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Cisco Catalyst 9130AX Series Access Points

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The Cisco[®] Catalyst[®] 9130AX Series Access Points are the next generation of enterprise access points. They are resilient, secure, and intelligent.



With the emergence of high-density networks and the Internet of Things (IoT), we are more dependent on wireless networks than ever before. Increasing numbers of devices connect to the network every year, ranging from high-performance client devices to low-bandwidth IoT devices. Cisco Catalyst 9130AX Series Access Points provide a seamless experience anywhere for everyone, with high scaling and unmatched performance in diverse network deployments. Going beyond the Wi-Fi 6 (802.11ax) standard, the 9130AX Series provides integrated security, resiliency, and operational flexibility as well as increased network intelligence.

Extending Cisco's intent-based network and perfect for networks of all sizes, the Cisco Catalyst 9130AX Series scales to meet the growing demands of IoT while fully supporting the latest innovations and new technologies. The 9130AX Series is also a leader in performance, security, and analytics.

The Cisco Catalyst 9130AX Series Access Points, paired with the Cisco Digital Network Architecture (Cisco DNA), are enterprise-class products that will address both your current and future needs. They are the first step in updating your network to take better advantage of all of the features and benefits that Wi-Fi 6 provides.

Feature	Benefits
Wi-Fi 6 (802.11ax)	The IEEE 802.11ax emerging standard, also known as High-Efficiency Wireless (HEW) or Wi-Fi 6, builds on 802.11ac. It delivers a better experience in typical environments with more predictable performance for advanced applications such as 4K or 8K video, high-density, high-definition collaboration apps, all-wireless offices, and IoT. Wi-Fi 6 is designed to use both the 2.4-GHz and 5-GHz bands, unlike the 802.11ac standard.
Cisco RF ASIC	The Cisco RF Application-Specific Integrated Circuit (ASIC) is a fully integrated Software-Defined Radio (SDR) that can perform advanced RF spectrum analysis and delivers features such as Cisco CleanAir [®] , Wireless Intrusion Prevention System (WIPS), FastLocate, [*] and Dynamic Frequency Selection (DFS) detection. (* Future)
Uplink/downlink OFDMA	Orthogonal Frequency-Division Multiple Access (OFDMA)-based scheduling splits the bandwidth into smaller frequency allocations called Resource Units (RUs), which can be assigned to individual clients in both the downlink and uplink directions to reduce overhead and latency.
Uplink/downlink MU-MIMO technology	Supporting eight spatial streams, Multiuser Multiple Input, Multiple Output (MU-MIMO) enables access points to split spatial streams between client devices to maximize throughput.

Table 1.Features and benefits

Feature	Benefits
BSS coloring	Spatial reuse (also known as Basic Service Set [BSS] coloring) allows the access points and their clients to differentiate between BSSs, thus permitting more simultaneous transmissions.
Target Wake Time	A new power-saving mode called Target Wake Time (TWT) allows the client to stay asleep and to wake up only at prescheduled (target) times to exchange data with the access point. This offers significant energy savings for battery-operated devices, up to three to four times the savings achieved by 802.11n and 802.11ac.
Intelligent Capture	Intelligent Capture probes the network and provides Cisco DNA Center with deep analysis. The software can track more than 240 anomalies and instantaneously review all packets on demand, emulating the onsite network administrator. Intelligent Capture allows for more informed decisions on your wireless networks.
Flexible Radio Assignment (FRA) with tri-radio mode	 FRA allows the access points to intelligently determine the operating mode of serving radios based on the RF environment and traffic demands. The access points can operate in the following modes: Dual-radio mode: One 8x8 5 GHz and one 4x4 2.4 GHz. One radio will serve clients on the 5-GHz band, while the other serves clients on the 2.4-GHz band. Tri-radio mode:[*] Dual 4x4 5 GHz and one 4x4 2.4 GHz. With two 4x4 5-GHz and one 4x4 2.4-GHz radios (tri-radio) inside the access point, client device capacity can be increased on demand. The access point's default mode is dual radio with 8x8 5 GHz and 4x4 2.4 GHz. It has the ability to split the 8x8 radio into two separate 4x4 5-GHz radios through software, thereby enabling the benefits of FRA while allowing the 2.4-GHz radio to remain active.
Industry first 8x8 external antenna access point with smart antenna connector	The Cisco Catalyst 9130AX Series Access Points are the first in the industry to provide an 8x8 radio architecture with external antennas. Additionally, these antennas can be split into a dual 4x4 radio architecture. An intelligent physical antenna connector is included on the 9130AX Series with an external antenna. This connector provides advanced network design flexibility for high-density and large open-area environments such as auditoriums, convention centers, libraries, cafeterias, and arenas/stadiums.
Cisco Embedded Wireless Controller (EWC)	An Embedded Wireless Controller on the Catalyst 9130AX access points is designed for networks of all sizes, including small and medium-sized businesses and distributed enterprises. It provides industry-leading wireless LAN technology without the need for a physical wireless controller. For more details refer to the <u>EWC data sheet.</u>
Application Hosting on Catalyst 9100 Access	Application Hosting on Catalyst 9100 Access Points helps future-proof and simplify IoT deployments by eliminating the need to install and manage overlay networks. Utilizing the USB interface, containerized applications and hardware modules can be deployed to reduce cost and complexity. Adding Cisco DNA Center provides workflows and deployment-wide application lifecycle management.
Multigigabit Ethernet support	Multigigabit Ethernet provides uplink speeds of 5 Gbps and 2.5 Gbps, in addition to 100 Mbps and 1 Gbps. All speeds are supported on Category 5e cabling, as well as 10GBASE-T (IEEE 802.3bz) cabling.
Bluetooth 5	Integrated Bluetooth Low Energy (BLE) 5 radio enables location-based use cases such as asset tracking, wayfinding, and analytics.
Container support for applications	Container support enables edge computing capabilities for IoT applications on the host access point.

Feature	Benefits
Apple features	Apple and Cisco have partnered to create an optimal mobile experience for iOS devices on corporate networks based on Cisco technologies. Using new features in Apple iOS, in combination with the latest software and hardware from Cisco, businesses can now more effectively use their network infrastructure to deliver an enhanced user experience across all business applications.
	At the center of the collaboration is a unique handshake between the Cisco WLAN and Apple devices. This handshake enables the Cisco WLAN to provide an optimal Wi-Fi roaming experience to Apple devices. Additionally, the Cisco WLAN trusts Apple devices and gives priority treatment for business-critical applications specified by the Apple device. This feature is also known as Fast Lane.

For more details about Wi-Fi 6, see Cisco's technical white paper on Wi-Fi 6.

For more details about Catalyst 9130AX feature support, see Cisco's Feature Matrix.

Secure infrastructure

Trustworthy systems built with Cisco Trust Anchor Technologies provide a highly secure foundation for Cisco products. With the Cisco Catalyst 9100 Access Points, these technologies enable assurance of hardware and software authenticity for supply chain trust and strong defense against man-in-the-middle attacks that compromise software and firmware. Trust Anchor capabilities include:

- Image signing
- Secure Boot
- Cisco Trust Anchor module

Cisco DNA support

Pairing the Cisco Catalyst 9130AX Series Access Points with Cisco DNA allows for a total network transformation. Cisco DNA allows you to truly understand your network with real-time analytics, quickly detect and contain security threats, and easily provide networkwide consistency through automation and virtualization. The 9130AX Series supports Software-Defined Access (SD-Access), Cisco's leading enterprise architecture.

Working together, the Cisco Catalyst 9130AX Series and Cisco DNA offer such features as:

- Cisco DNA Spaces
- Cisco Identity Services Engine
- Cisco DNA Analytics and Assurance

The result? Your network stays relevant, becomes digital ready, and is the lifeblood of your organization.

Note: For information about DNA, refer to the Cisco DNA Solution Overview.

Product specifications

Table 2.Specifications

Item	Specification
Part numbers	 Cisco Catalyst 9130AXI Access Point: Indoor environments, with internal antennas C9130AXI-x: Cisco Catalyst 9130AX Series Cisco Catalyst 9130AXE Access Point: Challenging indoor environments, with external antennas C9130AXE-x: Cisco Catalyst 9130AX Series Regulatory domains: (x = regulatory domain) Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country, visit https://www.cisco.com/go/aironet/compliance. Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List and/or regional price lists. Cisco Wireless LAN Services AS-WLAN-CNSLT: Cisco Wireless LAN Network Planning and Design Service AS-WLAN-CNSLT: Cisco Wireless LAN 802.11n Migration Service AS-WLAN-CNSLT: Cisco Wireless LAN Performance and Security Assessment Service
Software	Catalyst 9130AXI Cisco Unified Wireless Network Software Release 8.10.x or later Cisco IOS® XE Software Release 16.12.1 with AP Device Pack, or later Catalyst 9130AXE Cisco Unified Wireless Network Software Release 8.10 MR1 or later Cisco IOS XE Software Release 17.1.1 or later
Supported wireless LAN controllers	 Cisco Catalyst 9800 Series Wireless Controllers Cisco 3504, 5520, and 8540 Wireless Controllers and Cisco Virtual Wireless Controller
802.11n version 2.0 (and related) capabilities	 4x4 MIMO with four spatial streams Maximal Ratio Combining (MRC) 802.11n and 802.11a/g 20- and 40-MHz channels PHY data rates up to 1.5 Gbps (40 MHz with 5 GHz and 20 MHz with 2.4 GHz) Packet aggregation: Aggregate MAC Protocol Data Unit (A-MPDU) (transmit and receive), Aggregate MAC Service Data Unit (A-MSDU) (transmit and receive) 802.11 Dynamic Frequency Selection (DFS) Cyclic Shift Diversity (CSD) support
802.11ac	 8x8 downlink MU-MIMO with eight spatial streams MRC 802.11ac beamforming 20-, 40-, 80-, and 160-MHz channels PHY data rates up to 6.9 Gbps (160 MHz with 5 GHz) Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive) 802.11 DFS CSD support Wi-Fi Protected Access (WPA) 3 support

Item	Specification
802.11ax	 8x8 uplink/downlink MU-MIMO with eight spatial streams Uplink/downlink OFDMA TWT BSS coloring MRC 802.11ax beamforming 20-, 40-, 80-, and 160-MHz channels PHY data rates up to 10 Gbps (160 MHz with 5 GHz and 20 MHz with 2.4 GHz) Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive) 802.11 DFS CSD support WPA3 support
Integrated antenna	 2.4 GHz: Peak gain 4 dBi, internal antenna, omnidirectional in azimuth 5 GHz: Peak gain 6 dBi, internal antenna, omnidirectional in azimuth
External antenna with smart antenna connector	 The Cisco Catalyst 9130AXE Access Point is certified for use with antenna gains up to 13 dBi (2.4 GHz and 5 GHz) Cisco offers the industry's broadest selection of <u>antennas</u>, delivering optimal coverage for a variety of deployment scenarios Supports Self-Identifiable Antennas (SIA) on the smart antenna connector Smart antenna connector is a compact multi-RF connector with 8-DART interface Requires the AIR-CAB-002-D8-R= 2-fppt smart antenna connector when used with antennas with a RP-TNC connector Requires the AIR-CAB-003-D8-N= 3 ft smart antenna connector when used with AIR-ANT2513P4M-N= antenna For more details, see <u>the Catalyst 9130AX Series Getting Started Guide</u>.
Interfaces	 1x 100, 1000, 2500, 5000 Multigigabit Ethernet (RJ-45) - IEEE 802.3az Management console port (RJ-45) USB 2.0 at 4.5W (enabled via future software)
Indicators	 Status LED indicates boot loader status, association status, operating status, boot loader warnings, and boot loader errors
Dimensions (W x L x H)	 Access point (without mounting brackets): C9130AXI: 8.9 x 8.9 x 1.88 in. (22.6 x 22.6 x 4.8 cm) C9130AXE: 9.17 x 9.17 x 1.58 in. (23.3 x 23.3 x 4.0 cm)
Weight	Cisco Catalyst 9130AXI • 3.2 lb. (1.45 kg) Cisco Catalyst 9130AXE • 3.78 lb. (1.71 kg)
Input power requirements	 802.3at Power over Ethernet Plus (PoE+), 802.3bt Cisco Universal PoE (Cisco UPOE[®]) Cisco power injector, AIR-PWRINJ6= 802.3af PoE Cisco power injector, AIR-PWRINJ5= (Note: This injector supports only 802.3af)

Item	Specification						
	Catalyst 9130AXI						
	PoE power consumption	2.4-GHz radio	5-GHz radio	Link spe	eed	USB	Link Layer Discovery Protocol (LLDP)
	802.3at (PoE+)	4x4	8x8	5G		Ν	25.5W
	802.3at (PoE+)	4x4	4x4	5G		Y [4.5W]	25.5W
	802.3bt (Cisco UPOE)	4x4	8x8	5G		Y [4.5W]	30.5W
	Cisco Catalyst	9130AXE					
	PoE power consumption	2.4-GHz radio	5-GHz radio	Link spe	eed	USB	LLDP
	802.3at (PoE+)	4x4	8x8	5G		Ν	25.5W
	802.3at (PoE+)	4x4	4x4	5G		Y [4.5W]	25.5W
	802.3bt (Cisco UPOE)	4x4	8x8	5G		Y [4.5W]	30.5W
	Cisco Catalyst 9	9130AXI and 913	OAXE				
	PoE power consumption	2.4-GHz radio	5-GHz radio	Link spe	ed	USB	LLDP
	802.3af	PoE	1x1	1x1	1G	Ν	13.4W
Environmental	 Nonoperating (s Operating temp Operating humi Operating altitu Note: When the to 4x4 on the 5 0 interface will rem Cisco Catalyst 9 Nonoperating (s Nonoperating temp Operating humi 	storage) temperatu storage) altitude tes perature: 32° to 122 dity: 10% to 90% (r de test: 40°C, 9843 ambient operatin GHz radio, uplink nain enabled. 9130AXE storage) temperatu storage) altitude tes	noncondensing) 3 ft (3000 m) g temperature ex Ethernet will dow re: -22° to 158°F (st: 25°C, 15,000 ft (2°F (-20° to 50°C) noncondensing)	4600 m) ceeds 40° ngrade to -30° to 70	°C, the a 1 Gigal		
System memory	 2048 MB DRAM 1024 MB flash 						

ltem	Specification						
Warranty	Limited lifetime hardware warranty						
Available transmit power settings	2.4 GHz • 23 dBm (200 mW) • -4 dBm(0.39 mW)	5 GHz • 26 dBm (400 mW) • -1 dBm (0.79 mW)					
Regulatory domains	Note: Customers are responsible for verifying approval for use in their individual countries verify approval and to identify the regulatory domain that corresponds to a particular cour visit <u>https://www.cisco.com/go/aironet/compliance</u> .						
Compliance standards	 Safety: IEC 60950-1 EN 60950-1 UL 60950-1 CAN/CSA-C22.2 No. 60950-1 AS/NZS60950.1 UL 2043 Class III equipment Emissions: CISPR 32 (rev. 2015) EN 55032 (rev. 2012/AC:2013) EN 55032 (rev. 2015) EN 55032 (rev. 2014) EN61000-3-2 (rev. 2014) EN61000-3-3 (rev. 2013) KN61000-3-2 KN61000-3-3 AS/NZS CISPR 32 Class B (rev. 2015) 47 CFR FCC Part 15B ICES-003 (rev. 2016 Issue 6, Class B) VCCI-CISPR 32 CNS (rev. 13438) KN-32 QCVN 118:2018/BTTTT Immunity: CISPR 24 (rev. 2010) EN 55035: 2017 KN35 Emissions and immunity: EN 301 489-1 (v2.1.1 2017-02) QCVN (18:2014) QCVN 112:2017/BTTTT 	 Radio: EN 300 328 (v2.1.1) EN 301 893 (v2.1.1) AS/NZS 4268 (rev. 2017) 47 CFR FCC Part 15C, 15.247, 15.407 RSP-100 RSS-GEN RSS-247 China regulations SRRC LP0002 (rev 2018.1.10) Japan Std. 33a, Std. 66, and Std. 71 RF safety: EN 50385 (rev. Aug 2002) ARPANSA AS/NZS 2772 (rev. 2016) EN 62209-1 (rev. 2016) EN 62209-2 (rev. 2010) 47 CFR Part 1.1310 and 2.1091 RSS-102 IEEE standards: IEEE 802.3ab IEEE 802.3ab IEEE 802.11a/b/g/n/ac/ax IEEE 802.11h, 802.11d Security: 802.111, (WPA2, WPA3 802.1X Advanced Encryption Standard (AES) EXTensible Authentication Protocol (EAP) types: EAP-Transport Layer Security (TLS) EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol (MSCHAP) v2 					

ltem		Specification							
		 EN 60601-1-2:2015 EN 61000-6-1: 2007 				 PEAP v1 or EAP-Generic Token Card (GTC) EAP-Subscriber Identity Module (SIM) 			
Data rate, power, rec sensitivity	eive	For more detailed information about data rate, transmit power, and receive sensitivity, please refer to the <u>Cisco RF details</u> .							
Transmit (Tx) power and receive (Rx) sensitivity									
			5-GHz primary	radio	5-GHz seco	ndary radio	2.4-GHz rad	io	
	Spatial streams	Number of active antennas	Total Tx power (dBm)	Rx sensitivity (dBm)	Total Tx power (dBm)	Rx sensitivity (dBm)	Total Tx power (dBm)	Rx sensitivity (dBm)	
802.11/11	2								
1 Mbps	1	4	-	-	_	-	23	-104	
11 Mbps	1	4	-	-	-	-	23	-96	
802.11a/g									
6 Mbps	1	4	23	-100	23	-99	23	-98	
24 Mbps	1	4	22	-92	22	-92	22	-91	
54 Mbps	1	4	21	-84	21	-83	20	-82	
802.11n H	Г20								
MCS0	1	4	23	-99	23	-99	23	-98	
MCS31	4	4	20	-77	20	-77	20	-75	
802.11n H ⁻	Г40								
MCS0	1	4	23	-96	23	-96	-	-	
MCS31	4	4	20	-75	20	-75	-	-	
802.11ac \	/HT20								
MCS0	1	4	23	-100	23	-99	-	-	
MCS9	4	4	-	-	-	-	-	-	
MCS0	1	8	26	-102	-		-	-	
MCS8	8	8	23	-73	-		-	-	

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MCS9

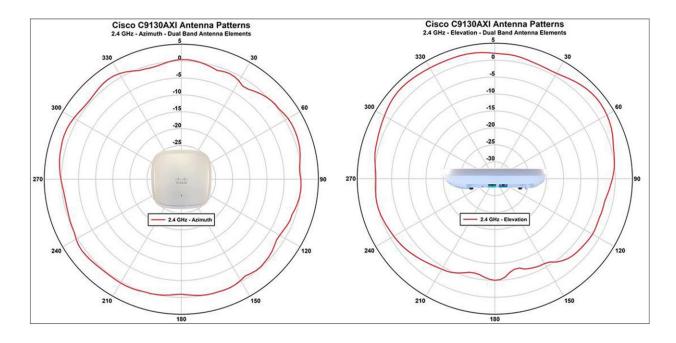
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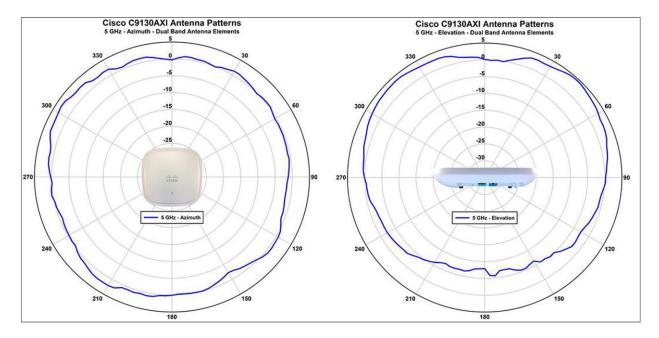
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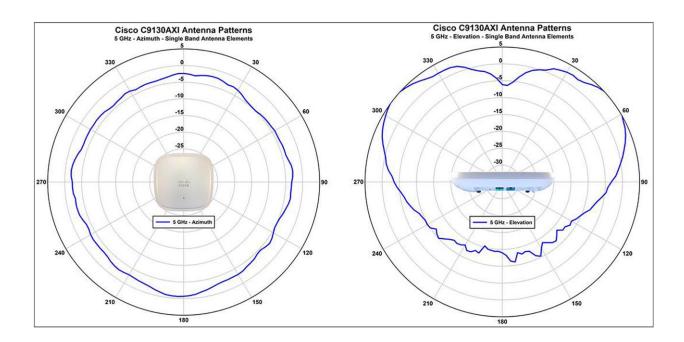
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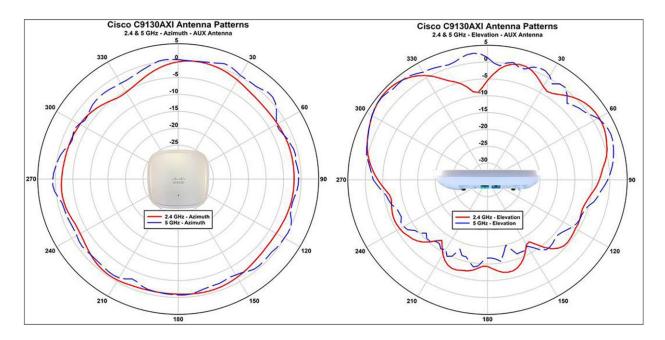
ltem		Specification							
802.11ac VHT40									
MCS0	1	4	23	-96	23	-96	-	_	
MCS9	4	4	19	-69	19	-69	-	-	
MCS0	1	8	26	-99		-	-	-	
MCS9	8	8	22	-69		-	-	-	
802.11ac \	/HT80								
MCS0	1	4	23	-93	23	-93	-	-	
MCS9	4	4	19	-65	19	-64	-	-	
MCS0	1	8	26	-95		-	-	-	
MCS9	8	8	22	-65		-	-	-	
802.11ac VHT160									
MCS0	1	4	26	-89		-	-	-	
MCS9	4	4	21	-61		-	-	-	
802.11ax I	IE20								
MCS0	1	4	23	-99	23	-99	23	-98	
MCS11	4	4	18	-66	18	-66	17	-65	
MCS0	1	8	26	-102		-	-	_	
MCS11	8	8	21	-65		-	-	-	
802.11ax I	HE40								
MCS0	1	4	23	-96	23	-96	-	_	
MCS11	4	4	18	-63	18	-62	-	-	
MCS0	1	8	26	-99		-	-	-	
MCS11	8	8	21	-63		-	-	-	
802.11ax I	IE80								
MCS0	1	4	23	-93	23	-93	-	-	
MCS11	4	4	17	-59	17	-59	-	-	

Item		Specification						
MCS0	1	8	26	-96	_	-	-	
MCS11	8	8	20	-59	_	-	-	
802.11ax I	802.11ax HE160							
MCS0	1	4	26	-88	-	-	_	
MCS11	4	4	19	-56	-	-	-	









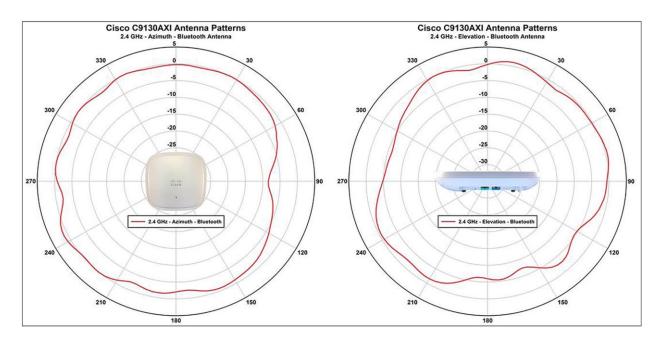


Figure 1. Antenna profiles

Note: For information about feature support, refer to the Cisco Catalyst 9100 Release Notes.

Licensing

For information about licensing and packaging, refer to <u>Cisco Licensing</u>.

Warranty information

The Cisco Catalyst 9130AX Series Access Points come with a limited lifetime warranty that provides full warranty coverage of the hardware for as long as the original end user continues to own or use the product. The warranty includes 10-day advance hardware replacement and ensures that software media are defect-free for 90 days. For more details, visit https://www.cisco.com/go/warranty.

Cisco environmental sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environment Sustainability" section of Cisco's <u>Corporate Social Responsibility</u> (CSR) Report.

Reference links to information are below

Information on product material content laws and regulations: Materials.

Information on electronic waste laws and regulations, including products, batteries, and packaging: <u>WEEE</u> <u>compliance</u>.

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Cisco Services

With Cisco Services, you can achieve infrastructure excellence faster with less risk. From an initial WLAN readiness assessment to implementation, full solution support, and in-depth training, our services for the Cisco Catalyst 9130AX Series provide expert guidance to help you successfully plan, deploy, manage, and support your new access points. With unmatched networking expertise, best practices, and innovative tools, Cisco Services can help you reduce overall upgrade, refresh, and migration costs as you introduce new hardware, software, and protocols into the network. With a comprehensive lifecycle of services, Cisco experts will help you minimize disruption and improve operational efficiency to extract maximum value from your Cisco DNA-ready infrastructure.

Smart Account

Creating a Smart Account by using the Cisco Smart Software Manager (SSM) enables you to order devices and licensing packages and also manage your software licenses from a centralized website. For more information on Smart Accounts, refer to <u>https://www.cisco.com/go/smartaccounts</u>.

Cisco Capital

Flexible payment solutions to help you achieve your objectives

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. Learn more.

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