



RL2450X (2V450Ah)

RL 2450X is a general purpose battery with 18 years floating design life. With heavy duty grid, thick plates, special additives, RL series battery maintain very long life time and stable performance.



Specification

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|--|--|
| Cells Per Unit | 1 |
| Voltage Per Unit | 2 |
| Capacity | 450Ah@10hr-rate to 1.80V per cell @25°C |
| Weight | Approx. 28.0 Kg |
| Max. Discharge Current | 2250 A (5 sec) |
| Internal Resistance | Approx. 0.65 mΩ |
| Operating Temperature Range | Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C |
| Normal Operating Temperature Range | 25°C±5°C |
| Float charging Voltage | 2.27 to 2.3 VDC/unit Average at 25°C |
| Recommended Maximum Charging Current Limit | 90 A |
| Equalization and Cycle Service | 2.43 to 2.47 VDC/unit Average at 25°C |
| Self Discharge | RITAR 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 | Thread insert & Bolt (F10) |
| Container Material | A.B.S. (UL94-HB), Flammability resistance of UL94-V1 can be available upon request. |



MH28539



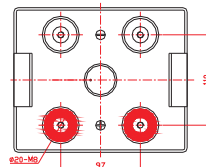
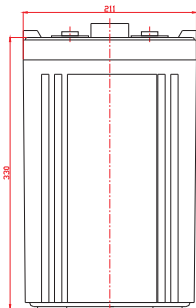
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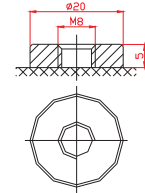
ISO9001:2000 Certificate

Dimensions

Unit: mm Dimension: 211(L)×176(W)×366(H)



Terminal F10



Constant Current Discharge Characteristics : A(25°C)

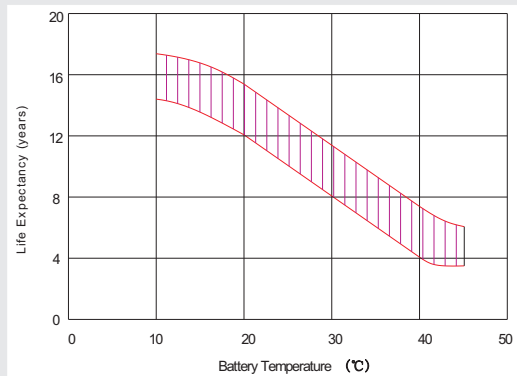
| F.V/Time | 15MIN | 30MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 6HR | 8HR | 10HR |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V | 611.0 | 450.6 | 290.0 | 172.4 | 128.4 | 102.3 | 86.18 | 72.38 | 58.43 | 48.84 |
| 1.65V | 581.0 | 432.6 | 277.4 | 166.1 | 123.0 | 98.75 | 82.59 | 70.64 | 55.81 | 47.99 |
| 1.70V | 541.7 | 407.8 | 272.0 | 163.4 | 120.3 | 97.85 | 81.70 | 68.90 | 54.94 | 47.12 |
| 1.75V | 480.9 | 367.0 | 250.5 | 154.4 | 114.0 | 92.47 | 78.10 | 65.41 | 53.20 | 46.25 |
| 1.80V | 414.0 | 334.3 | 236.1 | 147.2 | 109.5 | 91.57 | 75.41 | 64.54 | 52.33 | 45.38 |
| 1.85V | 350.1 | 301.0 | 218.2 | 139.2 | 104.1 | 84.39 | 71.82 | 61.05 | 49.71 | 42.31 |

Constant Power Discharge Characteristics : W(25°C)

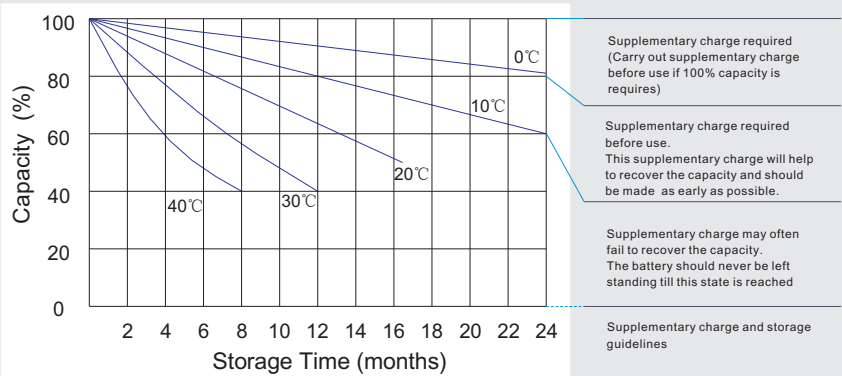
| F.V/Time | 15MIN | 30MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 6HR | 8HR | 10HR |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V | 1070 | 821.2 | 531.0 | 319.3 | 239.3 | 192.3 | 162.9 | 139.7 | 111.2 | 94.29 |
| 1.65V | 1042 | 816.8 | 529.1 | 314.7 | 234.5 | 189.5 | 161.0 | 137.9 | 110.2 | 93.40 |
| 1.70V | 984.0 | 773.0 | 519.5 | 310.1 | 231.0 | 188.7 | 159.6 | 134.7 | 108.6 | 91.94 |
| 1.75V | 876.5 | 696.6 | 478.5 | 293.5 | 222.7 | 179.3 | 152.9 | 128.0 | 105.1 | 90.48 |
| 1.80V | 758.6 | 635.6 | 451.2 | 280.3 | 213.5 | 178.4 | 147.9 | 126.5 | 103.4 | 87.25 |
| 1.85V | 646.9 | 573.0 | 417.1 | 265.4 | 203.4 | 165.3 | 141.2 | 119.9 | 98.29 | 84.01 |

All mentioned values are average values.

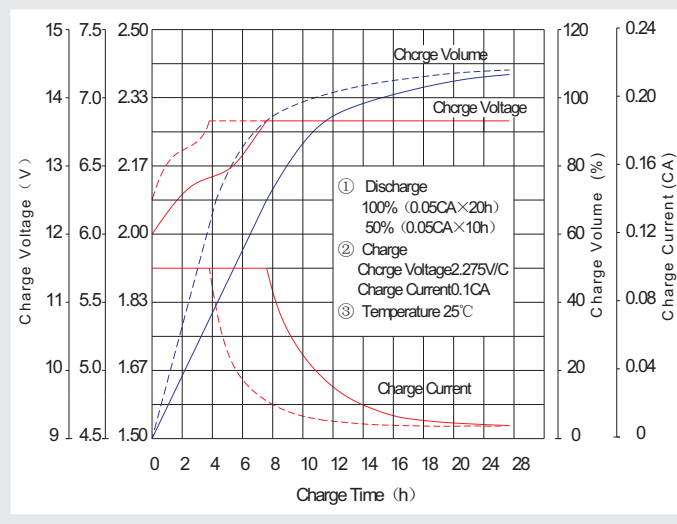
Effect of temperature on long term float life



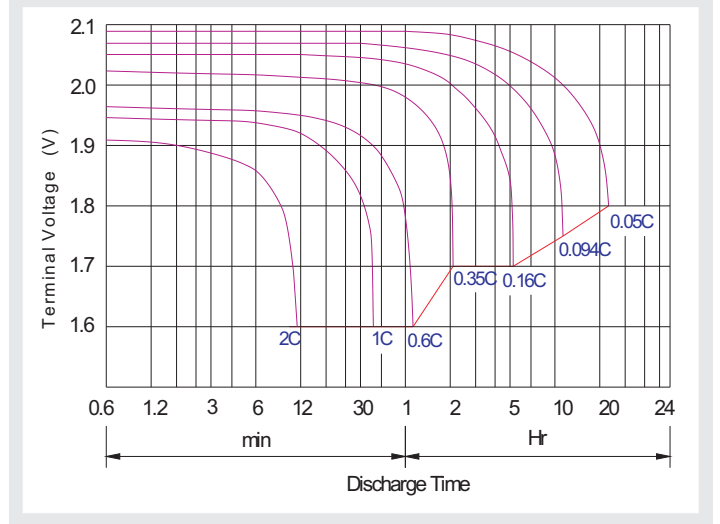
Storage characteristic



Charge characteristic Curve for standby use



Discharge characteristic Curve



Capacity Factors With Different Temperature

| Battery Type | | -20°C | -10°C | 0°C | 5°C | 10°C | 20°C | 25°C | 30°C | 40°C | 45°C |
|--------------|--------|-------|-------|-----|-----|------|------|------|------|------|------|
| GEL Battery | 6V&12V | 50% | 70% | 83% | 85% | 90% | 98% | 100% | 102% | 104% | 105% |
| | 2V | 60% | 75% | 85% | 88% | 92% | 99% | 100% | 103% | 105% | 106% |
| AGM Battery | 6V&12V | 46% | 66% | 76% | 83% | 90% | 98% | 100% | 103% | 107% | 109% |
| | 2V | 55% | 70% | 80% | 85% | 92% | 99% | 100% | 104% | 108% | 110% |

Discharge Current VS. Discharge Voltage

| Final Discharge Voltage V/cell | 1.75V | 1.70V | 1.60V |
|--------------------------------|------------|-------------------|------------|
| Discharge Current (A) | (A) ≤ 0.2C | 0.2C < (A) < 1.0C | (A) ≥ 1.0C |

Maintenance & Cautions

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| Float Service: |
| ※ Every month, recommend inspection every battery voltage. |
| ※ Every three months, recommend equalization charge for one time. |
| Equalization charge method: |
| Discharge: 100% rate capacity discharge. |
| Charge: Max. current 0.3CA, constant voltage 2.4-2.45V/Cell charge 24h. |
| ※ Effect of temperature on float charge voltage: -3mV/°C/Cell. |
| ※ Length of service life will be directly affected by the number of discharge cycles, depth of discharge, ambient temperature and charging voltage. |

Charge the batteries at least once every six months, if they are stored at 25°C.

Charging Method:

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|------------------|--|
| Constant Voltage | -0.2Cx2h+2.40~2.45V,24h,Max. Current 0.2CA |
| Constant Current | -0.2Cx2h+0.1CA×12h |
| Fast | -0.2Cx2h+0.3CAx4.0h |