



## 3FM4.5W (6V4.5Ah)

**LONGWAY®** Standard battery is design for a general purpose by KaiYing Power. 3FM4.5W is a general purpose battery up to 5 years in float service or more than 260 cycles at 100% discharge in cycle service. As with all **LONGWAY®** batteries, all are rechargeable highly efficient, leak proof and maintenance free.



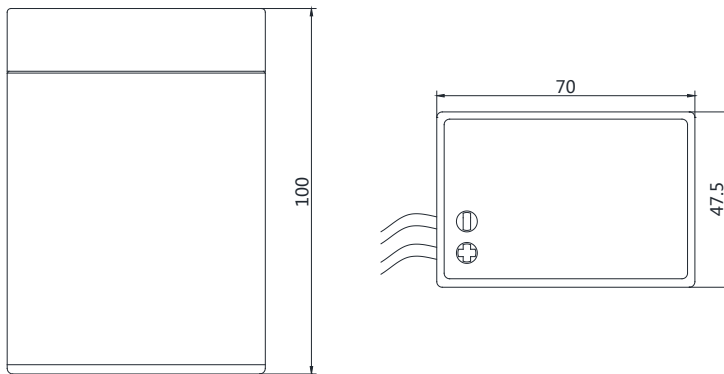
**LONGWAY**



### Specifications:

|                                     |   |
|-------------------------------------|---|
| Cells per Unit                      | 3   |
| Normal Voltage                      | 6V  |
| Capacity                            | 4.5Ah@20Hr-rate to 1.75V per cell@25°C  |
| Weight                              | Approx. 0.71kg(1.65lbs)   |
| Maximum Discharge Current           | 45A(5sec)   |
| Internal Resistance                 | Approx. 28mΩ full charged @25°C   |
| Operating Temperature Range         | Discharge: -15°C~50°C<br>Charge: -15°C~40°C<br>Storage: -15°C~40°C  |
| Nominal Operating Temperature Range | 25°C±3°C(77°F±5°F)  |
| Float Charging Voltage              | 6.75~6.90VDC/unit Average @25°C   |
| Maximum Charging Current            | 1.35A   |
| Equalization and Cycle Service      | 7.20V~7.50VDC/unit Average @ 25°C   |
| Self Discharge                      | LONGWAY Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using. |
| Terminal                            | Wire lead   |
| Container Material                  | ABS(UL94-HB)<br>*Flammability resistance of (UL94-V0) can be available upon request   |

**Dimensions: L70\*W40\*H100(TH100)mm**



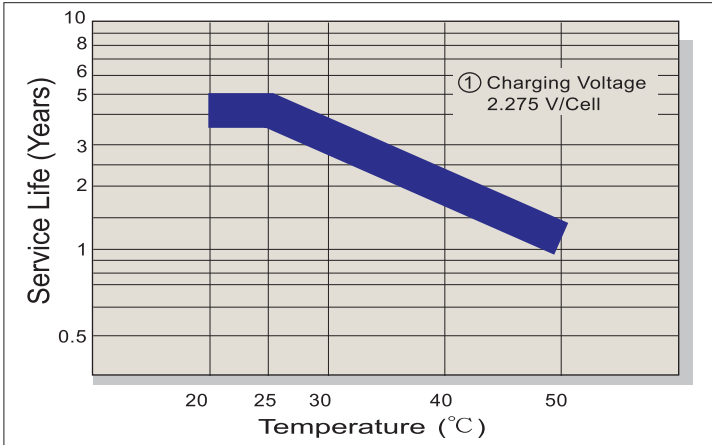
### Constant Current Discharge Characteristics (A, 25 °C)

| F.V/TIME | 10min | 15min | 30min | 60min | 2h   | 3h   | 5h   | 8h   | 10h  | 20h  |
|----------|-------|-------|-------|-------|------|------|------|------|------|------|
| 4.80     | 12.1  | 9.4   | 4.62  | 2.73  | 1.53 | 1.28 | 0.85 | 0.50 | 0.46 | 0.23 |
| 4.95     | 11.7  | 9.09  | 4.48  | 2.65  | 1.52 | 1.27 | 0.84 | 0.50 | 0.45 | 0.23 |
| 5.10     | 11.5  | 8.99  | 4.44  | 2.62  | 1.51 | 1.26 | 0.84 | 0.50 | 0.45 | 0.23 |
| 5.25     | 11.1  | 8.62  | 4.25  | 2.51  | 1.50 | 1.25 | 0.83 | 0.50 | 0.45 | 0.23 |
| 5.40     | 10.8  | 8.54  | 4.21  | 2.49  | 1.48 | 1.23 | 0.82 | 0.50 | 0.45 | 0.23 |

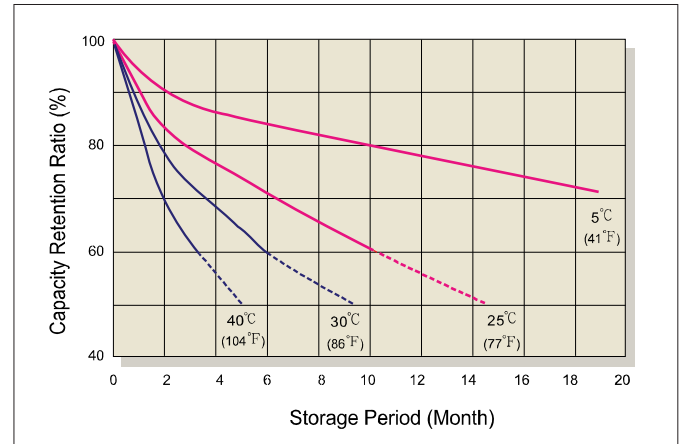
### Constant Power Discharge Characteristics (Watt, 25 °C)

| F.V/TIME | 10min | 15min | 30min | 60min | 2h   | 3h   | 5h   | 8h   | 10h  | 20h  |
|----------|-------|-------|-------|-------|------|------|------|------|------|------|
| 4.80     | 68.2  | 53.4  | 26.5  | 15.8  | 8.98 | 7.60 | 5.09 | 3.01 | 2.74 | 1.37 |
| 4.95     | 66.2  | 51.8  | 25.7  | 15.3  | 8.89 | 7.52 | 5.04 | 3.00 | 2.73 | 1.36 |
| 5.10     | 64.8  | 51.3  | 25.4  | 15.2  | 8.85 | 7.48 | 5.01 | 2.99 | 2.72 | 1.36 |
| 5.25     | 62.8  | 49.1  | 24.4  | 14.5  | 8.76 | 7.41 | 4.96 | 2.98 | 2.71 | 1.35 |
| 5.40     | 60.9  | 48.7  | 24.1  | 14.4  | 8.67 | 7.33 | 4.91 | 2.97 | 2.70 | 1.35 |

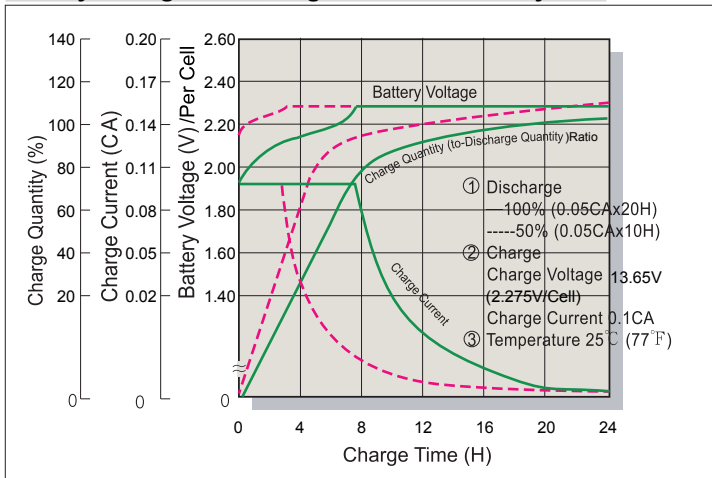
### Float Service Life



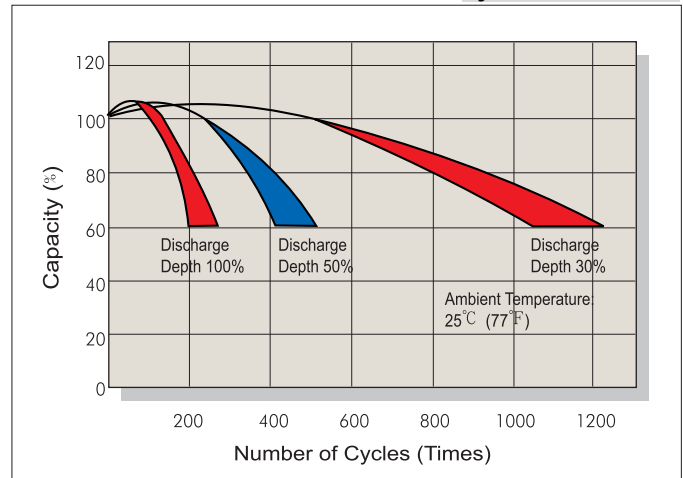
### Capacity Retention Characteristic



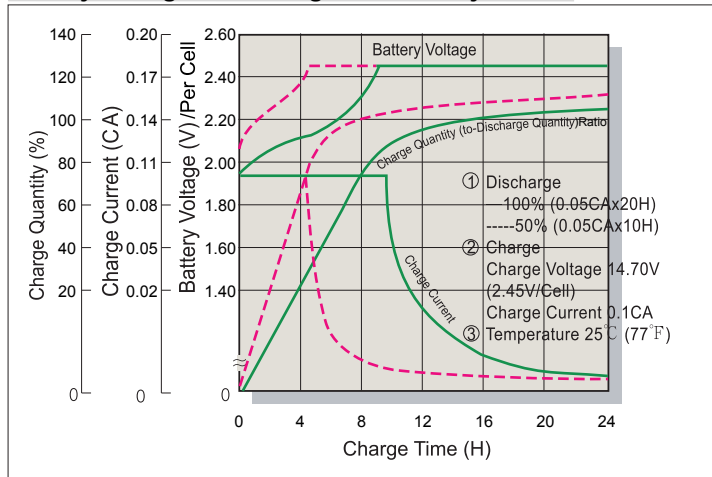
### Battery Voltage and Charge Time for Standby use



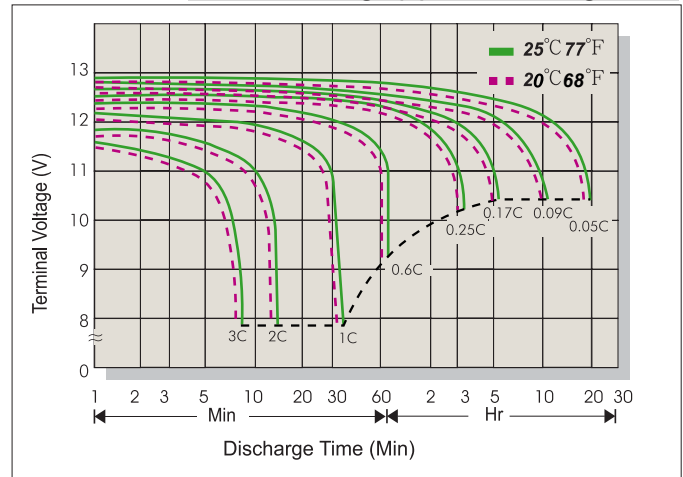
### Cycle Service Life



### Battery Voltage and Charge Time for Cycle Use



### Terminal Voltage (V) and Discharge Time



### 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       | 0.3C                |
| 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 |

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