

## SmartPro 120V 2.2kVA 1.92kW UL 60601-1 Medical-Grade Line-Interactive UPS, Extended Run, SNMPWEBCARD Option, Full Isolation, USB, DB9 Serial

MODEL NUMBER: **SMART2500XLHG**



### Highlights

- 2200VA line-interactive extended-run tower UPS
- UL 60601-1 Approved for use within the Patient Care Vicinity
- Approved to IEC60601-1-2:2014, 4th Ed.
- Lowers cumulative leakage current of connected equipment to under 100  $\mu$ A
- Floating AC output prevents noise coupling

### Package Includes

- SMART2500XLHG Medical Grade Tower UPS System
- AC Power Cord (C19 to NEMA 5-20P)
- PowerAlert Software and cabling
- Warranty information
- Instruction manual

### Description

UL 60601-1 compliance is required for UPS systems within patient care areas. Get complete, compliant power protection with the SMART2500XLHG SmartPro® Medical UPS System. The SMART2500XLHG provides a high-load capacity 2200VA/1920W, full UL 60601-1 3rd edition compliance. Protects connected medical equipment against data loss, downtime and equipment damage due to power outages, voltage fluctuations and transient surges. It features a USB port, input locking clamp, equipotential earth bonding lug, four NEMA 5-15/20R outlets and four IEC C13 outlets for universally adaptable outlet options. The SMART2500XLHG offers a complete power protection solution for clinical labs, diagnostic imaging, ophthalmology, medical equipment, imaging and other devices requiring medical grade protection. With built-in Faraday shielding, the SMART2500XLHG provides full line isolation and reduces the cumulative leakage current of connected equipment to less than 100 A for optimal safety in patient care areas. Full isolation also provides continuous noise filtering and enhanced common mode surge suppression. Featuring advanced line-interactive operation, it provides regulated 120V nominal output without using battery power during brownouts and overvoltages. Large internal batteries support connected equipment during blackouts and optional external battery packs (BP48V24-2U and BP48V60RT-3U) provide extended runtime tailored to your application. The SMART2500XLHG features a USB communication port that works with included PowerAlert® software to provide UPS and site power monitoring and safe unattended shutdown of connected equipment in the event of a prolonged power failure. This UPS contains a lead acid battery designed to be connected continuously to an AC power source, except during brief power outages. It is not intended for frequent charge/discharge cycles, such as mobile cart applications where the UPS is often disconnected from the power source. Using the SMART2500XLHG in this type of application will void the battery warranty.

### Features

- Ideal UPS protection for applications in patient-care vicinities where UL 60601-1 3rd edition listed medical electrical equipment is required
- Internal low-impedance isolation transformer with Faraday shield offers 100% isolation from the input AC line
- Floating AC output prevents noise coupling from noisy hospital ground circuits
- Full line isolation prevents shock potential and operational problems in sensitive electronic equipment
- Provides connected equipment with continuous power during short and long duration loss of commercial power
- Expandable runtime is available with the addition of one or more external battery packs (BP48V24-2U)



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and BP24V60RT-3U)

- Line-interactive voltage regulation corrects brownouts and overvoltages from 83V to 143V back to usable 120V output levels without using battery power
- Resistant to electrostatic discharge
- Supports loads up to 2200VA/1920W
- 13 min. half-load runtime (1100VA/960W), 4 min. full load runtime (2200VA/1920W)
- Input: IEC320-C20 inlet with locking clamp; Output: 4 NEMA 5-15/20R and 4 IEC C13
- Built-in USB, DB9 (RS-232) and optional SNMPWEBCARD accessory monitoring options
- PowerAlert unattended shutdown software and complete cabling included
- Offers line isolation and continuous noise filtering
- 940-joule surge protection rating
- 5 diagnostic LEDs indicate AC present, on battery, voltage correction, overload & battery low/replace
- Battery replacement door and back panel grounding lug
- Relay I/O card allows users to communicate UPS status and events via 6 configurable contact closure outputs

## Specifications

| OVERVIEW                           |                                                                                          |
|------------------------------------|------------------------------------------------------------------------------------------|
| UPC Code                           | 037332168283                                                                             |
| UPS Type                           | Line-Interactive                                                                         |
| INPUT                              |                                                                                          |
| Input Phase                        | Single-Phase                                                                             |
| Rated input current (Maximum Load) | 16 A                                                                                     |
| Nominal Input Voltage(s) Supported | 120V AC                                                                                  |
| UPS Input Connection Type          | C20 inlet                                                                                |
| Input Circuit Breakers             | 2 x 20A                                                                                  |
| UPS Input Cord Length (ft.)        | 6                                                                                        |
| UPS Input Cord Length (m)          | 1.8                                                                                      |
| Recommended Electrical Service     | 20A 120V                                                                                 |
| Maximum Input Amps                 | 16                                                                                       |
| Total Harmonic Distortion          | <3%                                                                                      |
| OUTPUT                             |                                                                                          |
| Output Capacity (VA)               | 2200                                                                                     |
| Output Capacity (kVA)              | 2.2                                                                                      |
| Output Capacity (Watts)            | 1920                                                                                     |
| Output Capacity (kW)               | 1.92                                                                                     |
| Output Capacity Details            | 16A @ 120V. (LINE MODE) 110%+/- 10% @ 5 minutes; (BATTERY MODE) 110% +/- 10% @ 5 seconds |



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|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Factor                                    | 0.87                                                                                                                                                                                                                                                                                                                                           |
| Nominal Voltage Details                         | 120V sinusoidal in line mode and 120V sinusoidal in battery mode                                                                                                                                                                                                                                                                               |
| Frequency Compatibility                         | 60 Hz                                                                                                                                                                                                                                                                                                                                          |
| Frequency Compatibility Details                 | Output is regulated to +/-0.05Hz when input frequency exceeds +/-5Hz of nominal.                                                                                                                                                                                                                                                               |
| Output Voltage Regulation (Line Mode)           | -18%, +8%                                                                                                                                                                                                                                                                                                                                      |
| Output Voltage Regulation (Battery Mode)        | +/- 5%                                                                                                                                                                                                                                                                                                                                         |
| Output Receptacle Details                       | Hospital grade output receptacles; Compatible with P-Lock Power Cords                                                                                                                                                                                                                                                                          |
| UPS Output Receptacles (Surge Suppression Only) | 4 UPS outlets, 4 surge-only outlets                                                                                                                                                                                                                                                                                                            |
| Output AC Waveform (AC Mode)                    | Pure Sine wave                                                                                                                                                                                                                                                                                                                                 |
| Output AC Waveform (Battery Mode)               | Pure Sine wave                                                                                                                                                                                                                                                                                                                                 |
| Nominal Output Voltage(s) Supported             | 115V; 120V                                                                                                                                                                                                                                                                                                                                     |
| Output Receptacles                              | (4) 5-15/20R; (4) C13                                                                                                                                                                                                                                                                                                                          |
| Individually Controllable Load Banks            | No                                                                                                                                                                                                                                                                                                                                             |
| <b>BATTERY</b>                                  |                                                                                                                                                                                                                                                                                                                                                |
| Battery Type                                    | Valve Regulated Lead Acid (VRLA)                                                                                                                                                                                                                                                                                                               |
| Runtime Full Load (min.)                        | 4.4 min. (1920W)                                                                                                                                                                                                                                                                                                                               |
| Runtime Half Load (min.)                        | 13 min. (960W)                                                                                                                                                                                                                                                                                                                                 |
| Expandable Runtime                              | Yes                                                                                                                                                                                                                                                                                                                                            |
| External Battery Pack Compatibility             | &nbsp;<a class="productLink" href="//tripplite.eaton.com/External-48V-2U-Rack-Tower-Battery-Pack-Enclosure-DC-Cabling-select-UPS-Systems~BP48V24-2U">BP48V24-2U</a>&nbsp;<a href="//tripplite.eaton.com/External-48V-2U-Rack-Tower-Battery-Pack-Enclosure-DC-Cabling-select-UPS-Systems~BP48V60RT-3U">BP48V60RT-3U</a> (multi-pack compatible) |
| DC System Voltage (VDC)                         | 48                                                                                                                                                                                                                                                                                                                                             |
| Battery Recharge Rate (Included Batteries)      | 4.5 hours MAX (10% to 90% capacity) Internal batteries only                                                                                                                                                                                                                                                                                    |
| Battery Access                                  | Battery access door                                                                                                                                                                                                                                                                                                                            |
| Internal UPS Replacement Battery Cartridge      | &nbsp;<a class="productLink" href="//tripplite.eaton.com/UPS-Replacement-Battery-Cartridge-Kit-SMART2500XLHG-UPS~RBC48V-HGTWR">RBC48V-HGTWR</a>&nbsp;                                                                                                                                                                                          |
| Battery Replacement Description                 | Hot-swappable, user replaceable batteries                                                                                                                                                                                                                                                                                                      |
| <b>VOLTAGE REGULATION</b>                       |                                                                                                                                                                                                                                                                                                                                                |
| Voltage Regulation Description                  | Automatic voltage regulation (AVR) maintains line power operation with an input voltage range of 81 to 143                                                                                                                                                                                                                                     |
| Overvoltage Correction                          | Input voltages between 126 and 143 are reduced by 9%                                                                                                                                                                                                                                                                                           |
| Undervoltage Correction                         | Input voltages between 96 and 106 are boosted by 10%                                                                                                                                                                                                                                                                                           |
| Severe Undervoltage Correction                  | Input voltages between 81 and 95 are boosted by 21%                                                                                                                                                                                                                                                                                            |
| <b>USER INTERFACE, ALERTS &amp; CONTROLS</b>    |                                                                                                                                                                                                                                                                                                                                                |



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|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Switches                                                      | 2 Switches control off/on power status and alarm-cancel/self-test operation                                                                        |
| Alarm Cancel Operation                                        | Power-fail alarm can be silenced using alarm-cancel switch; once silenced, alarm will re-sound to indicate low-battery status                      |
| Audible Alarm                                                 | Audible alarm indicates power-failure, overload and low-battery conditions                                                                         |
| LED Indicators                                                | 5 LEDs indicate line power, battery power, overload, voltage regulation and battery low/replace status                                             |
| <b>ISOLATION</b>                                              |                                                                                                                                                    |
| Output Isolation Transformer                                  | Hospital grade load isolation transformer                                                                                                          |
| Leakage Current                                               | Equal to 100 microamps                                                                                                                             |
| <b>SURGE / NOISE SUPPRESSION</b>                              |                                                                                                                                                    |
| EMI / RFI AC Noise Suppression                                | Yes                                                                                                                                                |
| AC Suppression Joule Rating                                   | 940                                                                                                                                                |
| AC Suppression Response Time                                  | Instantaneous                                                                                                                                      |
| <b>PHYSICAL</b>                                               |                                                                                                                                                    |
| Primary Form Factor                                           | Tower                                                                                                                                              |
| Cooling Method                                                | Fan                                                                                                                                                |
| Installation Form Factors Supported with Included Accessories | Tower                                                                                                                                              |
| Installation Form Factors Supported with Optional Accessories | Wallmount ( <a href="http://tripplite.eaton.com/Wall-Mount-Bracket-Installation-Accessories-for-UPS-Systems-UPSWM">UPSWM</a> - tower mounting kit) |
| Primary UPS Depth (mm)                                        | 485                                                                                                                                                |
| Primary UPS Height (mm)                                       | 247                                                                                                                                                |
| Primary UPS Width (mm)                                        | 226                                                                                                                                                |
| Shipping Dimensions (hwd / in.)                               | 16.00 x 14.00 x 24.00                                                                                                                              |
| Shipping Dimensions (hwd / cm)                                | 40.64 x 35.56 x 60.96                                                                                                                              |
| Shipping Weight (lbs.)                                        | 100.00                                                                                                                                             |
| Shipping Weight (kg)                                          | 45.36                                                                                                                                              |
| UPS Housing Material                                          | PVC                                                                                                                                                |
| UPS Power Module Dimensions (hwd, cm)                         | 24.69 x 22.61 x 48.49                                                                                                                              |
| UPS Power Module Dimensions (hwd, in.)                        | 9.72 x 8.90 x 19.09                                                                                                                                |
| UPS Power Module Weight (kg)                                  | 36.97                                                                                                                                              |
| UPS Power Module Weight (lbs.)                                | 81.5                                                                                                                                               |
| Unit Weight (lbs.)                                            | 73.3000                                                                                                                                            |
| Unit Weight (kg)                                              | 33.25                                                                                                                                              |
| <b>ENVIRONMENTAL</b>                                          |                                                                                                                                                    |



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|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature Range                                 | 32° to 104°F (0° to 40°C)                                                                                                                                                                                        |
| Storage Temperature Range                                   | 5° to 122°F (-15° to 50°C)                                                                                                                                                                                       |
| Relative Humidity                                           | 0-95% non-condensing                                                                                                                                                                                             |
| AC Mode BTU / Hr. (Full Load)                               | 162.8                                                                                                                                                                                                            |
| AC Mode Efficiency Rating (100% Load)                       | 94%                                                                                                                                                                                                              |
| AC Economy Mode Efficiency Rating (100% Load)               | 0.94                                                                                                                                                                                                             |
| Battery Mode Heat Dissipation (BTU/Hr) @ Full Load          | 315.2                                                                                                                                                                                                            |
| Battery Mode Heat Dissipation (BTU/Hr) @ Half Load          | 190.5                                                                                                                                                                                                            |
| Operating Elevation                                         | 0-6562 ft. (0-2000 m)                                                                                                                                                                                            |
| <b>COMMUNICATIONS</b>                                       |                                                                                                                                                                                                                  |
| Network Management Cards                                    | &nbsp;<a class="productLink" href="//tripplite.eaton.com/Network-Card-Eaton-Tripp-Lite-Series-UPS-Systems~WEBCARDLXE">WEBCARDLXE</a>&nbsp;</td>                                                                  |
| Network Monitoring Port Description                         | Supports detailed monitoring of UPS and site power conditions                                                                                                                                                    |
| PowerAlert Software                                         | For local monitoring via the UPS's built-in communication ports, download PowerAlert software at <a href="https://tripplite.eaton.com/products/power-alert">https://tripplite.eaton.com/products/power-alert</a> |
| Communications Cable                                        | USB and DB9 serial cabling included                                                                                                                                                                              |
| Network Management Card Description                         | Network management card optional                                                                                                                                                                                 |
| Communications Interface                                    | USB (HID enabled); DB9 Serial; EPO (emergency power off); Slot for SNMP/Web interface                                                                                                                            |
| <b>LINE / BATTERY TRANSFER</b>                              |                                                                                                                                                                                                                  |
| Transfer Time                                               | 2-4 milliseconds                                                                                                                                                                                                 |
| Low Voltage Transfer to Battery Power (Setpoint)            | 81                                                                                                                                                                                                               |
| High Voltage Transfer to Battery Power (Setpoint)           | 143                                                                                                                                                                                                              |
| <b>FEATURES &amp; SPECIFICATIONS</b>                        |                                                                                                                                                                                                                  |
| Cold Start (Startup in Battery Mode During a Power Failure) | Cold-start operation supported                                                                                                                                                                                   |
| High Availability UPS Features                              | Hot swappable batteries; Auto Probe Monitoring (requires WEBCARDLXE); Surge/noise protection                                                                                                                     |
| <b>APPLICATIONS</b>                                         |                                                                                                                                                                                                                  |
| UPS Applications                                            | Hospital/Medical                                                                                                                                                                                                 |
| <b>STANDARDS &amp; COMPLIANCE</b>                           |                                                                                                                                                                                                                  |
| Product Certifications                                      | CSA (Canada); UL 1778; UL 60601-1; NOM (Mexico)                                                                                                                                                                  |
| Product Compliance                                          | RoHS; FCC Part 15 Class A (USA)                                                                                                                                                                                  |



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WARRANTY & SUPPORT

|                                        |                         |
|----------------------------------------|-------------------------|
| Product Warranty Period<br>(Worldwide) | 2-year limited warranty |
|----------------------------------------|-------------------------|

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