2.14 V/cell when fully charged (2.12 to 2.15)

2.03 V/cell at 50%

1.75 V/cell at 0%

|  |  |  |
| --- | --- | --- |
| **State of Charge** | **12 Volt battery** | **Volts per Cell** |
| 100% | 12.7 | 2.12 |
| 90% | 12.5 | 2.08 |
| 80% | 12.42 | 2.07 |
| 70% | 12.32 | 2.05 |
| 60% | 12.20 | 2.03 |
| 50% | 12.06 | 2.01 |
| 40% | 11.9 | 1.98 |
| 30% | 11.75 | 1.96 |
| 20% | 11.58 | 1.93 |
| **10%** | **11.31** | **1.89** |
| **0** | **10.5** | **1.75** |

Battery charging takes place in 3 basic stages: Bulk, Absorption, and Float.

1. **Bulk Charge** - The first stage of 3-stage battery charging. Current is sent to batteries at the maximum safe rate they will accept until voltage rises to near (80-90%) full charge level. Voltages at this stage typically range from 10.5 volts to 15 volts. There is no "correct" voltage for bulk charging, but there may be limits on the maximum current that the battery and/or wiring can take.
2. **Absorption Charge**: The 2nd stage of 3-stage battery charging. Voltage remains constant and current gradually tapers off as internal resistance increases during charging. It is during this stage that the charger puts out maximum voltage. Voltages at this stage are typically around 14.2 to 15.5 volts. (The internal resistance gradually goes up because there is less and less to be converted back to normal full charge).
3. **Float Charge**: The 3rd stage of 3-stage battery charging. After batteries reach full charge, charging voltage is reduced to a lower level (typically 12.8 to 13.2) to reduce gassing and prolong battery life.