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## FAMILY DATASHEET

# Meraki MS Series Switches

## Overview

Cisco Meraki offers a broad range of switches built from the ground up that are designed to be easy to manage without compromising any of the power and flexibility traditionally found in enterprise-class switches.

Meraki access and aggregation switches are all managed through an elegant, intuitive cloud interface, freeing administrators to spend less time on configuration and more time on meeting business needs.

To set up a Meraki switch, just plug it in; there's no need for repetitive, command-based configuration. Switches can be up and running within minutes of connecting them to the network.

A powerful centralized management interface gives administrators deep visibility into the network and how it is used. See which switches are near capacity across hundreds of sites. Quickly provision and reconfigure switch ports with security, QoS, and more. The Meraki dashboard provides unified policies, event logs, and monitoring, making switch management efficient and scalable.

## Product highlights

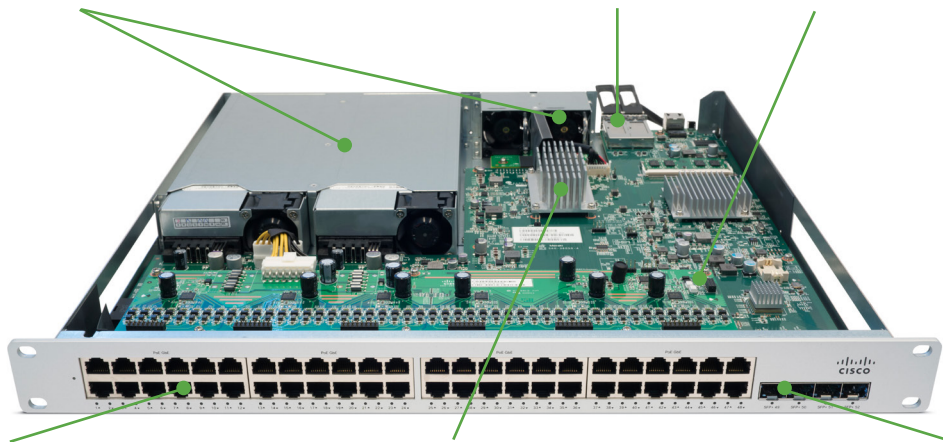
- Range of enterprise switching options built on proven Cisco hardware technologies
- Basic layer 2 to high-performance layer 3 switches with up to 40 GbE uplinks on access and up to 100 GbE on aggregation switches, suitable for deployments of all sizes
- True zero-touch configuration model that scales with organization needs and requirements
- Integrated troubleshooting tools, logging, and alerting reduce operational costs
- Energy-efficient design with low acoustics and fanless options
- Flexible stacking for scaled configuration and high performance in one
- Cloud management reduces cost, overhead, and time to resolution
- Industry-standard features allow for simple integration into existing and mixed infrastructures
- Role-based administration and automatic, secure firmware updates delivered via the web
- Stack power, improved physical stacking, and multigigabit options on select models

## Inside the Meraki MS

Energy-efficient dual-power supplies with variable speed fans

Stacking connectors

High reliability/MTBF extended life components



48× 1 GbE ports with 802.3af/802.3at PoE/PoE+

Enhanced CPU/memory Meraki cloud management

4× 10 GbE SFP+ uplink ports built in for uplink connectivity

## Enterprise-class hardware

Meraki switches feature high-end hardware and an exceptional feature set, including:


- Options for fixed and modular uplinks: 1 GbE, 10 GbE, and 40 GbE uplink ports for high-speed connectivity to aggregation-layer switches or other upstream devices
- Optional multigigabit ports providing up to 10 Gbps on a single cable, supporting the latest Wi-Fi performance capabilities
- Wire-speed, non-blocking switch fabric (up to 800 Gbps), and six dedicated QoS queues for high-performance, converged voice, video, and data deployments
- Power-efficient, quiet acoustic designs and shallow rack-depth options enable flexible deployment in wiring closets as well as offices and classrooms
- Fanless design on select models
- Power over Ethernet, PoE+, and UPoE options available
- Up to 740W PoE budget with PoE+ support for powering APs, phones, cameras, and other PoE-enabled devices (124W for 120-8 series), with 830W available on the MS390 UPoE model
- Lifetime hardware warranty and advanced replacement at no additional cost
- Field-replaceable, hot-swappable power supplies and fans; RPS option for mission-critical applications; stack power on select models for added resilience

## Powerful feature set for deployments of all types




Meraki switches include all of the traditional Ethernet features found on the highest-end products, including:

- Quality-of-service (QoS) to prioritize mission-critical traffic such as voice and video
- IEEE 802.1x support for port-based network access control
- MAC-based RADIUS auth and MAC allowlisting
- Voice VLAN support for simplified VoIP deployments
- Port mirroring support for monitoring network traffic at line rate
- DHCP snooping to prevent users from adding unauthorized DHCP servers on the network
- IGMP snooping to optimize network performance with multicast traffic
- Link aggregation control protocol (LACP) for high-capacity trunking, stacking, and increased availability
- Rapid spanning tree protocol (RSTP), BPDU guard, root guard, and other safeguards to help prevent misconfigurations and reduce convergence time
- Per port VLAN configuration
- Multiple administrative roles with sophisticated security policy management
- High-performance layer 3 routing capabilities on select models

## Meraki access switching portfolio


	MS120-8	MS120	MS125
			
<b>Usage</b>	Compact	Branch and small campus	Small branch and office
<b>Interface</b>	8× 1 GbE RJ45	24/48× 1 GbE RJ45	24/48× 1 GbE RJ45
<b>Uplinks</b>	2× 1 GbE SFP Fixed	4× 1 GbE SFP Fixed	4× 10 GbE SFP Fixed
<b>PoE capabilities</b>	67W (LP model) 124W (FP model)	370W (P, LP models) 740W (FP model)	370W (P, LP models) 740W (FP model)
<b>Power configuration</b>	External PSU (non-PoE, LP model) Internal (FP model)	Internal	Internal
<b>Stacking capabilities</b>	Virtual only	Virtual only	Virtual only
<b>Routing capabilities</b>	DHCP relay	DHCP relay	DHCP relay
<b>Models</b>	MS120-8-HW MS120-8LP-HW MS120-8FP-HW	MS120-24-HW MS120-24P-HW MS120-48-HW MS120-48LP-HW MS120-48FP-HW	MS125-24-HW MS125-24P-HW MS125-48-HW MS125-48LP-HW MS125-48FP-HW

## Meraki stackable access switching portfolio

	MS210	MS225	MS250
			
<b>Usage</b>	Branch and small campus	Branch and small campus	Branch and campus
<b>Interface</b>	24/48× 1 GbE RJ45	24/48× 1 GbE RJ45	24/48× 1 GbE RJ45
<b>Uplinks</b>	4× 1 GbE SFP Fixed	4× 10 GbE SFP+ Fixed	4× 10 GbE SFP+ Fixed
<b>PoE capabilities</b>	370W (P, LP models) 740W (FP models)	370W (P, LP models) 740W (FP models)	370W (P, LP models) 740W (FP models)
<b>Power configuration</b>	Internal Optional RPS	Internal Optional RPS	Modular Redundant PSU optional
<b>Stacking capabilities</b>	Compatible with MS225 80G physical + virtual	Compatible with MS210 80G physical + virtual	80G physical + virtual
<b>Routing capabilities</b>	Static only DHCP relay	Static only DHCP relay	Static + dynamic <sup>1</sup> DHCP server + relay Warm spare (VRRP)
<b>Models</b>	MS210-24-HW MS210-24P-HW MS210-48-HW MS210-48LP-HW MS210-48FP-HW	MS225-24-HW MS225-24P-HW MS225-48-HW MS225-48LP-HW MS225-48FP-HW	MS250-24-HW MS250-24P-HW MS250-48-HW MS250-48LP-HW MS250-48FP-HW

<sup>1</sup> Detailed routing specifications are available in series datasheets




## Meraki stackable access switching portfolio

	MS350	MS355	MS390
			
<b>Usage</b>	Campus and multigigabit	Branch and small campus	High-performance campus and branch
<b>Interface</b>	24/48× 1 GbE RJ45 <sup>1</sup> 8× mGig RJ45 (24 port only)	24/48× 1 GbE RJ45 8× mGig RJ45 (24 port only)	24/48× 1 GbE RJ45 24/48 × mGig RJ45 (in select models)
<b>Uplinks</b>	4× 10 GbE SFP+ Fixed	2× 40G QSFP+ Fixed	4/8× 10GbE SFP+ 2× 40GbE QSFP+ Modular
<b>PoE capabilities</b>	370W (P, LP models) 740W (24 port, FP models)	740W (24 port, X2 models) 740W (48 port, X2 models)	830W (24 port models) 822W (48 port models)
<b>Power configuration</b>	Modular Redundant PSU optional	Removable PSU	Removable PSU Modular 80 Plus Platinum PSU
<b>Stacking capabilities</b>	160G physical + virtual	400G physical +virtual	Compatible only with MS390 480G physical +virtual
<b>Routing capabilities</b>	Static + dynamic <sup>2</sup> DHCP server + relay Warm spare (VRRP)	Static + dynamic DHCP server + relay	Static + dynamic DHCP server + relay
<b>Models</b>	MS350-24-HW MS350-24P-HW MS350-24X-HW MS350-48-HW MS350-48LP-HW MS350-48FP-HW	MS355-24X-HW MS355-24X2-HW MS355-48X-HW MS355-48X2-HW	MS390-24-HW MS390-24P-HW MS390-24U-HW MS390-24UX-HW MS390-48-HW MS390-48P-HW MS390-48U-HW MS390-48UX-HW MS390-48UX2-HW

<sup>1</sup> Interfaces do not support half-duplex on the MS350

<sup>2</sup> Detailed routing specifications are available in series datasheets

## Meraki aggregation switching portfolio

	MS410	MS425	MS450
			
<b>Usage</b>	1G fiber aggregation	10G fiber aggregation	40G fiber aggregation
<b>Interface</b>	16/32 × GbE SFP	16/32 × 10 GbE SFP+	12 × 40 GbE QSFP+
<b>Uplinks</b>	2 × 10 GbE SFP+ (MS410-16) 4 × 10 GbE SFP+ (MS410-32)	2 × 40 GbE QSFP+	2 × 100 GbE QSFP28
<b>Power configuration</b>	Modular Redundant PSU optional (sold separately)	Modular Redundant PSU optional (sold separately)	Modular Redundant PSU optional (sold separately)
<b>Stacking capabilities</b>	160G physical + virtual	Front-port 160G + virtual	Front-port 160G + virtual
<b>Routing capabilities</b>	Static + dynamic DHCP server + relay Warm spare (VRRP)	Static + dynamic DHCP server + relay Warm spare (VRRP)	Static + dynamic DHCP server + relay Warm spare (VRRP)
<b>Models</b>	MS410-16-HW MS410-32-HW	MS425-16-HW MS425-32-HW	MS450-12-HW

### Lifetime warranty with next-day advance replacement

All Cisco Meraki MS switches include a limited lifetime hardware warranty that provides next-day advance hardware replacement. The Meraki simplified software and support licensing model also combines all software upgrades, centralized systems management, and phone support under a single, easy-to-understand model.

For complete details, please visit [meraki.cisco.com/support](https://meraki.cisco.com/support).

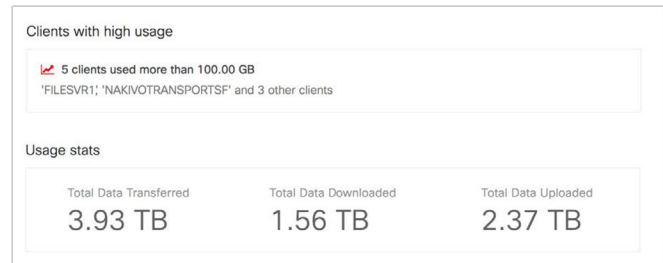


## Features and capabilities

Meraki switches include all of the traditional Ethernet features found in modern enterprise access switches, including:

### Intelligent campus and branch switching

With built-in monitoring, troubleshooting, and logging capabilities, Meraki switches provide a refreshing new approach to managing network infrastructure, regardless of deployment size. The virtual stacking technology eliminates the need for configuration scripts and commands, empowering administrators to make changes quickly and securely on one or all of the switches in a deployment at once.



### Intelligent anomaly detection flags potential network events

### Wired security without compromise

Whether deployed in an office environment, hospital, or retail store, Meraki switches make enforcing security policies a breeze. Set up multiple policies and enable them at the port level or apply them across the entire network in a few clicks. Meraki switches also provide comprehensive security reporting, making it easy to proactively discover rogue DHCP servers and other malicious activity on the network.

Email alerts: Send an email if a new DHCP server is seen

Default DHCP server policy: Allow DHCP servers

Note: Switches with configured DHCP servers are always allowed.

Blocked DHCP servers: 02:31:3a:1c:c4:14

DHCP servers for the last day

Description	VLAN	Subnet	IP	Last seen	Recent packet	Policy
CORE_1 (interface CORP_WIFI)	132	10.92.132.0/22	10.92.135.254	13 seconds	<a href="#">View packet</a>	allowed
CORE_1 (interface )	46	172.16.46.0/23	172.16.47.254	1 second	<a href="#">View packet</a>	allowed
SD-WAN_Security_1	42	172.16.42.0/23	172.16.43.254	2 seconds	<a href="#">View packet</a>	blocked

### Rogue DHCP server detection across the entire network

### Troubleshooting the way it should be

Drastically reduce time to resolution with a variety of powerful troubleshooting tools, such as remote cable testing and packet captures, that help isolate and troubleshoot network issues. With the dynamic network topology of Meraki, automatically see how the entire network is interconnected and ensure the team receives alerts upon power loss, downtime, or configuration changes.

Select a tool: Cable test

Warning: This test will disrupt traffic to 100 or 10 Mbit devices.

12 [Run cable test](#)

Testing the cable attached to port 12

Port	Link	Length	Status	Pair 1	Pair 2	Pair 3	Pair 4
12	down	94.5 m	Failure	open	ok	ok	open

### Remote cable test in the Meraki dashboard

## Stack power and improved physical stacking

Stack power pools power from each individual PSU in a switch stack to form a larger, shared pool of power that provides additional redundancy and also helps reduce costs by managing the available PoE more efficiently. Improved physical stacking helps in faster-stack convergence in case of a failover, which is critical in large enterprise deployments.

## Industry-leading cloud management

The Meraki cloud-management architecture delivers true zero-touch switch provisioning. Configure switches before they arrive on-site or use Meraki templates to standardize an entire fleet of switches, no matter what size.

With Meraki virtual stacking, administrators can manage up to thousands of ports from a single dashboard, enabling rapid and streamlined configuration that could otherwise take weeks to complete.

Switch ports for the last day -

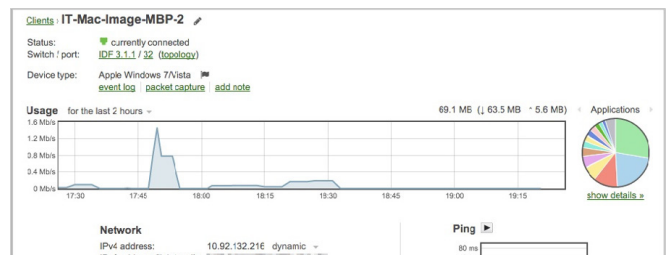
Edit | Aggregate | Split | Mirror | Unmirror | is:access help 3204 switch ports

Switch / Port	Switch	Name	Type	VLAN	Status	Tags	POE	Access policy	CDP/LLDP
<input type="checkbox"/> CORE1.1.18	CORE_1	Staging Port	access	110	<span style="background-color: #ccc; width: 20px; height: 10px;"></span>			Open	-
<input type="checkbox"/> CORE1.1.17	CORE_1	To ALPHA-GW1	access	78	<span style="background-color: #2e7d32; width: 20px; height: 10px;"></span>			Open	sf012-00a-gw1.cisco.com
<input type="checkbox"/> CORE1.1.18	CORE_1	To ALPHA-GW2	access	78	<span style="background-color: #2e7d32; width: 20px; height: 10px;"></span>			Open	sf012-00a-gw2.cisco.com
<input type="checkbox"/> Closet.1.1.3/1	Closet.1.1.3	Cisco Alpha	access	110, voice 110	<span style="background-color: #2e7d32; width: 20px; height: 10px;"></span>		disabled	Open	SEP509700261074

Switch virtual stack for managing all switch ports at once

## Built-in application layer visibility

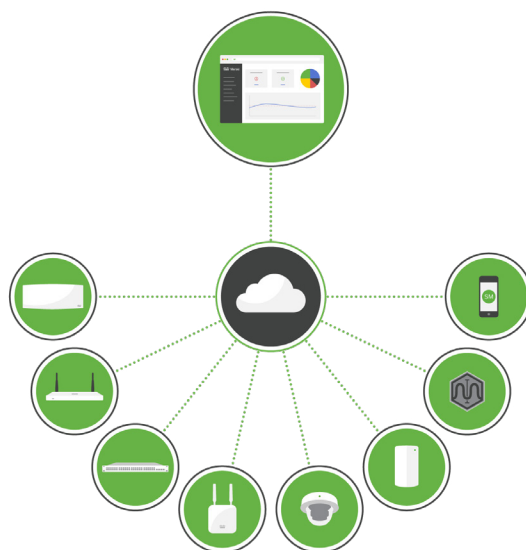
Meraki is the only switch to include integrated layer 7 fingerprinting. Identify hundreds of applications, from business apps to BitTorrent and YouTube. User fingerprinting with Google-like search allows administrators to easily identify and control individual users, PCs, iMacs, iPads, Androids, and other devices. This unprecedented visibility allows optimization of network resources and maintenance of optimal network performance.



Granular network client visibility up to the application layer

## Beyond-the-network software architecture

Meraki switches run the same operation system used by all Meraki products. The use of a common operating system allows a consistent experience across all product lines, from security products to VoIP phones. Meraki switches automatically connect to the Meraki cloud, download configuration, and join the appropriate network. If new firmware is required, this is retrieved by the switch and updated automatically. This ensures the network is kept up-to-date with bug fixes, security updates, and new features.



**MERAKI CLOUD-MANAGEMENT**  
ARCHITECTURE WITH ALL PRODUCTS

## Included in the box

MS120-8 series	Integrated mounting brackets; external PSU (non-PoE and LP models); mounting screw kit; getting started insert
MS120 series	Mounting screw kit; getting started insert
MS210 series	Mounting screw kit; getting started insert
MS225 series	Mounting screw kit; getting started insert
MS250 series	Power supply (1); system fans (2); mounting screw kit; getting started insert
MS350 series	Stacking cable (1); power supply (1); system fans (2); mounting screw kit; getting started insert
MS355 series	Power supply (1); system fans (3); mounting screw kit; getting started insert
MS390 series	Power supply (1); system fans (3); mounting screw kit; getting started insert
MS410 series	Power supply (1); system fans (2); mounting screw kit; getting started insert
MS425 series	Power supply (1); system fans (3); mounting screw kit; getting started insert
MS450 series	Power supply (1); system fans (3); mounting screw kit; getting started insert

## Licensing

Every MS license is available in 1-, 3-, 5-, 7-, and 10-year terms.

Product	Model	License	Description
MS120	MS120-8-HW	LIC-MS120-8-xYR	MS120-8 Enterprise license and support
	MS120-8LP-HW	LIC-MS120-8LP-xYR	MS120-8LP Enterprise license and support
	MS120-8FP-HW	LIC-MS120-8FP-xYR	MS120-8FP Enterprise license and support
	MS120-24-HW	LIC-MS120-24-xYR	MS120-24 Enterprise license and support
	MS120-24P-HW	LIC-MS120-24P-xYR	MS120-24P Enterprise license and support
	MS120-48-HW	LIC-MS120-48-xYR	MS120-48 Enterprise license and support
	MS120-48LP-HW	LIC-MS120-48LP-xYR	MS120-48LP Enterprise license and support
	MS120-48FP-HW	LIC-MS120-48FP-xYR	MS120-48FP Enterprise license and support
MS125	MS125-24-HW	LIC-MS125-24-xYR	MS125-24 Enterprise license and support
	MS125-24P-HW	LIC-MS125-24P-xYR	MS125-24P Enterprise license and support
	MS125-48-HW	LIC-MS125-48-xYR	MS125-48 Enterprise license and support
	MS125-48LP-HW	LIC-MS125-48LP-xYR	MS125-48LP Enterprise license and support
	MS125-48FP-HW	LIC-MS125-48FP-xYR	MS125-48FP Enterprise license and support
MS210	MS210-24-HW	LIC-MS210-24-xYR	MS210-24 Enterprise license and support
	MS210-24P-HW	LIC-MS210-24P-xYR	MS210-24P Enterprise license and support
	MS210-48-HW	LIC-MS210-48-xYR	MS210-48 Enterprise license and support
	MS210-48LP-HW	LIC-MS210-48LP-xYR	MS210-48LP Enterprise license and support
	MS210-48FP-HW	LIC-MS210-48FP-xYR	MS210-48FP Enterprise license and support
MS225	MS225-24-HW	LIC-MS225-24-xYR	MS225-24 Enterprise license and support
	MS225-24P-HW	LIC-MS225-24P-xYR	MS225-24P Enterprise license and support
	MS225-48-HW	LIC-MS225-48-xYR	MS225-48 Enterprise license and support
	MS225-48LP-HW	LIC-MS225-48LP-xYR	MS225-48LP Enterprise license and support
	MS225-48FP-HW	LIC-MS225-48FP-xYR	MS225-48FP Enterprise license and support

## Licensing

Every MS license is available in 1-, 3-, 5-, 7-, and 10-year terms.

Product	Model	License	Description
MS250	MS250-24-HW	LIC-MS250-24-xYR	MS250-24 Enterprise license and support
	MS250-24P-HW	LIC-MS250-24P-xYR	MS250-24P Enterprise license and support
	MS250-48-HW	LIC-MS250-48-xYR	MS250-48 Enterprise license and support
	MS250-48LP-HW	LIC-MS250-48LP-xYR	MS250-48LP Enterprise license and support
	MS250-48FP-HW	LIC-MS250-48FP-xYR	MS250-48FP Enterprise license and support
MS350	MS350-24-HW	LIC-MS350-24-xYR	MS350-24 Enterprise license and support
	MS350-24P-HW	LIC-MS350-24P-xYR	MS350-24P Enterprise license and support
	MS350-24X-HW	LIC-MS350-24X-xYR	MS350-24X Enterprise license and support
	MS350-48-HW	LIC-MS350-48-xYR	MS350-48 Enterprise license and support
	MS350-48LP-HW	LIC-MS350-48LP-xYR	MS350-48LP Enterprise license and support
	MS350-48FP-HW	LIC-MS350-48FP-xYR	MS350-48FP Enterprise license and support
MS355	MS355-24X-HW	LIC-MS355-24X-xYR	MS355-24X Enterprise license and support
	MS355-24X2-HW	LIC-MS355-24X2-xYR	MS355-24X2 Enterprise license and support
	MS355-48X-HW	LIC-MS355-48X-xYR	MS355-48X Enterprise license and support
	MS355-48X2-HW	LIC-MS355-48X2-xYR	MS355-48X2 Enterprise license and support
MS390	MS390-24E-HW	LIC-MS390-24A-xYR	MS390-24 Advanced license and support
	MS390-24E-HW	LIC-MS390-24E-xYR	MS390-24 Enterprise license and support
	MS390-48E-HW	LIC-MS390-48A-xYR	MS390-48 Advanced license and support
	MS390-48E-HW	LIC-MS390-48E-xYR	MS390-48 Enterprise license and support
MS410	MS410-16-HW	LIC-MS410-16-xYR	MS410-16 Enterprise license and support
	MS410-32-HW	LIC-MS410-32-xYR	MS410-32 Enterprise license and support
MS425	MS425-16-HW	LIC-MS425-16-xYR	MS425-16 Enterprise license and support
	MS425-32-HW	LIC-MS425-32-xYR	MS425-32 Enterprise license and support
MS450	MS450-12-HW	LIC-MS450-12-xYR	MS450-12 Enterprise license and support

## Optional accessories

Description	Accessory	Supported models
Power cable	MA-PWR-CORD-US MA-PWR-CORD-EU MA-PWR-CORD-UK MA-PWR-CORD-AU	All models
External power supply	DC 54V/1.67A, 90W, MA-PWR-90WAC  DC 12V/2.5A, 30W, MA- PWR-30WAC	MS120-8, MS120-8-LP
250W power supply	MA-PWR-250WAC	MS250-24, MS250-48, MS350-24, MS350-48, MS410, MS425
640W power supply	MA-PWR-640WAC	MS250-24P, MS250-48LP, MS350-24P, MS350-48LP
1025W power supply	MA-PWR-1025WAC	MS250-24P, MS250-48FP, MS350-24X, MS350-48FP
350W power supply	MA-PWR-350WAC	MS390-24HW, MS390-48HW
715W power supply	MA-PWR-715WAC	All MS390 models
1100W power supply	MA-PWR-1100WAC	All MS390 models
Stacking cable (.5 m)	MA-CBL-40G-50CM	MS210, MS225, MS250, MS350, MS410, MS425
Stacking cable (1 m)	MA-CBL-40G-1M	MS210, MS225, MS250, MS350, MS410, MS425
Stacking cable (3 m)	MA-CBL-40G-3M	MS210, MS225, MS250, MS350, all MS410 models, MS425
16K system fan	MA-FAN-16K	MS350-24, MS350-24P, MS350-48, MS350-48LP, MS350-48FP, MS410
18K system fan	MA-FAN-18K	MS350-24X, MS425 series
Stack power cables	MA-CBL-SPWR-30CM MA-CBL-SPWR-150CM	All MS390 models
Stacking cables	MA-CBL-120G-50CM MA-CBL-120G-1M MA-CBL-120G-3M	All MS390 models
8× 1/10G SFP+ uplink module	MA-MOD-8×10G	All MS390 models
4× 1/10G SFP+ uplink Module	MA-MOD-4×10G*	All MS390 models
2× 40G QSFP+ uplink module	MA-MOD-2×40G	All MS390 models
16K2 system fan	MA-FAN-16K2	All MS390 models

\* MA-MOD-4×10G reached end-of-sale on November 1, 2021. Please refer to its [end-of-sale announcement](#) for further details

Meraki MS switches support SFP/SFP+/QSFP+ optic accessories for high-speed connectivity. Meraki offers a variety of GbE, 10 GbE, and 40 GbE accessories. Full specifications and compatibility information is available in the [Meraki accessories datasheet](#).

## Additional resources

[Meraki MS120 series datasheet](#)

[Meraki MS125 series datasheet](#)

[Meraki MS210 series datasheet](#)

[Meraki MS225 series datasheet](#)

[Meraki MS250 series datasheet](#)

[Meraki MS350 series datasheet](#)

[Meraki MS355 series datasheet](#)

[Meraki MS390 series datasheet](#)

[Meraki MS410 series datasheet](#)

[Meraki MS425 series datasheet](#)

[Meraki MS450 series datasheet](#)