Cisco Catalyst IE3100 Rugged Series

Contents

The Cisco Catalyst™ IE3100 Rugged Series delivers mainstream adoption of Gigabit Ethernet connectivity in a compact, fixed form-factor switch that is purpose-built for a wide variety of extended enterprise and industrial applications in the most space constrained scenarios.

Product overview

Cisco Catalyst IE3100 Rugged Series switches with up to 20 Gigabit Ethernet interfaces deliver high-speed Gigabit Ethernet connectivity in a compact form factor and are designed for a wide range of industrial applications for which hardened products are required. This platform is built to withstand harsh environments in manufacturing, energy, transportation, mining, smart cities, and oil and gas. The IE3100 is ideal for space constrained deployments often found in distribution centers, warehouses, and outdoor spaces.

These switches run Cisco IOS® XE, an operating system with built-in security and trust, featuring Secure Boot, image signing, and the Cisco® Trust Anchor module. Cisco IOS XE also provides API-driven configuration with open APIs and data models. Provide secure Zero-Trust Network Access (ZTNA) to industrial assets at scale with Secure Equipment Access.

The Cisco Catalyst IE3100 Rugged Series can be managed with a powerful management tool, Cisco Catalyst Center, and can easily be set up with a completely redesigned user-friendly modern GUI tool called WebUI.

The IE3100 supports PoE with a power budget of up to 240W for PoE/PoE+/4PPoE and is ideal for connecting PoE-powered end devices such as IP and PTZ cameras, phones, wireless access points, sensors, and more.

The IE3100 Rugged Series switches offer:

- Models offering 6, 10, 12, or 20 Gigabit Ethernet ports with up to 4 Gigabit SFP uplink ports or 2 Gigabit Combo uplink ports.
- Support for up to 8 PoE/PoE+ ports or up to 6 PoE/PoE+ and 2 4PPoE ports with a maximum power budget of 240W.
- Robust resiliency enabled by features such as Media Redundancy Protocol (MRP), Resilient Ethernet Protocol (REP), and dual-input DC power supplies.
- Simplified software management with universal images.
- Support for industrial automation protocols EtherNet/IP (CIP), Modbus and PROFINET.
- Support for Layer-2 Network Address Translation[1]

[1] Supported on the IE-3105 variants only.

Figure 1.
IE-3100 Rugged Series switches models

Figure 2.
IE-3105 Rugged Series switch models with enhanced feature set

Features and benefits

Table 1. Features and benefits

Feature	Benefits
Robust industrial design	• Built for harsh environments and temperature ranges (-40° to 75°C / -40° to 167°F) • Fanless, convection-cooled with no moving parts for extended durability • Hardened for vibration, shock and surge, and electrical noise immunity • Complies with multi-industry specifications for automation, Intelligent Transport Systems (ITS), and substation environments • Improves the uptime, performance, and safety of industrial systems and equipment • Alarm I/O for monitoring and signaling to external equipment
Full Gigabit Ethernet switch	• Up to 20 Gigabit Ethernet ports provide multiple resilient design options • Provides secure access for new high-speed applications in the industrial space • Allows IP-based Supervisory Control And Data Acquisition (SCADA) connectivity • Delivers multiple rings, redundant ring topology for new network configurations • Extends geographical scalability where connectivity over longer distances is required

Feature	Benefits
Power over Ethernet (PoE)	• Support for up to 8 Ports of Power over Ethernet with 802.3af, 802.3at and 802.3bt options with a maximum PoE budget of up to 240W • Controls costs by limiting wiring, distribution panels, and circuit breakers • Reduces equipment needs, thus requiring less space and reducing heat dissipation • Enables ready-to-use PoE devices, such as IP phones, vision cameras, next-generation PTZ cameras, and wireless access points • PoE Boost Support: PoE/PoE+/4PPoE is supported on DC power input as low as 12VDC.Perpetual PoE Support: With Perpetual PoE, the PoE power is maintained during a switch reload. This is important for IoT endpoints such as PoE-powered lights, so the device does not completely power off. • Fast PoE Support: When power is restored to a switch, PoE starts delivering power to endpoints without waiting for the operating system to fully load, thereby speeding up the time for the endpoint to start up.
Redundancy and Resiliency	• Resilient Ethernet Protocol (REP) • Media Redundancy Protocol (MRP) • G.8032 Ethernet Ring Protection (ERP) Protocol, version 1
User-friendly WebUI	• Allows for easy configuration and monitoring, even by nonspecialist personnel • Eliminates the need for more complex terminal emulation programs • Reduces the cost of deployment
Industrial automation protocols	• EtherNet/IP (CIP), Modbus, SCADA, GOOSE and PROFINET MRP (IEC 62439-2) allow integration with existing management platforms from Rockwell, Siemens, and others • IEEE 1588v2 Precision Timing Protocol (PTP) (both power profile for utility and default profile for manufacturing are supported) • gRPC mTLS Stream Telemetry
Zero Trust Network Access (ZTNA)	• Secure remote access to Operational Technology (OT) assets efficiency with Cisco Secure Equipment Access (SEA) • Remote users connect to a cloud portal for authentication and authorization to configured devices and protocols for a designed date and time

Table 2. Product feature sets

Product series	Platforms supported	Cisco IOS Software image (feature sets) supported
IE3100	IE-3100-4T2S-E	Network Essentials
	IE-3100-8T2C-E	Network Essentials
	IE-3100-8T4S-E	Network Essentials
	IE-3100-18T2C-E	Network Essentials
	IE-3100-18T2C-CC-E	Network Essentials
	IE-3100-4P2S-E	Network Essentials

Product series	Platforms supported	Cisco IOS Software image (feature sets) supported
	IE-3100-8P2C-E	Network Essentials
	IE-3100-3P1U2S-E	Network Essentials
	IE-3100-6P2U2C-E	Network Essentials
	IE-3105-8T2C-E	Network Essentials
	IE-3105-18T2C-E	Network Essentials

Product specifications

Table 3 highlights the hardware configuration for Cisco Catalyst IE3100 Rugged Series.

Table 3. Hardware configurations

Product number	Total ports	10/100/1000 Mbps RJ45 Copper ports	1GE SFP ports	1GE combo ports	Software license	PoE Power budget[1]	Conformal coating
IE-3100-4T2S-E	6	4	2	-	Network Essentials		
IE-3100-8T2C-E	10	8	-	2	Network Essentials		
IE-3100-8T4S-E	12	8	4	-	Network Essentials		
IE-3100-18T2C-E	20	18	-	2	Network Essentials		
IE-3100-18T2C-CC-E	20	18	-	2	Network Essentials		Yes
IE-3100-4P2S-E	6	4 PoE/PoE+	2	-	Network Essentials	120W[2]	
IE-3100-8P2C-E	10	8 PoE/PoE+	-	2	Network Essentials	240W[3]	
IE-3100-3P1U2S-E	6	3 PoE/PoE+ 1 4PPoE	2	-	Network Essentials	120W[4]	
IE-3100-6P2U2C-E	10	6 PoE/PoE+ 2 4PPoE	-	2	Network Essentials	240W[5]	

Product number	Total ports	10/100/1000 Mbps RJ45 Copper ports	1GE SFP ports	1GE combo ports	Software license	PoE Power budget[1]	Conformal coating
IE-3105-8T2C-E	10	8	-	2	Network Essentials		
IE-3105-18T2C-E	20	18	-	2	Network Essentials		

[1] Supported from Cisco IOS XE 17.15.1 and onwards.

[2] PoE Budget of 120W and can supply up to 30W PoE+ output on all 4 downlink ports.

[3] PoE budget of 240W and can supply up to 30W PoE+ output on all 8 downlink ports.

[4] PoE Budget of 120W and can supply up to 30W PoE+ output on 3 downlink ports or up to 90W 4PPoE on 1 downlink port.

[5] PoE Budget of 240W and can supply up to 30W PoE+ output on 6 downlink ports or up to 90W 4PPoE on 2 downlink ports.

Tables 4 and 5 highlight the hardware specifications for the Cisco Catalyst IE3100 Rugged Series.

Table 4. Hardware specifications

Hardware Specification	IE-3100-4T2S-E IE-3100-8T2C-E IE-3100-8T4S-E IE-3100-18T2C-E IE-3100-18T2C-CC-E	IE-3105-8T2C-E IE-3105-18T2C-C	IE-3100-4P2S-E IE-3100-3P1U2S-E	IE-3100-8P2C-E IE-3100-6P2U2C-E
Hardware	4GB DRAM	4GB DRAM	4GB DRAM	4GB DRAM
Removeable Storage	SD card[1]	SD card[1]	SD card[1]	SD card[1]
Alarms	2 dry-contact alarm inputs	2 dry-contact alarm inputs	2 dry-contact alarm inputs	2 dry-contact alarm inputs
Console Ports	1 RS-232 (via RJ-45), 1 Micro USB	1 RS-232 (via RJ-45), 1 Micro USB	1 RS-232 (via RJ-45), 1 Micro USB	1 RS-232 (via RJ-45), 1 Micro USB
Power Input	Dual DC Inputs	Dual DC Inputs	Dual DC Inputs	Dual DC Inputs
PoE Power Budget	Not applicable	Not applicable	120W	240W

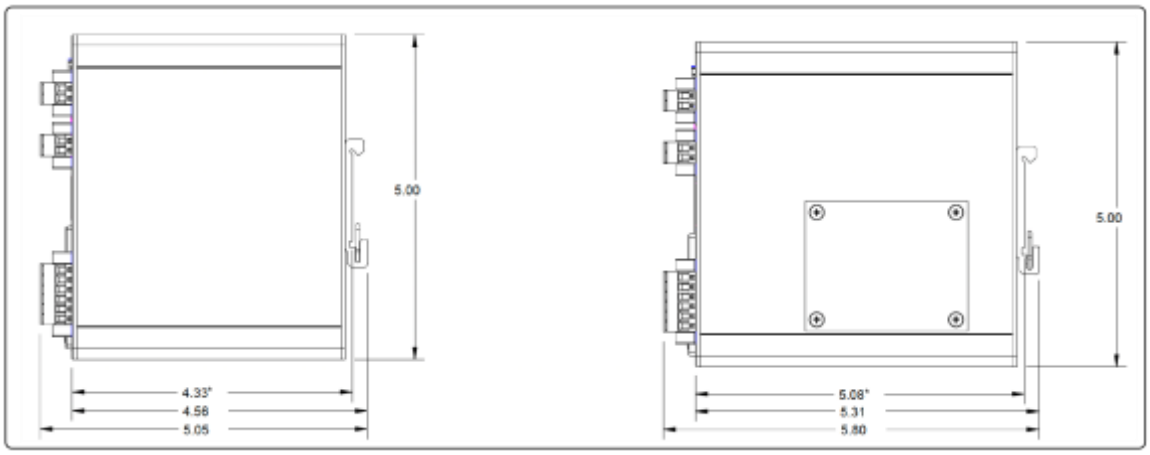
[1] The SD card is optional and not shipped by default with the switch.

Table 5. Physical configurations

Product number	Dimensions (H x W x D)	Weight	Mounting
IE-3100-4T2S-E	5.00 x 2.55 x 4.33 in. (12.70 x 6.48 x 11.00 cm)	1.6 lb (0.73 kg)[1]	DIN Rail
IE-3100-8T2C-E	5.00 x 3.00 x 4.33 in. (12.70 x 7.62 x 11.00 cm)	1.9 lb (0.86 kg)[1]	DIN Rail
IE-3100-8T4S-E	5.00 x 3.00 x 4.33 in. (12.70 x 7.62 x 11.00 cm)	1.9 lb (0.86 kg)[1]	DIN Rail
IE-3100-18T2C-E	5.00 x 4.30 x 5.08 in (12.70 x 10.92 x 12.90 cm)	2.8 lb (1.27 kg)[1]	DIN Rail
IE-3100-18T2C-CC-E	5.00 x 4.30 x 5.08 in (12.70 x 10.92 x 12.90 cm)	2.8 lb (1.27 kg)[1]	DIN Rail

Product number	Dimensions (H x W x D)	Weight	Mounting
IE-3100-4P2S-E	5.00 x 2.55 x 5.08 in. (12.70 x 6.48 x 12.90 cm)	2.0 lb (0.91 kg)[1]	DIN Rail
IE-3100-8P2C-E	5.00 x 3.00 x 5.08 in. (12.70 x 7.62 x 12.90 cm)	2.3 lb (1.04 kg)[1]	DIN Rail
IE-3100-3P1U2S-E	5.00 x 2.55 x 5.08 in. (12.70 x 6.48 x 12.90 cm)	2.0 lb (0.91 kg)[1]	DIN Rail
IE-3100-6P2U2C-E	5.00 x 3.00 x 5.08 in. (12.70 x 7.62 x 12.90 cm)	2.3 lb (1.04 kg)[1]	DIN Rail
IE-3105-8T2C-E	5.00 x 3.00 x 5.08 in. (12.70 x 7.62 x 12.90 cm)	2.3 lb (1.04 kg)[1]	DIN Rail
IE-3105-18T2C-E	5.00 x 4.30 x 5.08 in. (12.70 x 10.92 x 12.90 cm)	2.8 lb (1.27 kg)[1]	DIN Rail

[1] Switch only



*Measurement reference is from faceplate to DIN Rail face attachment.

Figure 3.
Cisco Catalyst IE3100 side view dimensions

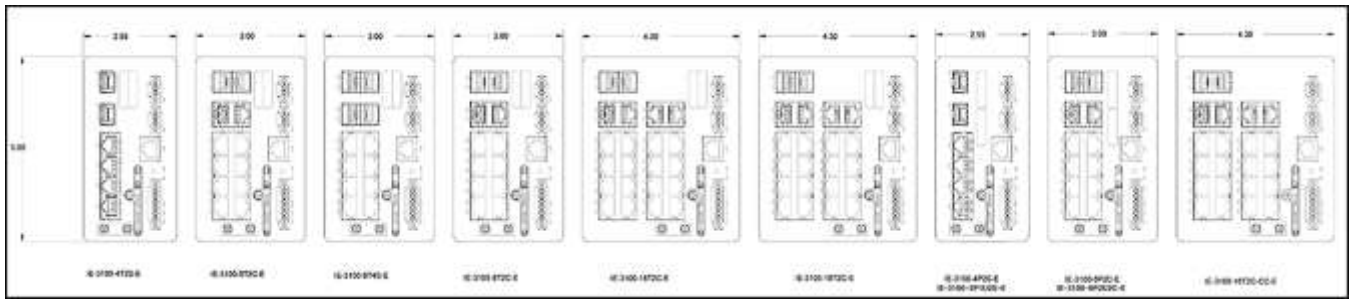


Figure 4.
Cisco Catalyst IE3100 front view dimensions

Table 6 highlights power specifications for the Cisco Catalyst IE3100 Rugged Series.

Table 6. Power specifications

Product number	Input Voltage Range	Max Current during normal operation[1]	Inrush Current[1]	Power consumption[2,3,4,5]
IE-3100-4T2S-E	12V to 48V nominal 9.6V to 60V absolute	1.6 A with 12V input 0.8 A with 24V input 0.4 A with 48V input	10 A for 7 ms with 12V input 6 A for 6 ms with 24V input 6 A for 6 ms with 48V input	14W
IE-3100-8T2C-E	12V to 48V nominal 9.6V to 60V absolute	2.0 A with 12V input 1.0 A with 24V input 0.5 A with 48V input	10 A for 7 ms with 12V input 6 A for 6 ms with 24V input 6 A for 6 ms with 48V input	17.7W
IE-3100-8T4S-E	12V to 48V nominal 9.6V to 60V absolute	2.0 A with 12V input 1.0 A with 24V input 0.5 A with 48V input	10 A for 7 ms with 12V input 6 A for 6 ms with 24V input 6 A for 6 ms with 48V input	17.8W
IE-3100-18T2C-E	12V to 48V nominal 9.6V to 60V absolute	4.2 A with 12V input 2.6 A with 24V input 1.3 A with 48V input	10 A for 7 ms with 12V input 6 A for 6 ms with 24V input 6 A for 6 ms with 48V input	36.7W
IE-3100-18T2C-CC-E	12V to 48V nominal 9.6V to 60V absolute	4.2 A with 12V input 2.6 A with 24V input 1.3 A with 48V input	10 A for 7 ms with 12V input 6 A for 6 ms with 24V input 6 A for 6 ms with 48V input	36.7W
IE-3100-4P2S-E	12V to 54V nominal 9.6V to 60V absolute	5.8 A with 12V input 7.3 A with 24V input 3.7 A with 54V input	80 A for 1 ms with 12V input 80 A for 1 ms with 24V input 80 A for 1 ms with 48V input	22.5W
IE-3100-8P2C-E	12V to 54V nominal 9.6V to 60V absolute	6.1 A with 12V input 7.5 A with 24V input 5.8 A with 54V input	80 A for 1 ms with 12V input 80 A for 1 ms with 24V input 80 A for 1 ms with 48V input	26W
IE-3100-3P1U2S-E	12V to 54V nominal 9.6V to 60V absolute	5.8 A with 12V input 7.3 A with 24V input 3.7 A with 54V input	80 A for 1 ms with 12V input 80 A for 1 ms with 24V input 80 A for 1 ms with 48V input	22.5W
IE-3100-6P2U2C-E	12V to 54V nominal 9.6V to 60V absolute	6.1 A with 12V input 7.5 A with 24V input 5.8 A with 54V input	80 A for 1 ms with 12V input 80 A for 1 ms with 24V input 80 A for 1 ms with 48V input	26W
IE-3105-8T2C-E	12V to 48V nominal 9.6V to 60V absolute	3.2 A with 12V input 1.6 A with 24V input 0.8 A with 48V input	10 A for 7 ms with 12V input 6 A for 6 ms with 24V input 6 A for 6 ms with 48V input	28W

Product number	Input Voltage Range	Max Current during normal operation[1]	Inrush Current[1]	Power consumption[2,3,4,5]
IE-3105-18T2C-E	12V to 48V nominal 9.6V to 60V absolute	4.2 A with 12V input 2.6 A with 24V input 1.3 A with 48V input	10 A for 7 ms with 12V input 6 A for 6 ms with 24V input 6 A for 6 ms with 48V input	36.7W

[1] Max Current and Inrush current should be used for sizing power supplies and electrical wiring.

[2] Power Consumption should be used for thermal load and battery capacity.

[3] Power consumption varies with the local ambient temperature, the input voltage, and the number/type of active interfaces. Please see the IE-310x Power Estimator for more detailed power consumption.

[4] For BTU/hr, please convert the Power Consumption watts to BTU/hr

[5] Power consumption does not include PoE Power.

Table 7 highlights the performance and scalability features of the Cisco Catalyst IE3100 Rugged Series.

Table 7. Performance and scalability features

Feature	IE-3100-4T2S-E IE-3100-4P2S-E IE-3100-3P1U2S-E	IE-3100-8T2C-E IE-3100-8P2C-E IE-3100-6P2U2C-E IE-3105-8T2C-E	IE-3100-8T4S-E	IE-3100-18T2C-E IE-3100-18T2C-CC-E IE-3105-18T2C-E
Forwarding Rate[1]	8.928 Mpps	14.88 Mpps	17.856 Mpps	29.76 Mpps
Forwarding Bandwidth	6 Gbps	10 Gbps	12 Gbps	20 Gbps
Number of queues	8 egress	8 egress	8 egress	8 egress
Unicast MAC addresses	8000	8000	8000	8000
Internet Group Management Protocol (IGMP) multicast groups	512	512	512	512
VLANs	256	256	256	256
IPv4 indirect routes	2000	2000	2000	2000
Spanning Tree Protocol (STP) instances	128	128	128	128
DRAM	4 GB	4 GB	4 GB	4 GB
Flash (User Accessible)	1.5 GB	1.5 GB	1.5 GB	1.5 GB
SD card capacity[2]	1 GB, 4 GB, 16 GB	1 GB, 4 GB, 16 GB	1 GB, 4 GB, 16 GB	1 GB, 4 GB, 16 GB

[1] Measured with 64-byte packets

[2] SD card is optional and is not shipped by default with the switch

Table 8 highlights the power supply options for the Cisco Catalyst IE3100 Rugged Series.

Table 8. Power supply options

Product number	Wattage	Rated nominal input operating range	PoE/PoE+ support[3]	More details
PWR-IE50W-AC=	50W	AC 100-240V/1.25A 50-60Hz or DC 125-250V/1.25A		For more details on these DIN rail power supplies, see the power supplies data sheet.
PWR-IE50W-AC-L=[1]	50W	AC 100-240V/1.2A 50-60Hz		
PWR-IE50W-AC-IEC=[1]	50W	AC 90-264V		
PWR-IE65W-PC-AC=	65W	AC 100-240V/1.4A 50-60Hz or DC 125-250V/1.0A	Yes	
PWR-IE65W-PC-DC=	65W	DC 24-48VDC/4.5A	Yes	
PWR-IE170W-PC-AC=	170W	AC 100-240V/2.3A 50-60Hz or DC 125-250V/2.1A	Yes	
PWR-IE170W-PC-DC=[4]	170W	DC 12-54VDC/23A	Yes	
PWR-IE240W-PCAC-L=[1]	240W	AC 100-240V/2.5A 50-60Hz	Yes	
PWR-IE480W-PCAC-L=[1]	480W	AC 100-240V/5.0A 50-60Hz	Yes	

[1] The power supplies are not certified for smart grid and hazardous locations. These power supplies are IP20 rated.

[2] Power Supplies Datasheet Link: https://www.cisco.com/c/en/us/products/collateral/switches/industrial-ethernet-switches/datasheet-c78-742180.html

[3] The entire power budget for the switch and PoE ports needs to stay within the power supply wattage.

[4] Not supported with IE-3100-4P2S-E, IE-3100-8P2C-E, IE-3100-3P1U2S-E, and IE-3100-6P2U2C-E.

Tables 9 and 10 highlight the software features supported by the Cisco Catalyst IE3100 Rugged Series.

Table 9. Key supported software features (Network Essentials license)

Network Essentials license (perpetual)	Features
Layer 2 switching	802.1Q, RSTP (802.1w), LLDP (802.1ab), MSTP (802.1s), LACP (802.3ad), Per-VLAN Rapid Spanning Tree (PVRST+), Per-VLAN Spanning Tree (PVST+), Rapid PVST (RPVST), Switch Port Analyzer (SPAN), Remote-SPAN (RSPAN), Flow-Based SPAN (FSPAN), STP, Storm Control, VLAN Trunk Protocol (VTP) v2/v3, 802.1Q Tunneling, Q-in-Q, EtherChannel
Multicast	IGMP v1/v2/v3, IGMP snooping, Multicast Listener Discovery (MLD) snooping
Management	WebUI, MIB, Simple Network Management Protocol (SNMP), syslog, Dynamic Host Configuration Protocol (DHCP) server, NETCONF, RESTCONF, Embedded Event Manager (EEM), Cisco Network Plug and Play (PnP), Express Setup, Delayless IPDT
Security	DHCPv6 Guard, IP Source Guard, IPv6 Destination Guard, IPv6 Neighbor Discovery Multicast Suppress, IPv6 Router Advertisement (RA) Guard, IPv6 Snooping, IPv6 Source/Prefix Guard, IPv6 Neighbor Discovery Duplicate Address Detection, PACL, VACL, Network Edge Authentication Topology (NEAT), HTTPS, RADIUS, TACACS+, X.509v3, Secure Shell (SSH), DHCP Snooping, 802.1X, Client Information Signaling Protocol (CISP), Dynamic ARP Inspection (DAI), authentication, authorization, and accounting (AAA), Secure Copy Protocol (SCP), Security Exchange Protocol (SXP)
Quality of Service (QoS)	802.1p, priority queuing, Modular QoS command-line interface (MQC), class-based shaping and marking, Ingress policing, egress queuing and shaping, Auto-QoS, Differentiated Services Code Point (DSCP) mapping and filtering, low-latency queuing
Layer 3 routing	Inter-VLAN routing, static routing
Industrial Ethernet	Locate Switch, Swap Drive, Generic Object-Oriented Substation Events (GOOSE) messaging, SCADA Protocol Classification, PTP (Default Profile, Power Profile 2011, Power Profile 2017[2]), Network Time Protocol (NTP) to PTP, Sampled Values
Redundancy	Resilient Ethernet Protocol (REP) ring, Media Redundancy Protocol (MRP), G.8032 Ethernet Ring Protection (ERP) Protocol version 1
Automation	YANG, NETCONF, RESTCONF
Industrial management	Layer 2 switching with 1:1 switching Network Address Translation (L2NAT)[1]

[1] Supported on the IE3105 variants only.

[2] Support planned with future software updates.

Table 10 highlights the details of Cisco Catalyst Center Essentials for the IE3100 Rugged Series.

Table 10. Cisco Catalyst Center Essentials license

Feature[2]	Description	Cisco Catalyst Center Essentials[1]
Cisco Catalyst Center	Discovery, topology, inventory, software image management	Yes
Visibility	Overall Health dashboard	Yes
Day-zero network bring-up automation	Cisco Network Plug-and-Play application	Yes
SD-Access Extended Node	SD-Access fabric overlay extension	Yes
Industrial Support	MRP Monitoring, REP Configuration	Yes

[1] Cisco Catalyst Center licenses for Industrial Ethernet switches are add-on/optional and not mandatory. They do not include Network Tier features.

[2] Does not represent all support Cisco Catalyst Center features. Refer to Catalyst Center datasheet for additional information.

Table 11 highlights the compliance specifications for the Cisco Catalyst IE3100 Rugged Series.

Table 11. Compliance specifications

Descriptions	Specifications
Industrial Automation Control System	IEC 62443-4-1 IEC 62443-4-2
Emissions, immunity and regulatory compliance	FCC 47 CFR Part 15 Subpart B Class A EN 55032A Class A EN55035 VCCI Class A AS/NZS CISPR 32 Class A, AS/NZS CISPR35 ICES 003 Class A BMSI-Taiwan CNS15936 KCC –Korea KS C9832, KS C9835 CE EU RCM-(Australia/ New Zealand) Brazil Anatel certification[2] India TEC Certification[2] IEC/EN/EN61000-4-2 (Electro Static Discharge), 15kV air/8kV contact IEC/EN 61000-4-3 (Radiated Immunity, 10 V/m with unshielded cables) IEC/EN 61000-4-4 (Fast Transients-4kV power line, 4kV data line) IEC/EN 61000-4-5 (Surge 2KVL-G and 1KVL-L) IEC/EN 61000-4-6 (Conducted Immunity, 10 Vrms)

Descriptions	Specifications
	IEC/EN 61000-4-8 (Power Frequency Magnetic Field Immunity), 1000A/m 1s and 100A/m cont IEC/EN 61000-4-10 (Oscillatory Magnetic Field Immunity), 100A/m IEC/EN 61000-4-29 (Voltage Dips Immunity) IEC/EN 61000-6-1 (Immunity for Light Industrial Environments) IEC/EN 61000-6-2 (Immunity for Industrial Environments) IEC/EN 61000-6-4 (Emission for industrial Environments) EN 61326 RoHS compliance (EU and China)
Industry standards	EN 61131-2 (EMC/EMI, environmental, mechanical) Substation / Utility (IEEE 1613, IEC 61850-3) EN50121-3-2 EN50121-4 IP30 ODVA Industrial Ethernet/IP support PROFINETv2.3 support NEMA TS2:2021 Traffic Controller Assemblies[3]
Safety standards and certifications	Information Technology Equipment: • UL/CSA 60950-1 • UL/CSA 62368-1 • CB report and certificate to IEC 62368-1 with all country deviations Industrial floor (control equipment): • UL/CSA 61010-2-201 Hazardous Locations: • UL121201(Class I, Div 2, groups A-D) • CSA 22.2 No 213 (Class I, Div 2, groups A-D) • UL/CSA 60079-0, (Class I, Zone 2, Gc/IIC) • IEC 60079-0, -7, IECEx test report (Class I, Zone 2, Gc/IIC) • EN 60079-0, -7, ATEX certificate (Class I, Zone 2, Gc/IIC) • An external IP54 enclosure is required for hazardous location installations (see hardware install guide / hazardous locations document for more information)

Descriptions	Specifications
Operating environment	Operating temperature: -40° to 75°C (-40° to 167°F) (blower-equipped cabinet) -40° to 60°C (-40° to 140°F) (sealed cabinet)[4] -40° to 70°C (-40° to 158°F) (vented cabinet) +85°C (type tested for 96 hours) EN 60068-2-1 EN 60068-2-2 EN 61132 Altitude: Up to 15,000 feet (4,572 m) with no temperature derating Up to 40,000 feet (12,192 m) with temperature derating down to 25°C (77°F)
Storage environment	Temperature: -40° to 85°C (-40° to 185°F) Altitude: 40,000 feet (12,192 m) IEC 60068-2-14
Humidity	IEC 60068-2-30 Relative humidity: 5% to 95% noncondensing
Shock and vibration	IEC 60068-2-27 (Operational Shock: 30G 11ms, half sine) IEC 60068-2-27 (Non-Operational Shock 55-70G, trapezoidal) IEC 60068-2-6, IEC 60068-2-64, EN 61373 (Operational Vibration) IEC 60068-2-6, IEC 60068-2-64, EN 61373 (Non-operational Vibration)
Corrosion	IEC 60068-2-52 (salt mist, method 3)[2] IEC60068-2-60 (flowing mixed gases)[2]
Railway	EN50125-1: 2014 EN50125-3: 2003
Marine	DNV Certification, IACS UR E10
Warranty	Five-year limited hardware warranty on all IE3100 Rugged Series product IDs and all Industrial Ethernet (IE) power supplies. See more information in the Warranty section.

[1] Certification in progress

[2] Certification in progress for all IE3100 PoE supported models

[3] Certification pending for IE-3100-3P1U2S-E and IE-3100-6P2U2C-E

[4] Safety approved up to 60oC

Table 12 highlights the Mean Time Between Failures (MTBF) for the Cisco Catalyst IE3100 Rugged Series.

Table 12. MTBF information

Product ID	Rated MTBF (hours) based on Telcordia Issue 4
IE-3100-4T2S-E	931,290
IE-3100-8T2C-E	854,560
IE-3100-8T4S-E	575,966
IE-3100-18T2C-E	642,050
IE-3100-18T2C-CC-E	777,450
IE-3100-4P2S-E	755,460
IE-3100-8P2C-E	682,250
IE-3100-3P1U2S-E	503,617
IE-3100-6P2U2C-E	491,786
IE-3105-8T2C-E	774,680
IE-3105-18T2C-E	642,050

Table 13 highlights information about management and standards for the Cisco Catalyst IE3100 Rugged Series.

Table 13. Management and standards*

Description	Specifications	
IEEE standards	• IEEE 802.1D MAC Bridges, STP • IEEE 802.1p Layer2 COS prioritization • IEEE 802.1q VLAN • IEEE 802.1s Multiple Spanning-Trees • IEEE 802.1w Rapid Spanning-Tree • IEEE 802.1x Port Access Authentication • IEEE 802.1AB Link Layer Discovery Protocol LLDP • IEEE 802.3ad Link Aggregation Control Protocol (LACP)	• IEEE 802.3ah 100BASE-X SMF/MMF only • IEEE 802.3u 100BASE-TX specification • IEEE 802.3ab 1000BASE-T specification • IEEE 802.3z 1000BASE-X specification • IEEE 1588v2 Precision Time Protocol (PTP)

Description	Specifications	
RFC compliance	• RFC 768: User Datagram Protocol (UDP) • RFC 783: Trivial File Transfer Protocol (TFTP) • RFC 791: IPv4 protocol • RFC 792: Internet Control Message Protocol (ICMP) • RFC 793: TCP • RFC 826: ARP • RFC 854: Telnet • RFC 951: BOOTP • RFC 959: FTP • RFC 1157: SNMPv1 • RFC 1901,1902-1907 SNMPv2 • RFC 2273-2275: SNMPv3 • RFC 2571: SNMP Management • RFC 1166: IP Addresses • RFC 1256: ICMP Router Discovery	• RFC 1305: NTP • RFC 1492: TACACS+ • RFC 1493: Bridge MIB Objects • RFC 1534: DHCP and BOOTP interoperation • RFC 1542: Bootstrap Protocol • RFC 1643: Ethernet Interface MIB • RFC 1757: Remote Monitoring (RMON) • RFC 2068: HTTP • RFC 2131, 2132: DHCP • RFC 2236: IGMP v2 • RFC 3376: IGMP v3 • RFC 2474: DiffServ Precedence • RFC 3046: DHCP Relay Agent Information Option • RFC 3580: 802.1X RADIUS • RFC 4250-4252 SSH Protocol
SNMP MIB objects	• BRIDGE-MIB • CALISTA-DPA-MIB • CISCO-ACCESS-ENVMON-MIB • CISCO-ADMISSION-POLICY-MIB • CISCO-AUTH-FRAMEWORK-MIB • CISCO-BRIDGE-EXT-MIB • CISCO-BULK-FILE-MIB • CISCO-CABLE-DIAG-MIB • CISCO-CALLHOME-MIB • CISCO-CAR-MIB • CISCO-CDP-MIB • CISCO-CIRCUIT-INTERFACE-MIB • CISCO-CONFIG-COPY-MIB • CISCO-CONFIG-MAN-MIB • CISCO-DATA-COLLECTION-MIB • CISCO-DHCP-SNOOPING-MIB • CISCO-EMBEDDED-EVENT-MGR-MIB • CISCO-ENTITY-ALARM-MIB • CISCO-ENTITY-VENDORTYPE-OID-MIB • CISCO-ENVMON-MIB • CISCO-ERR-DISABLE-MIB • CISCO-FLASH-MIB	• CISCO-SNMP-TARGET-EXT-MIB • CISCO-STP-EXTENSIONS-MIB • CISCO-SYSLOG-MIB • CISCO-TCP-MIB • CISCO-UDLDP-MIB • CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB • CISCO-VLAN-MEMBERSHIP-MIB • CISCO-VTP-MIB • ENTITY-MIB • ETHERLIKE-MIB • HC-RMON-MIB • IEEE8021-PAE-MIB • IEEE8023-LAG-MIB • IF-MIB • IP-FORWARD-MIB • LLDP-EXT-MED-MIB • LLDP-EXT-PNO-MIB • LLDP-MIB • NETRANGER • NOTIFICATION-LOG-MIB • OLD-CISCO-CHASSIS-MIB

Description	Specifications	
	• CISCO-FTP-CLIENT-MIB • CISCO-IGMP-FILTER-MIB • CISCO-IMAGE-MIB • CISCO-IP-STAT-MIB • CISCO-LAG-MIB • CISCO-LICENSE-MGMT-MIB • CISCO-MAC-AUTH-BYPASS-MIB • CISCO-MAC-NOTIFICATION-MIB • CISCO-MEMORY-POOL-MIB • CISCO-PAE-MIB • CISCO-PAGP-MIB • CISCO-PING-MIB • CISCO-PORT-QOS-MIB • CISCO-PORT-SECURITY-MIB • CISCO-PORT-STORM-CONTROL-MIB • CISCO-PRIVATE-VLAN-MIB • CISCO-PROCESS-MIB • CISCO-PRODUCTS-MIB • CISCO-RESILIENT-ETHERNET-PROTOCOL-MIB • CISCO-RTTMON-ICMP-MIB • CISCO-RTTMON-IP-EXT-MIB • CISCO-RTTMON-MIB • CISCO-RTTMON-RTP-MIB	• OLD-CISCO-CPU-MIB • OLD-CISCO-FLASH-MIB • OLD-CISCO-INTERFACES-MIB • OLD-CISCO-IP-MIB • OLD-CISCO-MEMORY-MIB • OLD-CISCO-SYS-MIB • OLD-CISCO-SYSTEM-MIB • OLD-CISCO-TCP-MIB • OLD-CISCO-TS-MIB • RMON-MIB • RMON2-MIB • SMON-MIB • SNMP-COMMUNITY-MIB • SNMP-FRAMEWORK-MIB • SNMP-MPD-MIB • SNMP-NOTIFICATION-MIB • SNMP-PROXY-MIB • SNMP-TARGET-MIB • SNMP-USM-MIB • SNMP-VIEW-BASED-ACM-MIB • SNMPv2-MIB • TCP-MIB • UDP-MIB

*The list of standards is not final and may change.

Table 14 highlights information about supported SFP modules for the Cisco Catalyst IE3100 Rugged Series switches.

Table 14. SFP support

Part number	Specification	SFP type	Max distance	Cable type	Temperature range	Digital Optical Monitoring (DOM) support
GLC-FE-100FX-RGD=	100BASE-FX	FE	2km	MMF	IND	Yes
GLC-FE-100LX-RGD	100BASE-LX10	FE	10km	SMF	IND	Yes
GLC-FE-100FX=	100BASE-FX	FE	2km	MMF	COM	No
GLC-FE-100LX=	100BASE-LX10	FE	10km	SMF	COM	No
GLC-FE-100EX=	100BASE-EX	FE	40km	SMF	COM	No

Part number	Specification	SFP type	Max distance	Cable type	Temperature range	Digital Optical Monitoring (DOM) support
GLC-FE-100ZX=	100BASE-ZX	FE	80km	SMF	COM	No
GLC-FE-100BX-D=	100BASE-BX10	FE	10km	SMF	COM	No
GLC-FE-100BX-U=	100BASE-BX10	FE	10km	SMF	COM	Yes
GLC-SX-MM-RGD=	1000BASE-SX	GE	550m	MMF	IND	Yes
GLC-LX-SM-RGD=	1000BASE-LX/LH	GE	550m/10km	MMF/SMF	IND	Yes
GLC-ZX-SM-RGD=	1000BASE-ZX	GE	70km	SMF	IND	Yes
GLC-BX40-U-I=	1000BASE-BX40	GE	40km	SMF	IND	Yes
GLC-BX40-D-I=	1000BASE-BX40	GE	40km	SMF	IND	Yes
GLC-BX40-DA-I=	1000BASE-BX40	GE	40km	SMF	IND	Yes
GLC-BX80-U-I=	1000BASE-BX80	GE	80km	SMF	IND	Yes
GLC-BX80-D-I=	1000BASE-BX80	GE	80km	SMF	IND	Yes
GLC-SX-MMD=	1000BASE-SX	GE	550m	MMF	EXT	Yes
GLC-LH-SMD=	1000BASE-LX/LH	GE	550m/10km	MMF/SMF	EXT	Yes
GLC-EX-SMD=	1000BASE-EX	GE	40km	SMF	EXT	Yes
GLC-ZX-SMD=	1000BASE-ZX	GE	70km	SMF	EXT	Yes
GLC-BX-D=	1000BASE-BX10	GE	10km	SMF	COM	Yes
GLC-BX-U=	1000BASE-BX10	GE	10km	SMF	COM	Yes
GLC-BX-D-I=	1000BASE-BX	GE	10km	SMF	IND	Yes
GLC-BX-U-I=	1000BASE-BX	GE	10km	SMF	IND	Yes
CWDM-SFP-xxxx= (8 freq)	CWDM 1000BASE-X	GE	--	SMF	COM	Yes
DWDM-SFP-xxxx= (40 freq)	DWDM 1000BASE-X	GE	--	SMF	COM	Yes
SFP-GE-S=	1000BASE-SX	GE	550m	MMF	EXT	Yes
SFP-GE-L=	1000BASE-LX/LH	GE	550m/10km	MMF/SMF	EXT	Yes
SFP-GE-Z=	1000BASE-ZX	GE	70km	SMF	EXT	Yes
GLC-SX-MM=	1000BASE-SX	GE	550m	MMF	COM	No
GLC-LH-SM=	1000BASE-LX/LH	GE	550m/10km	MMF/SMF	COM	No

Part number	Specification	SFP type	Max distance	Cable type	Temperature range	Digital Optical Monitoring (DOM) support
GLC-ZX-SM=	1000BASE-ZX	GE	70km	SMF	COM	Yes
GLC-T=	1000BASE-T	GE	100m	Copper	EXT	NA
GLC-TE=	1000BASE-T	GE	100m	Copper	EXT	NA
GLC-T-RGD=	1000BASE-T	GE	100m	Copper	IND	NA

For DOM support and for first software release supporting SFP, refer to https://www.cisco.com/en/US/products/hw/modules/ps5455/products_device_support_tables_list.html.

MMF = Multimode Fiber.

SMF = Single-Mode Fiber.

Ordering information

Table 15 lists the ordering information for the Cisco Catalyst IE3100 Rugged Series.

Table 15. Ordering information

Product ID	Description
IE-3100-4T2S-E	Catalyst IE3100 w/4 Ports GE Copper and 2 GE SFP uplinks, NE
IE-3100-8T2C-E	Catalyst IE3100 w/8 Ports GE Copper and 2 GE Combo uplinks, NE
IE-3100-8T4S-E	Catalyst IE3100 w/8 Ports GE Copper and 4 GE SFP uplinks, NE
IE-3100-18T2C-E	Catalyst IE3100 w/18 Ports GE Copper and 2 GE Combo uplinks, NE
IE-3100-18T2C-CC-E	Catalyst IE3100 w/18 Ports GE Copper and 2 GE Combo uplinks, Conformal Coating, NE
IE-3100-4P2S-E	Catalyst IE3100 w/4 PoE+ GE Copper and 2 GE SFP uplinks, NE
IE-3100-8P2C-E	Catalyst IE3100 w/8 PoE+ GE Copper and 2 GE Combo uplinks, NE
IE-3100-3P1U2S-E	Catalyst IE3100 w/3 GE PoE+, 1 GE 4PPoE, and 2 GE SFP uplinks, NE
IE-3100-6P2U2C-E	Catalyst IE3100 w/6 GE PoE+, 2 GE 4PPoE, and 2 GE Combo uplinks, NE
IE-3105-8T2C-E	Catalyst IE3105 w/8 Ports GE Copper and 2 GE Combo uplinks, Advanced features, NE
IE-3105-18T2C-E	Catalyst IE3105 w/18 Ports GE Copper and 2 GE Combo uplinks, Advanced features, NE
SD-IE-1GB=	1GB SD memory card for IE
SD-IE-16GB=	16GB SD memory card for IE
PWR-IE50W-AC=	50W AC to DC or High DC to DC Power Supply
PWR-IE50W-AC-L=	50W AC to DC Power Supply

Product ID	Description
PWR-IE50W-AC-IEC=	50W AC to DC Power Supply with IEC connector (IEC 60320 C14)
PWR-IE65W-PC-AC=	65W AC to DC or High DC to DC Power Supply
PWR-IE65W-PC-DC=	65W Low DC to DC Power Supply
PWR-IE170W-PC-AC=	170W AC to DC or High DC to DC Power Supply
PWR-IE170W-PC-DC=	170W AC to DC or High DC to DC Power Supply
PWR-IE240W-PCAC-L=	240W AC to DC Power Supply
PWR-IE480W-PCAC-L=	480W AC to DC Power Supply
STK-RACK-DINRAIL=	19" DIN Rail mount kit
IE3100-DNA-E-L	Cisco Catalyst Center Essentials license for IE3100 Series (up to 12 ports)
IE3100-DNA-E-L-1Y	IE3100 Cisco Catalyst Center Essentials (up to12 Ports), 1 Year Term license
IE3100-DNA-E-L-3Y	IE3100 Cisco Catalyst Center Essentials (up to 12 Ports), 3 Year Term license
IE3100-DNA-E-L-5Y	IE3100 Cisco Catalyst Center Essentials (up to 12 Ports), 5 Year Term license
IE3100-DNA-E-L-7Y	IE3100 Cisco Catalyst Center Essentials (up to 12 Ports), 7 Year Term license
IE3100-DNA-E-L-10Y	IE3100 Cisco Catalyst Center Essentials (up to 12 Ports), 10 Year Term license
IE3100-DNA-E-M	Cisco Catalyst Center Essentials license for IE3100 Series (up to 24 ports)
IE3100-DNA-E-M-1Y	IE3100 Cisco Catalyst Center Essentials (up to 24 Ports), 1 Year Term license
IE3100-DNA-E-M-3Y	IE3100 Cisco Catalyst Center Essentials (up to 24 Ports), 3 Year Term license
IE3100-DNA-E-M-5Y	IE3100 Cisco Catalyst Center Essentials (up to 24 Ports), 5 Year Term license
IE3100-DNA-E-M-7Y	IE3100 Cisco Catalyst Center Essentials (up to 24 Ports), 7 Year Term license
IE3100-DNA-E-M-10Y	IE3100 Cisco Catalyst Center Essentials (up to 24 Ports), 10 Year Term license

Warranty

Five-year limited hardware warranty on all IE3100 product IDs and power supplies (see Table 8 above). See the following link for more details on the warranty: https://www.cisco.com/c/en/us/products/warranties/warranty-doc-c99-740591.html.

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 Corporate Social Responsibility (CSR) Report.

Reference links to information about key environmental sustainability topics (mentioned in the "Environment Sustainability" section of the CSR Report) are provided in the following table:

Table 16. Links to environmental sustainability topics

Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	Waste Electrical and Electronic Equipment (WEEE) compliance

Reference links to product-specific environmental sustainability information that is mentioned in relevant sections of this data sheet are provided in the following table:

Table 17. Product-specific environmental sustainability information

Sustainability topic	Reference
Power	
Power specifications and consumption	Table 5. Physical configurations
Environmental characteristics	
Operating temperature, industry standards, EMC emissions	Table 11. Compliance specifications
Material	
Unit weight	Table 5. Physical configurations

Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

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For information on services, visit https://www.cisco.com/web/services/.

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For more information

For more information about the Cisco IE 3100 Rugged Series, visit https://www.cisco.com/go/ie3100 or contact your local account representative.

Document history

New or revised topic	Described in	Date
G.8032v1 Support, Layer 2 Switching Names, Operating Environment, Humidity, Marine Certification, Industry Standards, Safety Standards and Certifications	Table 1, Table 9, Table 10	December 2025
IE-3100-3P1U2S-E, IE-3100-6P2U2C-E, IE-3100-4P2S-E and IE-3100-8P2C-E max current, formatting, PoE standards	Various Sections and Tables, Table 6, Table 4, Table 7, Table 1	June 2025
PoE Budgets, NEMA TS2:2021, SD-Access Extended Node, Industrial Support, SD Card Capacity, Ordering Information, Supported SFPs	Table 1, Table 3, Table 7, Table 10, Table 11, Table 14, Table 15	March 2025
IE-3100-4P2S-E, IE-3100-8P2C-E, IE-3100-18T2C-CC-E	Various Sections and Tables	June 2024
SEA Support	Table 1	January 2024
DNA name change to Catalyst Center, Addition of UL60101	Entire Datasheet, Compliance Specification	October 2023
IE-3100-8T4S-E	Various Sections and Tables	July 2023

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