



# Tropicana 12V18 Ah SMF/VRLA Battery

## TP 9- 12

### Specification

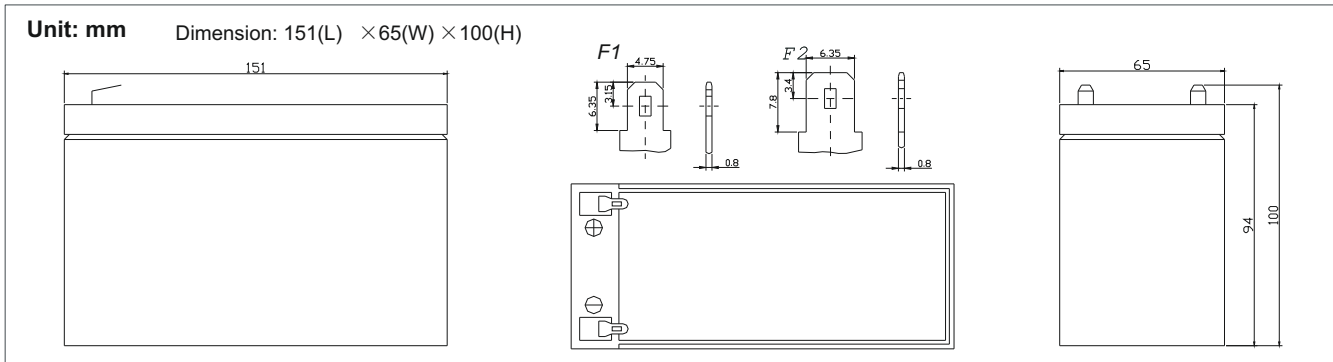
|  |   |
|--|---|
| Cells Per Unit                             | 6   |
| Voltage Per Unit                           | 12  |
| Capacity                                   | 9.0Ah@20hr-rate to 1.75V per cell @25C °  |
| Weight                                     | Approx. 2.55Kg  |
| Max. Discharge Current                     | 90 A (5 sec)  |
| Internal Resistance                        | Approx. 18 mΩ   |
| Operating Temperature Range                | Discharge: -20 °C~60°C<br>Charge: 0C~50C °<br>Storage: -20C~60C °   |
| Normal Operating Temperature Range         | 25C±5C  |
| Float charging Voltage                     | 13.7 to 13.9 VDC/unit Average at 25C °  |
| Recommended Maximum Charging Current Limit | 2.7 A   |
| Equalization and Cycle Service             | 14.6 to 14.8 VDC/unit Average at 25C °  |
| Self Discharge                             | TROPICANA Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25C. Self-discharge ratio less than 3% per month at 25C. Please charge batteries before using. |
| Terminal                                   | Faston Tab 187(F1)/Faston tab 250(F2)   |
| Constainer Material                        | A.B.S. (UL94-HB) ,  |



JIS 8702C,  
Pt-I,II,III



### Dimensions



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

| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 36.60 | 23.99 | 18.81 | 10.56 | 6.273 | 3.613 | 2.455 | 1.965 | 1.632 | 1.039 | 0.900 | 0.505 |
| 10.0V    | 35.27 | 23.39 | 18.20 | 10.42 | 6.102 | 3.540 | 2.410 | 1.937 | 1.604 | 1.035 | 0.890 | 0.487 |
| 10.2V    | 33.20 | 22.24 | 17.70 | 10.26 | 6.045 | 3.503 | 2.388 | 1.919 | 1.587 | 1.026 | 0.877 | 0.478 |
| 10.5V    | 29.84 | 20.79 | 16.69 | 9.980 | 5.926 | 3.457 | 2.367 | 1.900 | 1.567 | 1.017 | 0.872 | 0.463 |
| 10.8V    | 26.74 | 19.39 | 15.75 | 9.650 | 5.819 | 3.428 | 2.339 | 1.891 | 1.551 | 1.012 | 0.858 | 0.436 |
| 11.1V    | 23.40 | 17.78 | 14.53 | 9.283 | 5.662 | 3.290 | 2.294 | 1.874 | 1.535 | 1.004 | 0.845 | 0.429 |

### Constant Power Discharge Characteristics : W(25C) °

| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 385.0 | 255.2 | 201.3 | 120.8 | 72.84 | 42.15 | 28.70 | 23.25 | 19.32 | 12.44 | 10.78 | 6.051 |
| 10.0V    | 375.0 | 249.9 | 198.4 | 119.6 | 71.77 | 41.79 | 28.64 | 23.19 | 19.22 | 12.40 | 10.68 | 5.836 |
| 10.2V    | 356.7 | 240.0 | 195.8 | 118.6 | 71.24 | 41.53 | 28.53 | 23.00 | 19.03 | 12.30 | 10.58 | 5.728 |
| 10.5V    | 325.5 | 230.1 | 185.6 | 116.1 | 70.28 | 41.19 | 28.42 | 22.79 | 18.80 | 12.20 | 10.47 | 5.567 |
| 10.8V    | 293.7 | 215.3 | 175.4 | 113.4 | 69.13 | 40.85 | 28.08 | 22.71 | 18.61 | 12.14 | 10.31 | 5.243 |
| 11.1V    | 259.0 | 200.4 | 165.2 | 110.3 | 67.84 | 39.44 | 27.54 | 22.48 | 18.43 | 12.06 | 10.15 | 5.160 |



# Tropicana 12V18 Ah SMF/VRLA Battery

## TP 18- 12

### Specification

|  |  |
|--|--|
| Cells Per Unit                             | 6  |
| Voltage Per Unit                           | 12   |
| Capacity                                   | 18Ah@20hr-rate to 1.75V per cell @25C °  |
| Weight                                     | Approx. 5.0 Kg   |
| Max. Discharge Current                     | 180 A (5 sec)  |
| Internal Resistance                        | Approx. 14 mΩ  |
| Operating Temperature Range                | Discharge: -20 °C~60°C<br>Charge: 0C~50C °<br>Storage: -20C~60C °  |
| Normal Operating Temperature Range         | 25C± 5C  |
| Float charging Voltage                     | 13.7 to 13.9 VDC/unit Average at 25C °   |
| Recommended Maximum Charging Current Limit | 5.4 A  |
| Equalization and Cycle Service             | 14.6 to 14.8 VDC/unit Average at 25C °   |
| Self Discharge                             | Tropicana Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25C.° Self-discharge ratio less than 3% per month at 25C. Please charge batteries before using. |
| Terminal                                   | Faston F3/F13  |
| Constainer Material                        | A.B.S. (UL94-HB)   |

Certified



9001-2008

Compliance



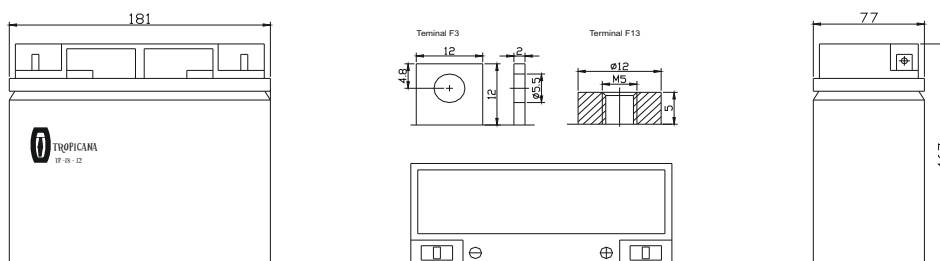
JIS 8702C,  
Pt-I,II,III



IEC 60896  
21 & 22

### Dimensions

Unit: mm Dimension: 181(L) × 77(W) × 167(H)



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

| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 73.19 | 47.99 | 37.61 | 21.11 | 12.55 | 7.226 | 4.910 | 3.929 | 3.263 | 2.078 | 1.799 | 1.010 |
| 10.0V    | 70.55 | 46.79 | 36.41 | 20.84 | 12.20 | 7.080 | 4.820 | 3.875 | 3.208 | 2.070 | 1.781 | 0.973 |
| 10.2V    | 66.40 | 44.47 | 35.40 | 20.53 | 12.09 | 7.005 | 4.777 | 3.837 | 3.173 | 2.051 | 1.754 | 0.955 |
| 10.5V    | 59.69 | 41.58 | 33.39 | 19.96 | 11.85 | 6.914 | 4.734 | 3.800 | 3.135 | 2.033 | 1.745 | 0.927 |
| 10.8V    | 53.48 | 38.78 | 31.50 | 19.30 | 11.64 | 6.857 | 4.679 | 3.781 | 3.102 | 2.025 | 1.716 | 0.873 |
| 11.1V    | 46.79 | 35.55 | 29.06 | 18.57 | 11.32 | 6.581 | 4.587 | 3.748 | 3.070 | 2.009 | 1.689 | 0.858 |

### Constant Power Discharge Characteristics : W(25C) °

| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 770.0 | 510.4 | 402.7 | 241.7 | 145.7 | 84.30 | 57.40 | 46.50 | 38.63 | 24.89 | 21.56 | 12.10 |
| 10.0V    | 749.9 | 499.8 | 396.9 | 239.2 | 143.5 | 83.58 | 57.28 | 46.39 | 38.43 | 24.79 | 21.35 | 11.67 |
| 10.2V    | 713.3 | 480.0 | 391.7 | 237.1 | 142.5 | 83.05 | 57.07 | 46.01 | 38.06 | 24.60 | 21.15 | 11.46 |
| 10.5V    | 651.0 | 460.2 | 371.3 | 232.3 | 140.6 | 82.38 | 56.83 | 45.59 | 37.61 | 24.40 | 20.93 | 11.13 |
| 10.8V    | 587.4 | 430.5 | 350.8 | 226.8 | 138.3 | 81.70 | 56.17 | 45.42 | 37.22 | 24.29 | 20.61 | 10.49 |
| 11.1V    | 518.0 | 400.8 | 330.4 | 220.6 | 135.7 | 78.88 | 55.07 | 44.96 | 36.86 | 24.12 | 20.31 | 10.32 |

All mentioned values are average values.



# Tropicana 12V65 Ah SMF/VRLA Battery

## TP 65- 12

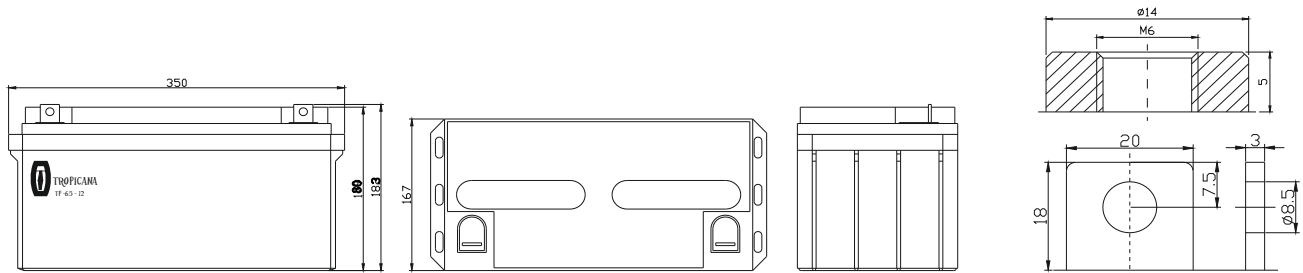
### Specification

|  |  |
|--|--|
| Cells Per Unit                             | 6  |
| Voltage Per Unit                           | 12   |
| Capacity                                   | 65Ah@10hr-rate to 1.80V per cell @25C °  |
| Weight                                     | Approx. 21.0 Kg  |
| Max. Discharge Current                     | 650A (5 sec)   |
| Internal Resistance                        | Approx. 6 mΩ   |
| Operating Temperature Range                | Discharge: -20 °C~60 °C<br>Charge: 0C~50C °<br>Storage: -20C~60C °   |
| Normal Operating Temperature Range         | 25C± 5C  |
| Float charging Voltage                     | 13.6 to 13.8 VDC/unit Average at 25C °   |
| Recommended Maximum Charging Current Limit | 19.5 A   |
| Equalization and Cycle Service             | 14.6 to 14.8 VDC/unit Average at 25C °   |
| Self Discharge                             | Tropicana Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25C.° Self-discharge ratio less than 3% per month at 25C. Please charge batteries before using. |
| Terminal                                   | Terminal F5/F11  |
| Container Material                         | A.B.S. (UL94-HB),  |



### Dimensions

Unit: mm Dimension: 350(L) × 167(W) × 180(H)



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

| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 217.8 | 160.4 | 125.0 | 76.18 | 42.25 | 25.27 | 17.45 | 14.45 | 12.17 | 8.312 | 6.894 | 3.678 |
| 10.0V    | 211.5 | 152.6 | 122.4 | 74.86 | 42.06 | 25.08 | 17.38 | 14.39 | 12.10 | 8.244 | 6.828 | 3.612 |
| 10.2V    | 205.2 | 147.2 | 120.5 | 73.47 | 41.67 | 24.89 | 17.25 | 14.32 | 12.02 | 8.176 | 6.761 | 3.545 |
| 10.5V    | 184.3 | 135.8 | 114.7 | 72.92 | 41.28 | 24.70 | 17.18 | 14.19 | 11.88 | 8.109 | 6.695 | 3.478 |
| 10.8V    | 166.3 | 123.9 | 105.8 | 71.67 | 40.30 | 24.25 | 16.71 | 13.85 | 11.67 | 7.974 | 6.629 | 3.411 |
| 11.1V    | 142.0 | 110.7 | 94.87 | 67.10 | 38.29 | 23.18 | 15.98 | 13.18 | 11.17 | 7.636 | 6.430 | 3.210 |

### Constant Power Discharge Characteristics: W(25C) °

| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 2298 | 1708  | 1363  | 854.8 | 488.2 | 297.8 | 207.6 | 172.3 | 145.2 | 99.24 | 82.38 | 44.10 |
| 10.0V    | 2252 | 1655  | 1341  | 844.3 | 487.1 | 296.2 | 207.7 | 172.1 | 144.8 | 98.76 | 81.86 | 43.34 |
| 10.2V    | 2227 | 1612  | 1326  | 838.3 | 483.3 | 294.4 | 206.8 | 171.7 | 144.3 | 98.12 | 81.14 | 42.54 |
| 10.5V    | 2027 | 1501  | 1265  | 832.5 | 478.9 | 292.3 | 206.0 | 170.1 | 142.6 | 97.31 | 80.34 | 41.73 |
| 10.8V    | 1846 | 1383  | 1169  | 819.2 | 470.1 | 288.6 | 200.4 | 166.2 | 140.0 | 95.69 | 79.54 | 40.93 |
| 11.1V    | 1622 | 1251  | 1052  | 771.6 | 450.0 | 277.9 | 191.7 | 158.2 | 134.0 | 91.63 | 77.16 | 38.52 |

All mentioned values are average values.



# Tropicana 12V200 Ah SMF/VRLA Battery

## TP 200- 12

### Specification

|  |   |
|--|---|
| Cells Per Unit                             | 3   |
| Voltage Per Unit                           | 6   |
| Capacity                                   | 200Ah@10hr-rate to 1.80V per cell @25C °  |
| Weight                                     | Approx. 29.0 Kg   |
| Max. Discharge Current                     | 2000A (5 sec)   |
| Internal Resistance                        | Approx. 4.0 mΩ  |
| Operating Temperature Range                | Discharge: -20 °C~60 °C<br>Charge: 0C~50C °<br>Storage: -20C~60C °  |
| Normal Operating Temperature Range         | 25C± 5C   |
| Float charging Voltage                     | 6.8 to 6.9 VDC/unit Average at 25C °  |
| Recommended Maximum Charging Current Limit | 60 A  |
| Equalization and Cycle Service             | 7.3 to 7.4 VDC/unit Average at 25C °  |
| Self Discharge                             | Tropicana Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25C. Self-discharge ratio less than 3% per month at 25C. Please charge batteries before using. |
| Terminal                                   | Terminal F14/F16  |
| Container Material                         | A.B.S. (UL94-HB),   |

Certified



9001-2008

Compliance



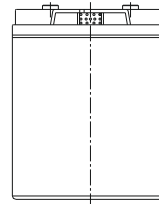
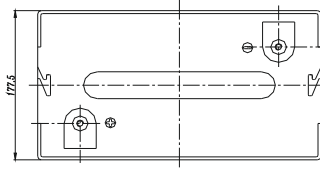
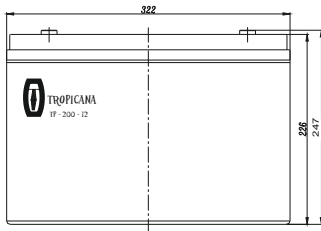
JIS 8702C,  
Pt-I,II,III



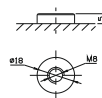
IEC 60896  
21 & 22

### Dimensions

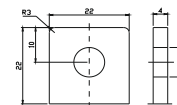
Unit: mm Dimension: 322(L) × 177.5(W) × 247(H)



Terminal F14



Terminal F16



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

| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 4.80V    | 545.1 | 408.3 | 344.7 | 220.8 | 130.0 | 77.79 | 53.77 | 44.06 | 36.07 | 24.84 | 21.01 | 11.55 |
| 5.00V    | 529.4 | 388.5 | 337.6 | 217.2 | 129.4 | 77.20 | 53.56 | 43.86 | 35.86 | 24.64 | 20.80 | 11.34 |
| 5.10V    | 513.7 | 374.8 | 332.3 | 215.3 | 128.2 | 76.62 | 53.15 | 43.66 | 35.64 | 24.44 | 20.60 | 11.13 |
| 5.25V    | 461.3 | 345.9 | 316.4 | 209.9 | 127.0 | 76.03 | 52.94 | 43.25 | 35.22 | 24.24 | 20.40 | 10.92 |
| 5.40V    | 416.3 | 315.4 | 291.7 | 200.7 | 124.0 | 74.67 | 51.50 | 42.23 | 34.58 | 23.83 | 20.20 | 10.71 |
| 5.55V    | 355.5 | 281.9 | 261.6 | 188.0 | 117.8 | 71.35 | 49.23 | 40.19 | 33.10 | 22.82 | 19.59 | 10.08 |

### Constant Power Discharge Characteristics: W(25C) °

| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 4.80V    | 2819 | 2174  | 1896  | 1259  | 751.1 | 458.4 | 319.9 | 262.6 | 215.1 | 148.3 | 125.5 | 69.26 |
| 5.00V    | 2764 | 2108  | 1865  | 1243  | 749.3 | 456.0 | 320.0 | 262.3 | 214.6 | 147.6 | 124.7 | 68.06 |
| 5.10V    | 2732 | 2052  | 1844  | 1234  | 743.5 | 453.3 | 318.6 | 261.7 | 213.9 | 146.6 | 123.6 | 66.80 |
| 5.25V    | 2487 | 1911  | 1759  | 1206  | 736.8 | 450.0 | 317.4 | 259.3 | 211.3 | 145.4 | 122.4 | 65.54 |
| 5.40V    | 2265 | 1761  | 1626  | 1156  | 723.2 | 444.2 | 308.7 | 253.4 | 207.5 | 143.0 | 121.2 | 64.28 |
| 5.55V    | 1990 | 1593  | 1464  | 1086  | 692.3 | 427.7 | 295.4 | 241.1 | 198.6 | 136.9 | 117.6 | 60.50 |

All mentioned values are average values.



# Tropicana 12V 100 Ah SMF/VRLA Battery

## TP 100- 12

### Specification

|  |   |
|--|---|
| Cells Per Unit                             | 3   |
| Voltage Per Unit                           | 6   |
| Capacity                                   | 100Ah@10hr-rate to 1.80V per cell @25C °  |
| Weight                                     | Approx. 16.5 Kg   |
| Max. Discharge Current                     | 1000A (5 sec)   |
| Internal Resistance                        | Approx. 2 mΩ  |
| Operating Temperature Range                | Discharge: -20 °C~60°C<br>Charge: 0C~50C °<br>Storage: -20C~60C °   |
| Normal Operating Temperature Range         | 25C± 5C   |
| Float charging Voltage                     | 6.8 to 6.9 VDC/unit Average at 25C °  |
| Recommended Maximum Charging Current Limit | 30 A  |
| Equalization and Cycle Service             | 7.3 to 7.4 VDC/unit Average at 25C °  |
| Self Discharge                             | Tropicana Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25C. Self-discharge ratio less than 3% per month at 25C. Please charge batteries before using. |
| Terminal                                   | Terminal F14  |
| Container Material                         | A.B.S. (UL94-HB),   |

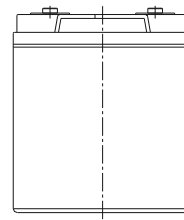
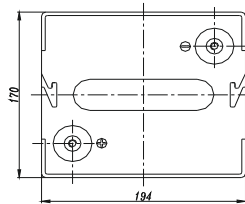
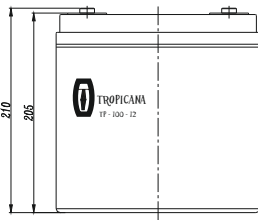


JIS 8702C,  
Pt-I,II,III

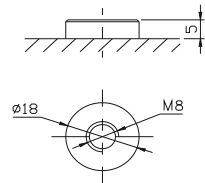


### Dimensions

Unit: mm Dimension: 194(L) × 170(W) × 205(H)



Terminal F14



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

| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 4.80V    | 304.6 | 222.3 | 177.8 | 112.7 | 65.00 | 38.89 | 26.88 | 22.03 | 18.03 | 12.42 | 10.50 | 5.777 |
| 5.00V    | 295.8 | 211.5 | 174.1 | 110.8 | 64.70 | 38.60 | 26.78 | 21.93 | 17.93 | 12.32 | 10.40 | 5.672 |
| 5.10V    | 287.1 | 204.1 | 171.4 | 109.8 | 64.10 | 38.31 | 26.57 | 21.83 | 17.82 | 12.22 | 10.30 | 5.567 |
| 5.25V    | 257.8 | 188.3 | 163.2 | 107.1 | 63.50 | 38.02 | 26.47 | 21.62 | 17.61 | 12.12 | 10.20 | 5.462 |
| 5.40V    | 232.7 | 171.7 | 150.4 | 102.4 | 62.00 | 37.33 | 25.75 | 21.11 | 17.29 | 11.92 | 10.10 | 5.357 |
| 5.55V    | 198.7 | 153.5 | 134.9 | 95.9  | 58.90 | 35.68 | 24.62 | 20.09 | 16.55 | 11.41 | 9.796 | 5.041 |

### Constant Power Discharge Characteristics: W(25C) °

| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 4.80V    | 1575 | 1184  | 977.8 | 642.2 | 375.6 | 229.2 | 160.0 | 131.3 | 107.6 | 74.16 | 62.76 | 34.63 |
| 5.00V    | 1544 | 1148  | 962.1 | 634.4 | 374.7 | 228.0 | 160.0 | 131.1 | 107.3 | 73.80 | 62.36 | 34.03 |
| 5.10V    | 1527 | 1117  | 951.3 | 629.8 | 371.8 | 226.6 | 159.3 | 130.9 | 106.9 | 73.32 | 61.81 | 33.40 |
| 5.25V    | 1390 | 1040  | 907.4 | 615.2 | 368.4 | 225.0 | 158.7 | 129.6 | 105.7 | 72.71 | 61.20 | 32.77 |
| 5.40V    | 1266 | 959.0 | 838.7 | 589.7 | 361.6 | 222.1 | 154.4 | 126.7 | 103.7 | 71.50 | 60.59 | 32.14 |
| 5.55V    | 1112 | 867.1 | 755.0 | 553.9 | 346.1 | 213.9 | 147.7 | 120.6 | 99.29 | 68.47 | 58.78 | 30.25 |

All mentioned values are average values.



# Tropicana 12V 7.2Ah SMF/VRLA Battery

## TP 7.2- 12

### Technical Specifications

|  |   |
|--|---|
| Cells Per Unit                             | 6   |
| Voltage Per Unit                           | 12  |
| Capacity                                   | 7.2Ah @ 20hr-rate to 1.75V per cell @25 °C (77°F)   |
| Weight                                     | Approx. 2.24 kg   |
| Maximum Discharge Current                  | 100A/130A(5sec)   |
| Internal Resistance                        | Approx. 23 mΩ   |
| Operating Temperature Range                | Discharge: -15°C~50°C ( 5°F~122°F)<br>Charge: -15 °C~40°C ( 5°F~104°F)<br>Storage: -15°C~40°C ( 5°F~104°F)  |
| Nominal Operating Temperature Range        | 25°C±3°C (77°F±5°F)   |
| Float Charging Voltage                     | 13.5 to 13.8 VDC/unit Average at 25°C (77°F)  |
| Recommended Maximum Charging Current Limit | 2.16A   |
| Equalization and Cycle Service             | 14.4 to 15.0 VDC/unit Average at 25°C (77°F)  |
| Self Discharge                             | Tropicana Batteries can be stored for more than 6 months at 25°C (77°F). Please charge the batteries before using. The higher temperatures the time interval will be shorter. |
| Terminal                                   | F1  |
| Container Material                         | ABS   |

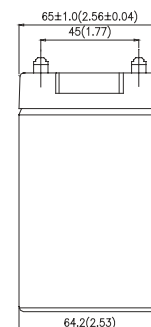
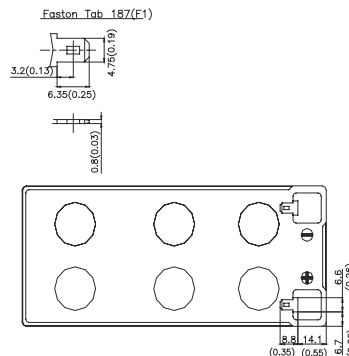
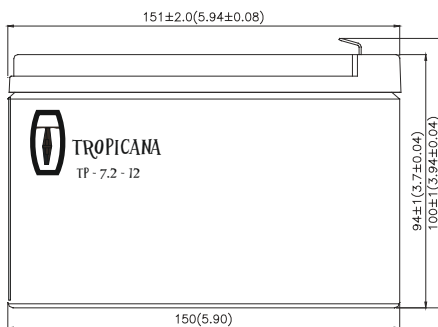


JIS 8702C,  
Pt-I,II,III



### Dimensions

unit: (MM)



### Constant Current Discharge Characteristics Unit:A (25°C ,77°F)

| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR  | 2HR  | 3HR  | 4HR  | 5HR  | 8HR   | 10HR  | 20HR  |
|----------|------|-------|-------|-------|------|------|------|------|------|-------|-------|-------|
| 1.60V    | 35.6 | 22.0  | 16.5  | 9.61  | 5.51 | 3.08 | 2.14 | 1.65 | 1.35 | 0.925 | 0.778 | 0.456 |
| 1.67V    | 33.1 | 21.0  | 15.9  | 9.36  | 5.42 | 3.03 | 2.09 | 1.60 | 1.32 | 0.906 | 0.762 | 0.447 |
| 1.70V    | 31.9 | 20.5  | 15.6  | 9.24  | 5.37 | 3.00 | 2.06 | 1.58 | 1.30 | 0.897 | 0.756 | 0.438 |
| 1.75V    | 29.6 | 19.6  | 15.1  | 9.03  | 5.30 | 2.96 | 2.02 | 1.54 | 1.28 | 0.883 | 0.742 | 0.428 |
| 1.80V    | 27.2 | 18.6  | 14.4  | 8.77  | 5.23 | 2.92 | 1.99 | 1.50 | 1.25 | 0.871 | 0.732 | 0.421 |
| 1.85V    | 24.5 | 17.4  | 13.7  | 8.45  | 5.14 | 2.87 | 1.96 | 1.48 | 1.23 | 0.861 | 0.720 | 0.409 |

### Constant Power Discharge Characteristics Unit:W (25°C ,77°F)

| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR  | 2HR  | 3HR  | 4HR  | 5HR  | 8HR  | 10HR | 20HR |
|----------|------|-------|-------|-------|------|------|------|------|------|------|------|------|
| 1.60V    | 360  | 245   | 183   | 108   | 64.4 | 37.7 | 26.6 | 20.8 | 17.3 | 11.8 | 9.80 | 5.37 |
| 1.67V    | 340  | 235   | 177   | 106   | 63.6 | 37.1 | 26.3 | 20.5 | 17.0 | 11.6 | 9.69 | 5.27 |
| 1.70V    | 331  | 231   | 174   | 105   | 63.1 | 36.9 | 26.2 | 20.4 | 16.9 | 11.5 | 9.54 | 5.23 |
| 1.75V    | 313  | 222   | 170   | 103   | 62.4 | 36.4 | 25.9 | 20.2 | 16.7 | 11.4 | 9.48 | 5.15 |
| 1.80V    | 295  | 213   | 165   | 101   | 61.7 | 35.9 | 25.6 | 19.9 | 16.5 | 11.3 | 9.40 | 5.07 |
| 1.85V    | 276  | 202   | 158   | 99.0  | 60.8 | 35.4 | 25.2 | 19.6 | 16.3 | 11.2 | 9.29 | 4.99 |

- All mentioned values are average values.
- Tolerance: X<6min(+15%~-15%),6min ≤X<10min(+12%~-12%),10min ≤X<60min(+8%~-8%),X ≥60min(+5%~-5%)



# Tropicana 12V 26 Ah SMF/VRLA Battery

## TP 26- 12

### Specification

|  |   |
|--|---|
| Cells Per Unit                             | 6   |
| Voltage Per Unit                           | 12  |
| Capacity                                   | 26Ah@20hr-rate to 1.75V per cell @25C °   |
| Weight                                     | Approx. 8.10 Kg   |
| Max. Discharge Current                     | 260 A (5 sec)   |
| Internal Resistance                        | Approx. 10 mΩ   |
| Operating Temperature Range                | Discharge: -20 °C~60°C<br>Charge: 0C~50C °<br>Storage: -20C~60C °   |
| Normal Operating Temperature Range         | 25C± 5C   |
| Float charging Voltage                     | 13.7 to 13.9 VDC/unit Average at 25C °  |
| Recommended Maximum Charging Current Limit | 7.8 A   |
| Equalization and Cycle Service             | 14.6 to 14.8 VDC/unit Average at 25C °  |
| Self Discharge                             | Tropicana Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25C. Self-discharge ratio less than 3% per month at 25C. Please charge batteries before using. |
| Terminal                                   | Faston F3/F13   |
| Constainer Material                        | A.B.S. (UL94-HB) ,  |

Certified



9001-2008

Compliance



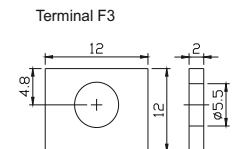
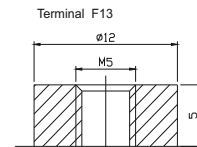
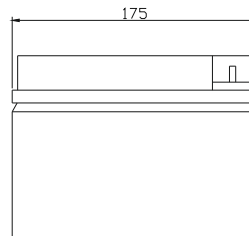
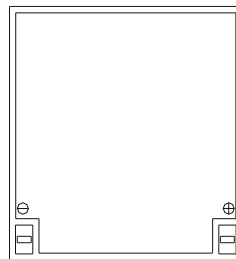
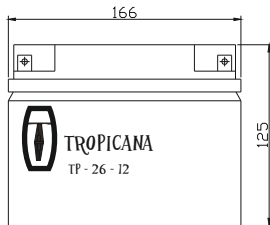
JIS 8702C,  
Pt-I,II,III



IEC 60896  
21 & 22

### Dimensions

Unit: mm Dimension: 166(L) × 175(W) × 125(H)



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

| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 100.4 | 66.54 | 52.16 | 29.89 | 17.85 | 10.28 | 7.093 | 5.591 | 4.643 | 3.002 | 2.599 | 1.459 |
| 10.0V    | 96.81 | 64.88 | 50.49 | 29.51 | 17.36 | 10.07 | 6.962 | 5.513 | 4.565 | 2.990 | 2.572 | 1.406 |
| 10.2V    | 91.12 | 61.67 | 49.08 | 29.05 | 17.20 | 9.97  | 6.900 | 5.459 | 4.515 | 2.963 | 2.533 | 1.380 |
| 10.5V    | 81.91 | 57.66 | 46.30 | 28.25 | 16.86 | 9.84  | 6.838 | 5.406 | 4.460 | 2.937 | 2.520 | 1.339 |
| 10.8V    | 73.39 | 53.78 | 43.68 | 27.32 | 16.56 | 9.76  | 6.759 | 5.380 | 4.413 | 2.925 | 2.478 | 1.260 |
| 11.1V    | 64.21 | 49.30 | 40.30 | 26.28 | 16.11 | 9.36  | 6.626 | 5.333 | 4.368 | 2.901 | 2.440 | 1.240 |

### Constant Power Discharge Characteristics : W(25C) °

| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 1057  | 707.7 | 558.4 | 342.1 | 207.3 | 119.9 | 81.66 | 66.16 | 54.96 | 35.95 | 31.14 | 17.48 |
| 10.0V    | 1029  | 693.1 | 550.4 | 338.6 | 204.2 | 118.9 | 81.50 | 66.00 | 54.68 | 35.81 | 30.84 | 16.86 |
| 10.2V    | 978.8 | 665.6 | 543.1 | 335.7 | 202.7 | 118.2 | 81.19 | 65.46 | 54.15 | 35.54 | 30.55 | 16.55 |
| 10.5V    | 893.4 | 638.2 | 514.8 | 328.8 | 200.0 | 117.2 | 80.86 | 64.86 | 53.51 | 35.24 | 30.23 | 16.08 |
| 10.8V    | 806.0 | 597.0 | 486.4 | 321.0 | 196.7 | 116.2 | 79.92 | 64.62 | 52.95 | 35.09 | 29.77 | 15.15 |
| 11.1V    | 710.8 | 555.8 | 458.1 | 312.2 | 193.0 | 112.2 | 78.35 | 63.97 | 52.45 | 34.84 | 29.33 | 14.91 |

All mentioned values are average values.



# Tropicana 12V 45Ah SMF/VRLA Battery

## TP 42- 12

### Specification

|  |  |
|--|--|
| Cells Per Unit                             | 6  |
| Voltage Per Unit                           | 12   |
| Capacity                                   | 45Ah@10hr-rate to 1.80V per cell @25C °  |
| Weight                                     | Approx. 13.5 Kg  |
| Max. Discharge Current                     | 450A (5 sec)   |
| Internal Resistance                        | Approx. 8 mΩ   |
| Operating Temperature Range                | Discharge: -20 °C~60°C<br>Charge: 0C~50C °<br>Storage: -20C~60C °  |
| Normal Operating Temperature Range         | 25C± 5C  |
| Float charging Voltage                     | 13.6 to 13.8 VDC/unit Average at 25C °   |
| Recommended Maximum Charging Current Limit | 13.5 A   |
| Equalization and Cycle Service             | 14.6 to 14.8 VDC/unit Average at 25C °   |
| Self Discharge                             | Tropicana Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25C.° Self-discharge ratio less than 3% per month at 25C. Please charge batteries before using. |
| Terminal                                   | Terminal F4/F11  |
| Container Material                         | A.B.S. (UL94-HB),  |

Certified



9001-2008

Compliance



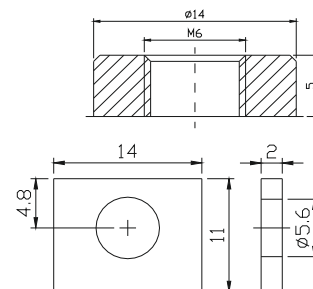
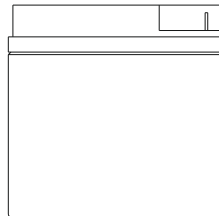
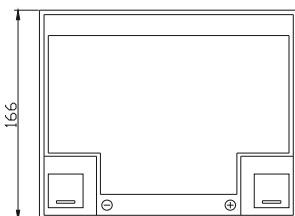
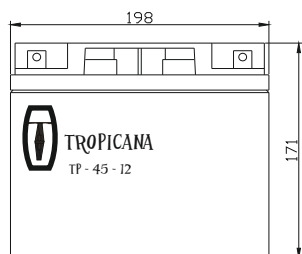
JIS 8702C,  
Pt-I,II,III



IEC 60896  
21 & 22

### Dimensions

Unit: mm Dimension: 198(L) × 166(W) × 171(H)



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

| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 150.8 | 111.0 | 86.54 | 52.74 | 29.25 | 17.49 | 12.08 | 10.01 | 8.424 | 5.754 | 4.773 | 2.547 |
| 10.0V    | 146.4 | 105.6 | 84.76 | 51.83 | 29.12 | 17.36 | 12.03 | 9.960 | 8.374 | 5.707 | 4.727 | 2.500 |
| 10.2V    | 142.1 | 101.9 | 83.43 | 50.87 | 28.85 | 17.23 | 11.94 | 9.913 | 8.325 | 5.661 | 4.681 | 2.454 |
| 10.5V    | 127.6 | 94.03 | 79.44 | 50.48 | 28.58 | 17.10 | 11.89 | 9.821 | 8.226 | 5.614 | 4.635 | 2.408 |
| 10.8V    | 115.2 | 85.74 | 73.23 | 49.62 | 27.90 | 16.79 | 11.57 | 9.589 | 8.077 | 5.520 | 4.589 | 2.361 |
| 11.1V    | 98.32 | 76.63 | 65.68 | 46.46 | 26.51 | 16.05 | 11.06 | 9.126 | 7.730 | 5.286 | 4.451 | 2.222 |

### Constant Power Discharge Characteristics: W(25C) °

| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 1591 | 1182  | 943.4 | 591.8 | 338.0 | 206.2 | 143.7 | 119.3 | 100.5 | 68.71 | 57.03 | 30.53 |
| 10.0V    | 1559 | 1146  | 928.3 | 584.5 | 337.2 | 205.1 | 143.8 | 119.1 | 100.2 | 68.37 | 56.67 | 30.00 |
| 10.2V    | 1542 | 1116  | 917.8 | 580.4 | 334.6 | 203.8 | 143.2 | 118.9 | 99.90 | 67.93 | 56.17 | 29.45 |
| 10.5V    | 1403 | 1039  | 875.5 | 576.4 | 331.6 | 202.4 | 142.6 | 117.7 | 98.71 | 67.37 | 55.62 | 28.89 |
| 10.8V    | 1278 | 957.8 | 809.2 | 567.1 | 325.5 | 199.8 | 138.7 | 115.1 | 96.93 | 66.24 | 55.07 | 28.34 |
| 11.1V    | 1123 | 865.9 | 728.4 | 534.2 | 311.5 | 192.4 | 132.7 | 109.5 | 92.76 | 63.44 | 53.42 | 26.67 |

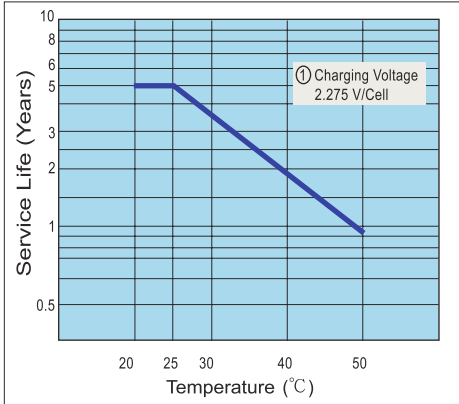
All mentioned values are average values.



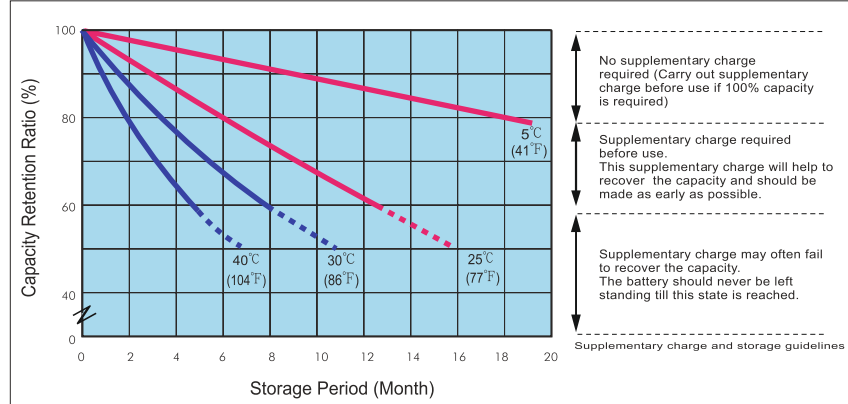


# Tropicana 12V Series SMF/VRLA Battery

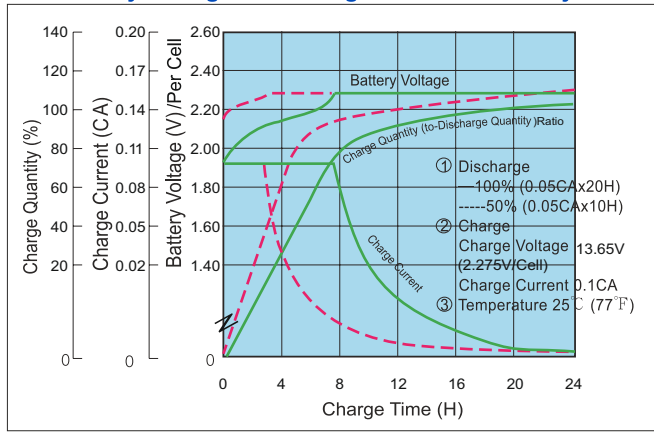
**Trickle (or Float) Service Life**



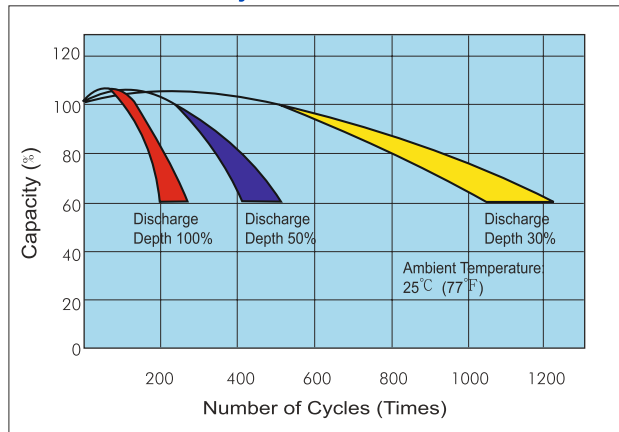
**Capacity Retention Characteristic**



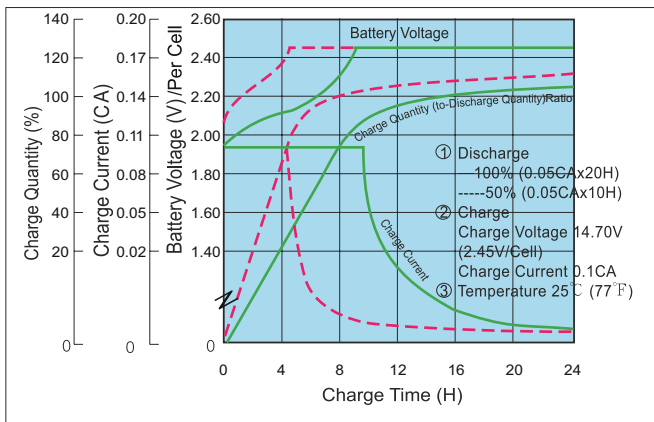
**Battery Voltage and Charge Time for Standby Use**



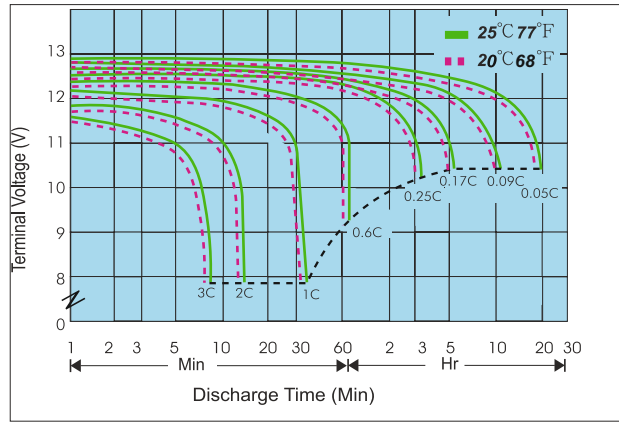
**Cycle Service Life**



**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          | 1.60          | 1.30     |
|--------------------------------|----------|---------------|---------------|----------|
| Discharge Current(A)           | 0.2C>(A) | 0.2C<(A)<0.5C | 0.5C<(A)<1.0C | (A)>1.0C |

**Tropicana Enterprises Private Limited**  
 A-232, Okhla Industrial Area, Ph-I,  
 New Delhi-110020, India  
 T: +91-11-26810258, 26810260  
 Email: sales@tropicana-power.com  
 www.tropicana-power.com

