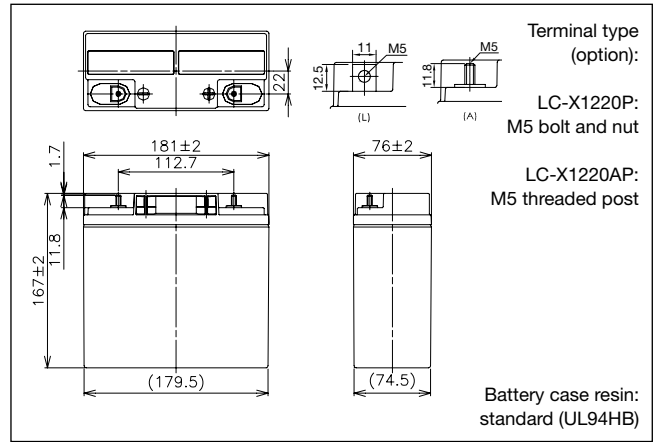


**LC-X1220P/AP\***

For standby power supplies.  
Expected trickle design life: 10 – 12 years at 20 °C according to Eurobat.



**Dimensions (mm)**



**Specifications**

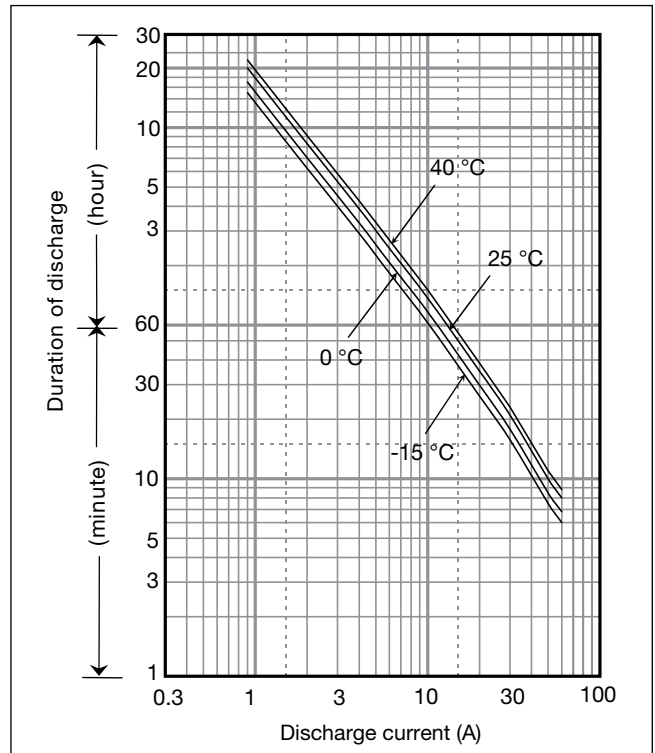
|                                 |   |        |
|---------------------------------|---|--------|
| Nominal voltage                 | 12 V                                      |        |
| Nominal capacity (20 hour rate) | 20 Ah                                     |        |
| Dimensions                      | Length                                    | 181 mm |
|                                 | Width                                     | 76 mm  |
|                                 | Height                                    | 167 mm |
|                                 | Total Height                              | 167 mm |
| Approx. mass                    | 6.6 kg                                    |        |
| Terminal                        | M5 Bolt and Nut type/<br>M5 threaded post |        |

\* This battery is also available with a flame retardant battery case resin (UL94V-0).

**Characteristics**

|   |                               |       |
|---|-------------------------------|-------|
| Capacity (25 °C)                                  | 20 hour rate                  | 20 Ah |
|   | 10 hour rate                  | 18 Ah |
|   | 5 hour rate                   | 16 Ah |
|   | 1 hour rate                   | 12 Ah |
| Internal resistance                               | Fully charged battery (25 °C) | 11 mΩ |
| Temperature dependency of capacity (20 hour rate) | 40 °C                         | 102 % |
|   | 25 °C                         | 100 % |
|   | 0 °C                          | 85 %  |
|   | -15 °C                        | 65 %  |
| Self discharge (25 °C)                            | After 3 months                | 91 %  |
|   | After 6 months                | 82 %  |
|   | After 12 months               | 64 %  |

**Duration of discharge vs Discharge current**



**Watt Table**

(Wattage/Battery)

| Cut-off V | 3min | 5min | 10min | 15min | 20min | 30min | 45min | 1h  | 1.5h | 2h   | 3h   | 4h   | 5h   | 6h   | 10h  | 20h  | 24h  |
|-----------|------|------|-------|-------|-------|-------|-------|-----|------|------|------|------|------|------|------|------|------|
| 9.6V      | 1202 | 948  | 619   | 473   | 396   | 296   | 209   | 167 | 115  | 88.8 | 66.1 | 50.8 | 41.9 | 33.7 | 22.3 | 12.1 | 10.1 |
| 9.9V      | 1115 | 889  | 607   | 470   | 390   | 293   | 207   | 167 | 113  | 88.1 | 65.8 | 50.5 | 41.6 | 33.6 | 22.2 | 12.1 | 10.1 |
| 10.2V     | 1029 | 833  | 591   | 460   | 383   | 289   | 205   | 164 | 110  | 85.8 | 65.1 | 50.1 | 41.3 | 33.3 | 22.0 | 12.0 | 10.0 |
| 10.5V     | 914  | 746  | 548   | 428   | 364   | 283   | 202   | 160 | 108  | 82.9 | 64.1 | 49.8 | 40.9 | 32.9 | 21.9 | 12.0 | 10.0 |
| 10.8V     | 772  | 660  | 488   | 399   | 354   | 273   | 199   | 157 | 105  | 78.9 | 62.8 | 49.1 | 39.9 | 32.4 | 21.7 | 11.9 | 9.93 |

**Ampere Table**

(Ampere/Battery)

| Cut-off V | 3min | 5min | 10min | 15min | 20min | 30min | 45min | 1h   | 1.5h | 2h   | 3h   | 4h   | 5h   | 6h   | 10h  | 20h  | 24h  |
|-----------|------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|
| 9.6V      | 108  | 85.0 | 55.3  | 41.1  | 34.2  | 25.3  | 17.8  | 14.2 | 9.72 | 7.50 | 5.56 | 4.25 | 3.50 | 2.81 | 1.86 | 1.01 | 0.84 |
| 9.9V      | 100  | 79.7 | 54.2  | 40.8  | 33.6  | 25.0  | 17.7  | 14.2 | 9.53 | 7.44 | 5.53 | 4.22 | 3.47 | 2.80 | 1.85 | 1.01 | 0.84 |
| 10.2V     | 92.5 | 74.7 | 52.8  | 40.0  | 33.1  | 24.7  | 17.5  | 13.9 | 9.33 | 7.25 | 5.47 | 4.19 | 3.44 | 2.78 | 1.83 | 1.00 | 0.84 |
| 10.5V     | 82.2 | 66.9 | 48.9  | 37.2  | 31.4  | 24.2  | 17.2  | 13.6 | 9.14 | 7.00 | 5.39 | 4.17 | 3.42 | 2.74 | 1.83 | 1.00 | 0.83 |
| 10.8V     | 69.4 | 59.2 | 43.6  | 34.7  | 30.6  | 23.3  | 16.9  | 13.3 | 8.89 | 6.67 | 5.28 | 4.11 | 3.33 | 2.70 | 1.81 | 0.99 | 0.83 |

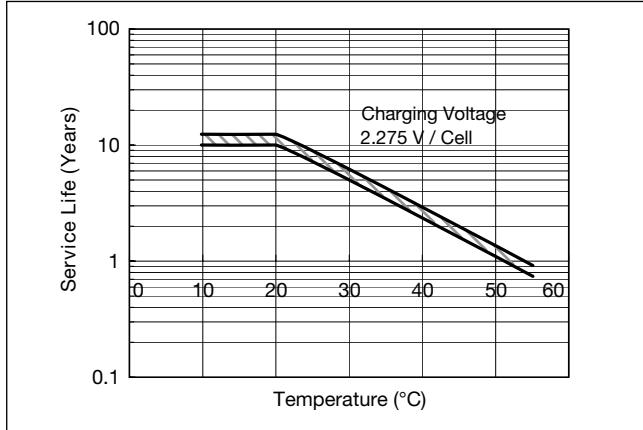
**Charging Method**

Trickle use Control voltage: 13.6 - 13.8 V; Initial current: 3 A or smaller

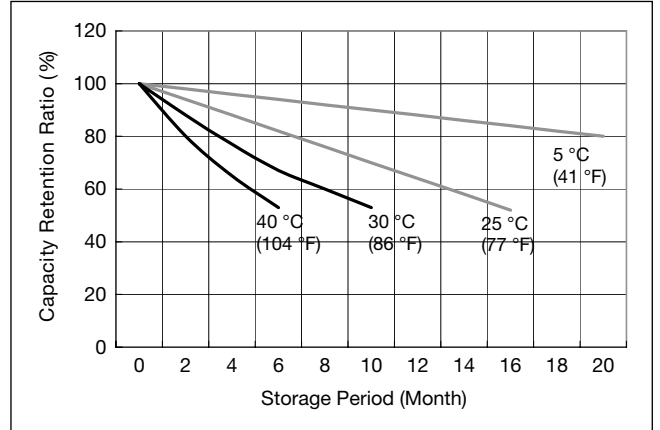
**Cut off voltage**

|                     |           |            |             |             |             |
|---------------------|-----------|------------|-------------|-------------|-------------|
| Discharge current   | 1 A - 4 A | 4 A - 10 A | 10 A - 20 A | 20 A - 40 A | 40 A - 60 A |
| Cut off voltage (V) | 10.5      | 10.2       | 9.9         | 9.3         | 8.7         |

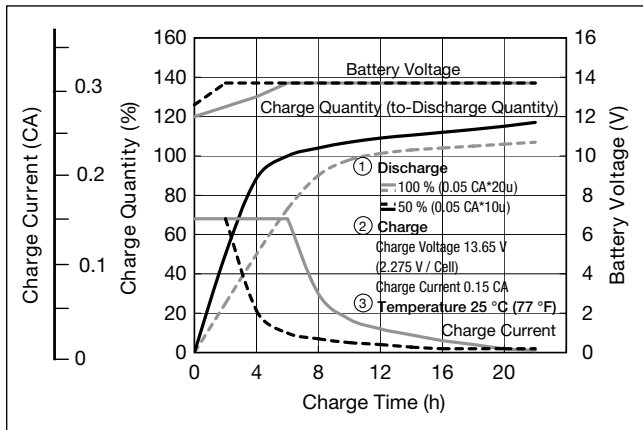
**Influence of Temperature on Trickle life**



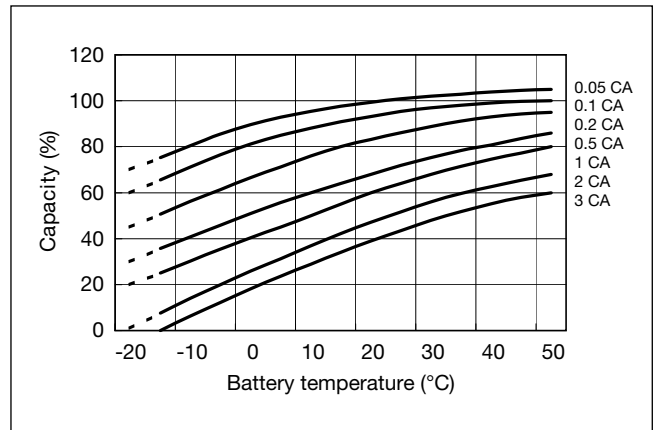
**Residual capacity vs storage period**



**Constant-voltage and constant-current charge characteristics for Trickle use**



**Discharge capacity by temperature and by discharge current**



**Discharge characteristics**

