cisco Meraki

MR Cloud-Managed Wireless Access Points

Overview

The Meraki MR series is the world's first enterprise-grade line of cloud-managed WLAN access points. Designed for challenging enterprise environments, the MR access points use advanced Wi-Fi 6 technologies, including MU-MIMO, OFDMA, beam forming and channel bonding, to deliver the throughput and reliable coverage required by demanding business applications.

Centralized cloud management

The award-winning Cisco Meraki cloud-managed architecture provides powerful and intuitive centralized management while eliminating the cost and complexity of traditional on-site wireless controllers. Seamlessly manage campus-wide Wi-Fi deployments and distributed multi-site networks with zero-touch access point provisioning, network-wide visibility and control, cloud-based RF optimization, seamless firmware updates, and more. With an intuitive browser-based user interface, Meraki WLAN configures in minutes without training or dedicated staff. Adding new sites to a network takes minutes, not hours or days, and there's no need to train additional staff to monitor or manage the remote networks. Meraki devices self-provision, enabling large campus and multi-site deployments without on-site IT.

Class-leading enterprise features

The MR series comes equipped with industry-leading features that make them ideal for demanding enterprise deployments:

- Self-configuring, plug-and-play deployment

- 802.11ax MU-MIMO with up to eight spatial streams built for voice and video

- Integrated enterprise security and guest access

- Dedicated radio for security and RF optimization with integrated spectrum analysis (indoor models)

- Integrated intrusion detection and prevention system (WIDS/WIPS)

- Self-learning application-aware traffic analytics engine

- Flexible group policy engine for creating and applying application-aware policies by network, device-type, and end user

- Integrated Bluetooth® IoT radio

- Self-healing, zero-configuration mesh

- Role-based administration and automatic, scheduled firmware upgrades delivered over the web

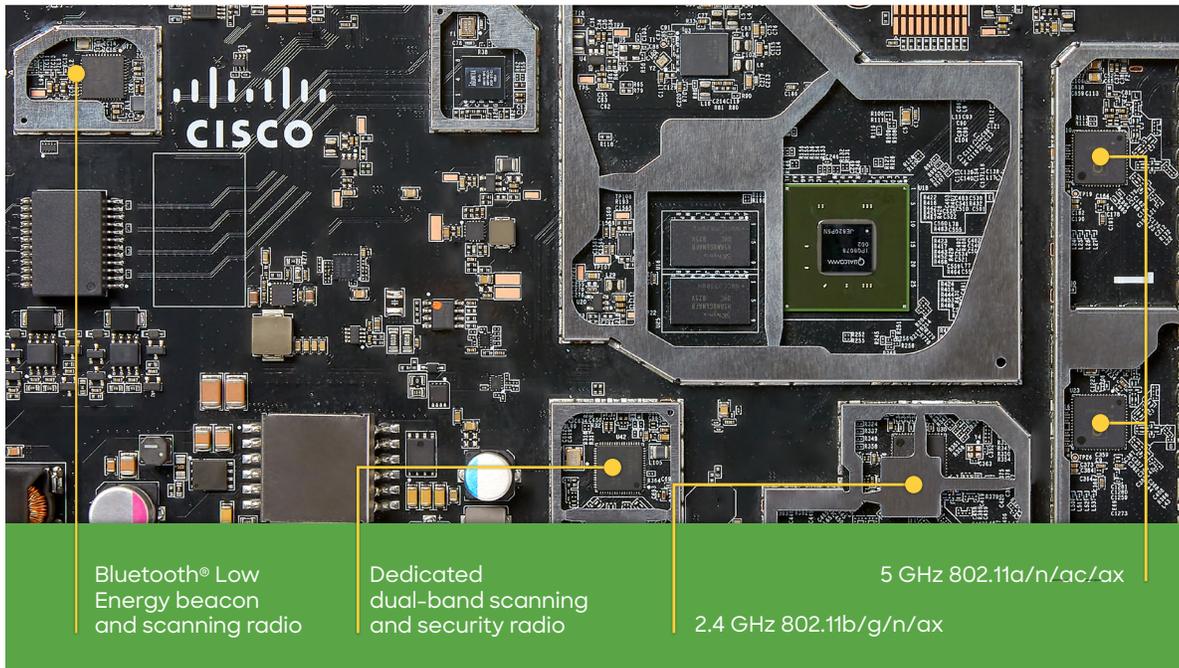- E-mail and text message alerts upon power loss, downtime, or configuration changes

Rapid deployment and scalability

Built from the ground up for multi-site networks, Meraki access points have revolutionized distributed branch wireless networking. Zero-touch deployments, multi-site visibility and control, and automated alerts make deploying, securing, and centrally managing branch networks a breeze.

The Meraki cloud-managed architecture enables plug-and-play branch deployments and provides centralized visibility and control across any number of distributed locations. Since Meraki MR series APs are managed entirely through the Meraki web-based dashboard, configuration and diagnostics can be performed remotely just as easily as on-site, eliminating costly field visits. Each device downloads its configuration via Meraki's cloud, applying your network and security policies automatically so you don't have to provision them on-site.

Inside the Meraki MR

MR56 shown, features vary by model

Bluetooth® Low Energy beacon and scanning radio

Dedicated dual-band scanning and security radio

5 GHz 802.11a/n/ac/ax

2.4 GHz 802.11b/g/n/ax

High-performance RF design

Every Meraki access point continuously and automatically monitors its surroundings to maximize Wi-Fi performance. By measuring channel utilization, signal strength, throughput, signals from non-Meraki APs, and non-Wi-Fi interference, Meraki APs automatically optimize Wi-Fi performance of individual APs and maximize system-wide performance.
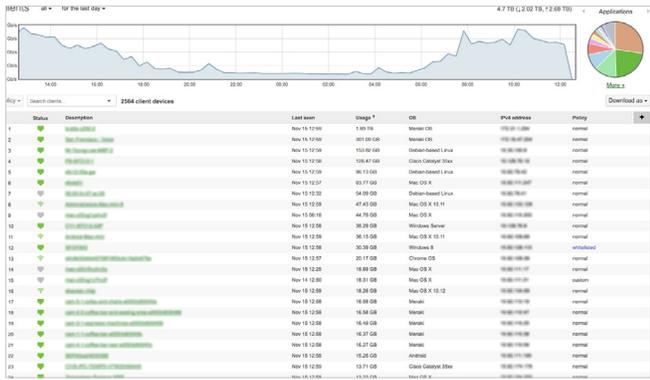
Meraki APs have been deployed and proven in the most demanding environments, supporting more than 100 users per AP and collectively serving hundreds of Mbps of user traffic to thousands of devices. By eliminating traditional hardware controllers, Meraki also eliminates the performance bottleneck that often chokes high-density wireless deployments.

By measuring utilization from neighboring APs, detecting Wi-Fi signals from non-Meraki APs, and identifying non-Wi-Fi interference, Meraki APs continuously stay on top of changing and challenging conditions. Tools such as real-time spectrum analysis and live channel utilization deliver immediate information on the RF environment at any part of the network. Even in dynamic environments, Meraki networks automatically detect and adapt to interference from non-Wi-Fi sources.
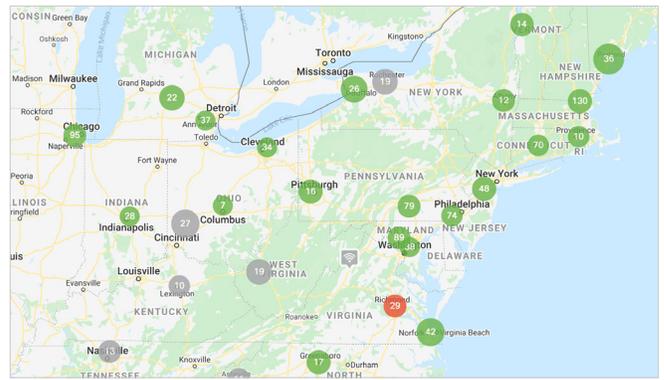

Real-time and historical metrics ensure maximum system-wide performance. Wireless channels, AP output power, and client connection settings are automatically adapted to changing performance and interference conditions, eliminating the need for tedious manual adjustment of dozens of independent parameters.

Mesh networking, included in every Meraki AP, extends coverage to hard-to-wire areas and creates a self-healing network that is resilient to cable and switch failures, continuing to operate despite failures or configuration changes in the rest of the network, without the need for manual configuration or optimization.

USER ANALYTICS AND TRAFFIC SHAPING

MULTI-SITE MANAGEMENT

LIVE TROUBLESHOOTING TOOLS

AIR MARSHAL: REAL-TIME WIRELESS
INTRUSION PREVENTION SYSTEM

Enterprise security and a dedicated radio

The MR series comes equipped with complete out-of-the-box enterprise-class security. Segment wireless users, applications, and devices; secure your network from attacks; and enforce the right policies for each class of users. A built-in stateful policy layer 3/layer 7 firewall, 802.1X/RADIUS support, and native Active Directory integration deliver fine-grained access control, while a guest access firewall provides secure, internet-only guest Wi-Fi in just one click. Integrated network access control (NAC) provides end-user antivirus scanning for accurate client device posture assessment to protect your wired and wireless network against virus infections.

Indoor APs feature a radio dedicated to full-time scanning, rogue AP containment, and automatic RF optimization. With Air Marshal, it is possible to set up a real-time wireless intrusion detection and prevention system (WIDS/WIPS) with user-defined threat remediation policies and intrusion alarms, enabling secure wireless environments without complex setup or systems integration. Auto RF eliminates the need for manual RF configuration by scanning the environment for utilization, interference, and other metrics, and computing the optimal channel and power settings for every AP in the network. Meraki WLANs are fully HIPAA and PCI compliant.

Meraki MR APs integrate with Cisco Umbrella™ (formerly OpenDNS) offering a cloud-delivered first line of defense against security threats like malware, ransomware, and phishing. Cisco Umbrella, the industry's first secure internet gateway, protects client devices at the DNS layer. The integration ensures DNS blind spots are proactively monitored and not exposed to malicious security threats.

Cisco ISE with change of authorization (CoA) provides secure access for authorized guests, oversight on guest onboarding, and identifies potential BYOD security threats.

Combine Meraki MR access points and Meraki MS switches to eliminate manual per-access-port configurations and reduce installation costs with SecureConnect, which automatically authorizes the MR access point and deploys security profiles

Built-in guest access

Meraki cloud management provides the ability to customize and integrate splash pages onto each Meraki MR access point, with options for click-through or sign-on splash using your own RADIUS server or the Meraki cloud-based RADIUS user database. The Meraki MR series features a complete array of built-in captive portal tools, including a guest ambassador portal for new user sign-on, splash sign-in tracking, application blocking and traffic shaping, free and paid tiers of access, integrated credit card processing and prepaid code generation, and splash bypass for corporate-issued or recognized devices.

Presence

The Meraki MR series tracks probing MAC addresses from associated and non-associated clients. This data is exported in real time from the access points to Meraki's cloud for analytics; information is then calculated and presented in the Meraki dashboard to display metrics such as user dwell time, repeat visits, and capture rate (people passing by vs. engaging with a site). This information can be used by retail, hospitality, and enterprise customers to understand foot traffic and visitor behavior across sites in order to facilitate optimization of opening hours, marketing campaigns, and staffing policies.
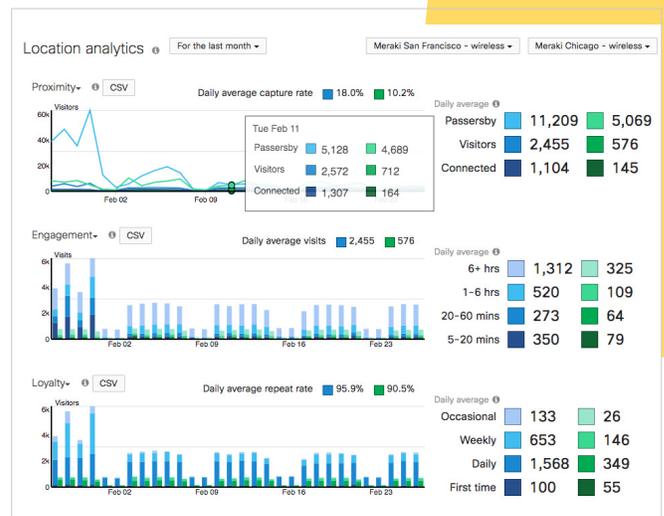
**PRESENCE ANALYTICS
(FOR NON-ASSOCIATED CLIENTS)**

BYOD-ready out of the box

User owned devices have exploded onto networks everywhere, with new iPads, Androids, and smartphones connecting every day. Meraki MR series APs feature built-in support for BYOD and make it easier than ever to securely track and support user-owned iPads, tablets, smartphones, and laptops—without exta appliances, licenses, or complex VLAN configurations. Using integrated layer 7 fingerprinting, client devices are automatically identified and classified, letting you distinguish between iPads and iPhones, device operation systems, and even manufacturers. Device-specific policies can be automatically applied to restrict, quarantine, or throttle user-owned devices. Client fingerprinting, combined with a heuristics-driven reporting engine, allows you to generate detailed reports of BYOD clients that have connected, measure the bandwidth and applications they've accessed, and even see their percentage of total traffic. Bonjour forwarding facilitates seamless discovery of Apple devices across VLANs, rounding out a full BYOD-centric feature set.

CLIENT LOCATION TRACKING

Top operating systems

#	OS	# Clients ▼	% Clients	Usage	% Usage
1	Apple iPhone	843	38.5%	163.22 GB	7.8%
2	Mac OS X	495	22.6%	1.20 TB	59.0%
3	Apple iPad	168	7.7%	78.78 GB	3.8%
4	Apple iPod	167	7.6%	45.13 GB	2.2%
5	Windows 7	158	7.2%	304.96 GB	14.6%
6	Android	144	6.6%	13.77 GB	0.7%
7	Windows XP	59	2.7%	26.85 GB	1.3%
8	Windows Vista	44	2.0%	81.39 GB	3.9%
9	Apple iOS	31	1.4%	1.40 GB	0.1%
10	Mac OS X 10.6	28	1.3%	84.06 GB	4.0%

DEVICE REPORTING AND ANALYTICS

Combine Meraki MR access points with Meraki cloud-based mobile device management (MDM)—called Meraki Systems Manager—to monitor each of your organization's devices, showing useful metrics including client hardware/software information and recent location, and centrally manage your corporate devices with a great degree of granularity. Log in with remote desktop or command-line, push new applications, and remotely lock and erase devices. Meraki SM provides secure and seamless client onboarding by encouraging devices connecting to corporate Wi-Fi to enroll into Systems Manager and encrypting network traffic between a user's device and the access point.

Auto-tunneling VPN technology

Leveraging the Meraki cloud architecture, site-to-site VPNs can be enabled via a single click without any command-line configurations or multistep key permission setups. Complete with IPsec encryption, deploy the following architectural setups within minutes:

- Teleworker VPN: Securely extend the corporate LAN to remote sites wirelessly using the MR series with your own server or a Meraki MX

- Site-to-site VPN: Multi-branch VPN with WAN optimization and Ccontent filtering (using Meraki MX security appliance)

- Secure roaming: Layer 2 and layer 3 roaming for large campus environments

Distributed packet processing

Meraki devices execute packet processing at the edge. Each wireless access point features a high-performance CPU that enforces layer 3-7 firewall policies, applicaiton QoS, network access control (NAC), and more. Meraki networks scale seamlessly—add capacity by simply deploying more APs–without concern for controller bottlenecks or choke points.

Every Meraki wireless access point is built with the packet-processing resources to secure and control its client traffic without need for a wireless LAN controller. Meraki APs are built with a high-performance CPU, hardware-accelerated encryption, and extended memory resources to implement stateful firewall policies, voice and video optimization, and even layer 7 traffic classification and QoS.

Cloud-managed network assurance

Meraki Health

A unified network infrastructure platform allows IT organizations to achieve faster issue remediation, maximize uptime, and optimize performance. By ingesting data from a complete network infrastructure platform, the Meraki Health heuristics engine rapidly identifies anomalies impacting wireless end users' experiences across every stage of client connectivity—association, authentication, IP addressing, and DNS availability—for rapid root-cause analysis and response.
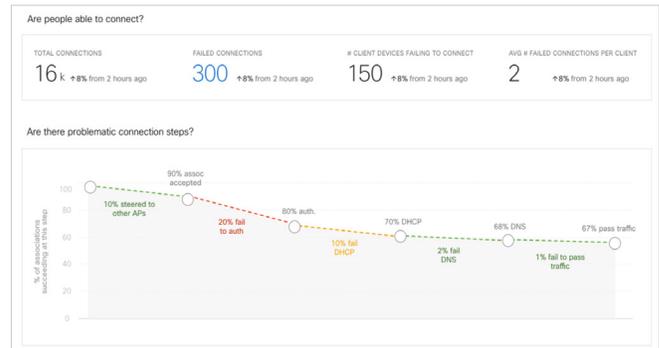
Global scalability

Using Meraki Health, immediate visibility is provided to identify problematic APs and clients, gain actionable insights to pinpoint stages of failure, and determine if users are able to access the network. Remotely identify problematic devices anywhere across a campus or thousands of separate geographical sites and access built-in live troubleshooting tools. Globally apply network data collection to extract insights and make configuration changes at scale to optimize Wi-Fi performance.
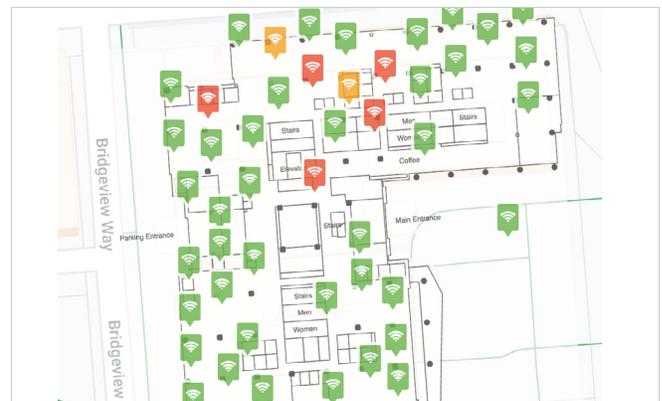
Analytics

Rich analytics ensure performance levels with color-coded historical metrics—signal quality, client count, wireless latency, channel utilization, and data rates—allowing for time-based correlation to significant events. Real-time analytics are provided for specific access points as well as individual wireless clients. Client timelines include automated root-cause identification and suggested remediation for client connectivity failures.

Macbook Pro 4.15 — 3rd floor AP — 35 — Access Switch — 49 — 51 — Closet 4 Switch — 52 — 3 — Data Center Switch — 2 — MX450 Router

Network-wide visibility

Visibility and status of the entire network is provided when combining Meraki access points with Meraki switches and routers. The end-to-end network infrastructure snapshot shows client connectivity failures and metrics that would dictate the health of a connection or device along the path to the network's layer 3 gateway. With a reduction in reactive troubleshooting and an increase in proactive and predictive network management, client, application, and service performance can be assured.

Product options: indoor Wi-Fi 6E

Premium hybrid work experiences

Wi-Fi 6E and the Meraki MR57 help you scale your mission-critical network infrastructure to meet the needs of hybrid work, remote work, and smarter workspaces.

Your network is the connection from data to employees to customers and everywhere in between. Creating a consistent and productive work environment that keeps people connected is a priority for every business. Employees want the same experience on your network, no matter their location, and you want them to have the right access at the right time.

MR57

Prepare for what's next

The Meraki MR57 Wi-Fi 6E access point delivers an improved wireless network that is faster and more reliable and designed for dense environments, high-bandwidth applications like video calls, and services that require ultra-low latency like augmented and virtual reality. In the era of hybrid work and meetings that bridge the physical and the virtual, you need a network that works with your team, not against it. Wi-Fi 6E networks offer the "wired-like" experience that collaboration tools require for a seamless, inclusive, and secure experience.

Smart spaces and automated processes that depend on IoT devices within manufacturing, shipping, and logistics facilities no longer have to suffer from slow Wi-Fi and intermittent connectivity. Wi-Fi 6E helps remediate these issues with wired-like Wi-Fi speeds and a clean spectrum for every automation need. Manufacturers can use robots and automatically guided vehicles in warehouses where they require ultra-low latency with the highest reliability.

	MR57
Usage	Next-generation, ultra-high-performance access point with Wi-Fi 6E technology
Radio specification	2.4 GHz 802.11b/g/n/ax client access radio 5 GHz 802.11a/n/ac/ax client access radio 6 GHz 802.11ax client access radio 2.4 GHz, 5 GHz, and 6 GHz tri-band Air Marshal WIDS/WIPS, spectrum analysis, and location analytics radio 2.4 GHz Bluetooth® Low Energy radio with beacon and scanning support concurrent operation of all five radios
Interface	Two 1,000/2.5G/5G BASE-T Ethernet (RJ45) One DC power connector (5.5 mm x 2.5 mm; center positive)
Power*	Power over Ethernet: 42.5V - 57V (PoE+ and UPoE compliant) Alternative 54V DC input via DC adapter Power consumption: 30W to 40W (UPoE) Minimum power requirement: 30W (PoE+; USB is disabled) Maximum power consumption: 40W
Performance features	DL-OFDMA, TWT support, BSS coloring 4 × 4 multiple input, multiple output (MIMO) with four spatial streams on 6 GHz 4 × 4 multiple input, multiple output (MIMO) with four spatial streams on 5 GHz 4 × 4 multiple input, multiple output (MIMO) with four spatial streams on 2.4 GHz SU-MIMO, UL, and DL MU-MIMO support Maximal ratio combining (MRC) and beamforming 20 and 40 MHz channels (802.11n); 20, 40, 80 MHz channels (802.11ac Wave 2); 20, 40, 80, and 160MHz channels (802.11ax) Up to 1024-QAM on all three: 2.4 GHz, 5 GHz, and 6 GHz bands Packet aggregation
Dimensions	260 mm x 260 mm x 56 mm, including desk-mount feet or mount plate
Weight	1.7 kg

* Power over Ethernet injector and DC adapter sold separately

Product options: indoor Wi-Fi 6

	MR36	MR36(H)	MR44
Usage	Next-generation entry-level high-performance WI-Fi 6 AP with security-scanning radio and Bluetooth® Low Energy included.	Next-generation in-room hotel or dormitory deployments that service IP-enabled devices; high performance Wi-Fi 6 AP.	Next-generation AP with Wi-Fi 6 technology. Ideal for medium-density locations with security scanning and Bluetooth® Low Energy included.
Radio specification	One 2.4 GHz 802.11b/g/n/ax One 5 GHz 802.11a/n/ac/ax One WIDS/WIPS One Bluetooth® radio 1.7 Gbit/sec max rate Two 2:2 MU-MIMO with beamforming	One 802.11b/g/n One 802.11a/n/ac One WIDS/WIPS One Bluetooth® radio 1.3 Gbit/sec max rate Two 2:2 MU-MIMO with beamforming	One 2.4 GHz 802.11b/g/n/ax One 5 GHz 802.11a/n/ac/ax One WIDS/WIPS One Bluetooth® radio 3 Gbit/sec max rate Two 2:2 + 4×4:4 MU-MIMO with beamforming
Interface	One Gigabit Ethernet port	One Gigabit Ethernet passthrough port One Gigabit Ethernet LAN port with 802.3af PoE Two Gigabit Ethernet LAN ports	One 2.5 Multigigabit Ethernet port
Power	802.3af PoE or DC power adapter	802.3at power w/ 802.3af PoE out/802.3af compatible w/o PoE out	802.3af/at PoE or DC power adapter
Performance features	Two 2:2 MU-MIMO and OFDMA 160 MHz channels* Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering	Two 2:2 MU-MIMO and OFDMA Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering	Two 2:2 + 4×4:4 UL/DL MU-MIMO and OFDMA 160 MHz channels* Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering
Dimensions	9.84 in x 4.72 in x 1.42 in (25 cm x 12 cm x 3.6 cm)	6.1 in x 4.3 in x 0.9 in (15.5 cm x 11.0 cm x 2.3 cm)	12.05 in × 5.06 in × 1.74 in (30.6 cm × 12.84 cm × 4.43 cm)
Weight	17.35 oz (0.5 kg)	17.35 oz (492 g)	26.07 oz (0.74 kg)

* Hardware capable

Product options: indoor Wi-Fi 6

	MR46(E)	MR56
Usage	Next-generation AP with Wi-Fi 6 technology. Ideal for high-density locations or focused wireless coverage with security scanning, Bluetooth® Low Energy, and external antenna option.	Next-generation AP with Wi-Fi 6 technology. Ideal for ultra-high-density and performance deployments. Security radio and Bluetooth® Low Energy included.
Radio specification	One 2.4 GHz 802.11b/g/n/ax One 5 GHz 802.11a/n/ac/ax One WIDS/WIPS One Bluetooth® radio 3.5 Gbit/sec max rate Four 4:4 MU-MIMO with beamforming	One 2.4 GHz 802.11b/g/n/ax One 5 GHz 802.11a/n/ac/ax One WIDS/WIPS One Bluetooth® radio 5.9 Gbit/sec max rate Eight 8:8 MU-MIMO with beamforming
Interface	One 2.5 Multigigabit Ethernet port	One 5 Gbps Multigigabit Ethernet port
Power	802.3at PoE or DC power adapter	802.3at PoE or DC power adapter
Performance features	Four 4:4 UL/DL MU-MIMO and OFDMA 160 MHz channels* Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering Removable antennas (MR46E)	Eight 8:8 UL/DL MU-MIMO and OFDMA 160 MHz channels* Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering
Dimensions	12.05 in × 5.06 in × 1.74 in (30.6 cm × 12.84 cm × 4.43 cm) (MR46) 9.84 in x 4.72 in x 1.42 in (30.72 cm x 15.62 cm x 3.49 cm) (MR46E)	12.83 in × 5.54 in × 1.76 in (32.6 cm × 14.08 cm × 4.47 cm)
Weight	28.21 oz (0.8 kg) (MR46) 29.98 oz (0.85 kg) (MR46E)	35.27 oz (1 kg)

* Hardware capable

Product options: outdoor Wi-Fi 6

	MR76	MR86
Usage	Rugged/outdoor high-performance Wi-Fi 6 wireless for outdoor campuses, industrial, point-point links, and outdoor location services.	Rugged/outdoor highest-performance Wi-Fi 6 with Multigigabit for tough RF and high-density environments.
Radio specification	One 802.11b/g/n/ax One 802.11a/n/ac/ax One WIDS/WIPS One Bluetooth® radio 1.7 Gbit/sec max rate Two 2:2 MU-MIMO and OFDMA with beamforming	One 802.11b/g/n/ax One 802.11a/n/ac/ax One WIDS/WIPS One Bluetooth® radio 3.5 Gbit/sec max rate Four 4:4 MU-MIMO and OFDMA with beamforming
Interface	One Gigabit Ethernet port Four External N-type connectors (antennas sold separately)	One 2.5 Gbps Multigigabit Ethernet port Four External N-type connectors (antennas sold separately)
Power	802.3af PoE	802.3at PoE
Physical design	Rugged industrial design Water and dust sealed (IP67 rated) Vibration and shock tested	Rugged industrial design Water and dust sealed (IP67 rated) Vibration and shock tested
Performance features	Third radio dedicated to security and RF management Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering Bluetooth low energy radio for Bluetooth Low Energy radio for beacon and scanning	Third radio dedicated to security and RF management Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering High-density support Bluetooth Low Energy radio for beacon and scanning
Dimensions	11.81 in × 6.02 in × 2.16 in (30.0 cm × 15.3 cm × 5.5 cm)	11.81 in × 6.02 in × 2.16 in (30.0 cm × 15.3 cm × 5.5 cm)
Weight	47.27 oz (1.34 kg)	52.91 oz (1.5 kg)

* Hardware capable

Product options: indoor Wi-Fi 5

	MR20	MR30H	MR33	MR42(E)	MR52/53(E)
Usage	Basic wireless, value-designed deployments.	In-room hotel or dormitory deployments that must service IP-enabled devices.	Entry-level 802.11ac wave 2 for future-proof deployments.	General purpose 802.11ac wave 2 for campus and enterprise, with external antenna option.	High-performance 802.11ac wave 2 with Multigigabit for high-density campus, and MU-MIMO, with external antenna option.
Radio specification	One 802.11b/g/n One 802.11a/n/ac 1.3 Gbit/sec max rate Two 2:2 MU-MIMO with beamforming	One 802.11b/g/n One 802.11a/n/ac One WIDS/WIPS One Bluetooth® radio 1.3 Gbit/sec max rate Two 2:2 MU-MIMO with beamforming	One 802.11b/g/n One 802.11a/n/ac One WIDS/WIPS One Bluetooth® radio 1.3 Gbit/sec max rate Two 2:2 MU-MIMO with beamforming	One 802.11b/g/n One 802.11a/n/ac One WIDS/WIPS One Bluetooth® radio 1.9 Gbit/sec max rate Three 3:3 MU-MIMO with beamforming	One 802.11b/g/n One 802.11a/n/ac One WIDS/WIPS One Bluetooth® radio 2.5 Gbit/sec max rate Four 4:4 MU-MIMO with beamforming
Interface	One Gigabit Ethernet port	One Gigabit Ethernet input One Gigabit Ethernet LAN port with 802.3af PoE Three Gigabit Ethernet LAN ports	One Gigabit Ethernet port	One Gigabit Ethernet port	One 2.5Gbps Multigigabit Ethernet port One Gigabit Ethernet port Two Gigabit Ethernet port (MR52)
Power	802.3af PoE or DC power adapter	802.3at power w/ 802.3af PoE out/802.3af compatible w/o PoE out	802.3af PoE or DC power adapter	802.3af/at PoE or DC power adapter	802.3at PoE or DC power adapter
Performance features	Two 2:2 MU-MIMO Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering	Two 2:2 MU-MIMO Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering	Two 2:2 MU-MIMO Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering	Three 3:3 MU-MIMO Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering Removable antennas (MR42E)	Four 4:4 MU-MIMO Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering Removable antennas (MR53E)
Dimensions	7.95 in × 4.88 in × 1.02 in (20.2 cm × 12.4 cm × 2.6 cm)	6.1 in x 4.3 in x 0.9 in (15.5 cm x 11.0 cm x 2.3 cm)	8.5 in x 4.3 in x 1.3 in (21.5 cm x 11.0 cm x 3.2 cm)	10.0 in x 6.1 in x 1.5 in (25.3 cm x 15.6 cm x 3.7 cm)	10.56 in x 6.38 in x 1.58 in (26.8 cm x 16.2 cm x 3.9 cm)
Weight	9.6 oz (0.27 kg)	14.4 oz (.41 kg)	13.2 oz (0.38 kg)	25 oz (0.7 kg)	28.9 oz (0.82 kg)

Product options: outdoor Wi-Fi 5

	MR70	MR74	MR84
Usage	Basic outdoor/rugged WLAN with medium-density deployments.	Rugged/outdoor general purpose WLAN for outdoor campuses, industrial, point-to-point links, and outdoor location services.	Highest-performance 802.11ac wave 2 with Multigigabit for tough RF and high-density environments.
Radio specification	One 802.11b/g/n One 802.11a/n/ac 1.3 Gbit/sec max rate Two 2:2 MU-MIMO with beamforming	One 802.11b/g/n One 802.11a/n/ac One WIDS/WIPS One Bluetooth® radio 1.3 Gbit/sec max rate Two 2:2 MU-MIMO with beamforming	One 802.11b/g/n/ac One 802.11a/n/ac One WIDS/WIPS One Bluetooth® radio 2.5 Gbit/sec max rate Four 4:4 MU-MIMO with beamforming
Interface	One Gigabit Ethernet port Integrated omni-directional antennas	One Gigabit Ethernet port Four external N-type connectors (antennas sold separately)	One 2.5 Gbps Multigigabit Ethernet port One Gigabit Ethernet port Four external N-type connectors (antennas sold separately)
Power	802.3af PoE DC power adapter	802.3af PoE	802.3at PoE
Performance features	Rugged industrial design Water and dust sealed (IP67 rated) Vibration and shock tested	Rugged industrial design Water and dust sealed (IP67 rated) Vibration and shock tested	Rugged industrial design Water and dust sealed (IP67 rated) Vibration and shock tested
Dimensions	Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption	Third radio dedicated to security and RF management Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption Band steering Bluetooth® Low Energy radio for beacon and scanning	Third radio dedicated to security and RF management Priority voice, power save (802.11e/WMM) Hardware-accelerated encryption High-density support, band steering Bluetooth® Low Energy radio for beacon and scanning
Weight	9.65 in × 4.53 in × 1.18 in (24.5 cm × 11.5 cm × 3 cm)	10.1 in x 6.22 in x 3.3 in (25.6 cm x 15.8 cm x 8.3 cm)	11.26 in x 6.93 in x 7.28 in (28.6 cm x 17.6 cm x 18.5 cm)
Weight	15.87 oz (0.45 kg)	49.6 oz (1.4 kg)	60.8 oz (1.7 kg)

Licensing

	License	Description
All Cisco Meraki MR access points	LIC-ENT-1YR	Cisco Meraki MR Enterprise License and Support, 1 Year
	LIC-ENT-3YR	Cisco Meraki MR Enterprise License and Support, 3 Years
	LIC-ENT-5YR	Cisco Meraki MR Enterprise License and Support, 5 Years
	LIC-ENT-7YR	Cisco Meraki MR Enterprise License and Support, 7 Years
	LIC-ENT-10YR	Cisco Meraki MR Enterprise License and Support, 10 Years
	LIC-MR-ADV-1Y	Cisco Meraki MR Advanced License and Support, 1 Year
	LIC-MR-ADV-3Y	Cisco Meraki MR Advanced License and Support, 3 Years
	LIC-MR-ADV-5Y	Cisco Meraki MR Advanced License and Support, 5 Years
	LIC-MR-UPGR-1Y	Cisco Meraki MR ENT to ADV Upgrade License, 1 Year
	LIC-MR-UPGR-3Y	Cisco Meraki MR ENT to ADV Upgrade License, 3 Year
	LIC-MR-UPGR-5Y	Cisco Meraki MR ENT to ADV Upgrade License, 5 Year

To learn more, visit Meraki.com