Datasheet | **SP7500-48PGE4TF-L3M**

48-Port Managed Gigabit PoE Switch with 10G SFP+ Uplink

All ports PoE+ with up to 470W PoE budget and Remote Management option

Select your new network engine!

As a trusted provider of network infrastructure, Benchu Group understands the growing challenges organizations face today: more connected devices, higher power demands, and increasingly complex network environments. From hospitality and education to retail, campuses, and enterprise branch offices, every deployment is unique. That is why Benchu offers a flexible range of PoE port counts and power budgets, allowing you to build a network that fits your current needs while staying ready for future growth—without overpaying for capacity you don't yet require.

The SP7500-48PGE4TF-L3M Gigabit Ethernet switch with PoE+ and 4 SFP+ ports joins the Benchu Group Standalone Smart Switches family, delivering full 48-port PoE+ support for high-density modern PoE device deployments. Organizations seeking cost efficiency can select the 460W model, which provides a practical power budget across all 48 ports. For those investing in long-term infrastructure and future-proofing, the SP7500-48PGE4TF-L3M-800W offers 760W of PoE power, giving additional headroom for evolving device demands.

With 4× 1G/2.5G/10G SFP+ uplink ports, the switch delivers up to 40Gbps of uplink bandwidth and powerful processing capacity. Administrators can flexibly choose the appropriate SFP/SFP+ transceiver—1.25G, 2.5G, or 10G—based on transmission distance and speed requirements, enabling efficient network extension.

Highlights

The Benchu Group 48-Port Gigabit PoE+ Layer 3 Managed Switch delivers outstanding value for high-density network deployments, combining a 470W PoE budget, 4× 1G/10G SFP+ uplinks, and advanced L3 management in a single high-performance device. Deploy VoIP phones, IP cameras, video-over-IP endpoints, and wireless access points with confidence—thanks to configurable VLANs, PoE operation scheduling, and robust security controls. Advanced features such as IPv4/IPv6 static routing, RIP, OSPF, LACP link aggregation, DiffServ QoS, Private VLANs, Multicast VLAN, and Spanning Tree give even the most demanding networks the performance, flexibility, and control they need.

Key features include:

- Layer 3 static routing (IPv4/IPv6) for inter-VLAN local routing
- Dynamic routing protocols: RIP v1/v2, OSPF v2/v3, and VRRP for gateway redundancy
- IPv4/IPv6 dual-stack support with switch virtual interfaces (SVIs)
- Advanced VLAN and Private VLAN support for better network segmentation
- L2/L3/L4 Access Control Lists (ACLs) for granular network access control
- IEEE 802.1X port-based authentication for network access security
- Per-port PoE controls with operation scheduling for remote power management (e.g., wireless APs, IP cameras, LED lighting, IoT devices)
- Advanced QoS: port-based, 802.1p, and DSCP-based traffic prioritization
- Built-in Denial-of-Service (DoS) attack prevention
- IGMP Snooping and Querier for multicast optimization
- Dynamic ARP Inspection (DAI) to defend against man-in-the-middle attacks
- Rate limiting and priority queuing for efficient bandwidth allocation
- Port mirroring for network monitoring and troubleshooting
- Energy Efficient Ethernet (IEEE 802.3az) for reduced power consumption
- SNMP v1/v2c/v3 and RMON remote monitoring

Build a future-proof network with BENCHU 48-Port Gigabit PoE+ L3 Managed Switch:

- Non-blocking performance — 360 Gbps switching capacity, 32K MAC table, 1024 multicast groups, and hardware-based ACLs for wire-speed security and traffic control.
- Full IPv6 support — management, QoS, ACL, and routing (static, RIPng, OSPFv3) for a smooth migration to next-generation IPv6 networks.
- 48× Gigabit PoE+ with 470W budget — power VoIP phones, IP cameras, and wireless APs on all ports, with dynamic power allocation for real-world efficiency.
- 4× 1G/10G SFP+ uplinks — high-speed fiber connectivity with LACP and Spanning Tree support for uplink redundancy and failover, ensuring continuous network availability.

Built-in Layer 3 Routing: Simplify Your Network and Cut Costs

- The Benchu 48-Port Gigabit PoE+ Layer 3 Managed Switch goes beyond simple switching. With integrated static routing, RIP, and OSPF, it routes traffic between VLANs directly on the switch—no external router or firewall required. This reduces hardware costs, removes an extra point of failure, and lowers latency for voice, video, and data. Your network becomes simpler to deploy and easier to manage, while still delivering enterprise-grade performance. Ideal for multi-VLAN environments where fast, local routing is essential and every rack unit matters.

BENCHU Quality and Reliability

- Efficient thermal design with built-in fan cooling for long-term stable operation
- Reliable PoE power delivery with overload, over-current, and short-circuit protection
- CE, FCC, and RoHS certified for global deployment confidence
- Intuitive front-panel LED indicators for power, link/activity, PoE, and SFP+ status

Management & Maintenance

- Multiple management options: Web GUI, CLI (Console/Telnet), SNMP v1/v2c/v3
- Secure remote access via HTTPS and SSH v1/v2
- Network visibility tools: RMON, system logs, LLDP, and port traffic statistics
- Proactive diagnostics: CPU and memory monitoring, ping test, and cable diagnostics

Hardware at a Glance

FRONT					**REAR**		**SIDE**
Model Name	10/100/1000Base-T RJ45 ports	1G/2.5G/10GBASE-X Fiber SFP+ Ports	PoE+ 802.3at Ports	PoE Budget	Power Budget	Power Supply	Fans
SP7500-48PGE4TF-L3M	48	4	48 PoE+	470W	500W	1 internal PSU, fixed	2 internal fans, fixed

Software at a Glance

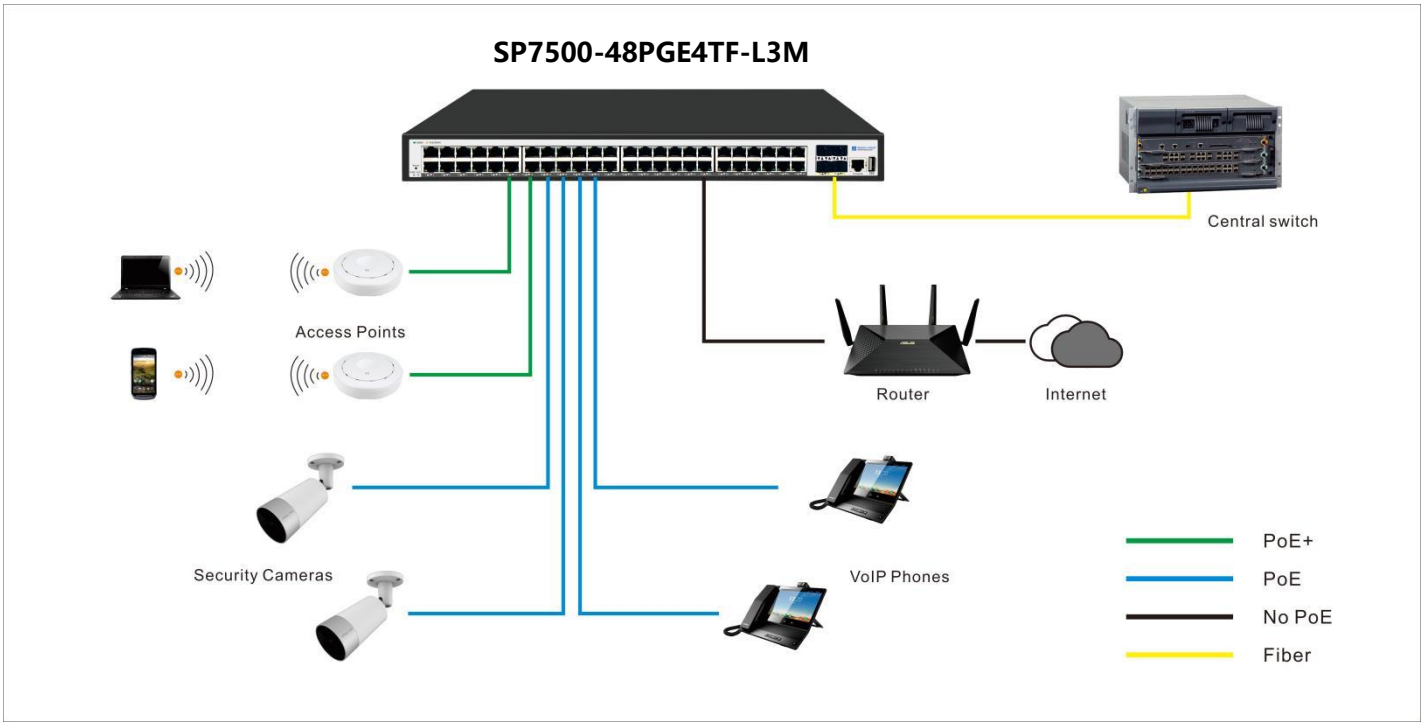
LAYER 2+ / LAYER 3 LITE FEATURES							
Management	Security & Access Control	QoS	VLAN	Multicast	Redundancy & Reliability	Routing	Energy Efficiency
Web GUI (HTTP/HTTPS), CLI (Console/Telnet), SNMP v1/v2c/v3, RMON	802.1X, RADIUS, L2/L3/L4 ACLs, DoS prevention, Dynamic ARP Inspection (DAI)	Port-based, 802.1p, DSCP, ACL-based classification	Static, Dynamic, Voice, MAC, Protocol-based, Private VLAN	IGMP Snooping, MLD Snooping, IGMP Querier	G.8032 ERPS, STP/RSTP/ MSTP, VRRP	IPv4/IPv6 static routing, RIP v1/v2, OSPF v2/v3	IEEE 802.3az Energy Efficient Ethernet

Performance at a Glance

SP7500-48PGE4TF-L3M									
Fabric	Packet buffer	CPU	MAC Address Table	ARP Table	VLANs	ACLs	Static Routes (IPv4 & IPv6)	Multicast IGMP Group	Latency
Capacity: 360Gbps Forwarding: 131Mpps	16MB	Dual-core 1 GHz MIPS InterAptiv, 4 GB DDR RAM	32K	2048	4096, with QinQ support	2K shared (ingress)	IPv4: 256 IPv6: 256	1024	1G Copper: <3.35 µs 10G Fiber: <2.5 µs

Target Application

Network Convergence

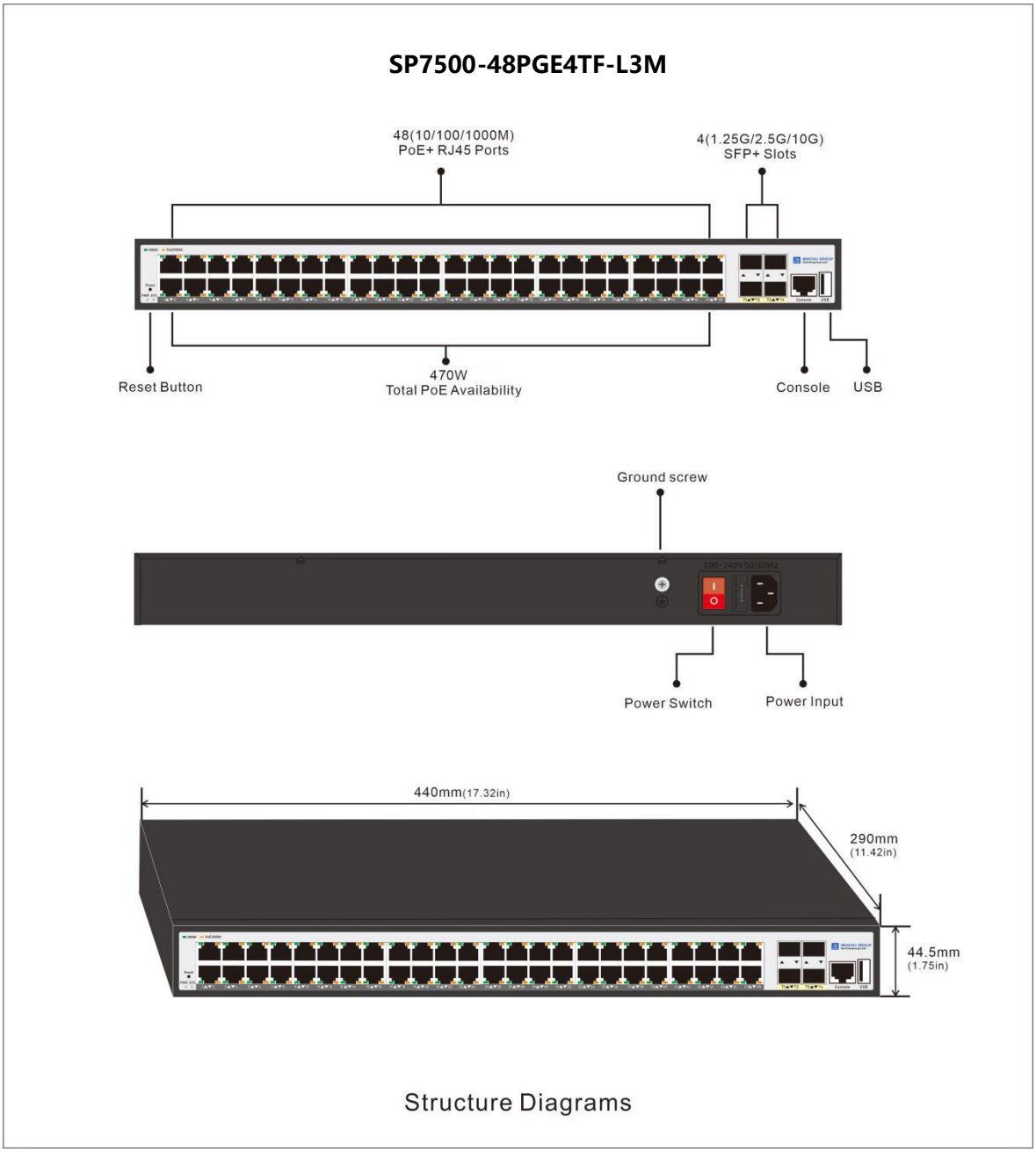


Modern organizations across hospitality, education, retail, and enterprise campuses are rapidly deploying VoIP phones, IP security cameras, video-over-IP endpoints, proximity sensors, LED lighting, secure access door locks, and other IoT devices. The dense concentration of these devices demands PoE-capable switches, so network managers can add power-hungry endpoints with a single cable for both power and connectivity. High-performance wireless access points—such as 802.11ac Wave 2 and newer Wi-Fi 6/6E models—as well as pan-tilt-zoom HD surveillance cameras with night vision and built-in motion tracking, require PoE+ (802.3at) power, further increasing the power demands on the network switch.

The BENCHU GROUP 48-Port Gigabit PoE+ Layer 3 Managed Switches are built for these dense, high-power PoE+ environments. They deliver robust Layer 2 and Layer 3 features for IPv4 and IPv6, with enhanced performance and an intuitive design that simplifies deployment for any IT team:

- 470W (SP7500-48PGE4TF-L3M) PoE budget across 48 Gigabit PoE+ ports
- 4 dedicated 1G/2.5G/10G SFP+ fiber ports for high-speed aggregation to the network core
- Layer 3 static routing (IPv4 and IPv6) for inter-VLAN local routing
- Layer 3 dynamic routing with RIPv1/v2, OSPFv2/v3, and VRRP for resilient multi-path routing
- IGMP Snooping, IGMP Querier, and IGMP Fast Leave for multicast optimization
- ERPS (G.8032), STP, RSTP, and MSTP for ring topology and link protection
- Comprehensive features: VLANs, PoE scheduling, ACLs, DiffServ, LACP, MVR, and DHCP
- Easy-to-use web-based management GUI — no need for an IT expert
- Limited Lifetime* Warranty and technical support

Structure Diagrams



Structure Diagrams

Model	SP7500-48PGE4TF-L3M
Technical Specifications	
RJ45 Ports	48 × 10/100/1000Base-T RJ45 Ports (All supporting IEEE 802.3af/at PoE+)
Uplink Ports	4 × 10GbE / 2.5GbE / 1GbE SFP+ Optical Slots (Dedicated)
PoE Power Budget	470W total PoE Budget (Up to 30W per port)
Management Interfaces	1 × Console Port (RJ45), 1 × USB 2.0 Port (for Config Backup/Firmware Upgrade)
LED Display	Power Indicator: PWR(green); System Indicator: sys(green); Network Indicator: Link(yellow), POE Indicator: PoE(orange) Fiber Link: Green
CPU / Processor	Dual-Core 1GHz MIPS InterAptive High-Performance Processor Subsystem
ESD Protection	Contact Discharge 6KV DC, Air Discharge 8KV DC
Surge Protection	Differential mode ±2KV , Common mode ±4KV
Power Consumption	26 watts (System) 506 watts (System+PoE)
Power Requirements- AC	AC 100~240V, 50/60Hz
Form Factor / Housing	19-inch 1U Rack-mountable Heavy-Duty Metal Enclosure
Dimensions (W × D × H)	440 × 290 × 44.5 mm (17.32 × 11.42 × 1.75 in)
Net Weight	4.6 kg (10.14 lbs)
Switch Performance & Line-Rate Capacity	
Forwarding Mode	Store-and-forward
Switching Capacity (Bandwidth)	360 Gbps (Non-blocking fabric)
Packet Forwarding Rate (Mpps)	131 Mpps
Packet Buffer Memory	16 MB
MAC Address Table Size	32K
Jumbo Frame Support	12 KB
ARP Table Size / Cache	2,048 Entries
MTBF (@ 25°C)	137,411 Hours
Port Latency	• 100M Copper: 8.314 µs (64B) / 8.612 µs (1518B) / 8.451 µs (9216B) • 1G Copper: 3.614 µs (64B) / 3.545 µs (1518B) / 3.628 µs (9216B) • 1G Fiber: 2.980 µs (64B) / 3.101 µs (1518B) / 3.179 µs (9216B) • 10G Fiber: 2.330 µs (64B) / 2.561 µs (1518B) / 2.712 µs (9216B)
Power over Ethernet (PoE) Specifications	
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE
PoE Supply Type	1/2(+), 3/6(-) End-span
PoE Power Output	Max. 30 watts
PoE Power Budget	470W

Layer 2 / Layer 3 Software Features	
Port Configuration	Port disable/enable Flow control disable/enable Bandwidth control on each port Port loopback detect
VLAN Management	802.1Q tagged VLAN, up to 4K VLAN groups 802.1ad Q-in-Q (VLAN stacking) GVRP for VLAN management Private VLAN Edge (PVE) supported Protocol-based VLAN MAC-based VLAN IP subnet VLAN
Bandwidth Control	TX/RX/Both
Layer 3 Routing	IPv4 & IPv6 Static Routing RIP v1/v2, OSPF v2, VRRP Supports up to 15 IP VLAN routed interfaces
Link Redundancy	IEEE 802.3ad Link Aggregation Control Protocol (LACP) Manual LAG (up to 8 LAGs with max 8 members per group)
Spanning Tree Protocol	STP, IEEE 802.1D Spanning Tree Protocol RSTP, IEEE 802.1w Rapid Spanning Tree Protocol MSTP, IEEE 802.1s Multiple Spanning Tree Protocol
Resiliency	ITU-T G.8032 ERPS: Industrial-grade Ethernet Ring Protection Switching with carrier-class failover recovery time < 50ms.
Multicast Control	IGMP Snooping v1/v2/v3, MLD Snooping v1/v2, IGMP/MLD Querier, Multicast VLAN Registration (MVR). Up to 1K Multicast Groups.
Quality of Service (QoS)	8 mapping ID to 8 level priority queues --- Port number --- 802.1p priority CoS/ToS --- 802.1Q VLAN tag --- DSCP field in IP packet Traffic classification based, strict priority and WRR
Security Functions	
Access Control Lists (ACLs)	2K shared ingress ACL rules for MAC, IP, IPv6, and TCP/UDP.
Network Access Control	IEEE 802.1x Port-based authentication, RADIUS Accounting, and TACACS+
Security	Port isolation Supports IP + MAC + port binding Identification and filtering of L2/L3/L4 based ACL Defend against DOS or TCP attacks Suppression of broadcast, multicast and unknown unicast packet DHCP Snooping, DHCP Option 82/43/60/61/67

Management Function	
System Management	Web browser / Telnet / SNMP v1, v2c, V3 Firmware upgrade by HTTP / TFTP protocol through Ethernet network Remote Local Syslog, System log, LLDP protocol , SNTP
Secure Management Interfaces	SSHv2, TLSv1.2, SNMPv3
Management	IPv4 and IPv6 dual stack management User IP security inspection for IPv4/IPv6 SNMP SNMP v1, v2c and v3 SNMP MIB and TRAP SNMP RMON 1, 2, 3, 9 four groups IPv4/IPv6 FTP/TFTP IPv4/IPv6 NTP RADIUS authentication for IPv4/IPv6 Telnet user name and password IPv4/IPv6 SSH The right configuration for users to adopt RADIUS server's shell management CLI, console, Telnet Security IP safety net management function: avoid unlawful landing at nonrestrictive area Syslog server for IPv4 and IPv6 TACACS+
SNMP MIBs	RFC 1213 MIB-II RFC 1215 Internet Engineering Task Force RFC 1271 RMON RFC 1354 IP-Forwarding MIB RFC 1493 Bridge MIB RFC 1643 Ether-like MIB RFC 1907 SNMP v2 RFC 2011 IP/ICMP MIB RFC 2012 TCP MIB RFC 2013 UDP MIB RFC 2096 IP forward MIB RFC 2233 if MIB RFC 2452 TCP6 MIB RFC 2454 UDP6 MIB RFC 2465 IPv6 MIB RFC 2466 ICMP6 MIB RFC 2573 SNMP v3 notify RFC 2574 SNMP v3 vacm RFC 2674 Bridge MIB Extensions (IEEE 802.1Q MIB) RFC 2674 Bridge MIB Extensions (IEEE 802.1P MIB)

Standard Conformance	SP7500-48PGE4TF-L3M
• IEEE 802.3 Ethernet • IEEE 802.3u 100BASE-T • IEEE 802.3ab 1000BASE-T • IEEE 802.3z 1000BASE-SX/LX • IEEE 802.3bz 2.5G BASE-X • IEEE 802.3ae 10G BASE-X • IEEE 802.3af PoE • IEEE 802.3at PoE+ • IEEE 802.3az Energy Efficient Ethernet (EEE)	• IEEE 802.3ad Trunking (LACP) • IEEE 802.3x Full-Duplex Flow Control • IEEE 802.1Q VLAN Tagging • IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED) • IEEE 802.1p Class of Service • IEEE 802.1D Spanning Tree (STP) • IEEE 802.1s Multiple Spanning Tree (MSTP) • IEEE 802.1w Rapid Spanning Tree (RSTP) • ITU-TG.8032 Ethernet Ring Protection Switching (ERPS) • IEEE 802.1x RADIUS Network Access Control
Environmental Specifications	
Operating Temperature	-20° to 50°C (-4° to 122°F)
Operating Humidity	90% maximum relative humidity (RH), non-condensing
Storage Temperature	–30° to 70°C (– 22° to 158°F)
Storage Humidity (relative)	95% maximum relative humidity, non-condensing
Electromagnetic Emissions and Immunity	
Regulatory Compliance	CE mark, commercial FCC Part 15 Class A, VCCI Class A Class A EN 55022 (CISPR 22) Class A Class A C-Tick 47 CFR FCC Part 15, SubpartB, Class A ICES-003: 2016 Issue 6, Class A IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013 AN/NZS CISPR 22:2009+A1:2010 CLASS A
Safety	
Regulatory Compliance	CB mark, commercial CSA certified (CSA 22.2 #950) EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013 AN/NZS 60950.1:2015 CCC (China Compulsory Certificate)
Package Contents	
SP7500-48PGE4TF-L3M	48 Port Smart PoE Managed Switch AC Power cord with C13 connector (localized to region of sale) Brackets and screws for rack mounting Rubber protection caps, which are already installed in the SFP sockets Installation guide User's manual

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