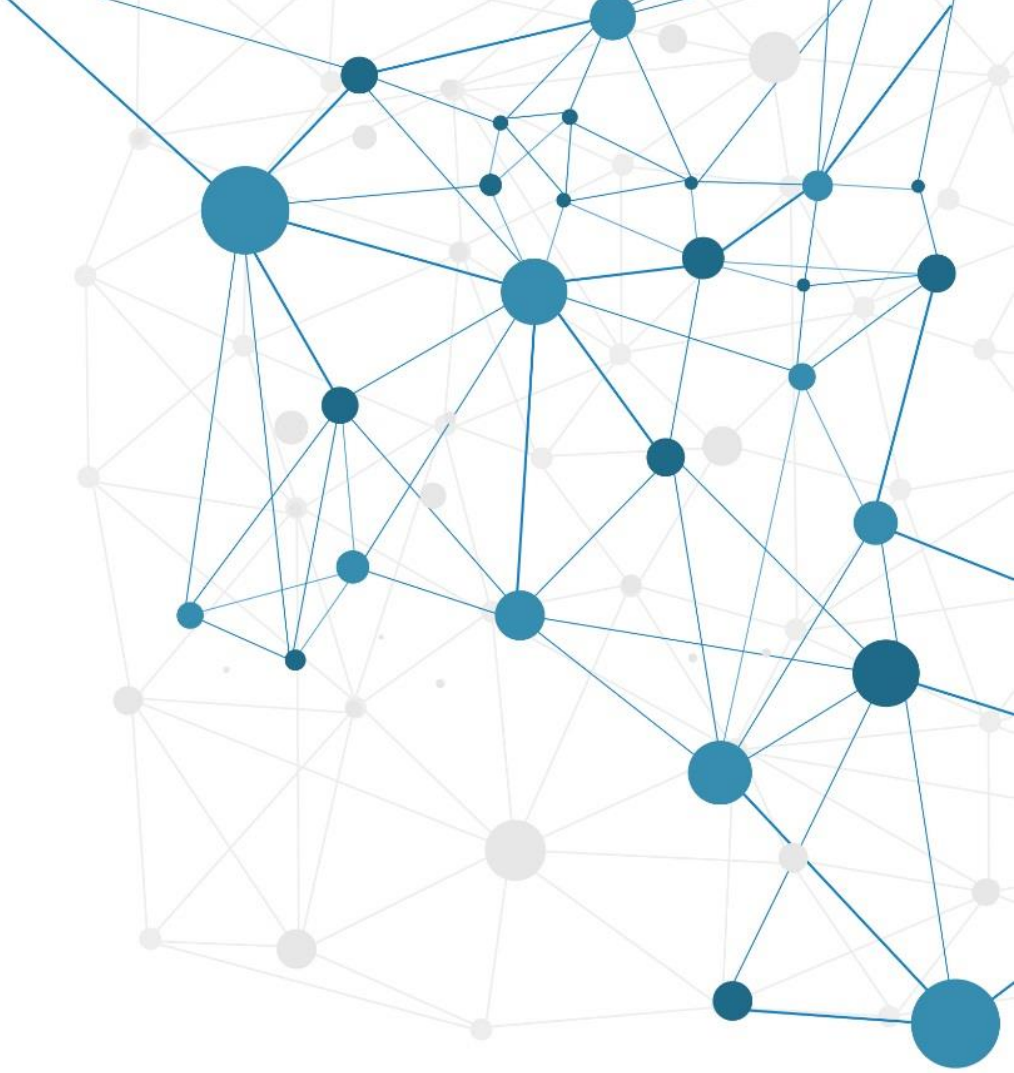




Cisco Catalyst 2960-X Series Switch Datasheet



Router-Switch.com
Leading Network Hardware Supplier

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OVERVIEW

Cisco® Catalyst® 2960-X Series Switches are fixed-configuration, stackable Gigabit Ethernet switches that provide enterprise-class access for campus and branch applications (Figure 1). Designed for operational simplicity to lower total cost of ownership, they enable scalable, secure and energy-efficient business operations with intelligent services and a range of advanced Cisco IOS® Software features.

APPEARANCE

Figure 1. Cisco Switch Catalyst 2960X



KEY FEATURES AND BENEFITS

- 24 or 48 Gigabit Ethernet ports with line-rate forwarding performance
- Gigabit Small Form-Factor Pluggable (SFP) or 10G SFP+ uplinks
- FlexStack Plus for stacking of up to 8 switches with 80 Gbps of stack throughput (optional)
- Power over Ethernet Plus (PoE+) support with up to 740W of PoE budget
- 24-port PoE fanless switch for deployment outside the wiring closet
- Reduced power consumption and advanced energy management features
- USB and Ethernet management interfaces for simplified operations
- Application visibility and capacity planning with integrated Full (Flexiable) NetFlow and NetFlow-Lite
- LAN Base or LAN Lite Cisco IOS software features
- Enhanced limited lifetime warranty (E-LLW) offering next-business-day hardware replacement
- Identify, classify and control of trusted internal network traffic through Domain Name System as an Authoritative Source (DNS-AS)

PRODUCT SPECIFICATIONS OF CISCO SWITCH CATALYST 2960X

Hardware specifications	
Flash memory	128 MB for LAN Base and IP Lite SKUs, 64 MB for LAN Lite SKUs
DRAM	512 MB for LAN Base and 256 MB for LAN Lite
CPU	APM86392 600 MHz dual core
Console ports	USB (Type B), Ethernet (RJ-45)

Storage interface	USB (Type A) for external flash storage	
Network management interface	10/100 Mbps Ethernet (RJ-45)	
Performance and Scalability		
	2960-X LAN Lite	2960-X LAN Lite
Forwarding bandwidth	50 Gbps	108 Gbps
Switching bandwidth	100 Gbps	216 Gbps
Maximum active VLANs	64	1023
VLAN IDs available	4096	4096
Maximum Transmission Unit (MTU)-L3 packet	9198 bytes	9198 bytes
Jumbo frame - Ethernet frame	9216 bytes	9216 bytes
Forwarding Performance		
Forwarding rate	64-byte Layer 3 packets	

Cisco Catalyst 2960X-48FPD-L	130.9 Mpps
Cisco Catalyst 2960X-48LPD-L	130.9 Mpps
Cisco Catalyst 2960X-24PD-L	95.2 Mpps
Cisco Catalyst 2960X-48TD-L	130.9 Mpps
Cisco Catalyst 2960X-24TD-L	95.2 Mpps
Cisco Catalyst 2960X-48FPS-L	107.1 Mpps
Cisco Catalyst 2960X-48LPS-L	107.1 Mpps
Cisco Catalyst 2960X-24PS-L	71.4 Mpps
Cisco Catalyst 2960X-24PSQ-L	71.4 Mpps
Cisco Catalyst 2960X-48TS-L	107.1 Mpps
Cisco Catalyst 2960X-24TS-L	71.4 Mpps
Cisco Catalyst 2960X-48TS-LL	104.2 Mpps
Cisco Catalyst 2960X-24TS-LL	68.5 Mpps

Mechanical Specifications				
Model	Dimensions		Weight	
	Inches (H x D x W)	Centimeters (H x D x W)	Pounds	Kilograms
WS-C2960X-48FPD-L	1.75 x 14.5 x 17.5	4.5 x 36.8 x 44.5	12.9	5.8
WS-C2960X-48LPD-L	1.75 x 14.5 x 17.5	4.5 x 36.8 x 44.5	12.9	5.8
WS-C2960X-48TD-L	1.75 x 11.0 x 17.5	4.5 x 27.9 x 44.5	9.6	4.3
WS-C2960X-24PD-L	1.75 x 14.5 x 17.5	4.5 x 36.8 x 44.5	12.7	5.7 g
WS-C2960X-24TD-L	1.75 x 11.0 x 17.5	4.5 x 27.9 x 44.5	8.9	4.0
WS-C2960X-48FPS-L	1.75 x 14.5 x 17.5	4.5 x 36.8 x 44.5	12.9	5.8
WS-C2960X-48LPS-L	1.75 x 14.5 x 17.5	4.5 x 36.8 x 44.5	12.9	5.8

WS-C2960X-48TS-L	1.75 x 11.0 x 17.5	4.5 x 27.9 x 44.5	9.4	4.2
WS-C2960X-24PS-L	1.75 x 14.5 x 17.5	4.5 x 36.8 x 44.5	12.8	5.8
WS-C2960X-24PSQ-L	1.73 x 11.03 x 17.5	4.45 x 28.0 x 44.5	12.8	5.8
WS-C2960X-24TS-L	1.75 x 11.0 x 17.5	4.5 x 27.9 x 44.5	8.9	4.0
WS-C2960X-48TS-LL	1.75 x 11.0 x 17.5	4.5 x 27.9 x 44.5	8.9	4.0
WS-C2960X-24TS-LL	1.75 x 11.0 x 17.5	4.5 x 27.9 x 44.5	8.2	3.7
Environmental Specifications				
Environmental Ranges				
	Fahrenheit	Centigrade		
Operating temperature up to 5000 ft (1500 m)	23° to 113°F	-5° to 45°C		

Operating temperature up to 10,000 ft (3000 m)	23° to 104°F	-5° to 40°C
Short-term exception at sea level*	23° to 131°F	-5° to 55°C
Short-term exception up to 5000 feet (1500 m)	23° to 122°F	-5° to 50°C
Short-term exception up to 10,000 feet (3000 m)	23° to 113°F	-5° to 45°C
Short-term exception up to 13,000 feet (4000 m)	23° to 104°F	-5° to 40°C
Storage temperature up to 15,000 feet (4573 m)	-13° to 158°F	-25° to 70°C
	Feet	Meters
Operating altitude	Up to 10,000	Up to 3000
Storage altitude	Up to 13,000	Up to 4000

Operating relative humidity	10% to 95% noncondensing			
Storage relative humidity	10% to 95% noncondensing			
Acoustic Noise				
Measured per ISO 7779 and declared per ISO 9296. PoE output of 185W or less where applicable.				
Bystander positions operating mode at 77°F (25°C) ambient.				
	Sound pressure		Sound power	
	LpA (typical)	LpAD (maximum)	LwA (typical)	LwAD (maximum)
Cisco Catalyst 2960X-48FPD-L				
Cisco Catalyst 2960X-48LPD-L				
Cisco Catalyst 2960X-24PD-L	39 dB	43 dB	4.9 B	5.3 B
Cisco Catalyst 2960X-48TD-L				
Cisco Catalyst 2960X-24TD-L	42 dB	46 dB	5.1 B	5.5 B

Cisco Catalyst 2960X-48FPS-L				
Cisco Catalyst 2960X-48LPS-L				
Cisco Catalyst 2960X-24PS-L	39 dB	43 dB	4.9 B	5.3 B
Cisco Catalyst 2960X-24PSQ-L	N/A	N/A	N/A	N/A
Cisco Catalyst 2960X-48TS-L				
Cisco Catalyst 2960X-24TS-L	42 dB	46 dB	5.1 B	5.5 B
Cisco Catalyst 2960X-48TS-LL				
Cisco Catalyst 2960X-24TS-LL	42 dB	46 dB	5.1 B	5.5 B
Predicted Reliability				
Model	MTBF in hours**			
Cisco Catalyst 2960X-48FPD-L	233,370			
Cisco Catalyst 2960X-48LPD-L	277,960			
Cisco Catalyst 2960X-24PD-L	325,780			

Cisco Catalyst 2960X-48TD-L	445,460
Cisco Catalyst 2960X-24TD-L	569,520
Cisco Catalyst 2960X-48FPS-L	232,610
Cisco Catalyst 2960X-48LPS-L	276,870
Cisco Catalyst 2960X-24PS-L	324,280
Cisco Catalyst 2960X-24PSQ-L	462,680
Cisco Catalyst 2960X-48TS-L	442,690
Cisco Catalyst 2960X-24TS-L	564,910
Cisco Catalyst 2960X-48TS-LL	476,560
Cisco Catalyst 2960X-24TS-LL	622,350
Cisco Catalyst 2960X-STACK	17,128,090

PWR-C2-250WAC	1,000,000
PWR-C2-640WAC	1,000,000
PWR-C2-1025WAC	1,000,000
Connectors and Interfaces	
Connectors and Interfaces	
Ethernet interfaces	
• 10BASE-T ports: RJ-45 connectors, 2-pair Category 3, 4, or 5 unshielded twisted pair (UTP) cabling • 100BASE-TX ports: RJ-45 connectors, 2-pair Category 5 UTP cabling • 1000BASE-T ports: RJ-45 connectors, 4-pair Category 5 UTP cabling • 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Category 5 UTP cabling	
Indicator LEDs	
• Per-ssssm status: System, RPS, stack link status, link duplex, PoE, and link speed	

Stacking interfaces

Cisco Catalyst 2960-X and 2960-XR Series FlexStack-Plus and FlexStack-Extended (hybrid module only) stacking cables:

- CAB-STK-E-0.5M stacking cable with a 0.5 m length
- CAB-STK-E-1M stacking cable with a 1.0 m length
- CAB-STK-E-3M stacking cable with a 3.0 m length

Console

Cisco Catalyst 2960-X and 2960-XR Series console cables:

- CAB-CONSOLE-RJ45 Console cable 6 ft. with RJ-45
- CAB-CONSOLE-USB Console cable 6 ft. with USB Type A and mini-B connectors

Power

- The internal power supply is an auto-ranging unit and supports input voltages between 100 and 240V AC
- Use the supplied AC power cord to connect the AC power connector to an AC power outlet
- The Cisco RPS connector offers connection for an optional Cisco RPS 2300 that uses AC input and supplies DC output to the switch
- Only the Cisco RPS 2300 (model PWR-RPS2300) should be attached to the redundant-power-system receptacle

Management and Standards Support

Category	Specification
Management	● BRIDGE-MIB ● CISCO-CABLE-DIAG-MIB ● CISCO-CDP-MIB ● CISCO-CLUSTER-MIB ● CISCO-CONFIG-COPY-MIB ● CISCO-CONFIG-MAN-MIB ● CISCO-DHCP-SNOOPING-MIB ● CISCO-ENTITY-VENDORTYPE-OID-MIB ● CISCO-ENVMON-MIB ● CISCO-ERR-DISABLE-MIB ● CISCO-FLASH-MIB ● CISCO-FTP-CLIENT-MIB ● CISCO-IGMP-FILTER-MIB ● CISCO-IMAGE-MIB ● CISCO-IP-STAT-MIB ● CISCO-LAG-MIB ● CISCO-MAC-NOTIFICATION-MIB ● CISCO-MEMORY-POOL-MIB ● CISCO-TC-MIB ● CISCO-TCP-MIB ● CISCO-UDLD-MIB ● CISCO-VLAN-IFTABLE ● RELATIONSHIP-MIB ● CISCO-VLAN-MEMBERSHIP-MIB ● CISCO-VTP-MIB ● ENTITY-MIB ● ETHERLIKE-MIB ● IEEE8021-PAE-MIB ● IEEE8023-LAG-MIB ● IF-MIB ● INET-ADDRESS-MIB ● OLD-CISCO-CHASSIS-MIB ● OLD-CISCO-FLASH-MIB ● OLD-CISCO-INTERFACES-MIB ● OLD-CISCO-IP-MIB ● OLD-CISCO-SYS-MIB

	● CISCO-PAGP-MIB ● CISCO-PING-MIB ● CISCO-POE-EXTENSIONS-MIB ● CISCO-PORT-QOS-MIB ● CISCO-PORT-SECURITY-MIB ● CISCO-PORT-STORM-CONTROL-MIB ● CISCO-PRODUCTS-MIB ● CISCO-PROCESS-MIB ● CISCO-RTTMON-MIB ● CISCO-SMI-MIB ● CISCO-STP-EXTENSIONS-MIB ● CISCO-SYSLOG-MIB	● OLD-CISCO-TCP-MIB ● OLD-CISCO-TS-MIB ● RFC1213-MIB ● RMON-MIB ● RMON2-MIB ● SNMP-FRAMEWORK-MIB ● SNMP-MPD-MIB ● SNMP-NOTIFICATION-MIB ● SNMP-TARGET-MIB ● SNMPv2-MIB ● TCP-MIB ● UDP-MIB ● ePM MIB ● CISCO-STACKWISE-MIB (2960-X)
Standards	● IEEE 802.1D Spanning Tree Protocol ● IEEE 802.1p CoS Prioritization ● IEEE 802.1Q VLAN ● IEEE 802.1s ● IEEE 802.1w ● IEEE 802.1X ● IEEE 802.1ab (LLDP)	● IEEE 802.3 10BASE-T ● IEEE 802.3u 100BASE-TX ● IEEE 802.3ab 1000BASE-T ● IEEE 802.3z 1000BASE-X ● RMON I and II standards ● SNMP v1, v2c, and v3 ● IEEE 802.3az

	● IEEE 802.3ad ● IEEE 802.3af and IEEE 802.3at ● IEEE 802.3ah (100BASE-X single/multimode fiber only) ● IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports	● IEEE 802.3ae 10 Gigabit Ethernet ● IEEE 802.1ax
RFC compliance	● RFC 768 - UDP ● RFC 783 - TFTP ● RFC 791 - IP ● RFC 792 - ICMP ● RFC 793 - TCP ● RFC 826 - ARP ● RFC 854 - Telnet ● RFC 951 - Bootstrap Protocol (BOOTP) ● RFC 959 - FTP ● RFC 1112 - IP Multicast and IGMP ● RFC 1157 - SNMP v1 ● RFC 1166 - IP Addresses ● RFC 1256 - Internet Control Message Protocol (ICMP) Router Discovery ● RFC 1305 - NTP ● RFC 1492 - TACACS+	● RFC 1902-1907 - SNMP v2 ● RFC 1981 - Maximum Transmission Unit (MTU) Path Discovery IPv6 ● RFC 2068 - HTTP ● RFC 2131 - DHCP ● RFC 2138 - RADIUS ● RFC 2233 - IF MIB v3 ● RFC 2373 - IPv6 Aggregatable Addrs ● RFC 2460 - IPv6 ● RFC 2461 - IPv6 Neighbor Discovery ● RFC 2462 - IPv6 Autoconfiguration ● RFC 2463 - ICMP IPv6

	● RFC 1493 - Bridge MIB ● RFC 1542 - BOOTP extensions ● RFC 1643 - Ethernet Interface MIB ● RFC 1757 - RMON ● RFC 1901 - SNMP v2C	● RFC 2474 - Differentiated Services (DiffServ) Precedence ● RFC 2597 - Assured Forwarding ● RFC 2598 - Expedited Forwarding ● RFC 2571 - SNMP Management ● RFC 2865 - RADIUS ● RFC 3046 - DHCP Relay Agent Information Option ● RFC 3376 - IGMP v3 ● RFC 3580 - 802.1X RADIUS
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Voltage and Power Ratings

Input Voltage and Current

Model	Voltage (auto ranging)	Current	Frequency
Cisco Catalyst 2960X-48FPD-L	100 to 240 VAC	9A to 4A	50 to 60 Hz
Cisco Catalyst 2960X-48LPD-L		5A to 2A	
Cisco Catalyst 2960X-24PD-L		5A to 2A	

Cisco Catalyst 2960X-48TD-L		1A to 0.5A	
Cisco Catalyst 2960X-24TD-L		1A to 0.5A	
Cisco Catalyst 2960X-48FPS-L		9A to 4A	
Cisco Catalyst 2960X-48LPS-L		5A to 2A	
Cisco Catalyst 2960X-24PS-L		5A to 2A	
Cisco Catalyst 2960X-24PSQ-L		2A to 4A	
Cisco Catalyst 2960X-48TS-L		1A to 0.5A	
Cisco Catalyst 2960X-24TS-L		1A to 0.5A	
Cisco Catalyst 2960X-48TS-LL		1A to 0.5A	
Cisco Catalyst 2960X-24TS-LL		1A to 0.5A	
Power Rating (switch maximum consumption values)			

Cisco Catalyst 2960X-48FPD-L	0.89 kVA
Cisco Catalyst 2960X-48LPD-L	0.48 kVA
Cisco Catalyst 2960X-24PD-L	0.47 kVA
Cisco Catalyst 2960X-48TD-L	0.049 kVA
Cisco Catalyst 2960X-24TD-L	0.034 kVA
Cisco Catalyst 2960X-48FPS-L	0.89 kVA
Cisco Catalyst 2960X-48LPS-L	0.49 kVA
Cisco Catalyst 2960X-24PS-L	0.49 kVA
Cisco Catalyst 2960X-24PSQ-L	0.16 kVA
Cisco Catalyst 2960X-48TS-L	0.051 kVA
Cisco Catalyst 2960X-24TS-L	0.039 kVA

Cisco Catalyst 2960X-48TS-LL	0.046KVA	
Cisco Catalyst 2960X-24TS-LL	0.035KVA	
	12V	53V
Cisco Catalyst 2960X-48FPD-L	4A	15A
Cisco Catalyst 2960X-48LPD-L	4A	8A
Cisco Catalyst 2960X-24PD-L	3A	8A
Cisco Catalyst 2960X-48TD-L	4A	N/A
Cisco Catalyst 2960X-24TD-L	3A	N/A
Cisco Catalyst 2960X-48FPS-L	4A	15A
Cisco Catalyst 2960X-48LPS-L	4A	8A
Cisco Catalyst 2960X-24PS-L	3A	8A

Cisco Catalyst 2960X-24PSQ-L	N/A			N/A
Cisco Catalyst 2960X-48TS-L	5A			N/A
Cisco Catalyst 2960X-24TS-L	4A			N/A
Power Consumption				
Measured Power Consumption in Watts				
Model	0% traffic	10% traffic	100% traffic	Weighted average
Cisco Catalyst 2960X-48FPD-L	50.8	65.9	66.7	66.0
Cisco Catalyst 2960X-48LPD-L	45.7	61.1	62.0	61.2
Cisco Catalyst 2960X-24PD-L	44.7	52.3	53.1	52.3
Cisco Catalyst 2960X-48TD-L	32.9	47.0	47.8	47.1

Cisco Catalyst 2960X-24TD-L	24.9	32.2	33.1	32.3
Cisco Catalyst 2960X-48FPS-L	51.9	66.6	66.8	66.6
Cisco Catalyst 2960X-48LPS-L	46.7	60.8	61.1	60.9
Cisco Catalyst 2960X-24PS-L	41.4	49.0	49.2	49.0
Cisco Catalyst 2960X-24PSQ-L	28.5	32.8	34.8	33.0
Cisco Catalyst 2960X-48TS-L	34.9	49.5	49.7	49.5
Cisco Catalyst 2960X-24TS-L	28.0	36.8	37.1	36.9
Cisco Catalyst 2960X-48TS-LL	31.4	44.3	44.5	44.4
Cisco Catalyst 2960X-24TS-LL	25.2	32.0	32.0	32.0

Safety and Compliance

Specification	Description
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Safety	- UL 60950-1 Second Edition - CAN/CSA-C22.2 No. 60950-1 Second Edition - EN 60950-1 Second Edition - IEC 60950-1 Second Edition - AS/NZS 60950-1
EMC – emissions	47CFR Part 15 (CFR 47) Class A - AS/NZS CISPR22 Class A - CISPR22 Class A - EN55022 Class A - ICES003 Class A - VCCI Class A - EN61000-3-2 - EN61000-3-3 - KN22 Class A - CNS13438 Class A
EMC – immunity	- EN55024 - CISPR24 - EN300386 - KN24

Environmental	Reduction of Hazardous Substances (RoHS) including Directive 2011/65/EU
Telco	Common Language Equipment Identifier (CLEI) code
US government certifications	USGv6 and IPv6 Ready Logo

CISCO SWITCH CATALYST 2960X BASIC ORDERING INFORMATION					
Part Number	10/100/1000 Ethernet Interfaces	Uplink Interfaces	Cisco IOS Software Feature Set	Available PoE Power	FlexStack-Plus Stacking
WS-C2960X-48FPD-L	48	2 SFP+	LAN Base	740W	Optional
WS-C2960X-48LPD-L	48	2 SFP+	LAN Base	370W	Optional
WS-C2960X-24PD-L	24	2 SFP+	LAN Base	370W	Optional
WS-C2960X-48TD-L	48	2 SFP+	LAN Base	-	Optional
WS-C2960X-24TD-L	24	2 SFP+	LAN Base	-	Optional
WS-C2960X-48FPS-L	48	4 SFP	LAN Base	740W	Optional
WS-C2960X-48LPS-L	48	4 SFP	LAN Base	370W	Optional
WS-C2960X-24PS-L	24	4 SFP	LAN Base	370W	Optional

Part Number	10/100/1000 Ethernet Interfaces	Uplink Interfaces	Cisco IOS Software Feature Set	Available PoE Power	FlexStack-Plus Stacking
<u>WS-C2960X-24PSQ-L</u>	24	2 SFP, 2 10/100/1000BT	LAN Base	110W	No
<u>WS-C2960X-48TS-L</u>	48	4 SFP	LAN Base	-	Optional
<u>WS-C2960X-24TS-L</u>	24	4 SFP	LAN Base	-	Optional
<u>WS-C2960X-48TS-LL</u>	48	2 SFP	LAN Lite	-	No
<u>WS-C2960X-24TS-LL</u>	24	2 SFP	LAN Lite	-	No

SOURCES

https://www.cisco.com/c/en/us/products/collateral/switches/catalyst-2960-x-series-switches/datasheet_c78-728232.html#Specifications