Cisco Catalyst IE3200 Rugged Series

Contents

The Cisco Catalyst® IE3200 Rugged Series ushers in mainstream adoption of Gigabit Ethernet connectivity in a compact form factor for a wide variety of extended enterprise and industrial applications.

Product Overview

The Cisco Catalyst IE3200 Rugged Series delivers high-speed Gigabit Ethernet connectivity in a compact form factor and is designed for a wide range of industrial applications where hardened products are required. The platform is built to withstand harsh environments in manufacturing, energy, transportation, mining, smart cities, and oil and gas. The IE3200 platform is also ideal for extended enterprise deployments in outdoor spaces, warehouses, and distribution centers.

These switches run Cisco IOS® XE, a next-generation operating system with built-in security and trust, featuring secure boot, image signing, and a Cisco® Trust anchor module. Cisco IOS XE also provides API-driven configuration with open APIs and data models.

The Cisco Catalyst IE3200 Rugged Series can be managed with powerful management tools such as Cisco DNA Center and Industrial Network Director, and can be easily set up with a completely redesigned, user-friendly, modern GUI tool called WebUI.

The IE3200 Series provides an option for up to eight ports of Power over Ethernet Plus (PoE+), with a product SKU that is ideal for connecting PoE-powered end devices such as IP cameras, phones, wireless access points, sensors, and more.

Figure 1.

Features and Benefits

Table 1. Features and Benefits

Feature	Benefit
Robust industrial design	• Built for harsh environments and temperature ranges (-40°C to +75°C) • 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, ITS, and substation environments • Improves uptime, performance, and safety of industrial systems and equipment • Covers a wide range of Power over Ethernet (PoE) application requirements • Alarm I/O for monitoring and signaling to external equipment
Full Gigabit Ethernet interfaces	• Provides secure access for new high-speed applications in the industrial space • Packs up to 10 ports of GE - 2x1 Gigabit Small Form-Factor Pluggable (SFP) uplinks, plus 8x1 Gigabit copper or PoE+ RJ45 downlinks in a small form-factor base system • Connects high-speed wireless access points (802.11n, 802.11ac) • Enables High-Definition (HD) IP cameras and Programmable Logic Controllers (PLC) • Delivers multiple rings and redundant ring topology for new network configurations • Extends geographical scalability where longer-distance connectivity is required
High-density industrial Power over Ethernet (PoE)	• Supports up to 8 PoE or PoE+ ports • 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, cameras, and wireless access points
User-friendly GUI, called WebUI	• Allows easy configuration and monitoring • Eliminates the need for more complex terminal emulation programs • Reduces the cost of deployment
SwapDrive, a zero-configuration replacement	• True zero-configuration and simple switch replacement in the event of a failure • No networking expertise required • Helps ensure fast recovery

Products Overview

Table 2. Product Feature Sets

Product family	Platforms supported	Cisco IOS Software image (feature sets) supported
IE3000	IE3200	Network Essentials (default)

Product Specifications

Table 3 highlights the hardware configuration for Cisco Catalyst IE3200 Rugged Series switches.

Table 3. IE3200 Hardware Configurations

Hardware specification	Cisco IE-3200-8T2S-E	Cisco IE-3200-8P2S-E
Total Ethernet Ports	10	10
100/1000 SFP-based ports	2	2
10/100/1000 PoE/PoE+ ports	0	8
PoE power budget	Not applicable	240W[1]
Removable storage	SD card[2]	SD card[2]
Alarms	2 alarms in, 1 alarm out	2 alarms in, 1 alarm out
Console ports	1 RS-232 (via RJ-45), 1 USB Mini Type B	1 RS-232(via RJ-45), 1 USB Mini Type B
Power inputs	Dual DC power inputs	Dual DC power inputs

[1] In order to achieve the 240W power budget, the minimum power requirements as specified in Table 6 for the switch need to be considered when selecting a power supply.

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

Table 4 highlights the physical configuration for Cisco Catalyst IE3200 Rugged Series switches.

Table 4. IE3200 Physical Configurations

Physical specifications	Cisco IE-3200-8T2S-E	Cisco IE-3200-8P2S-E
Dimensions (H x W x D)	6 in. X 3.6 in. X 5.3 in.	6.0 in. X 3.6 in. X 5.3 in.
Weight	3.75 lbs	3.75 lbs
Mounting	DIN rail	DIN rail

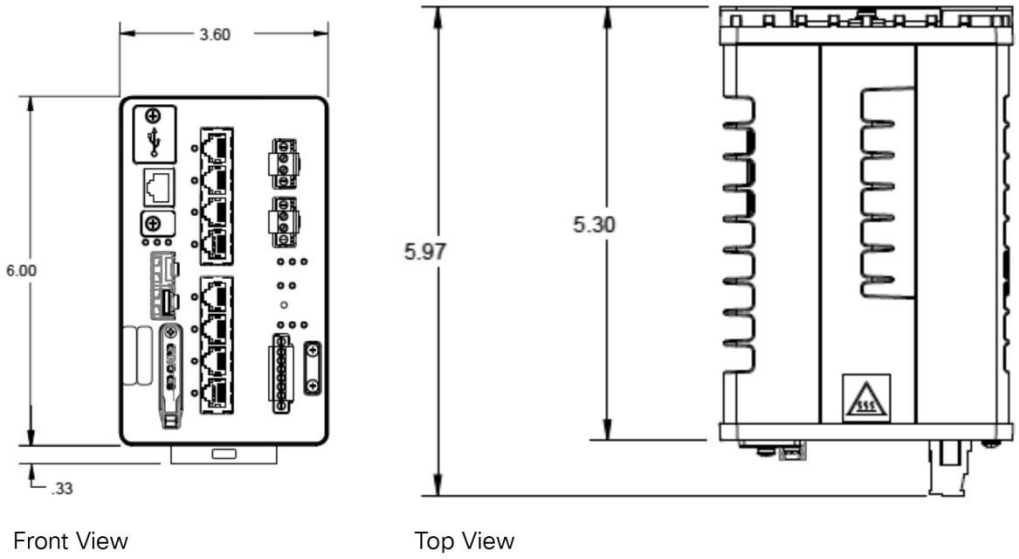

Figure 2.

Table 5 highlights the performance and scalability features for Cisco Catalyst IE3200 Rugged Series switches.

Table 5. IE3200 Performance and Scalability Features

Features	Cisco IE-3200-8T2S-E	Cisco IE-3200-8P2S-E
Forwarding rate	Line rate for all ports and all packet sizes	Line rate for all ports and all packet sizes
Number of queues	8	8
Unicast MAC addresses	8K	8K
Internet Group Management Protocol (IGMP) multicast groups	1K	1K
VLAN IDs	256	256
Spanning Tree Protocol (STP) instances	128	128
Access control lists (PACL)	1.5K	1.5K
DRAM	2 GB	2 GB
Flash (User Accessible)	1.5 GB	1.5 GB
SD card capacity[1]	4 GB	4 GB

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

Table 6 highlights the power specifications for Cisco Catalyst IE3200 Rugged Series switches.

Table 6. IE3200 Power Specifications

	Cisco IE-3200-8T2S-E	Cisco IE-3200-8P2S-E
Input voltage range	Redundant DC input voltage: 9.6 to 60VDC	Redundant DC input voltage: 9.6 to 60VDC 48VDC is required for PoE and 54VDC is required for PoE+
Maximum Input current	3.2A	5.5A
Power consumption[1]	33W	35W

[1] Power consumption for non PoE supported model is measured at 12V and for the PoE supported model is measured at 54V. Power consumption does not include PoE power.

Table 7 highlights the power supply options for Cisco Catalyst IE3200 Rugged Series switches.

Table 7. Power Supply Options

Product ID	Wattage	Rated nominal input operating range	PoE/PoE+ support[1]
PWR-IE50W-AC=	50W	AC 100-240V/1.25A 50-60Hz or DC 125-250V/1.25A	No
PWR-IE50W-AC-L=[2]	50W	AC 100-240V/1.0A 50-60Hz	No
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=	170W	DC 12-54VDC/2.3A	Yes
PWR-IE240W-PCAC-L=[2]	240W	AC 100-240V/2.5A 50-60Hz	Yes
PWR-IE480W-PCAC-L=[2]	480W	AC 100-240V/5.0A 50-60Hz	Yes

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

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

Table 8 highlights the supported software features for Cisco Catalyst IE3200 Rugged Series switches.

Table 8. Key Supported Software Features

Features	
Layer 2 switching	IEEE 802.1, 802.3 standard, NTP, UDLD, CDP, LLDP, unicast MAC filter, VTPv2, VTPv3, EtherChannel, voice VLAN, PVST+, MSTP, and RSTP
Multicast	IGMPv1, v2, v3 snooping, IGMP filtering, IGMP querier
Management	WebUI, MIB, SmartPort, SNMP, syslog, DHCP server, SPAN session, RSPAN, Express setup
Security	Port security, 802.1x, Dynamic Host Configuration Protocol (DHCP) snooping, dynamic ARP inspection, IP source guard, guest VLAN MAC authentication bypass, 802.1x multidomain authentication, storm control - unicast, multicast, broadcast, SCP, SSH, SNMPv3, TACACS+, RADIUS server/client, MAC address notification, BPDU guard, Port ACL, SUDI 2099 (Secure Unique Device identifier)
Quality of Service (QoS)	Ingress policing, rate limit, egress queuing and shaping, auto QoS
Layer 2 IPv6	IPv6 host support, SNMP over IPv6
Layer 3 routing	Inter-VLAN routing, static routing
Industrial Ethernet	CIP Ethernet/IP, IEEE 1588 PTP v2
Redundancy	Resilient Ethernet Protocol (REP) ring
Utility	Dying gasp, SCADA protocol classification - GOOSE messaging, MODBUS TCP/IP
Automation	YANG, NETCONF, RESTCONF

Table 9 highlights the compliance specifications for Cisco Catalyst IE3200 Rugged Series switches.

Table 9. Compliance Specifications[1]

Specifications	
Electromagnetic emissions	FCC 47 CFR Part 15 subpart B Class A EN 55032/CISPR 32 Class A VCCI Class A AS/NZS CISPR 32 Class A CISPR 11 Class A ICES 003 Class A CNS 13438 Class A KN 32 Class A EN 300 386
Electromagnetic immunity	CISPR 24 EN 55024 KN 35 EN 61000-4-2 Electro Static Discharge (air – 15kV, contact – 8kV) EN 61000-4-3 Radiated RF (10V/m UTP, 20V/m STP)

Specifications	
	EN 61000-4-4 Electromagnetic Fast Transients (4kV) EN 61000-4-5 Surge (2KV/1KV Power, 4KV STP) EN 61000-4-6 Conducted RF (10Vrms UTP) EN 61000-4-8 Power Frequency Magnetic Field (1000A/m) EN 61000-4-10 Pulsed Magnetic Field (30 A/m) EN 61000-4-16 Conducted CM Disturbances (30V, Cont/300V, 1 sec) EN 61000-4-17 Ripple Immunity DC Power (10%) EN 61000-4-18 Damped Oscillatory Wave (2.5kV, 1MHz) EN-61000-4-29 DC Voltage Dips and interruptions
Industry standards	EN 61000-6-2 Industrial Immunity EN 61000-6-4 Industrial Emissions EN 61000-6-1 Light Industrial Immunity EN 61326-1 Measurement, Control & Laboratory Equipment IEEE 1613 Electric Power Stations Communications Networking[2] EN/IEC 61850-3 Electric Substations Communications Networking[2] EN50121-4 Railway – Signaling and Telecommunications Apparatus[2] ODVA Industrial EtherNet/IP IP30
Safety standards and certifications	Information technology equipment: UL/CSA 60950-1,CB to IEC 60950-1 with all country deviations UL/CSA 62368-1, CB to IEC 62368-1 with all country deviations[2] Industrial floor (control equipment): UL/CSA 61010-2-201 CB report and certificate to IEC/EN 61010-2-201 Hazardous locations[2]: UL121201(Class I, Div 2, groups A-D) CSA 213 (Class I, Div 2, groups A-D) UL/CSA 60079-0, -15 (Class I, Zone 2, Gc/IIC) IEC 60079-0, -15 IECEx test report (Class I, Zone 2, Gc/IIC) EN 60079-0, -15 ATEX certificate (Class I, Zone 2, Gc/IIC) cabinet enclosure required
Operating environment	Operating temperature: -40°C to +70°C (40 LFM vented enclosure) -40°C to +60°C (sealed enclosure) -34°C to +75°C (Min. 200 LFM fan or blower-equipped enclosure) +85°C (type tested for 16 hours) Altitude: Up to 15,000 feet
Storage environment	Temperature: -40°C to +85°C Altitude: 15,000 feet IEC 60068-2-14

Specifications	
Humidity	Relative humidity of 5% to 95% non-condensing IEC 60068-2-78 IEC 60068-2-30
Shock and vibration	IEC 60068-2-27 (operational shock, 50G, 3ms, half sine) IEC 60068-2-27 (non-operational shock, 65-80G, 9ms, trapezoidal) MIL-STD-810, Method 514.4
Corrosion	EN 60068-2-52 (salt fog)[2] EN 60068-2-60 (flowing mixed gas)[2]
Warranty	Five-year limited hardware warranty on all IE3200 product IDs and all Industrial Ethernet (IE) power supplies. See more information under the Warranty section

[1] For more detailed information on safety approved power/thermal ratings refer the Hardware Installation Guide.

[2] Test in progress.

Table 10 highlights Mean-Time-Between-Failures (MTBF) for Cisco Catalyst IE3200 Rugged Series switches.

Table 10. MTBF Information

	Cisco IE-3200-8T2S-E	Cisco IE-3200-8P2S-E
Rated MTBF (hours)	641,150	613,125

Table 11 highlights information about management and standards for Cisco Catalyst IE3200 Rugged Series switches.

Table 11. 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 LLDP IEEE 1588v2 PTP Precision Time Protocol	IEEE 802.3ad Link Aggregation (LACP) IEEE 802.3ah 100BASE-X SMF/MMF only IEEE 802.3x full duplex on 10BASE-T IEEE 802.3 10BASE-T specification IEEE 802.3u 100BASE-TX specification IEEE 802.3ab 1000BASE-T specification IEEE 802.3z 1000BASE-X specification IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet plus
RFC compliance	RFC 768: UDP RFC 783: TFTP RFC 791: IPv4 protocol RFC 792: ICMP RFC 793: TCP RFC 826: ARP RFC 854: Telnet RFC 959: FTP RFC 1157: SNMPv1	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: RMON RFC 2068: HTTP RFC 2131, 2132: DHCP RFC 2236: IGMP v2

Description	Specifications	
	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 951: BootP	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	802.1X MIB CISCO-DHCP-SNOOPING-MIB CISCO-UDLDP-MIB CISCO-ENVMON-MIB CISCO-PRIVATE-VLAN-MIB CISCO-PAE-MIB Cisco-Port-QoS-MIB CISCO-ERR-DISABLE-MIB CISCO- PROCESS-MIB LLDP-MIB CiscoMACNotification-MIB CISCO-CONFIG-COPY-MIB LLDP-MED-MIB Bridge-MIB CISCO-CAR-MIB CISCO-LAG-MIB CISCO-SYSLOG-MIB CISCO-FTP-CLIENT-MIB CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB CISCO-VLAN-MEMBERSHIP-MIB Cisco-REP-MIB CISCO-PORT-STORM-CONTROL-MIB CISCO-CDP-MIB CISCO-IP-STAT-MIB CISCO-LICENSE-MGMT-MIB CISCO-STP-EXTN-MIB CISCO-VTP-MIB IEEE8023-LAG-MIB SMON-MIB CISCO-ACCESS-ENVMON-MIB CISCO-CALLHOME-MIB CISCO-CONFIG-MAN-MIB CISCO-FLASH-MIB	CISCO-IF-EXTENSION-MIB CISCO-IMAGE-MIB CISCO-MEMORY-POOL-MIB CISCO-PING-MIB SNMP-TARGET-EXT-MIB IF_MIB ENTITY-MIB LLDP-EXT-PNO-MIB NOTIFICATION-LOG-MIB OLD-CISCO-CPU-MIB ETHERLIKE-MIB OLD-CISCO-SYSTEM-MIB OLD-CISCO-MEMORY-MIB RMON-MIB SNMP-COMMUNITY-MIB SNMP-FRAMEWORK-MIB SNMP-PROXY-MIB SNMP-MPD-MIB SNMP-NOTIFICATION-MIB SNMP-TARGET-MIB SNMP-USM-MIB CISCO-DATACOLLECTION-MIB CISCO-CABLE-DIAG-MIB CISCO -PORT-SECURITY-MIB BULK_FILE_MIB NAC-NAD-MIB CISCO-ENTITY-ALARAM-MIB SNMP-VIEW-BASED-ACM-MIB CISCO-MAC-AUTH-BYPASS-MIB CISCO-AUTH-FRAMEWORK-MIB CISCO-BRIDGE-Ext-MIB SNMPv2-MIB CISCO-ENTITY-VENDORTYPE-OID-MIB CISCO-PRODUCTS-MIB

Table 12 highlights information about supported SFPs for Cisco Catalyst IE3200 Rugged Series switches.

Table 12. SFP Support

Product ID	Specifications	SFP type	Temperature range[1]	Maximum distance	Cable type	Dom support
GLC-FE-100FX-RGD	100BASE-FX	FE	IND	2 km	Multimode fiber (MMF)	No
GLC-FE-100LX-RGD	100BASE-LX10	FE	IND	10 km	Single-mode fiber (SMF)	No
GLC-FE-100FX	100BASE-FX	FE	COM	2 km	MMF	No
GLC-FE-100LX	100BASE-LX10	FE	COM	10 km	SMF	No
GLC-FE-100EX	100BASE-EX	FE	COM	40 km	SMF	No
GLC-FE-100ZX	100BASE-ZX	FE	COM	80 km	SMF	No
GLC-FE-100BX-U	100BASE-BX10	FE	COM	10 km	SMF	No
GLC-FE-100BX-D	100BASE-BX10	FE	COM	10 km	SMF	No
GLC-SX-MM-RGD	1000BASE-SX	GE	IND	220-550 m	MMF	Yes
GLC-LX-SM-RGD	1000BASE-LX/LH	GE	IND	550 m/10 km	MMF/SMF	Yes
GLC-ZX-SM-RGD	1000BASE-ZX	GE	IND	70 km	SMF	Yes
SFP-GE-S	1000BASE-SX	GE	EXT	220-550 m	MMF	Yes
SFP-GE-L	1000BASE-LX/LH	GE	EXT	550 m/10 km	MMF/SMF	Yes
SFP-GE-Z	1000BASE-ZX	GE	EXT	70 km	SMF	Yes
GLC-BX-U	1000BASE-BX10	GE	COM	10 km	SMF	Yes
GLC-BX-D	1000BASE-BX10	GE	COM	10 km	SMF	Yes
GLC-SX-MM	1000BASE-SX	GE	COM	220-550 m	MMF	Yes
GLC-LH-SM	1000BASE-LX/LH	GE	COM	550 m/10 km	MMF/SMF	Yes
GLC-ZX-SM	1000BASE-ZX	GE	COM	70 km	SMF	Yes
GLC-EX-SMD	1000BASE-EX	GE	COM	40 km	SMF	Yes
GLC-TE	1000BASE-T	GE	EXT	100 m	Cat5e	No

[1] If non-industrial SFPs (EXT, COM) are used, the switch operating temperature must be derated.

Ordering Information

Table 13 lists the ordering information for fixed system and memory that are commonly used with the Cisco Catalyst IE3200 switches.

Table 13. Ordering Information

Product ID	Product description
IE-3200-8T2S-E	Cisco Catalyst IE3200 Rugged Series fixed system, 8 non-PoE copper ports, 2 fiber SFPs, Network Essentials
IE-3200-8P2S-E	Cisco Catalyst IE3200 Rugged Series fixed system, 8 PoE copper ports, 2 fiber SFPs, Network Essentials
SD-IE-4GB=	Industrial Ethernet (IE) 4-GB SD memory card for IE
STK-RACK-DINRAIL=	19" DIN Rail mount kit

Warranty

Five-year limited HW warranty on all IE3200 PIDs and all IE Power Supplies (see table 7 above). See link below for more details on warranty https://www.cisco.com/c/en/us/products/warranties/warranty-doc-c99-740591.html.

Cisco Services

https://www.cisco.com/web/services/.

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.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **https://www.cisco.com/go/offices**.

Printed in USAs

C78-741758-00 05/19