Datasheet | **S7500-48GF6TF-L3M**
Gigabit Smart Fiber Switches with 10G SFP+ Uplink

48 ports 1.25G SFP and 6 Ports 1G/10G SFP+ for Fiber and Copper modules.
Select your new network engine!

The Benchu Group S7500-48GF6TF-L3M Smart Fiber Switch Series delivers L2/L3/L4 and IPv4/IPv6 cost-effective services for mid-enterprise edge and SMB core deployments with unrivalled ease of use. S7500-24GF8G-4TF-L3M is ideal for server aggregation, wireless access, unified communications and Video-over-IP.

The S7500-48GF6TF-L3M Fiber Switch is perfect for wireless access, unified communications and professional AV-over-IP installations.
Benchu group Intelligent Edge Switch solutions combine latest advances in hardware and software engineering for higher flexibility, lower complexity and stronger investment protection, at a high-value price point.

Support 6 Ports 1G/10G SFP+ Uplink，provides greater bandwidth and powerful processing capacity. It offers a maximum 60Gbps uplink bandwidth through the six 10Gbps SFP+ ports. In addition, the administrator can flexibly choose the suitable (1.25G/10G) SFP/SFP+ transceiver according to the transmission distance or the transmission speed required to extend the network efficiently.

Highlights

The Benchu group Gigabit Smart Fiber Switches with Remote Management provides a great value, Support 6 Ports 1G/10G SFP+ Uplink， provides greater bandwidth and powerful processing capacity. It offers a maximum 60Gbps uplink bandwidth through the six 10Gbps SFP+ ports. with configurable L3 network features like IPv4/IPv6 Layer 3 static routing, RIP，OSPF，VRRP，G.8032 ERPS，LACP link aggregation, DiffServ QoS, Private VLANs, Multicast VLAN and Spanning Tree will satisfy even the most advanced business networks.

Key features include:

- 48 Ports 1.25G SFP and 6 Ports 1G/10G SFP+ Uplink
- Layer 3 static routing (IPv4 and IPv6) for interVLAN local routing
- Layer 3 routing,RIP v1/V2 ,OSPF V1/V2 ,VRRP
- IPv4 / IPv6 Dual stack and 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 including 802.1x port authentication
- Advanced QoS (Quality of Service) for traffic prioritization including port-based, 802.1p and L2/L3/L4 DSCP-based
- IGMP Snooping and Querier for multicast optimization
- Dynamic ARP for increased security targeting a class of Man in the Middle attack
- Rate limiting and priority queuing for better bandwidth allocation
- Port mirroring for network monitoring
- Energy Efficient Ethernet (IEEE 802.3az) for maximum power savings
- SNMP v1, v2c and RMON remote monitoring

Build a future-proof network with BENCHU:

- Solid performance with non-blocking architecture, 16K MAC addresses, 100 shared (ingress) ACLs and 512 Multicast groups
- Comprehensive IPv6 supporting management, QoS, ACL and routing, ensuring investment protection and a smooth migration to IPv6-based network
- 6 Dedicated SFP+s, not only providing fiber uplinks, but also uplink redundancy and failover, improving reliability and availability for the network

Redundant Ring, Fast Recovery for Critical Network Applications

- The S7500-48GF6TF-L3M supports redundant ring technology and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced ITU-T G.8032 ERPS (Ethernet Ring Protection Switching) technology, Spanning Tree Protocol (802.1s MSTP), and redundant power input system into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments. In a certain simple Ring network, the recovery time of data link can be as fast as 10ms.

BENCHU Quality and Reliability

- Low power consumption, with fan.
- CE, FCC, RoHS.
- The user-friendly panel can show the device status through the LED indicator of PWR, Link.

Easy operation and maintenance management

- Web management, CLI command line (Console, Telnet), SNMP (V1/V2).
- HTTPS, and SSHV1/V2.
- RMON, system log, LLDP, and port traffic statistics.
- CPU monitoring, memory monitoring, Ping test, and cable diagnose.

Hardware at a Glance

FRONT				**REAR**	**SIDE**
Model Name	Form-Factor	1.25GBASE-X Fiber SFP Ports	1.25G/10GBASE-X Fiber SFP+ Ports	Power Supply	Fans
S7500-48GF6TF-L3M	Rackmount	48	6	1 internal PSU, fixed	2 internal fans, fixed

Software at a Glance

LAYER 2+ / LAYER 3 LITE FEATURES							
Management	IPv4/IPv6 ACL and QoS	IPv4/IPv6 Multicast Filtering	G.8032 ERPS STP/RSTP/MSTP	IEEE (802.3az) Energy Efficient Ethernet	VLANs	Convergence	IPv4 & IPv6 Static Routing
Web Browser-based GUI (HTTP/HTTPS), PC-Based Smart Control Center Utility (SCC) , RMON, SNMP	L2, L3, L4, ingress	IGMP and MLD Snooping	Yes	Yes	Static Dynamic, Voice, MAC, Protocol-based, and Private VLAN	LLDP-MED, RADIUS, 802.1X	Yes

Performance at a Glance

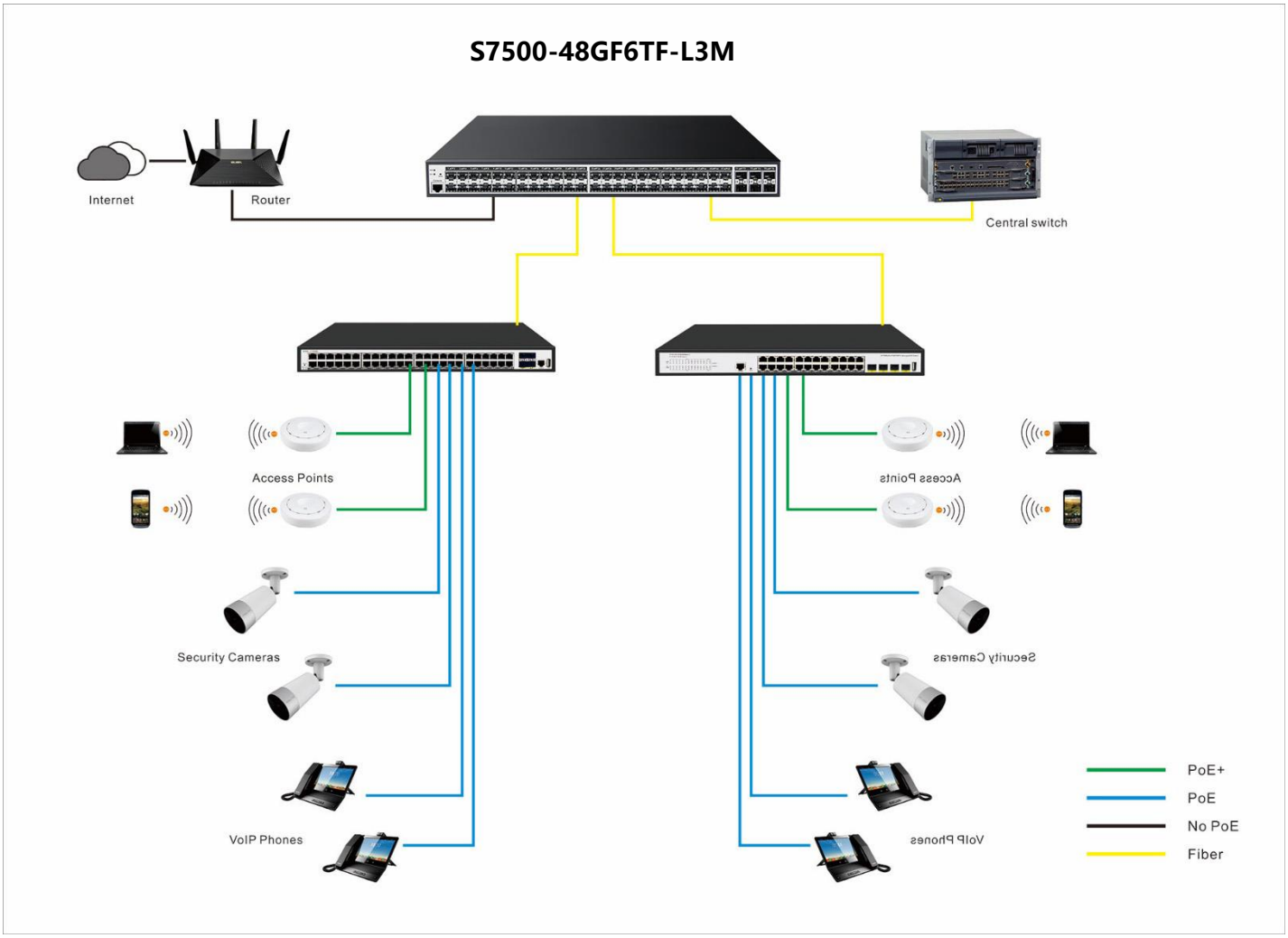
Model Name	Packet buffer	CPU	ACLs	MAC Address Table ARP Table VLANs	Fabric	Latency (Max Connection Speed)	Routes (IPv4 & IPv6)	Multicast IGMP Group
S7500-48GF6TF-L3M	16MB	Dual-Core 1GHz MIPS InterAptive CPU subsystem 4GB DDR3 RAM	100 shared	32K MAC 1024 ARP 4K VLANs QinQ	598Gbps 252Mpps line-rate	1G Copper: <3.35µs 10G Fiber: <2.5µs	IPv4: 512 IPv6: 512	512

Features and Benefits

Hardware Features	
1.25GBASE-X Fiber SFP Port	48 Ports 1.25G SFP for connect to the access network. Support for Fiber and Copper modules.
10GBASE-X Fiber SFP+ ports	Six dedicated 10G SFP+ ports for aggregation to the network core. Support for Fiber and Copper modules. Can also build dual redundancy by a trunked uplink with link aggregation.
Energy Efficient Ethernet (IEEE 802.3az)	Maximum power reduction for onging operational cost savings.
Software Features	
Comprehensive IPv6 Support for Management, ACL and QoS	Build current network with future in mind. Ensure investment protection and a smooth migration to an IPv6-based network without switch replacement.
IPv4 & IPv6 Static Routing	A simple way to provide segmentation of the network with internal routing through the switch – reserving the router for external traffic routing only, making the entire network more efficient.
Robust security features: • 802.1x authentication (EAP) • Port-based security by locked MAC • ACL filtering to permit or deny traffic based on MAC and IP addresses	Build a secured, converged network with all types of traffic by preventing external attacks and blocking malware while allowing secure access for authorized users.
Comprehensive QoS features: • Port-based or 802.1p-based prioritization • Layer 3-based (DSCP) prioritization • Port-based ingress and egress rate limiting	Advanced controls for optimized network performance and better delivery of mission-critical traffic such as voice and video.
IGMP (IPv4) and MLD (IPv6) Snooping and Querier modes with Fast Leave	Facilitate fast receiver joins and leaves for multicast streams. Save cost and improve network efficiency by ensuring multicast traffic only reaches desig-nated receivers without the need of an extra multicast router.
DHCP Snooping and Dynamic ARP Inspection	Ensure IP address allocation integrity by only allowing DHCP messages from trusted DHCP servers and dropping malformed DHCP messages with a port or MAC address mismatch. Use the DHCP snooping bindings database per port and per VLAN to drop incoming packets that do not match any binding and to enforce source IP/MAC addresses for malicious users traffic elimination.

Target Application

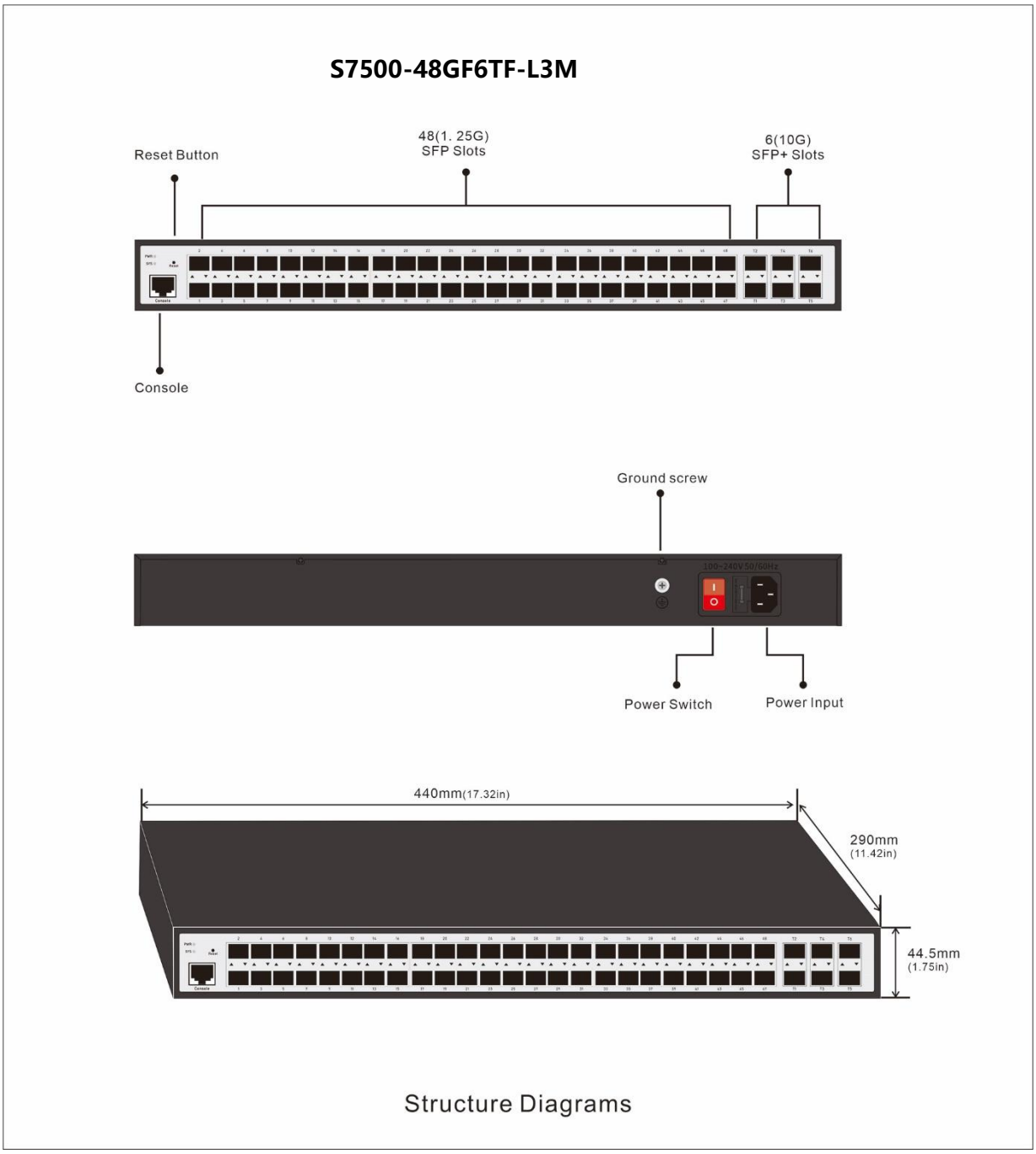
Network Convergence



The new 48-port BENCHU GROUP Smart Switches support dense deployments of these modern network devices. They offer powerful Layer 2 and Layer 3 features for IPv4 and IPv6 with enhanced performance and a focus on usability within SMB environments:

- 48 Ports 1.25G SFP fiber ports for connect to the access network switch
- 6 dedicated 1G/10G SFP+ fiber ports for aggregation to the network core
- Layer 3 static routing (IPv4 and IPv6) for interVLAN local routing
- Layer 3 RIPv1、v2, OSPFv1、v2, VRRP for multiple routing
- IGMP Snooping, IGMP Querier and IGMP Fast Leave for multicast optimization
- ERPS(G.8032) STP/FSTP/MSTP for Ring network and Link protection
- Include VLANs, Private VLAN, ACLs, DiffServ, LACP, MVR and DHCP
- Easy-to-use Web browser-based management GUI — No need for an IT expert
- Limited Lifetime* Warranty, Tech support

Structure Diagrams



Structure Diagrams

Technical Specifications	S7500-48GF6TF-L3M
1.25G SFP Fiber ports	48
1G/2.5G/10G SFP+ (fiber) ports	6
Console Port (For config)	Yes
Reset button (For system factory default and reboot)	Yes
Performance Specification	
CPU	Dual-Core 1GHz MIPS InterAptive CPU subsystem
Packet buffer memory (Dynamically shared across only used ports)	12 MB
Forwarding modes	Store-and-forward
Bandwidth	598 Gbps
Priority queues	8
MAC address database size (48-bit MAC ad-dresses)	32K
Multicast groups	1K
Number of IPv4 static routes	512
Number of IPv6 static routes	512
Number of VLANs	4094
Number of VLANs(Open QinQ)	16,760,836(4094*4094)
Number of ARP cache entries	1024 ARP
Number of DHCP snooping bindings	512
Access Control Lists (ACLs)	100 shared for MAC, IP and IPv6 ACLs (ingress)
Packet forwarding rate (64 byte packet size) (Mpps)	252Mpps
Jumbo frame support (bytes)	Up to 12K packet size
Mean Time Between Failures (MTBF) @ 25°C	113,456 hours
100M Copper Latency (64-byte; 1518-byte; 9216-byte frames)	8.321µs; 8.632µs; 8.461µs
1G Copper Latency (64-byte; 1518-byte; 9216-byte frames)	3.621µs; 3.552µs; 3.631µs
1G Fiber Latency (64-byte; 1518-byte; 9216-byte frames)	2.978µs; 3.108µs; 3.172µs
10G Fiber Latency (64-byte; 1518-byte; 9216-byte frames)	2.327µs; 2.563µs; 2.713µs

L2 Services - VLANs	**S7500-48GF6TF-L3M**
IEEE 802.1Q VLAN tagging	Yes
QinQ VLAN tagging	Yes
IP-based VLANs	Yes
MAC-based VLANs	Yes
Protocol-based VLAN	Yes
Voice VLAN	Yes
VLAN mapping	Yes
L2 Services - Availability	
Broadcast, multicast, unknown unicast storm control	Yes
IEEE 802.3ad - LAGs (LACP)	Yes
IEEE 802.3x (full duplex and flow control)	Yes
IEEE 802.1D Spanning Tree Protocol	Yes
IEEE 802.1w Rapid Spanning Tree Protocol	Yes
IEEE 802.1s Multiple Spanning Tree Protocol	Yes
Layer 2 DHCP Relay	Yes
L2 Services - Multicast Filtering	
IGMP snooping (v1, v2 and v3)	Yes
MLD snooping support (v1 and v2)	Yes
IGMP snooping querier (v2)	Yes
MLD snooping querier (v1)	Yes
Multicast VLAN Registration (MVR)	Yes
L3 Services - DHCP	
DHCP client	Yes
DHCP snooping	Yes
DHCP Server	Yes
L3 Services - Routing	
IPv4 static routing	512
IPv6 static routing	512
VLAN routing	Yes
RIP V1/V2	Yes
OSPF V2	Yes
Number of IP VLAN interfaces(routed VLANs)	15
Policy routing	Yes
VRRP	Yes

Link Aggregation	**S7500-48GF6TF-L3M**
IEEE 802.3ad - LAGs (LACP)	Yes
Manual LAG	Yes
# of LAGs / # of members in each LAG	26 LAGs with max 8 members in each LAG
Network Monitoring and Discovery Services	
802.1ab LLDP	Yes
SNMP	v1, v2
RMON group 1,2,3,9	Yes
Network Security	
IEEE 802.1x	Yes
RADIUS accounting	Yes
Access Control Lists (ACLs)	Yes
IP-based ACLs (IPv4 and IPv6)	L2 / L3 / L4
MAC-based ACLs	Yes
TCP/UDP-based ACLs	Yes
Control MAC # static entries	48
Port-based security by locked MAC addresses	Yes
Dynamic ARP inspection	Yes
Broadcast, unicast, multicast DoS protection	Yes
DoS attacks prevention	Yes
Network storm protection, DoS	Yes
Broadcast, unicast, multicast DoS protection	Yes
DoS attacks prevention	Yes
Quality of Service (QoS)	
Port-based rate limiting	Yes ingress and egress
Port-based QoS	Yes
Support for IPv6 fields	Yes
DiffServ QoS	Yes ingress
IEEE 802.1p COS	Yes
Destination MAC and IP	Yes
IPv4 and v6 DSCP	Yes
TCP/UDP-based	Yes
Weighted Round Robin (WRR)	Yes
Strict priority queue technology	Yes

IEEE Network Protocols	**S7500-48GF6TF-L3M**
• IEEE 802.3 Ethernet	• IEEE 802.1Q VLAN Tagging
• IEEE 802.3u 100BASE-T	• IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED)
• IEEE 802.3ab 1000BASE-T	• IEEE 802.1p Class of Service
• IEEE 802.3az Energy Efficient Ethernet (EEE)	• IEEE 802.1D Spanning Tree (STP)
• IEEE 802.3ad Trunking (LACP)	• IEEE 802.1s Multiple Spanning Tree (MSTP)
• IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX	• IEEE 802.1w Rapid Spanning Tree (RSTP)
• IEEE 802.3x Full-Duplex Flow Control	• IEEE 802.1x RADIUS Network Access Control
Management, Monitoring & Troubleshooting	
Password management	Yes
Admin access control via RADIUS and TACACS+	Yes
IPv6 management	Yes
SNMP v1/v2c	Yes
RMON group 1,2,3,9	Yes
Port mirroring	Yes ingress and egress
Many-to-one port mirroring	52
Cable test utility	Yes
TLS/HTTPS Web-based access (version)	Yes (v1.2)
File transfers (uploads, downloads)	TFTP / HTTP
HTTP upload/download (firmware)	Yes
Syslog (RFC 3164)	Yes
USB port for firmware and config upload/ download	Yes
LEDs	Yes
Per port	Speed, Link, Activity;
Per device	Power, system
Physical Specifications	Yes
Dimensions	440 x 290 x 44.5 mm (17.32 x 11.42 x 1.75 in)
Weight	3.65kg (8.05 lb)
Max power (worst case, all ports used , line-rate traffic) (Watts)	32W
Iddle power consumption (all ports link-down standby) (Watts)	21W
Energy Efficient Ethernet (EEE) IEEE 802.3az	Yes (deactivated by default)
Fan	2

Environmental Specifications	**S7500-48GF6TF-L3M**
Operating	
Operating Temperature	0° to 50°C (32° to 122°F)
Humidity	90% maximum relative humidity (RH), non-condensing
Altitude	10,000 ft (3,000 m) maximum
Storage	
Storage Temperature	–20° to 70°C (– 4° to 158°F)
Humidity (relative)	95% maximum relative humidity, non-condensing
Altitude	10,000 ft (3,000 m) maximum
Electromagnetic Emissions and Immunity	
Certifications	CE mark, commercial FCC Part 15 Class A, VCCI Class A Class A EN 55022 (CISPR 22) Class A Class A C-Tick EN 55024 CCC 47 CFR FCC Part 15, SubpartB, Class A ICES-003: 2016 Issue 6, Class A ANSI C63.4:2014 IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013 AN/NZS CISPR 22:2009+A1:2010 CLASS A
Safety	
Certifications	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)
Warranty and Support	
Hardware Limited Warranty	Limited Lifetime*
Technical Support via Phone and Email*	Limited Lifetime*
Limited Lifetime* 24x7 Online Chat Technical Support	Limited Lifetime*
Package Contents	
All models	Smart Fiber 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

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