V | 1.60V |
|-------------|-----|-------|-------|-------|-------|-------|-------|-------|
| Time        |     |       |       |       |       |       |       |       |
| 5           | min | 201   | 240   | 269   | 288   | 293   | 298   | 303   |
| 10          | min | 128   | 154   | 173   | 185   | 188   | 191   | 195   |
| 15          | min | 99.5  | 117   | 129   | 137   | 139   | 141   | 144   |
| 30          | min | 53.1  | 62.4  | 68.9  | 73.1  | 74.1  | 75.3  | 76.5  |
| 60          | min | 41.2  | 42.6  | 43.7  | 44.5  | 44.8  | 45.1  | 45.6  |
| 120         | min | 24.3  | 25.2  | 25.7  | 26.2  | 26.3  | 26.6  | 26.9  |
| 180         | min | 17.7  | 18.3  | 18.8  | 19.1  | 19.3  | 19.4  | 19.7  |
| 240         | min | 14.0  | 14.4  | 14.6  | 14.9  | 15.0  | 15.1  | 15.2  |
| 300         | min | 12.8  | 13.1  | 13.3  | 13.6  | 13.7  | 13.8  | 13.6  |
| 600         | min | 6.79  | 7.01  | 7.20  | 7.40  | 7.48  | 7.58  | 7.73  |
| 1200        | min | 3.48  | 3.68  | 3.85  | 4.00  | 4.07  | 4.15  | 4.28  |

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

| End Voltage |     | 1.85V | 1.80V | 1.75V | 1.70V | 1.67V | 1.65V | 1.60V |
|-------------|-----|-------|-------|-------|-------|-------|-------|-------|
| Time        |     |       |       |       |       |       |       |       |
| 5           | min | 104   | 126   | 141   | 151   | 154   | 157   | 160   |
| 10          | min | 61.6  | 75.1  | 84.1  | 89.5  | 91.3  | 93.1  | 94.9  |
| 15          | min | 50.9  | 59.8  | 66.0  | 70.0  | 71.2  | 72.2  | 73.3  |
| 30          | min | 29.6  | 33.4  | 36.8  | 38.0  | 38.8  | 40.0  | 40.6  |
| 60          | min | 21.3  | 22.0  | 22.4  | 22.7  | 22.9  | 23.1  | 23.4  |
| 120         | min | 11.8  | 12.3  | 12.7  | 13.0  | 13.1  | 13.3  | 13.4  |
| 180         | min | 8.71  | 9.04  | 9.25  | 9.40  | 9.49  | 9.59  | 9.78  |
| 240         | min | 6.90  | 7.17  | 7.41  | 7.58  | 7.60  | 7.64  | 7.72  |
| 300         | min | 6.28  | 6.52  | 6.67  | 6.80  | 6.84  | 6.87  | 6.94  |
| 600         | min | 3.50  | 3.65  | 3.80  | 3.87  | 3.91  | 3.97  | 4.00  |
| 1200        | min | 1.84  | 1.92  | 2.00  | 2.04  | 2.06  | 2.09  | 2.11  |

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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