

# Cisco Catalyst IW9167E Heavy Duty Access Point

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The Cisco® Catalyst® IW9167E Access Point provides reliable wireless connectivity for mission-critical applications in a state-of-the-art platform. It can operate as Wi-Fi 6 or Cisco Ultra-Reliable Wireless Backhaul (Cisco URWB).

## Product overview

The Catalyst IW9167E addresses the growing need to provide reliable wireless connectivity for mission-critical applications as organizations automate processes and operations. It comes with three 4x4 radios, in a heavy-duty design that is IP67 rated and packed with advanced features

The Catalyst IW9167E brings unmatched flexibility, as it can operate in one of two reliable wireless technologies: Wi-Fi 6 or Cisco URWB:

- All the [benefits of Wi-Fi 6](#) in industrial or outdoor spaces: Higher density, higher throughput, more channels, power efficiency, and improved security.
- [Cisco URWB](#) provides ultra-reliable wireless connectivity for moving assets or to extend the network where running fiber isn't feasible or is too costly. It provides up to 99.995% availability, <10 ms latency, and zero packet loss with seamless handoffs. Cisco URWB is a proven technology that has been used by many customers, operates on unlicensed spectrum, deploys like Wi-Fi, and gives you full control of your network.

The Catalyst IW9167E is designed to take advantage of the 6 GHz band expansion to deliver a network that is more reliable and secure, with higher throughput, more capacity, and less device interference. The 6 GHz band support will be available with a future software upgrade and is subject to approvals and regulations by each country's regulatory agencies for the use of the 6 GHz spectrum for outdoor standard power devices. Please refer to the [Wi-Fi 6E white paper](#) for more details on 6 GHz.



**Figure 1.**  
Catalyst IW9167E Heavy Duty Access Point

## Secure infrastructure

**Trustworthy systems built with Cisco Trust Anchor Technologies** provide a highly secure foundation for Cisco products. With the Cisco Catalyst IW9167E Heavy Duty Access Point, 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

## Features and benefits

**Table 1.** Catalyst IW9167E features and benefits

| Feature                                  | Benefit  |
|--|--|
| <b>Wi-Fi 6 (802.11ax)/Wi-Fi 6E-ready</b> | <p>The IEEE 802.11ax standard, also known as High-Efficiency Wireless or Wi-Fi 6, builds on 802.11ac. IW9167 can support up to a 7.8-Gbps PHY data rate with 4x4 MIMO and four spatial streams.</p> <p>Wi-Fi 6E is Wi-Fi 6 “extended” into the 6 GHz frequency band, allowing the use of additional channels. IW9167 is Wi-Fi 6E ready, subject to approvals and regulations for the use of the 6 GHz spectrum by each countries’ regulatory agencies.</p> |
| <b>Flexible multitechnology support</b>  | <p>Two different technologies (Wi-Fi and Cisco URWB) provide flexibility to choose a mode based on the use case. Ability to swap images in the field helps change modes between Wi-Fi and Cisco URWB without changing the hardware.</p>  |
| <b>Tri-radio architecture</b>            | <p>IW9167 has the following three data radios:</p> <ul style="list-style-type: none"><li>• 2.4 GHz 4x4 radio: 20-MHz channels</li><li>• 5 GHz 4x4 radio: 20, 40, 80, and 80+80 contiguous (limited to 4x4:2SS) MHz channels</li><li>• 5/6 GHz 4x4 radio: 20, 40, 80, and 160 MHz channels (6 GHz subject to country’s regulatory agency’s approval)</li></ul>  |
| <b>Multigigabit Ethernet</b>             | <p>Dual Multigigabit Ethernet supports speeds up to 5 Gbps. All speeds are supported on Category 5e cabling, as well as 10GBASE-T (IEEE 802.3bz) cabling.</p>  |
| <b>Smart AP<sup>†</sup></b>              | <p>Smart AP causes the access point to change its power consumption to reflect its current client load. An access point will typically operate on the radios provided to it regardless of how many clients are connected. With Smart AP, if the number of clients is small enough, the access point will automatically reduce the radio stream count, saving power.</p>  |
| <b>Band steering<sup>†</sup></b>         | <p>Enhanced to help clients that are 6 GHz capable to leave the 5 GHz radio and connect to the 6 GHz one. Wi-Fi 6E clients are automatically directed to connect to the 6 GHz radio to take advantage of the benefits that the radio offers and free up the 2.4- and 5 GHz radios for legacy clients. IW9167 is Wi-Fi 6E ready, subject to approvals and regulations for the use of the 6 GHz spectrum by each countries’ regulatory agencies</p>          |

| Feature  | Benefit   |
|--|---|
| <b>Uplink/downlink OFDMA</b> <sup>¥</sup>              | 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.                                      |
| <b>Uplink/downlink MU-MIMO technology</b> <sup>¥</sup> | Supporting four spatial streams, Multiuser Multiple Input, Multiple Output (MU-MIMO) enables access points to split spatial streams between client devices to maximize throughput.  |
| <b>BSS coloring</b> <sup>¥</sup>                       | 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.   |
| <b>Target Wake Time</b> <sup>¥</sup>                   | 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.                         |
| <b>Intelligent Capture</b> <sup>¥</sup>                | 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. |
| <b>Bluetooth 5</b> <sup>†</sup>                        | The integrated Bluetooth Low Energy (BLE) 5 radio enables location-based use cases such as asset tracking, wayfinding, and analytics.   |
| <b>Scanning radio</b> <sup>†</sup>                     | Dedicated radio for monitoring air space to perform advanced RF spectrum analysis and deliver features such as Cisco CleanAir®, Wireless Intrusion Prevention System (wIPS), and Dynamic Frequency Selection (DFS).   |
| <b>GNSS</b> <sup>†</sup>                               | A built-in GNSS (Global Navigation Satellite System) receiver provides coordinates to track the location of the access point.   |
| <b>M12 adapter</b>                                     | M12 adapter accessories give the flexibility to convert Ethernet and power interfaces on the base unit into M12 interfaces while retaining all the certifications.  |
| <b>Multipath operations</b> <sup>†‡</sup>              | Multipath operations (MPO) can enhance reliability by sending duplicate copies of packets across multiple wireless paths.   |
| <b>Workgroup bridge (WGB)</b> <sup>†</sup>             | Provides wireless connectivity to a lightweight access point infrastructure on behalf of wired clients that are connected via Ethernet behind the WGB access point.   |

† Available with a future software upgrade.

¥ Available only in Wi-Fi mode.

‡ Available only in Cisco URWB mode.

## Prominent feature

### Get reliable wireless connectivity for your mission-critical applications

As you automate your processes and operations to increase safety and productivity, you also need to improve your situational awareness to control your systems. Moving assets involved in mission-critical applications, such as Automated Guided Vehicles (AGVs), Autonomous Mobile Robots (AMRs), and teleremote devices, require reliable wireless connectivity. And sometimes you need to extend your network where running fiber isn't feasible or is too costly.

The Catalyst IW9167E gives you flexibility and reliability so you can extend reliable wireless connectivity to more places and applications, with features such as:

- One hardware device, two modes of operation: Protect your investment and evolve your wireless networks without the added cost of purchasing a new device. Simply update the software to run Wi-Fi 6 or Cisco URWB.
- Multipath operations (MPO):<sup>1</sup> Patented technology that duplicates your high-priority traffic and works alongside hardware failures to increase availability, lower latency, and lower the effects of interference and hardware failures.
- Workgroup bridge (WGB):<sup>2</sup> In workgroup bridge mode, the device associates to another access point as a client and provides a network connection for the equipment connected to its Ethernet port.
- Heavy-duty design: IP67-rated, hardened to withstand shock, vibration, and extreme temperatures. Supports industrial protocols and industrial certifications (e.g. rail - EN50155).

<sup>1</sup> In Cisco URWB mode.

<sup>2</sup> In Wi-Fi mode.

## Licensing

**Table 2.** Licensing

| Item       | Description                                     |
|------------|---|
| IW-DNA-E   | IoT Cisco DNA Essentials (AIR-DNA-E equivalent) |
| IW-DNA-A   | IoT Cisco DNA Advantage (AIR-DNA-A equivalent)  |
| IW-CURWB-E | IoT Cisco URWB Essentials                       |
| IW-CURWB-A | IoT Cisco URWB Advantage                        |
| IW-CURWB-P | IoT Cisco URWB Premier                          |
| IOTOD-IW-E | IoT-OD Essentials for Cisco URWB                |
| IOTOD-IW-A | IoT-OD Advantage for Cisco URWB                 |

## Product sustainability

Information about Cisco's Environmental, Social, and Governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability [reporting](#).

**Table 3.** Cisco environmental sustainability information

| Sustainability topic |  | Reference   |
|----------------------|--|---|
| <b>General</b>       | Information on product-material-content laws and regulations   | <a href="#">Materials</a>   |
|                      | Information on electronic waste laws and regulations, including our products, batteries, and packaging | <a href="#">WEEE Compliance</a>   |
|                      | Information on product takeback and reuse program  | <a href="#">Cisco Takeback and Reuse Program</a>                              |
|                      | Sustainability Inquiries   | Contact: <a href="mailto:csr_inquiries@cisco.com">csr_inquiries@cisco.com</a> |
|                      | Environmental operating temperature range  | <a href="#">Table 4. Product Specifications</a>                               |
| <b>Power</b>         | Power input  | <a href="#">Table 4. Product Specifications</a>                               |
|                      | Power consumption  | <a href="#">Table 4. Product Specifications</a>                               |
| <b>Material</b>      | Product packaging weight and materials   | Contact: <a href="mailto:environment@cisco.com">environment@cisco.com</a>     |
|                      | Physical dimensions and weight   | <a href="#">Table 4. Product Specifications</a>                               |

## Product specifications

**Table 4.** IW9167E product specifications

| Item  | Specification   |
|---|---|
| <b>Part numbers</b>                                   | <p><b>Cisco Catalyst IW9167E Heavy Duty Access Point</b></p> <ul style="list-style-type: none"> <li>• <b>IW9167EH-AP-x:</b> Catalyst IW9167E with Wi-Fi software</li> <li>• <b>IW9167EH-CURWB-x:</b> Catalyst IW9167E with Cisco URWB software</li> </ul> <p><b>Regulatory domains: (x = regulatory domain)</b></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 <a href="https://www.cisco.com/go/aironet/compliance">https://www.cisco.com/go/aironet/compliance</a>.</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> |
| <b>Software</b>                                       | <p><b>IW9167EH-AP</b></p> <ul style="list-style-type: none"> <li>• Cisco IOS® XE Software Release 17.9.2 or later</li> </ul> <p><b>IW9167EH-CURWB</b></p> <p>Cisco Unified Client Software 17.9.2 or later</p>  |
| <b>Supported wireless LAN controllers</b>             | <ul style="list-style-type: none"> <li>• Cisco Catalyst 9800 Series Wireless Controllers (physical or virtual)</li> </ul>   |
| <b>802.11n version 2.0 (and related) capabilities</b> | <ul style="list-style-type: none"> <li>• 4x4 MIMO with four spatial streams in one 2.4 GHz radio and two 5 GHz radios</li> <li>• Maximal Ratio Combining (MRC)</li> <li>• 802.11n and 802.11a/g</li> <li>• 20- and 40-MHz channels</li> <li>• PHY data rates up to 1.5 Gbps (with 40 MHz on both 5 GHz radios and 20 MHz on the 2.4 GHz radio)</li> <li>• Packet aggregation: Aggregate MAC Protocol Data Unit (A-MPDU) (transmit and receive), Aggregate MAC Service Data Unit (A-MSDU) (transmit and receive)</li> <li>• 802.11 Dynamic Frequency Selection (DFS)</li> <li>• Cyclic Shift Diversity (CSD) support</li> </ul>  |
| <b>802.11ac</b>                                       | <ul style="list-style-type: none"> <li>• 4x4 downlink MU-MIMO with four spatial streams on both 5 GHz radios</li> <li>• Maximal Ratio Combining (MRC)</li> <li>• 802.11ac beamforming</li> <li>• 20, 40, 80, and 80+80 MHz contiguous channels</li> <li>• PHY data rates up to 3.4 Gbps (dual 4x4:4SS 80 MHz or 4x4:2SS 80+80 MHz contiguous on 5 GHz)</li> <li>• Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive)</li> <li>• 802.11 DFS</li> <li>• CSD support</li> <li>• Wi-Fi Protected Access (WPA) 3 support</li> </ul>  |

| Item                            | Specification   |
|---------------------------------|---|
| <b>802.11ax</b>                 | <ul style="list-style-type: none"> <li>• 4x4 uplink/downlink MU-MIMO with four spatial streams in 2.4, 5, and 6 GHz*</li> <li>• Uplink/downlink OFDMA</li> <li>• Target Wake Time (TWT)</li> <li>• BSS coloring</li> <li>• Maximal Ratio Combining (MRC)</li> <li>• 802.11ax beamforming</li> <li>• 20, 40, 80, and 160 MHz channels (5/6 GHz radio)</li> <li>• 20, 40, 80, 80+80 MHz contiguous (limited to 4x4:2SS) channels (5 GHz radio)</li> <li>• 20 MHz channels (2.4 GHz radio)</li> <li>• PHY data rates up to 7.8 Gbps (4x4 160 MHz on 6 GHz, 4x4 80 MHz on 5 GHz, and 4x4 20 MHz on 2.4 GHz)</li> <li>• Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive)</li> <li>• 802.11 DFS</li> <li>• CSD support</li> <li>• WPA3 support</li> </ul> |
| <b>External antennas</b>        | <ul style="list-style-type: none"> <li>• Certified for use with antenna gains up to 13 dBi (2.4 GHz) and 19 dBi (5 GHz).</li> <li>• Cisco offers the industry's broadest selection of <a href="#">antennas</a>, delivering optimal coverage for a variety of deployment scenarios.</li> <li>• Supports Self-Identifying Antennas (SIA)</li> </ul>   |
| <b>Interfaces</b>               | <ul style="list-style-type: none"> <li>• 1x 100M/1000M/2.5G/5G Multigigabit Ethernet (RJ-45)/M12 X-code autosensing PoE+ in (802.3at/bt), UPOE in</li> <li>• 1x SFP (copper) 100M/1000M/10G Multigigabit Ethernet /M12 X-code</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• 1x SFP (fiber) 1G/10G</li> <li>• Management console port (RJ-45)</li> <li>• Multicolor system LED</li> <li>• DC power input (micro-fit/M12 A-code)</li> <li>• Reset button</li> </ul> <p><b>Note:</b> PG 13.5 glands or M12 adapters shall be used with Ethernet and power interfaces to maintain IP67 rating.</p>  |
| <b>Dimensions (W x L x H)</b>   | <ul style="list-style-type: none"> <li>• 11.3 x 10.5 x 2.8 in (28.7 x 26.7 x 7.1 cm)</li> </ul>   |
| <b>Weight</b>                   | <ul style="list-style-type: none"> <li>• 9.2 lb. (4.2 kg)</li> </ul>  |
| <b>Input power requirements</b> | <ul style="list-style-type: none"> <li>• 802.3at (PoE+), 802.3bt (PoE++), Cisco Universal PoE (Cisco UPOE®)</li> <li>• DC power source: 24 to 48 VDC (maximum voltage range: 18 to 60 VDC)</li> <li>• Cisco power AC-DC power adapter, IW-PWRADPT-MFIT4PN=</li> <li>• Cisco power injector, IW-PWRINJ-60RGD5GE=</li> </ul>  |

| Item                         | Specification   |                      |                    |                      |             |                 |                     |
|------------------------------|---|----------------------|--------------------|----------------------|-------------|-----------------|---------------------|
| <b>Power draw</b>            | <b>Power Input Type</b>   | <b>2.4 GHz radio</b> | <b>5 GHz radio</b> | <b>5/6 GHz radio</b> | <b>RJ45</b> | <b>SFP/SFP+</b> | <b>Power Budget</b> |
|                              | 24-48 VDC   | 4x4                  | 4x4                | 4x4                  | 5Gbps       | Yes             | 45W                 |
|                              | 802.3bt (UPOE)  | 4x4                  | 4x4                | 4x4                  | 5Gbps       | Yes             | 45W                 |
|                              | 802.3at (PoE+)  | 2x2                  | 2x2                | -                    | 1Gbps       | No              | 30W                 |
|                              | <b>Note:</b> Power required at the power source equipment (PSE) will depend on the cable length and other environmental issues.   |                      |                    |                      |             |                 |                     |
| <b>Surge</b>                 | <ul style="list-style-type: none"> <li>Surge protection to <math>\pm 2</math> kV (line-earth) and <math>\pm 1</math> kW (line-line) on DC power input</li> <li>Surge protection to <math>\pm 4</math> kV on Ethernet ports</li> </ul>   |                      |                    |                      |             |                 |                     |
| <b>Environmental</b>         | <ul style="list-style-type: none"> <li>Nonoperating (storage) temperature: <math>-40^{\circ}</math> to <math>+185^{\circ}</math> F (<math>-40^{\circ}</math> to <math>+85^{\circ}</math> C)</li> <li>Nonoperating (storage) altitude test: <math>+25^{\circ}</math> C (<math>77^{\circ}</math> F), 15,000 ft.</li> <li>Operating temperature: <math>-40^{\circ}</math> to <math>+158^{\circ}</math> F (<math>-40^{\circ}</math> to <math>+70^{\circ}</math> C) with solar load and still air</li> <li>Extended operating temperature (DC powered): <math>-58^{\circ}</math> to <math>+167^{\circ}</math> F (<math>-50^{\circ}</math> to <math>+75^{\circ}</math> C) without solar loading, still air, and cold start limited to <math>-40^{\circ}</math> C</li> <li>Operating type test: <math>+85^{\circ}</math> C for 16 hours</li> <li>Operating humidity: 0% to 100% (condensing)</li> <li>Operating altitude: 15,000 ft. (4,500 m)</li> <li>Wind resistance: Up to 160 mph (257 km/h) sustained winds</li> </ul>   |                      |                    |                      |             |                 |                     |
| <b>Environmental ratings</b> | <ul style="list-style-type: none"> <li>EN/IEC 60529 (IP66 and IP67)</li> </ul>  |                      |                    |                      |             |                 |                     |
| <b>System memory</b>         | <ul style="list-style-type: none"> <li>2048 MB DRAM</li> <li>1024 MB flash</li> </ul>   |                      |                    |                      |             |                 |                     |
| <b>Data rates supported</b>  | <p>2.4 GHz radio:</p> <p>802.11b: 1, 2, 5.5, 11 Mbps</p> <p>802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</p> <p>802.11n: HT20 MCS0 - 31, 400 and 800 ns guard intervals</p> <p>802.11ax: HE20 MCS0 - 11, 1 to 4 spatial streams, 0.8, 1.6, and 3.2 <math>\mu</math>s guard intervals</p> <p>5 GHz radio:</p> <p>802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</p> <p>802.11n: HT20 and HT40, MCS0 to 31, 400 and 800 ns guard intervals</p> <p>802.11ac: VHT20 MCS0 to 8, 1 to 4 spatial streams, 400 and 800 ns guard intervals</p> <ul style="list-style-type: none"> <li>VHT40 and VHT80 MCS0 to 9, 1 to 4 spatial streams, 400 and 800 ns guard intervals</li> <li>VHT80+80 contiguous MCS0 to 9, 1 or 2 spatial streams, 400 and 800 ns guard intervals</li> </ul> <p>802.11ax: HE20, HT40, and HE80 MCS0 to 11, 1 to 4 spatial streams, 0.8, 1.6, and 3.2 <math>\mu</math>s guard intervals</p> <ul style="list-style-type: none"> <li>HE80+80 contiguous MCS0 to 11, 1 or 2 spatial streams, 0.8, 1.6, and 3.2 <math>\mu</math>s guard intervals</li> </ul> <p>5/6 GHz radio:</p> <p>802.11a (5 GHz band only): 6, 9, 12, 18, 24, 36, 48, 54 Mbps</p> <p>802.11n (5 GHz band only): HT20 and HT40, MCS0 to 31, 400 and 800 ns guard intervals</p> |                      |                    |                      |             |                 |                     |

| Item   | Specification   |
|--|---|
|  | <p>802.11ac (5 GHz band only): VHT20 MCS0 to 8, 1 to 4 spatial streams, 400 and 800 ns guard intervals</p> <ul style="list-style-type: none"> <li>• VHT80, VHT160 MCS0 to 9, 1 to 4 spatial streams, 400 and 800 ns guard intervals</li> </ul> <p>802.11ax: HE20, HT40, HE80, and HE160 MCS0 to 11, 1 to 4 spatial streams, 0.8, 1.6, and 3.2 <math>\mu</math>s guard intervals</p>   |
| <p><b>Frequency band and 20-MHz operating channels</b></p> | <p>A (A regulatory domain):</p> <ul style="list-style-type: none"> <li>• 2.412 to 2.462 GHz; 11 channels</li> <li>• 5.260 to 5.320 GHz; 4 channels</li> <li>• 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz)</li> <li>• 5.745 to 5.825 GHz; 5 channels</li> </ul> <p>B (B regulatory domain):</p> <ul style="list-style-type: none"> <li>• 2.412 to 2.462 GHz; 11 channels</li> <li>• 5.180 to 5.320 GHz; 8 channels</li> <li>• 5.500 to 5.720 GHz; 12 channels</li> <li>• 5.745 to 5.825 GHz; 5 channels</li> <li>• 5.955 to 6.415 GHz; 24 channels</li> <li>• 6.535 to 6.855 GHz; 17 channels</li> </ul> <p>E (E regulatory domain, outdoor):</p> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.500 to 5.700 GHz; 11 channels</li> </ul> <p>E (E regulatory domain, indoor):</p> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.180 to 5.320 GHz; 8 channels</li> <li>• 5.500 to 5.700 GHz; 11 channels</li> </ul> <p>I (I regulatory domain):</p> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> </ul> <p>Q (Q regulatory domain):</p> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.500 to 5.720 GHz; 12 channels</li> </ul> <p>R (R regulatory domain):</p> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.180 to 5.320 GHz; 8 channels</li> <li>• 5.660 to 5.825 GHz; 9 channels</li> </ul> <p>Z (Z regulatory domain):</p> <ul style="list-style-type: none"> <li>• 2.412 to 2.462 GHz; 11 channels</li> <li>• 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz)</li> <li>• 5.745 to 5.825 GHz; 5 channels</li> </ul> <p><b>Note:</b> This varies by regulatory domain. Customers are responsible for verifying approval for use in their individual countries. To verify approval and to determine availability of the regulatory domain that corresponds to a particular country, visit <a href="https://www.cisco.com/c/dam/assets/prod/wireless/wireless-compliance-tool/index.html">https://www.cisco.com/c/dam/assets/prod/wireless/wireless-compliance-tool/index.html</a>.</p> |

| Item  | Specification   |                        |  |                             |                             |  |                             |                             |
|---|---|------------------------|--|-----------------------------|-----------------------------|--|-----------------------------|-----------------------------|
| <b>Maximum number of nonoverlapping channels</b>  | <b>2.4 GHz</b>  |                        | <b>5 GHz</b>   |                             |                             | <b>6 GHz*</b>  |                             |                             |
|   | <ul style="list-style-type: none"> <li>• 802.11b/g:               <ul style="list-style-type: none"> <li>◦ 20 MHz: 3</li> </ul> </li> <li>• 802.11n/ax:               <ul style="list-style-type: none"> <li>◦ 20 MHz: 3</li> <li>◦ 40 MHz: 1 (hardware capable)</li> </ul> </li> </ul> |                        | <ul style="list-style-type: none"> <li>• 802.11a:               <ul style="list-style-type: none"> <li>◦ 20 MHz: 25</li> </ul> </li> <li>• 802.11n:               <ul style="list-style-type: none"> <li>◦ 20 MHz: 25</li> <li>◦ 40 MHz: 12</li> </ul> </li> <li>• 802.11ac/ax:               <ul style="list-style-type: none"> <li>◦ 20 MHz: 25</li> <li>◦ 40 MHz: 12</li> <li>◦ 80 MHz: 6</li> <li>◦ 80+80 MHz contiguous: 2</li> </ul> </li> </ul> |                             |                             | <ul style="list-style-type: none"> <li>• 802.11ax:               <ul style="list-style-type: none"> <li>◦ 20 MHz: 41</li> <li>◦ 40 MHz: 20</li> <li>◦ 80 MHz: 9</li> <li>◦ 160 MHz: 4</li> </ul> </li> </ul> |                             |                             |
| <p><b>Note:</b> This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.</p> |   |                        |  |                             |                             |  |                             |                             |
| <b>Conducted transmit power and receive sensitivity</b>   |   |                        | <b>2.4 GHz radio</b>   |                             | <b>5 GHz radio</b>          |  | <b>5/6 GHz radio</b>        |                             |
|   |   | <b>Spatial streams</b> | <b>Total Tx power (dBm)</b>  | <b>Rx sensitivity (dBm)</b> | <b>Total Tx power (dBm)</b> | <b>Rx sensitivity (dBm)</b>  | <b>Total Tx power (dBm)</b> | <b>Rx sensitivity (dBm)</b> |
|   | <b>802.11/11b</b>   |                        |  |                             |                             |  |                             |                             |
|   | <b>1 Mbps</b>   | 1                      | 30   | -99                         | -                           | -  | -                           | -                           |
|   | <b>11 Mbps</b>  | 1                      | 30   | -91                         | -                           | -  | -                           | -                           |
|   | <b>802.11a/g</b>  |                        |  |                             |                             |  |                             |                             |
|   | <b>6 Mbps</b>   | 1                      | 30   | -94                         | 30                          | -96  | 23                          | -96                         |
|   | <b>24 Mbps</b>  | 1                      | 30   | -85                         | 30                          | -87  | 23                          | -86                         |
|   | <b>54 Mbps</b>  | 1                      | 27   | -78                         | 27                          | -80  | 21                          | -79                         |
|   | <b>802.11n HT20</b>   |                        |  |                             |                             |  |                             |                             |
|   | <b>MCS0</b>   | 1                      | 30   | -95                         | 30                          | -97  | 23                          | -94                         |
|   | <b>MCS7</b>   | 1                      | 27   | -77                         | 25                          | -79  | 20                          | -79                         |
|   | <b>MCS8</b>   | 2                      | 30   | -92                         | 30                          | -94  | 23                          | -91                         |
|   | <b>MCS15</b>  | 2                      | 27   | -74                         | 25                          | -76  | 20                          | -76                         |
|   | <b>MCS16</b>  | 3                      | 30   | -90                         | 30                          | -92  | 23                          | -89                         |
| <b>MCS23</b>  | 3   | 27                     | -72  | 25                          | -74                         | 20   | -74                         |                             |
| <b>MCS24</b>  | 4   | 30                     | -89  | 30                          | -91                         | 23   | -88                         |                             |

| Item | Specification         |   |    |     |    |     |    |     |
|------|-----------------------|---|----|-----|----|-----|----|-----|
|      | MCS31                 | 4 | 27 | -71 | 25 | -73 | 20 | -73 |
|      | <b>802.11n HT40</b>   |   |    |     |    |     |    |     |
|      | MCS0                  | 1 | -  | -   | 28 | -94 | 23 | -92 |
|      | MCS7                  | 1 | -  | -   | 25 | -76 | 20 | -76 |
|      | MCS8                  | 2 | -  | -   | 28 | -91 | 23 | -89 |
|      | MCS15                 | 2 | -  | -   | 25 | -73 | 20 | -73 |
|      | MCS16                 | 3 | -  | -   | 28 | -89 | 23 | -87 |
|      | MCS23                 | 3 | -  | -   | 25 | -71 | 20 | -71 |
|      | MCS24                 | 4 | -  | -   | 28 | -88 | 23 | -86 |
|      | MCS31                 | 4 | -  | -   | 25 | -70 | 20 | -70 |
|      | <b>802.11ac VHT20</b> |   |    |     |    |     |    |     |
|      | MCS0                  | 1 | -  | -   | 30 | -97 | 23 | -94 |
|      | MCS8                  | 1 | -  | -   | 24 | -76 | 18 | -76 |
|      | MCS0                  | 2 | -  | -   | 30 | -94 | 23 | -91 |
|      | MCS8                  | 2 | -  | -   | 24 | -73 | 18 | -73 |
|      | MCS0                  | 3 | -  | -   | 30 | -92 | 23 | -89 |
|      | MSC8                  | 3 | -  | -   | 24 | -71 | 18 | -71 |
|      | MCS0                  | 4 | -  | -   | 30 | -91 | 23 | -88 |
|      | MCS8                  | 4 | -  | -   | 24 | -70 | 18 | -70 |
|      | <b>802.11ac VHT40</b> |   |    |     |    |     |    |     |
|      | MCS0                  | 1 | -  | -   | 28 | -94 | 23 | -92 |
|      | MCS9                  | 1 | -  | -   | 24 | -71 | 18 | -71 |
|      | MCS0                  | 2 | -  | -   | 28 | -91 | 23 | -89 |
|      | MCS9                  | 2 | -  | -   | 24 | -68 | 18 | -68 |
|      | MCS0                  | 3 | -  | -   | 28 | -89 | 23 | -87 |
|      | MSC9                  | 3 | -  | -   | 24 | -66 | 18 | -66 |
|      | MCS0                  | 4 | -  | -   | 28 | -88 | 23 | -86 |

| Item | Specification         |   |    |     |    |     |    |     |
|------|-----------------------|---|----|-----|----|-----|----|-----|
|      | MCS9                  | 4 | -  | -   | 24 | -65 | 18 | -65 |
|      | <b>802.11ac VHT80</b> |   |    |     |    |     |    |     |
|      | MCS0                  | 1 | -  | -   | 28 | -91 | 23 | -89 |
|      | MCS9                  | 1 | -  | -   | 23 | -68 | 18 | -68 |
|      | MCS0                  | 2 | -  | -   | 28 | -88 | 23 | -86 |
|      | MCS9                  | 2 | -  | -   | 23 | -65 | 18 | -65 |
|      | MCS0                  | 3 | -  | -   | 28 | -86 | 23 | -84 |
|      | MCS9                  | 3 | -  | -   | 23 | -63 | 18 | -63 |
|      | MCS0                  | 4 | -  | -   | 28 | -85 | 23 | -83 |
|      | MCS9                  | 4 | -  | -   | 23 | -62 | 18 | -62 |
|      | <b>802.11ax HT20</b>  |   |    |     |    |     |    |     |
|      | MCS0                  | 1 | 30 | -95 | 30 | -97 | 23 | -94 |
|      | MCS11                 | 1 | 23 | -65 | 23 | -67 | 16 | -68 |
|      | MCS0                  | 2 | 30 | -92 | 30 | -94 | 23 | -91 |
|      | MCS11                 | 2 | 23 | -62 | 23 | -64 | 16 | -65 |
|      | MCS0                  | 3 | 30 | -90 | 30 | -92 | 23 | -89 |
|      | MCS11                 | 3 | 23 | -60 | 23 | -62 | 16 | -63 |
|      | MCS0                  | 4 | 30 | -89 | 30 | -91 | 23 | -88 |
|      | MCS11                 | 4 | 23 | -59 | 23 | -61 | 16 | -62 |
|      | <b>802.11ax HE40</b>  |   |    |     |    |     |    |     |
|      | MCS0                  | 1 | -  | -   | 28 | -94 | 23 | -92 |
|      | MCS11                 | 1 | -  | -   | 23 | -65 | 16 | -65 |
|      | MCS0                  | 2 | -  | -   | 28 | -91 | 23 | -89 |
|      | MCS11                 | 2 | -  | -   | 23 | -62 | 16 | -62 |
|      | MCS0                  | 3 | -  | -   | 28 | -89 | 23 | -87 |
|      | MCS11                 | 3 | -  | -   | 23 | -60 | 16 | -60 |
|      | MCS0                  | 4 | -  | -   | 28 | -88 | 23 | -59 |

| Item | Specification  |   |   |   |    |     |    |     |
|------|--|---|---|---|----|-----|----|-----|
|      | MCS11  | 4 | - | - | 23 | -59 | 16 | -84 |
|      | <b>802.11ax HE80</b>   |   |   |   |    |     |    |     |
|      | MCS0   | 1 | - | - | 28 | -91 | 23 | -89 |
|      | MCS11  | 1 | - | - | 22 | -62 | 16 | -63 |
|      | MCS0   | 2 | - | - | 28 | -88 | 23 | -86 |
|      | MCS11  | 2 | - | - | 22 | -59 | 16 | -60 |
|      | MCS0   | 3 | - | - | 28 | -86 | 23 | -84 |
|      | MCS11  | 3 | - | - | 22 | -57 | 16 | -58 |
|      | MCS0   | 4 | - | - | 28 | -85 | 23 | -83 |
|      | MCS11  | 4 | - | - | 22 | -54 | 16 | -57 |
|      | <b>802.11ax HE160</b>  |   |   |   |    |     |    |     |
|      | MCS0   | 1 | - | - | -  | -   | 23 | -86 |
|      | MCS11  | 1 | - | - | -  | -   | 16 | -59 |
|      | MCS0   | 2 | - | - | -  | -   | 23 | -83 |
|      | MCS11  | 2 | - | - | -  | -   | 16 | -56 |
|      | MCS0   | 3 | - | - | -  | -   | 23 | -81 |
|      | MCS11  | 3 | - | - | -  | -   | 16 | -54 |
|      | MCS0   | 4 | - | - | -  | -   | 23 | -80 |
|      | MCS11  | 4 | - | - | -  | -   | 16 | -53 |
|      | <b>Note: Values in this table assume all four antennas are used.</b> |   |   |   |    |     |    |     |

| Item                        | Specification  |
|-----------------------------|--|
| <b>Compliance standards</b> | <p><b>Environmental</b></p> <p>EN 60529 IP67</p> <p>UL50E Type 4X</p> <p>IEC 60068-2-1 (Cold)</p> <p>IEC 60068-2-2 (Dry Heat)</p> <p>IEC 60068-2-14 (Change of Temperature)</p> <p>IEC 60068-2-30 (Damp Heat)</p> <p>IEC 60068-2-6 (Vibration)</p> <p>IEC 60068-2-27 (Shock)</p> <p>IEC 60068-2-30 (Humidity)</p> <p>IEC 60068-2-32 (Freefall)</p> <p>IEC 60068-3-3 (Seismic)</p> <p><b>Electromagnetic compatibility</b></p> <p>FCC 47 CFR Part 15 Class A</p> <p>EN 55032 Class A</p> <p>VCCI Class A</p> <p>AS/NZ CISPR 32 Class A</p> <p>CISPR 32 Class A</p> <p>ICES 003 Class A</p> <p>CNS13438 Class A</p> <p>EN 300 386</p> <p>KS C 9832:2019</p> <p>EN 301 489-1 v2.1.1</p> <p>EN 301 489-17 v2.1.1</p> <p>EN 301 489 - 19</p> <p>EN 55035</p> <p>CISPR35</p> <p>KS C 9835:2019</p> <p>KS X 3124</p> <p>KS X 3126</p> <p>IEC/EN 61000-4-2 - Electro Static Discharge</p> <p>IEC/EN 61000-4-3 - Radiated RF Immunity</p> <p>IEC/EN 61000-4-5 - Surge</p> <p>IEC/EN 61000-4-6 - Conducted RF Immunity</p> <p>IEC/EN 61000-4-8 - Power Frequency Magnetic Field</p> <p>IEC 61000-4-9 - Pulsed Magnetic Field</p> <p>IEC 61000-4-11 - AC Voltage Dips</p> |

| Item   | Specification   |
|--|---|
|  | <p>IEC 61000-4-18 - Damped Oscillatory Wave</p> <p>EN-61000-4-29 - DC Voltage Dips</p> <p><b>Safety</b></p> <p>IEC 62368-1</p> <p>EN 62368-1</p> <p>EN 62311</p> <p><b>Flammability</b></p> <p>EN 45545-3</p> <p>DIN 5510-2</p> <p><b>Industrial</b></p> <p>EN 61000-6-2 - Industrial</p> <p>EN 61000-6-4 - Industrial</p> <p>EN 61000-6-1 - Light Industrial</p> <p><b>Rail</b></p> <p>AREMA C&amp;S Manual Section 11.5.1</p> <p>AAR S9401 Rail - Rolling stock cab, wayside outside</p> <p>EN 50155 Rail - Electronic Equipment on Rolling Stock Class TX (EMC, Environmental)</p> <p>EN 61373 Rail - Environmental</p> <p>EN 50121-4 Rail - Signaling and Telecommunications Apparatus</p> <p>EN 50121-3-2 Rail - Apparatus for Rolling Stock</p> <p>EN 61373 - Shock and Vibration</p>   |
| <p><b>Wireless communication standards</b></p> | <p><b>Radio approvals</b></p> <ul style="list-style-type: none"> <li>• FCC Part 15.247, 15.407</li> <li>• EN 300 328 v2.2.2 (EU)</li> <li>• EN 301 893 v2.1.1 (EU)</li> <li>• ARIB-STD 66 (Japan)</li> <li>• ARIB-STD T71 (Japan)</li> <li>• EMI and susceptibility (Class B)</li> </ul> <p><b>IEEE Wi-Fi and security standards</b></p> <ul style="list-style-type: none"> <li>• IEEE 802.11a/b/g/n/ac/ax, 802.11h, 802.11d, 802.11v, 802.11u, 802.11k, 802.11r</li> <li>• IEEE 802.11i, Wi-Fi Protected Access 3 (WPA3), WPA2, WPA</li> <li>• IEEE 802.1X</li> <li>• Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP)</li> </ul> <p><b>Extensible Authentication Protocol (EAP) types</b></p> <ul style="list-style-type: none"> <li>• EAP-Transport Layer Security (TLS)</li> <li>• EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2)</li> <li>• Protected EAP (PEAP) v0 or EAP-MSCHAPv2</li> <li>• EAP-Flexible Authentication via Secure Tunneling (FAST)</li> <li>• PEAP v1 or EAP-Generic Token Card (GTC)</li> </ul> |

| Item | Specification  |
|------|--|
|      | <ul style="list-style-type: none"> <li>EAP-Subscriber Identity Module (SIM)</li> </ul> <p><b>Multimedia</b></p> <ul style="list-style-type: none"> <li>Wi-Fi Multimedia (WMM)</li> </ul> <p><b>Other</b></p> <ul style="list-style-type: none"> <li>FCC Bulletin OET-65C</li> <li>RSS-102</li> </ul> |

\*6 GHz usage subject to country's regulatory agency's approvals

## Ordering information

**Table 5.** Ordering information

| Part #                  | Product description  |
|-------------------------|--|
| <b>IW9167EH-x-AP</b>    | Industrial Wireless 9167E, 11ax 6E AP, 8 RF ports, x domain, AP software         |
| <b>IW9167EH-x-CURWB</b> | Industrial Wireless 9167E, 11ax 6E AP, 8 RF ports, x domain, Cisco URWB software |

x = regulatory domain

## Warranty information

The Catalyst IW9167E Access Point comes with a 1-year limited warranty. The warranty includes 10-day advance hardware replacement and ensures that software media are defect-free for 90 days. For more details, visit [Product Warranties](#).

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