

# 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



## 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)

## 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 µA
- Floating AC output prevents noise coupling
- Compatible with Eaton Tripp Lite power cords to simplify deployment and enhance reliability

## Package Includes

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

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

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 Eaton Tripp Lite 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; (limit 1); BP48V60RT-3U (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>	

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 (&nbsp;<a class="productLink" href="//tripplite.eaton.com/Wall-Mount-Bracket-Installation-Accessories-for-UPS-Systems~UPSWM">UPSWM</a>&nbsp; - 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;
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 (Worldwide)	2-year limited warranty
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