# TECHNICAL GUIDE SPECIFICATIONS

# Lite-Wave

## Single Phase, (200 to 490 Watts)
## UL924 Central Lighting Inverter

## 1. SCOPE

The Emergency Lighting Power System shall be a solid-state single phase unit designed to provide regulated and conditioned sinusoidal power for emergency lighting applications. The Emergency Lighting Power System shall provide uninterrupted power during all modes of operation. There shall be no interruption of power to the lighting system when the unit transfers to and from battery operation. The Emergency Lighting Power System and battery subsystem shall be listed to UL 924 Standard for Emergency Lighting and Power Equipment by a nationally recognized organization.

## 2. MODES OF OPERATION

**NORMAL:**
During normal operation, utility (or generator) power is thoroughly conditioned and regulated by solid state electronics. The Solid-State Electronics in conjunction with the input filter, filters noise and transients from the incoming power.
Additionally, Solid-State Electronics regulates its output voltage to within specified limits. The rectifier section maintains the batteries in a fully charged state.

**EMERGENCY:**
Upon loss of input power or when power exceeds the specified input limits, the control logic shall transfer to operation and disconnect the input line. The transfer to battery shall be an uninterrupted or "no break" power transfer. The inverter shall supply power from the batteries and through the Solid-State Electronics to the lighting system. The output shall be sinusoidal and within specified limits. If power is not restored before the batteries have been exhausted, the Inverter shall completely shutdown, protecting the batteries from possible damage.

**RECHARGE**:
Upon restoration of input power and before the batteries are completely exhausted, the Inverter shall automatically return to normal operation. This retransfer to normal operation shall be uninterrupted. The battery charger shall automatically recharge the batteries to full capacity. The battery charger shall recharge the batteries as set forth in U.L. Standard 924

## 3. MAJOR SYSTEM COMPONENTS

Emergency Lighting Power System shall consist of the following major subsystems:

**SOLID STATE ELECTRONICS**: The Solid-State Electronics shall provide regulation and conditioning from incoming power aberrations. Power to the critical load shall be supplied by the Solid-State Electronics whether the Inverter is in normal mode or emergency mode. The output wave shape shall be sinusoidal for all modes of operation.

**BATTERY SUBSYSTEM**: Sealed, maintenance-free batteries shall be provided. The batteries shall have an expected life of ten (10) years. The batteries shall be fully wired and contained within its own section. Battery run time (based on 100% full load) shall be no less than ninety (90) minutes. Optional Extended battery run times greater than ninety (90) minutes shall be available.

**INVERTER:** The Emergency Lighting Power System shall convert DC power supplied from the batteries into AC power.

**CHARGER**: A battery charger shall be provided. The battery charger shall maintain the batteries at full charge. The battery charger shall be sized such that it recharges the batteries as set forth in UL Standard 924.

**POWER CONNECTIONS:** The Emergency Lighting Power System input and output shall be hard wired. A main Input, Output and DC circuit breaker shall be provided. The main Input circuit breaker provides over-current protection and a means to easily disconnect power from the lighting system.

**TRANSFORMER:** Unit shall utilize auto transformer for 277 Volt input & output only.

**MONITORING PANEL:**

**Front Panel LCD / LED display**

The unit shall use LCD display for easy viewing of UPS status.

**Alarm indicators**

The UPS gives the following audible alarms:

- If UPS is on battery and the ON BATTERY LED is on, UPS will beep every 5 seconds.
- If the battery capacity is low and the ON BATTERY LED is flashing, the UPS will beep twice every 5 seconds.
- If UPS is on bypass and the BYPASSED LED is on, UPS will not beep.
- If UPS has an internal fault and the ALARM LED is on, the UPS will give a constant audible alarm displaying the cause on the LCD display.

**The unit shall use 5 LED indicator lights:**

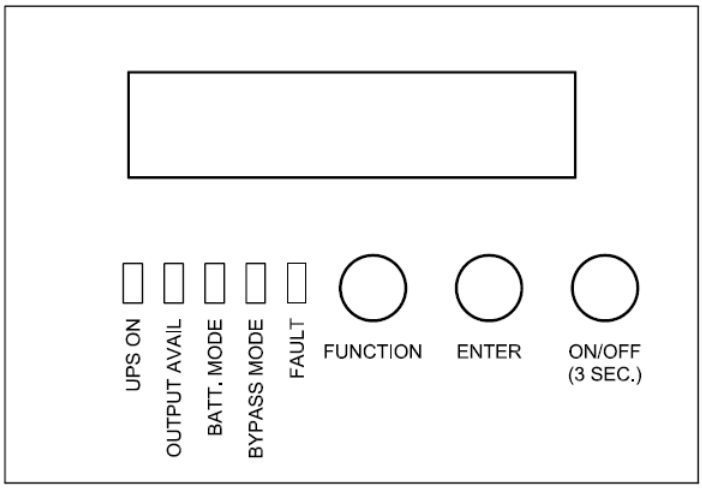
**UPS-ON:** Green LED is lit when UPS has been turned on.

**OUTPUT AVAIL**: Is lit when the UPS is in normal or static bypass modes, there
is voltage at the output terminals.

**BATT MODE:** Is lit While operating in battery mode.

**BYPASS MODE:** Is lit While operating in bypass mode, this LED will light up in yellow.

**FAULT:** Is lit if any internal error occurs in the UPS, this LED will light up in red and give off an audible alarm. Press any of the buttons on the front panel to turn off the alarm.




## 4. OPTIONS

- **Auxiliary TVSS**: Input Transient voltage suppressor shall comply with UL1449 third edition
- **Auxiliary Output Circuit Breaker:** Unit shall provide up to 3 optional 1 pole 10amp din rail output circuit breakers
- **SNMP/Web Card**: SNMP shall allow direct monitoring in SNMP based networks for monitoring of the Unit through web browser.
- **Communication interface**: Unit shall have RS232 and USB communication port Option
- **Floor mount brackets:** Unit shall provide floor mount provision.
- **Remote Status Panel**: Unit shall be equipped with an optional remote monitoring panel.
- **Facility interface:** Unit shall connect to facility system via dry contact Option.

## 5. SPECIFICATIONS:

| Specifications for 120VVAC /277VAC | | | | |
|---|---|---|---|---|
| **Capacity (W)** | **Description** | **200W** | **300W** | **490W** |
| **Input** | Voltage | Single Phase 120Vac or 277Vac | | |
| | Voltage Range | 120Vac ±10% or or 277Vac | | |
| | Frequency | 60Hz +/- 4Hz | | |
| **Output** | Voltage (on battery) | Single Phase 120Vac or 277Vac | | |
| | Voltage Range | 120Vac ±2% or 277Vac | | |
| | Frequency (on battery) | 60 Hz +/-0.5% | | |
| | Transfer Time | 0 ms | | |
| | Overload Recovery | Auto transfer to UPS | | |
| | High Efficiency mode (AC to AC) | > 95 % | | |
| | UPS Design Technology | On-Line / Fully digitized microprocessor controlled | | |
| | Harmonic distortion | < 3% of T.H.D. at linear load | | |
| | Overload Protection | 125% for 1 minutes and 150% for 10 seconds | | |
| **Protection and Filtering** | Overload Protection | 125% for 1 minutes and 150% for 10 seconds | | |
| | Short Circuit Protection | Circuit breaker | | |
| **System/Display/ Warning** | Visual Display (LED model) | UPS on(green), line-mode(green), battery mode(yellow), bypass(yellow), fault(red) | | |
| | Visual Display (LCD model) | Input / output voltage, input / output frequency, on-line mode, back up mode, battery capacity, load level | | |
| | Audible Alarm (Battery back-up) | Beep every 5 sec | | |
| | UPS Fault | Continuous beeping sound and LCD display | | |
| | Communication | RS-232 Serial Port and USB | | |
| **Battery** | 90 min. UL924 (Sealed, maintenance free lead acid battery | 2X35 A/H | 2X50 A/H | 2X50 A/H |
| **Dimensions** | (Inches) Width x Height x Depth | 24 X 17 X 9.5 | | |
| **Environmental** | Operating Temperature | 0 - 40ºC / 32 ~ 104ºF | | |
| | Storage Temperature | -20 ~ 50ºC / -4 ~ 122ºF | | |
| | Audible Noise (1 meter from surface) | < 40 dBA | | |
| | Relative Humidity | 0 ~ 95% humidity, non-condensing | | |

**Note: Due to continuous improvement specifications are subject to change without prior notice**

| Wall/Floor Mount Lighting Inverter<br>90 minute battery back up (Batt. 24 VDC) | | | | |
|---|---|---|---|---|
| Total/<br>WATT | Model<br>Numbers | Input/Output<br>Voltages | BTU/ Hr | Cabinet Dimension<br>(W"xH"xD") |
| 200W | WM.20A01CP | 120V/120V | 216 | **24 X 17 X 9.5** |
| | WM.20R01CP | 277V/120V | 233 | |
| | WM.20R25CP | 277V/277V | 233 | |
| | WM.20A25CP | 120V/277V | 233 | |
| 300W | WM.30A01CP | 120V/120V | 305 | " |
| | WM.30R01CP | 277V/120V | 353 | |
| | WM.30R25CP | 277V/277V | 353 | |
| | WM.30A25CP | 120V/277V | 353 | |
| 490W | WM.49A01CP | 120V/120V | 499 | " |
| | WM.49R01CP | 277V/120V | 543 | |
| | WM.49R25CP | 277V/277V | 543 | |
| | WM.49A25CP | 120V/277V | 543 | |
| **(NOTE)**<br>** **BTU/HR ARE APROX. NUMBER WITH TOLERANCE ± 15% FOR ALL MODELS** | | | | |