# Yuasa Technical Data Sheet

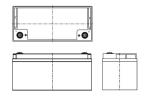
## Yuasa SWL2250 Industrial VRLA Battery

| Specifications  | 10  |
|---|---|
| Nominal voltage (V)<br>10m rate Constant Power (Typ) to 9.6V at 20°C<br>(W/Block)   | 12<br>2250  |
| 10m rate Constant Power (Typ) to 1.6V/cell at 20°C (W/Cell)   | 375   |
| 10-hr rate Capacity to 1.8V/Cell at 20°C (Ah)<br>20-hr rate Capacity to 1.75V/Cell at 20°C (Ah)   | 76<br>86.0  |
| Dimensions  |   |
| Length (mm)   | 380 (±2)  |
| Width (mm)<br>Height (mm)   | 166 (±1)<br>177.5 (±2)  |
| Mass (kg)   | 28  |
| Terminal Type   |   |
| Threaded terminal - (M=Male or F=Female)  | M8 (F)  |
| Torque (Nm)   | 6   |
| <b>Operating Temperature Range</b><br>Storage (in fully charged condition)  | -20°C to +50°C  |
| Charge  | -15°C to +50°C  |
| Discharge   | -20°C to +60°C  |
| Storage   |   |
| Capacity loss per month at 20°C (% approx.)   | 3   |
| <b>Case Material</b><br>Standard  | ABS (UL94:HB)   |
| FR version available  | UL94:V0   |
|   |   |
| Charge Voltage  |   |
| <b>Charge Voltage</b><br>Float charge voltage at 20°C (V)/Block   | 13.65 (±1%)   |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell   | 2.275 (±1%)   |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std   |   |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell   | 2.275 (±1%)   |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell   | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)   |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std  | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)   |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)   | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)   |
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| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)   | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)<br>-4   |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)<br><b>Charge Current</b><br>Float charge current limit (A)<br>Cyclic (or Boost) charge current limit (A)<br><b>Maximum Discharge Current</b>  | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)<br>-4<br>No limit   |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)<br><b>Charge Current</b><br>Float charge current limit (A)<br>Cyclic (or Boost) charge current limit (A)<br><b>Maximum Discharge Current</b><br>1 second (A)  | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)<br>-4<br>No limit<br>19<br>800                                |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)<br><b>Charge Current</b><br>Float charge current limit (A)<br>Cyclic (or Boost) charge current limit (A)<br><b>Maximum Discharge Current</b><br>1 second (A)<br>1 minute (A)  | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)<br>-4<br>No limit<br>19                                       |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)<br><b>Charge Current</b><br>Float charge current limit (A)<br>Cyclic (or Boost) charge current limit (A)<br><b>Maximum Discharge Current</b><br>1 second (A)<br>1 minute (A)<br><b>Short-Circuit Current &amp; Internal Resistance</b>  | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)<br>-4<br>No limit<br>19<br>800<br>500                         |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)<br><b>Charge Current</b><br>Float charge current limit (A)<br>Cyclic (or Boost) charge current limit (A)<br><b>Maximum Discharge Current</b><br>1 second (A)<br>1 minute (A)  | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)<br>-4<br>No limit<br>19<br>800<br>500                         |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)<br><b>Charge Current</b><br>Float charge current limit (A)<br>Cyclic (or Boost) charge current limit (A)<br><b>Maximum Discharge Current</b><br>1 second (A)<br>1 minute (A)<br><b>Short-Circuit Current &amp; Internal Resistance</b><br>Internal resistance - according to EN IEC 60896-2   | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)<br>-4<br>No limit<br>19<br>800<br>500                         |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)<br><b>Charge Current</b><br>Float charge current limit (A)<br>Cyclic (or Boost) charge current limit (A)<br><b>Maximum Discharge Current</b><br>1 second (A)<br>1 minute (A)<br><b>Short-Circuit Current &amp; Internal Resistance</b><br>Internal resistance - according to EN IEC 60896-27<br>(m $\Omega$ )<br>Short-Circuit current - according to EN IEC<br>60896-21 (A)<br><b>Impedance</b>  | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)<br>-4<br>No limit<br>19<br>800<br>500<br>10.49<br>1442        |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)<br><b>Charge Current</b><br>Float charge current limit (A)<br>Cyclic (or Boost) charge current limit (A)<br><b>Maximum Discharge Current</b><br>1 second (A)<br>1 minute (A)<br><b>Short-Circuit Current &amp; Internal Resistance</b><br>Internal resistance - according to EN IEC 60896-27<br>(mΩ)<br>Short-Circuit current - according to EN IEC<br>60896-21 (A)<br><b>Impedance</b><br>Measured at 1 kHz (mΩ)                                       | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)<br>-4<br>No limit<br>19<br>800<br>500                         |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)<br><b>Charge Current</b><br>Float charge current limit (A)<br>Cyclic (or Boost) charge current limit (A)<br><b>Maximum Discharge Current</b><br>1 second (A)<br>1 minute (A)<br><b>Short-Circuit Current &amp; Internal Resistance</b><br>Internal resistance - according to EN IEC 60896-27<br>(mΩ)<br>Short-Circuit current - according to EN IEC<br>60896-21 (A)<br><b>Impedance</b><br>Measured at 1 kHz (mΩ)<br><b>Design Life &amp; Approvals</b> | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)<br>-4<br>No limit<br>19<br>800<br>500<br>10.49<br>1442<br>3.6 |
| Float charge voltage at 20°C (V)/Block<br>Float charge voltage at 20°C (V)/Cell<br>Float Chg voltage tmp correction factor from std<br>20°C (mV)<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Block<br>Cyclic (or Boost) charge Voltage at 20°C (V)/Cell<br>Cyclic Chg voltage tmp correction factor from std<br>20°C (mV)<br><b>Charge Current</b><br>Float charge current limit (A)<br>Cyclic (or Boost) charge current limit (A)<br><b>Maximum Discharge Current</b><br>1 second (A)<br>1 minute (A)<br><b>Short-Circuit Current &amp; Internal Resistance</b><br>Internal resistance - according to EN IEC 60896-27<br>(mΩ)<br>Short-Circuit current - according to EN IEC<br>60896-21 (A)<br><b>Impedance</b><br>Measured at 1 kHz (mΩ)                                       | 2.275 (±1%)<br>-3<br>14.5 (±3%)<br>2.42 (±3%)<br>-4<br>No limit<br>19<br>800<br>500<br>10.49<br>1442        |





## Layout



# **3rd Party Certifications**

ISO9001 - Quality Management Systems ISO14001 - Environmental Management Systems ISO45001 OHSAS Management Systems UNDERWRITERS LABORATORIES Inc.

# Safety

#### Installation

Can be installed and operated in any orientation except permanently inverted.

# Handles

Batteries must not be suspended by their handles (where fitted).

#### Vent valves

Each cell is fitted with a low pressure release valve to allow gasses to escape and then reseal.

# Gas release

VRLA batteries release hydrogen gas which can form explosive mixtures in the air. Do not place inside a sealed container.

### Recycling

YUASA's VRLA batteries must be recycled at the end of life in accordance with local and national laws and regulations.



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