



The bridge to possible

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Cisco Catalyst 9124AX Series Access Points

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The Cisco Catalyst 9124AX Series outdoor access points are next-generation Wi-Fi 6 access points encased in a rugged and robust design that service providers and enterprises can easily deploy.



Figure 1.
Cisco Catalyst 9124AX Series Access points

With the emergence of high-density networks and the Internet of Things (IoT), we are more dependent on wireless networks than ever before. An increasing number of devices connect to the network every year, ranging from high-performance client devices to low-bandwidth IoT devices. The Cisco® Catalyst® 9124AX Series outdoor access points provide a seamless experience, with high scaling and unmatched performance in diverse network deployments. Going beyond the Wi-Fi 6 (802.11ax) standard, the Catalyst 9124AX Series provides integrated security, resiliency, and operational flexibility as well as increased network intelligence.

The Catalyst 9124AX Series offers flexible deployment options for service providers and enterprise networks that need the fastest links possible for mobile, outdoor clients (smartphones, tablets, and laptops), and wireless backhaul. With options for internal or external antennas, the 9124AX Series gives network operators the flexibility to balance their desired wireless coverage with their need for easy deployment.

The Catalyst 9124AX 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.

Table 1. Features and benefits

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.
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.

Feature	Benefits
Uplink/downlink MU-MIMO technology	Supporting two spatial streams, multiuser multiple-input multiple-output (MU-MIMO) enables access points to split spatial streams between client devices to maximize throughput.
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 3 to 4 times the savings achieved by 802.11n and 802.11ac.
Cisco RF ASIC	Cisco RF 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).
Bluetooth® 5	Integrated Bluetooth Low Energy (BLE) 5 radio enables location-based use cases such as asset tracking, wayfinding, and analytics.
Multigigabit Ethernet support	Provides uplink speeds of 2.5G, 1G, and 100M. All speeds are supported on Category 5e cabling for an industry first, as well as 10GBASE-T (IEEE 802.3bz) cabling.

For more details about Wi-Fi 6, see [Cisco's technical white paper](#) on Wi-Fi 6.

For more details about Catalyst 9124AX Series feature support, see [Cisco's Feature Matrix](#) on Wi-Fi 6.

For product ordering instructions, see [The Wireless Ordering Guide with Cisco DNA Subscription Licenses](#) document.

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 Catalyst 9124AX 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 Catalyst 9124AX Series supports SD-Access, Cisco's leading enterprise architecture.

Working together, the Catalyst 9124AX 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 Cisco DNA, refer to [Cisco DNA](#).

Product specifications

Table 2. Specifications

Item	Specification
Part numbers	<p>Cisco Catalyst 9124AX Series Access Points: Outdoor environments, with internal antennas</p> <ul style="list-style-type: none">• C9124AXI-x: Cisco Catalyst 9124AX Series (internal omnidirectional antenna)• C9124AXD-x: Cisco Catalyst 9124AX Series (internal directional antenna)• C9124AXE-x: Cisco Catalyst 9124AX Series (External antenna) - Available second half 2021 <p>Note: C9124AXE-x unavailable until Summer calendar year 2021.</p> <p>Note: Catalyst 9124AXI-x and 9124AXD-x initially available in US and Canada only. Worldwide availability set for Summer, calendar year 2021.</p> <p>Regulatory domains: (x = regulatory domain)</p> <p>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.</p> <p>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.</p> <p>Cisco Wireless LAN Services</p> <ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Catalyst 9124AXI, 9124AXD• Cisco IOS® XE Software Release 17.5.1 or later
Supported wireless LAN controllers	<ul style="list-style-type: none">• Cisco Catalyst 9800 Series Wireless Controllers

Item	Specification
802.11n version 2.0 (and related) capabilities	<ul style="list-style-type: none"> • 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 890 Mbps (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	<ul style="list-style-type: none"> • 4x4 downlink MU-MIMO with four spatial streams • MRC • 802.11ac beamforming • 20-, 40-, 80- and 160-MHz channels • PHY data rates up to 3.47 Gbps (160 MHz with 5 GHz) • Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive) • 802.11 DFS • CSD support • WPA3 support
802.11ax	<ul style="list-style-type: none"> • 4x4 uplink/downlink MU-MIMO with four spatial streams • Uplink/downlink OFDMA • TWT • BSS coloring • MRC • 802.11ax beamforming • 20-, 40-, 80-, and 160-channels • PHY data rates up to 5.38 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 • WPA3-Enterprise 192 support
Integrated antenna	<p>Catalyst 9124AXI</p> <ul style="list-style-type: none"> • 2.4 GHz: Peak gain 6 dBi, internal antenna, omnidirectional • 5 GHz: Peak gain 6.5 dBi, internal antenna, omnidirectional <p>Catalyst 9124AXD</p> <ul style="list-style-type: none"> • 2.4 GHz: Peak gain 8.5 dBi, internal antenna, directional, azimuth beamwidth 69 deg, elevation beamwidth 63 deg • 5 GHz: Peak gain 9 dBi, internal antenna, directional, azimuth beamwidth 63 deg, elevation beamwidth 51 deg
Interfaces	<p>Catalyst 9124AXI, 9124AXD</p> <ul style="list-style-type: none"> • 1x 100/1000/2500 BASE-T (Ethernet) uplink interface • 1x Gigabit Ethernet SFP • 1x 10/100/1000 BASE-T (Ethernet) downlink interface • Management console port (RJ-45)

Item	Specification							
Indicators	<ul style="list-style-type: none"> Status LED indicates boot loader status, association status, operating status, boot loader warnings, and boot loader errors 							
Dimensions (W x L x H)	<ul style="list-style-type: none"> Access point (without mounting brackets): <ul style="list-style-type: none"> 9124AXI, 9124AXD, 9124AXE: 10.2 x 9.2 x 3.2 in. (25.9 x 23.3 x 8.1 cm) 							
Weight	9124AXI, 9124AXD <ul style="list-style-type: none"> 6.5 lb. (2.9 kg) 							
Input power requirements	<ul style="list-style-type: none"> 802.3af Power over Ethernet (PoE), 802.3at PoE+, 802.3bt PoE++, Cisco Universal PoE (Cisco UPOE®) Cisco power injector, AIR-PWRINJ-60RGD1= and AIR-PWRINJ-60RGD2= Cisco power injector, AIR-PWRINJ6= (Note: This injector supports 802.3at) DC power source: Auxiliary DC input, 24V to 56V 							
	PoE	Radio 0 SS	Radio 1 SS	Radio 2 SS	Multigigabit	SFP	1G PHY	PoE O/P
	.3af	Disabled	Disabled	n/a	1G	N	N	N
	.3at	2x2	2x2	n/a	1G	N	Y	N
	.3bt/UPOE/DC	4x4	4x4	n/a	2.5G	Y	Y	Y
Environmental	Catalyst 9124AXI, 9124AXD <ul style="list-style-type: none"> Nonoperating (storage) temperature: -40° to 185° F (-40° to 85° C) Nonoperating altitude test: 17,000 ft (5182 m) Operating temperature: -40° to 149° F (-40° to 65° C) with no solar loading, -40° to 131° F (-40° to 55° C) with solar loading Operating altitude test: 17,000 ft (5182 m) Operating humidity: 0% to 100% (condensing) IEC 60529 Ingress Rating: IP66/IP67 Wind resistance up to 100 mph (161 km/h) sustained winds and 165 mph (266 km/h) wind gusts Icing protection: NEMA 250-2008 13mm (0.5 in.) Corrosion: NEMA 250-2008 (600 hrs. salt, 1200 hrs. mixed gas) Solar radiation: EN 60068-2-5 (1120 W/m²) Vibration: MIL-STD-810, Method 514.4 							
Available transmit power settings (max/min)	2.4 GHz <ul style="list-style-type: none"> 30 dBm (1W) -4 dBm (0.4 mW) 				5 GHz <ul style="list-style-type: none"> 30 dBm (1W) -4 dBm(0.4 mW) 			
Regulatory domains	<p>Note: 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</p> <p>For information about regulatory domain support, refer to the Cisco Regulatory Domain White Paper.</p>							

Item	Specification	
Compliance	<ul style="list-style-type: none"> • Safety: <ul style="list-style-type: none"> ◦ IEC 60950-1/IEC 60950-22 ◦ IEC 62368-1 ◦ EN 60950-1/EN 60950-22 ◦ EN 62368-1 ◦ AS/NZS 60950.1/AS/NZS 62368.1 ◦ UL 60950-1/ UL 60950-22 ◦ UL 62368-1 ◦ CAN/CSA-C22.2 No. 60950-1/ 60950-22 ◦ CAN/CSA-C22.2 No. 62368-1 • Emissions: <ul style="list-style-type: none"> ◦ CISPR 32 (rev. 2015) ◦ EN 55032 (rev. 2015+A11:2020) ◦ EN61000-3-2 (rev. 2019) ◦ EN61000-3-3 (rev. 2013+A1:2019) ◦ 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 : 2016 ◦ CNS (rev. 13438) ◦ KN-32 ◦ QCVN 118:2018/BTTTT • Immunity: <ul style="list-style-type: none"> ◦ CISPR 24 (rev. 2010) ◦ EN 55024 + AMD 1(rev. 2010) ◦ EN 55035: 2017 ◦ QCVN (TCVN 7317:2003) ◦ KN35: 2015 • Emissions and immunity: <ul style="list-style-type: none"> ◦ EN 301 489-1 (v2.2.3 2019-11) ◦ EN 301 489-17 (v3.1.1 2017-02) ◦ QCVN 18:2014/BTTTT ◦ QCVN 112:2017/BTTTT ◦ KN 489-1 ◦ KN 489-17 	<ul style="list-style-type: none"> • Radio: <ul style="list-style-type: none"> ◦ 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) ◦ Japan Std. 33a, Std. 66, and Std. 71 ◦ QCVN (54:2011/BTTTT) ◦ QCVN (65:2013/BTTTT) • RF safety: <ul style="list-style-type: none"> ◦ EN 50385 (rev. Aug 2017) ◦ ARPANSA ◦ AS/NZS 2772 (rev. 2016) ◦ 47 CFR Part 1.1310 and 2.1091 ◦ RSS-102 (2015) • IEEE standards: <ul style="list-style-type: none"> ◦ IEEE 802.3 ◦ IEEE 802.3ae ◦ IEEE 802.11a/b/g/n/ac/ax/h/d/u/k/v/r ◦ IEEE 802.15.1/802.15.4 • Multimedia: <ul style="list-style-type: none"> ◦ Wi-Fi Multimedia (WMM) • Security: <ul style="list-style-type: none"> ◦ 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA, WPA3 ◦ 802.1X/AES/TKIP • Extensible Authentication Protocol (EAP) types: <ul style="list-style-type: none"> ◦ EAP-Transport Layer Security (TLS) ◦ EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol (MSCHAP) v2 ◦ Protected EAP (PEAP) v0 or EAP-MSCHAP v2 ◦ EAP-Flexible Authentication via Secure Tunneling (EAP-FAST) ◦ PEAP v1 or EAP-Generic Token Card (GTC) ◦ EAP-Subscriber Identity Module (SIM)
Data rate, transmit power, receive sensitivity	<ul style="list-style-type: none"> • For information about data rate, transmit power, and receive sensitivity, refer to Cisco RF details (WIP) 	

Item	Specification				
Transmit power and receive sensitivity					
		2.4-GHz radio		5-GHz radio	
	Spatial streams	Total TX power (dBm)	RX sensitivity (dBm)	Total TX power (dBm)	RX sensitivity (dBm)
802.11/11b					
1 Mbps	1	30	-102	-	-
11 Mbps	1	30	-94	-	-
802.11a/g					
6 Mbps	1	30	-97	30	-99
24 Mbps	1	30	-89	30	-90
54 Mbps	1	30	-81	30	-83
802.11n HT20					
MCS0	1	30	-97	30	-99
MCS7	1	29	-79	29	-80
MCS8	2	30	-95	30	-97
MCS15	2	29	-77	29	-78
MCS16	3	30	-93	30	-95
MCS23	3	29	-75	29	-76
MCS24	4	30	-92	30	-94
MCS31	4	29	-74	29	-75
802.11n HT40					
MCS0	1	-	-	30	-97
MCS7	1	-	-	30	-79
MCS8	2	-	-	30	-95
MCS15	2	-	-	30	-77
MCS16	3	-	-	30	-93
MCS23	3	-	-	30	-75
MCS24	4	-	-	30	-92

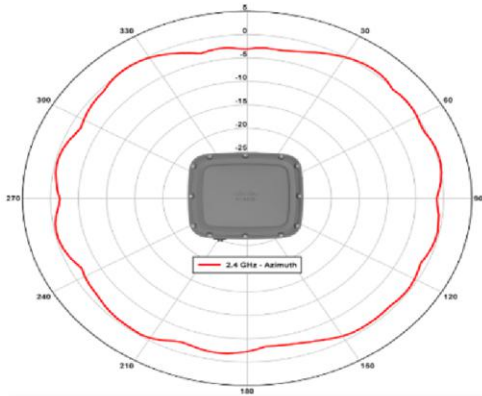
Item	Specification					
MCS31	4		-	-	30	-74
802.11ac VHT20						
MCS0	1		-	-	30	-99
MCS8	1		-	-	28	-76
MCS0	2		-	-	30	-97
MCS8	2		-	-	28	-74
MCS9	2		-	-	-	-
MCS0	3		-	-	30	-95
MCS8	3		-	-	28	-72
MCS9	3		-	-	-	-
MCS0	4		-	-	30	-94
MCS8	4		-	-	28	-71
MCS9	4		-	-	-	-
802.11ac VHT40						
MCS0	1		-	-	30	-96
MCS8	1		-	-	29	-74
MCS0	2		-	-	30	-94
MCS8	2		-	-	29	-72
MCS9	2		-	-	28	-70
MCS0	3		-	-	30	-92
MCS8	3		-	-	29	-70
MCS9	3		-	-	28	-68
MCS0	4		-	-	30	-91
MCS8	4		-	-	29	-69
MCS9	4		-	-	28	-67

Item	Specification					
802.11ac VHT80						
MCS0	1		-	-	30	-94
MCS8	1		-	-	29	-72
MCS0	2		-	-	30	-92
MCS8	2		-	-	29	-70
MCS9	2		-	-	28	-69
MCS0	3		-	-	30	-90
MCS8	3		-	-	29	-68
MCS9	3		-	-	28	-67
MCS0	4		-	-	30	-89
MCS8	4		-	-	29	-67
MCS9	4		-	-	28	-66
802.11ac VHT160						
MCS0	1		-	-	30	-91
MCS8	1		-	-	26	-69
MCS0	2		-	-	30	-89
MCS8	2		-	-	26	-67
MCS9	2		-	-	25	-66
802.11ax HE20						
MCS0	1		30	-97	30	-98
MCS11	1		26	-69	27	-70
MCS0	2		30	-95	30	-96
MCS11	2		26	-67	27	-68
MCS0	3		30	-93	30	-94
MCS11	3		26	-65	27	-66
MCS0	4		30	-92	30	-93
MCS11	4		26	-64	27	-65

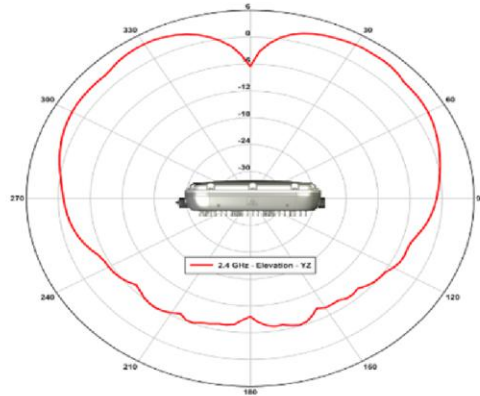
Item	Specification					
802.11ax HE40						
MCS0	1		-	-	30	-95
MCS11	1		-	-	26	-67
MCS0	2		-	-	30	-93
MCS11	2		-	-	26	-65
MCS0	3		-	-	30	-91
MCS11	3		-	-	26	-63
MCS0	4		-	-	30	-90
MCS11	4		-	-	26	-62
802.11ax HE80						
MCS0	1		-	-	30	-92
MCS11	1		-	-	26	-64
MCS0	2		-	-	30	-90
MCS11	2		-	-	26	-62
MCS0	3		-	-	30	-88
MCS11	3		-	-	26	-60
MCS0	4		-	-	30	-87
MCS11	4		-	-	26	-59
802.11ax HE160						
MCS0	1		-	-	30	-89
MCS11	1		-	-	25	-61
MCS0	2		-	-	30	-87
MCS11	2		-	-	25	-59

Antenna Pattern

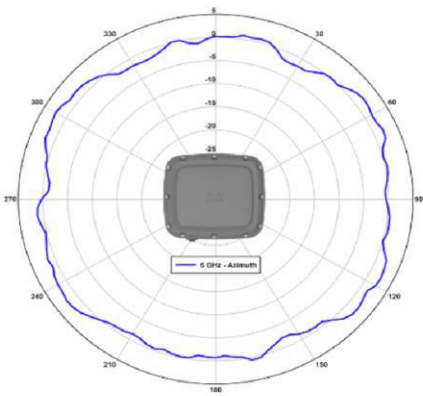
Catalyst C9124AXI Outdoor Access Point
2.4 GHz - Azimuth - Dual band



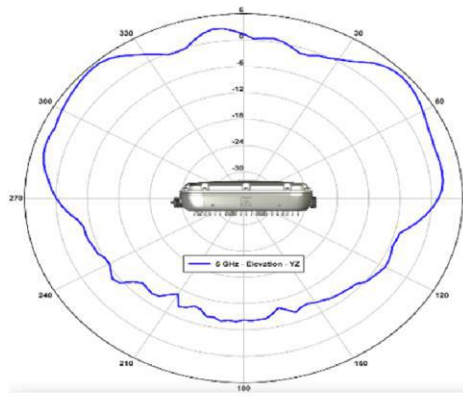
Catalyst C9124AXI Outdoor Access Point
2.4 GHz - Elevation - Dual band



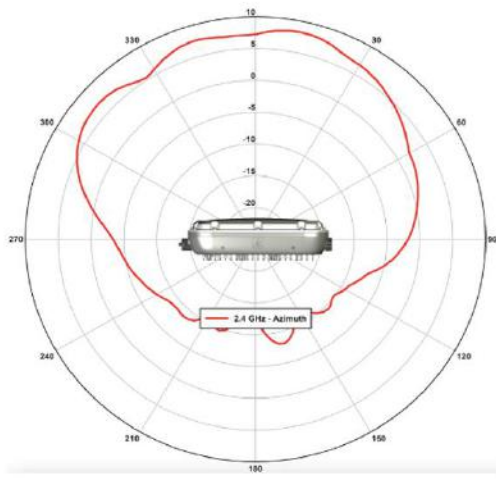
Catalyst C9124AXI Outdoor Access Point
5 GHz - Azimuth - Dual band



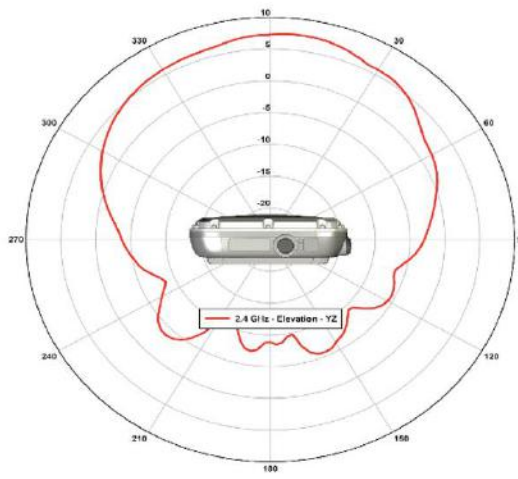
Catalyst C9124AXI Outdoor Access Point
5 GHz - Elevation - Dual band



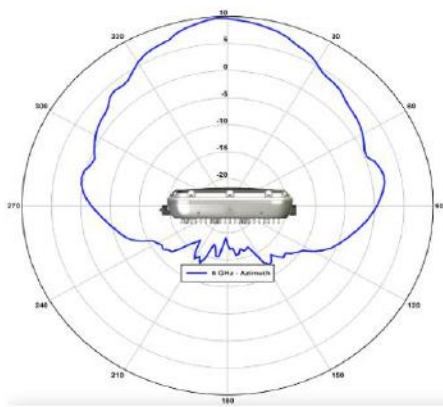
Catalyst C9124AXD Outdoor Access Point
2.4 GHz – Azimuth – Dual band



Catalyst C9124AXD Outdoor Access Point
2.4 GHz – Elevation – Dual band



Catalyst C9124AXD Outdoor Access Point
5 GHz – Azimuth – Dual band



Catalyst C9124AXD Outdoor Access Point
5 GHz – Elevation – Dual band

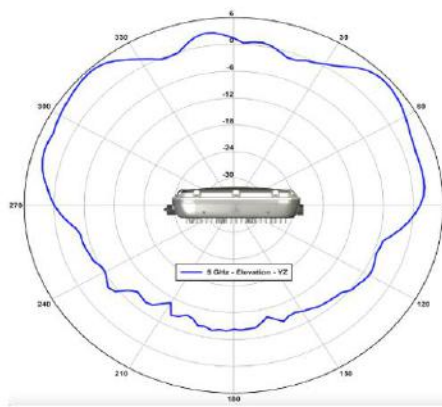


Figure 2.
Antenna profiles

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

Licensing

For information about licensing, refer to [Cisco Wireless Licensing](#)

Warranty information

The Cisco Catalyst 9124AX 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 "Environmental Sustainability" section of Cisco's [Corporate Social Responsibility](#) (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: [WEEE compliance](#)

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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 9124AX 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.

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](#).

Smart Account

Creating Smart Accounts 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 <https://www.cisco.com/go/smartaccounts>.

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