# FZA 20-12 *(E-BIKE)*
12V 20AH

## FZA 20-12

## Physical Specification

| | |
|---|---|
| Part Number: | FZA 20-12 |
| Length: | **181.5 ± 2 mm (5.95 inches)** |
| Width: | **77 ± 2 mm (3.85 inches)** |
| Container Height: | **167.5 ± 2 mm (3.74 inches)** |
| Total Height (with terminal): | **167.5 ± 2 mm (3.98 inches)** |
| Approx Weight: | **Approx 7 kg** |

## Specifications

| | | |
|---|---|---|
| | Nominal Voltage | 12V |
| | Nominal Capacity (20HR) | 20AH |
| Terminal Type | Standard Terminal | F3 |
| | Optional Terminal | F12 |
| Container Material | Standard Option | ABS |
| | Flame Retardant Option (FR) | ABS (UL94:VO) |
| Rated Capacity | 20.0 AH/1.00A | (20hr,1.80V/cell, 25°C / 77°F) |
| | 18.6 AH/1.86A | (10hr,1.80V/cell, 25°C / 77°F) |
| | 17.0 AH/3.40A | (5hr,1.75V/cell, 25°C / 77°F) |
| | 15.3 AH/5.10A | (3hr,1.75V/cell, 25°C / 77°F) |
| | 12.56 AH/12.56A | (1hr,1.60V/cell, 25°C / 77°F) |
| Max Discharge Current | 300A (5s) | |
| Internal Resistance | Approx 15mΩ | |
| Discharge Characteristics | Operating Temp. Range | Discharge: -15 ~ 50°C (5 ~ 122°F) |
| | | Charge. 0 ~ 40°C (5 ~ 104°F) |
| | | Storage: -15 ~ 40°C (5 ~ 104°F) |
| | Nominal Operating Temp. Range | 25 ± 3°C (77 ± 5°F) |
| | Cycle Use | Inital Charging Current less than 6.0A,Voltage |
| | | 14.4V ~ 15.0V at 25°C (77°F) Temp. Coefficient -30mV/°C |
| | Standby Use | No limit on Initial Charging Current Voltage |
| | | 13.5V ~ 13.8V at 25°C (77°F) Temp. Coefficient -20mV/°C |
| | Capacity affected by Temperature | 40°C (104°F) 103% |
| | | 25°C (77°F) 100% |
| | | 0°C (32°F) 86% |
| Design Floating Life at 20°C | 5 Years | |

## Dimensions

**F3 Terminal**

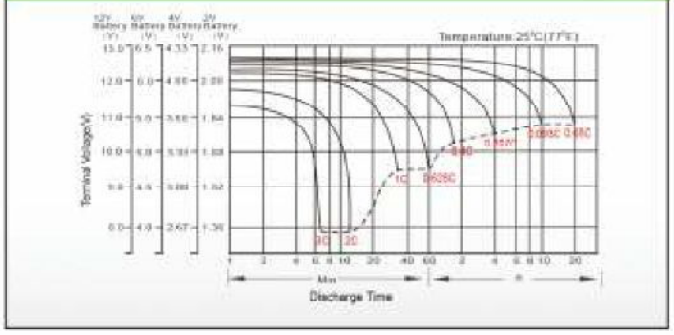
## Constant Current Discharge (Amperes) at 25°C (77°F)

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 38.1 | 29.2 | 24.2 | 20.9 | 16.2 | 11.9 | 10.1 | 5.95 | 4.65 | 3.78 | 3.09 | 2.68 | 2.16 | 1.80 | 0.99 |
| 1.80V/cell | 51.1 | 37.4 | 29.3 | 24.8 | 19.1 | 13.9 | 11.3 | 6.49 | 5.01 | 4.04 | 3.31 | 2.87 | 2.29 | 1.86 | 1.00 |
| 1.75V/cell | 57.6 | 41.1 | 32.0 | 26.6 | 19.8 | 14.4 | 11.8 | 6.73 | 5.10 | 4.13 | 3.40 | 2.95 | 2.33 | 1.91 | 1.01 |
| 1.70V/cell | 63.5 | 44.8 | 34.1 | 28.0 | 20.7 | 15.0 | 12.2 | 6.90 | 5.24 | 4.24 | 3.49 | 3.01 | 2.36 | 1.95 | 1.03 |
| 1.65V/cell | 70.0 | 48.3 | 36.3 | 29.7 | 21.8 | 15.4 | 12.4 | 7.00 | 5.47 | 4.39 | 3.58 | 3.08 | 2.40 | 1.99 | 1.04 |
| 1.60V/cell | 77.2 | 52.4 | 38.8 | 31.7 | 23.0 | 16.0 | 12.6 | 7.30 | 5.63 | 4.52 | 3.70 | 3.14 | 2.42 | 2.01 | 1.05 |

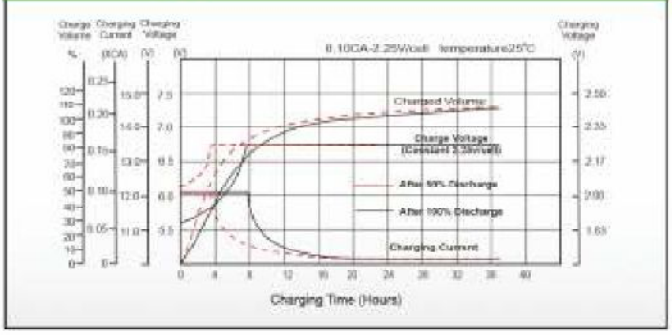
## Constant Power Discharge (Watts) at 25°C (77°F)

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 69.6 | 54.0 | 45.2 | 39.5 | 30.9 | 22.9 | 19.4 | 11.6 | 9.07 | 7.40 | 6.05 | 5.26 | 4.26 | 3.57 | 1.96 |
| 1.80V/cell | 92.5 | 68.2 | 53.9 | 46.0 | 35.9 | 26.5 | 21.6 | 12.5 | 9.71 | 7.86 | 6.46 | 5.62 | 4.51 | 3.68 | 1.98 |
| 1.75V/cell | 102.0 | 73.8 | 58.1 | 49.0 | 36.9 | 27.2 | 22.5 | 12.9 | 9.85 | 8.00 | 6.61 | 5.78 | 4.58 | 3.77 | 2.00 |
| 1.70V/cell | 109.3 | 78.6 | 61.2 | 51.1 | 38.2 | 28.2 | 23.1 | 13.2 | 10.1 | 8.20 | 6.77 | 5.87 | 4.64 | 3.84 | 2.03 |
| 1.65V/cell | 118.8 | 84.0 | 64.6 | 53.9 | 40.0 | 28.6 | 23.5 | 13.3 | 10.5 | 8.45 | 6.93 | 5.98 | 4.70 | 3.91 | 2.05 |
| 1.60V/cell | 128.0 | 89.1 | 67.9 | 56.8 | 41.9 | 29.7 | 23.6 | 13.9 | 10.8 | 8.69 | 7.13 | 6.09 | 4.73 | 3.95 | 2.06 |

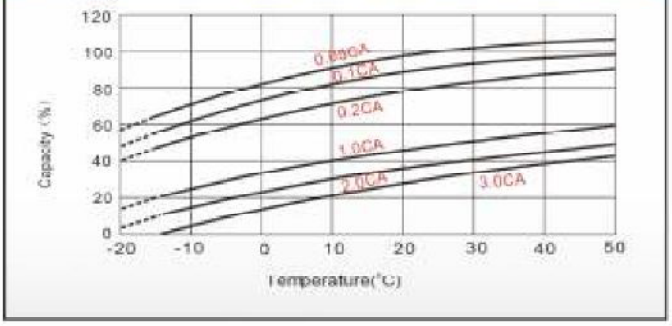
## Discharge Characteristics



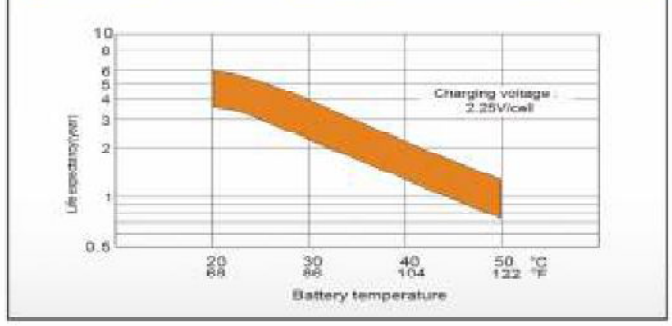

## Float Charging Characteristics



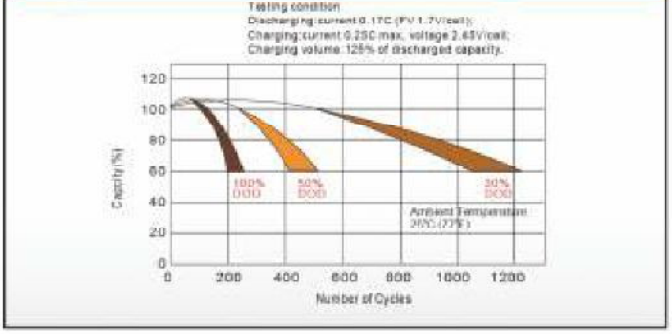

## Temperature Effects in Relation to Battery Capacity




## Effect of Temperature on Long Term Float Life




## Cycle Life in Relation to Depth of Discharge




## Self Discharge Characteristics