

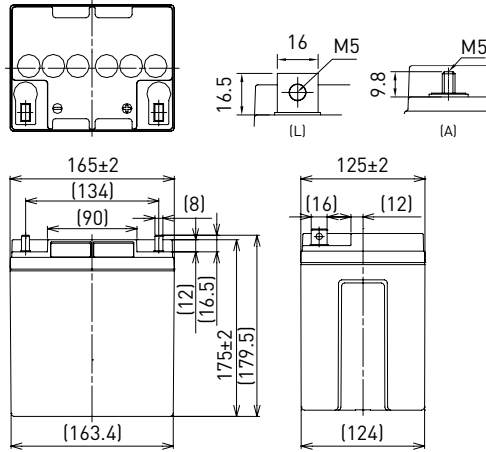
# LC-QA1224P/AP

FOR STANDBY POWER SUPPLIES.  
EXPECTED TRICKLE DESIGN LIFE: 15 YEARS AT 20°C.

## DIMENSIONS (MM)



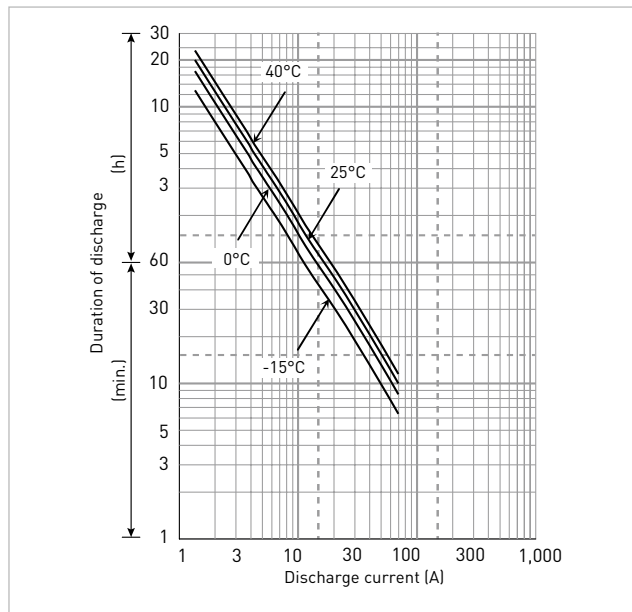
Terminal type (option)



Contents indicated (including the recycle marking, etc.) are subject to change without notice. Battery case resin: flame-retardant (UL94 V-0)

| Specifications  |                            | LC-QA1224P/AP                         |
|---|----------------------------|---------------------------------------|
| <b>Nominal voltage (V)</b>                                    |                            | 12                                    |
| <b>Nominal capacity</b>                                       | <b>20 hours rate (Ah)</b>  | 24.0                                  |
| <b>Dimensions</b>   | <b>Length (mm)</b>         | 125                                   |
|   | <b>Width (mm)</b>          | 165                                   |
|   | <b>Total height (mm)</b>   | 175                                   |
| <b>Approx. mass (kg)</b>                                      |                            | 9.9                                   |
| <b>Terminal type</b>  |                            | M5 bolt/nut & threaded post           |
| <b>Capacity (25°C)</b>  | <b>20 hours rate (Ah)</b>  | 27.0                                  |
|   | <b>10 hours rate (Ah)</b>  | 25.0                                  |
|   | <b>3 hours rate (Ah)</b>   | 20.0                                  |
|   | <b>1 hour rate (Ah)</b>    | 16.0                                  |
| <b>Impedance (mΩ)</b>   |                            | <b>Fully charged battery (25°C)</b> 8 |
| <b>Temperature dependency of capacity (%) – 20 hours rate</b> | 40°C                       | 102                                   |
|   | 25°C                       | 100                                   |
|   | 0°C                        | 85                                    |
|   | -15°C                      | 65                                    |
| <b>Remaining capacity (25°C)</b>                              | <b>After 3 months (%)</b>  | 91                                    |
|   | <b>After 6 months (%)</b>  | 82                                    |
|   | <b>After 12 months (%)</b> | 64                                    |

## DURATION OF DISCHARGE VS. DISCHARGE CURRENT



## WATT TABLE (25°C)

(Wattage/battery)

| Cut-off | 10min. | 15min. | 20min. | 30min. | 45min. | 1h  | 1.5h | 2h  | 3h   | 4h   | 5h   | 6h   | 10h  | 20h  |
|---------|--------|--------|--------|--------|--------|-----|------|-----|------|------|------|------|------|------|
| 9.6V    | 773    | 605    | 521    | 401    | 280    | 215 | 167  | 113 | 79.9 | 65.8 | 51.8 | 46.8 | 27.0 | 13.5 |
| 9.9V    | 760    | 600    | 512    | 396    | 274    | 210 | 163  | 112 | 79.7 | 65.3 | 50.9 | 46.0 | 26.8 | 13.5 |
| 10.2V   | 746    | 591    | 503    | 390    | 268    | 205 | 159  | 111 | 79.3 | 64.7 | 50.1 | 45.3 | 26.4 | 13.4 |
| 10.5V   | 724    | 575    | 479    | 372    | 261    | 200 | 155  | 107 | 78.2 | 64.0 | 49.7 | 44.8 | 26.1 | 13.3 |
| 10.8V   | 701    | 558    | 456    | 344    | 256    | 196 | 152  | 104 | 77.1 | 63.2 | 49.5 | 44.3 | 25.9 | 13.3 |

## AMPERE TABLE (25°C)

(Ampere/battery)

| Cut-off | 10min. | 15min. | 20min. | 30min. | 45min. | 1h   | 1.5h | 2h   | 3h   | 4h   | 5h   | 6h   | 10h  | 20h  |
|---------|--------|--------|--------|--------|--------|------|------|------|------|------|------|------|------|------|
| 9.6V    | 72.6   | 51.2   | 42.8   | 30.5   | 22.4   | 17.4 | 11.3 | 9.90 | 6.98 | 5.51 | 4.50 | 3.83 | 2.48 | 1.35 |
| 9.9V    | 70.3   | 50.1   | 42.3   | 30.3   | 21.8   | 17.0 | 11.2 | 9.79 | 6.86 | 5.46 | 4.41 | 3.71 | 2.48 | 1.35 |
| 10.2V   | 67.7   | 49.2   | 41.3   | 30.0   | 21.4   | 16.7 | 11.1 | 9.68 | 6.75 | 5.40 | 4.36 | 3.69 | 2.48 | 1.35 |
| 10.5V   | 64.9   | 47.3   | 39.5   | 29.3   | 20.3   | 15.8 | 11.0 | 9.56 | 6.64 | 5.29 | 4.32 | 3.65 | 2.48 | 1.35 |
| 10.8V   | 63.8   | 46.4   | 38.8   | 28.2   | 18.0   | 13.8 | 10.3 | 9.00 | 6.41 | 5.18 | 4.28 | 3.60 | 2.48 | 1.35 |

All mentioned values are average values

# LC-QA1224P/AP

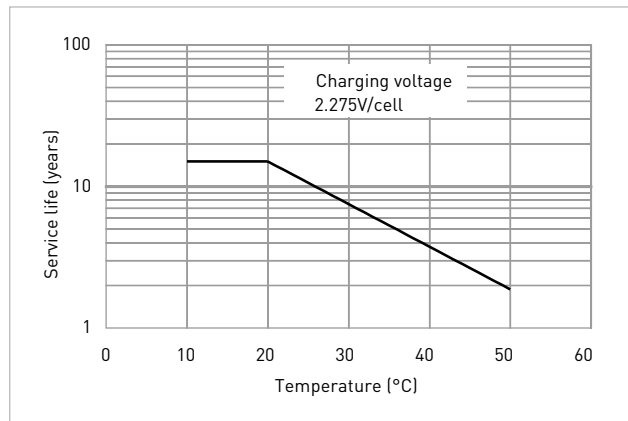
## CHARGING METHOD (25°C)

|                  |   |
|------------------|---|
| <b>Cycle use</b> | Control voltage: 13.6V - 13.8V<br>Initial current: 3.60A or smaller |
|------------------|---|

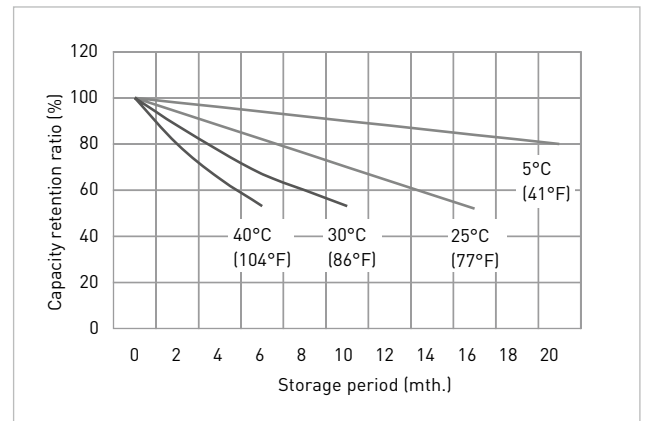
## CUT-OFF VOLTAGE

|                          |               |               |               |               |               |
|--------------------------|---------------|---------------|---------------|---------------|---------------|
| <b>Discharge current</b> | 1.20A - 4.80A | 4.80A - 12.0A | 12.0A - 24.0A | 24.0A - 48.0A | 48.0A - 72.0A |
| <b>Cut-off voltage</b>   | 10.5V         | 10.2V         | 9.9V          | 9.3V          | 8.7V          |

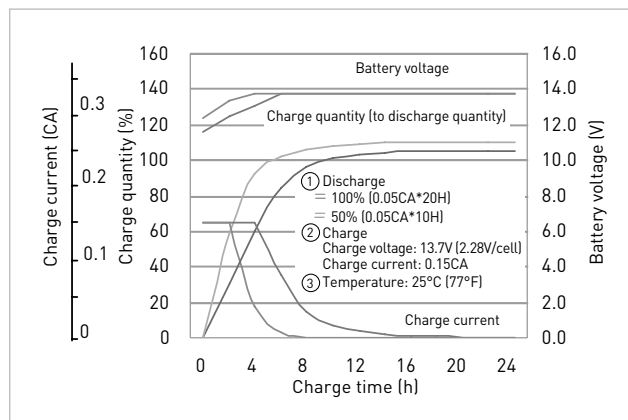
## INFLUENCE OF TEMPERATURE ON TRICKLE LIFE



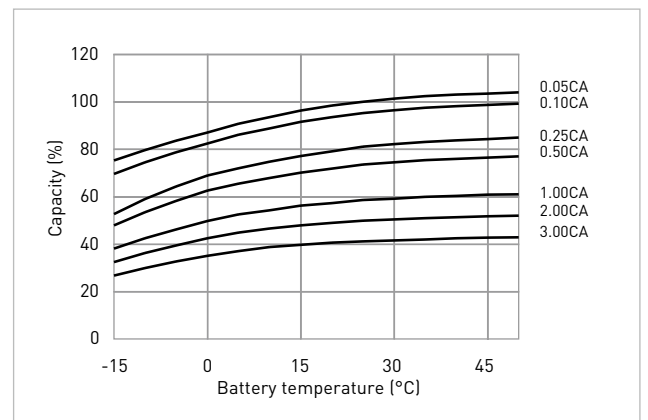
## RESIDUAL CAPACITY TEST RESULT



## CONSTANT-VOLTAGE CONSTANT-CURRENT CHARGE CHARACTERISTICS FOR TRICKLE USE



## DISCHARGE CAPACITY BY TEMPERATURE AND BY DISCHARGE CURRENT



## DISCHARGE CHARACTERISTICS

