

TECHNICAL DATASHEET

SUPERMICRO · EDGE & EMBEDDED

Supermicro Outdoor IoT Server SYS-E403-12P-IPA2-C

X12 IP65 designed server with 3rd Gen Intel Xeon Scalable processors

SKU SYS-E403-12P-IPA2-C

LGA4189

Supermicro



FORM FACTOR

—

MAX POWER (BASE)

306 W

HEAT OUTPUT

1,044 BTU/h

PRICE

On request



REQUEST A QUOTATION ONLINE

serverinvest.com/product/sys-e403-12p-ipa2-c

01 Product overview

The Supermicro SYS-E403-12P-IPA2-C is a Outdoor IoT Server built on Intel Xeon Scalable 3rd Gen with up to 2 TB of memory in 8 DIMM slots.

X12 IP65 designed server with 3rd Gen Intel Xeon Scalable processors.

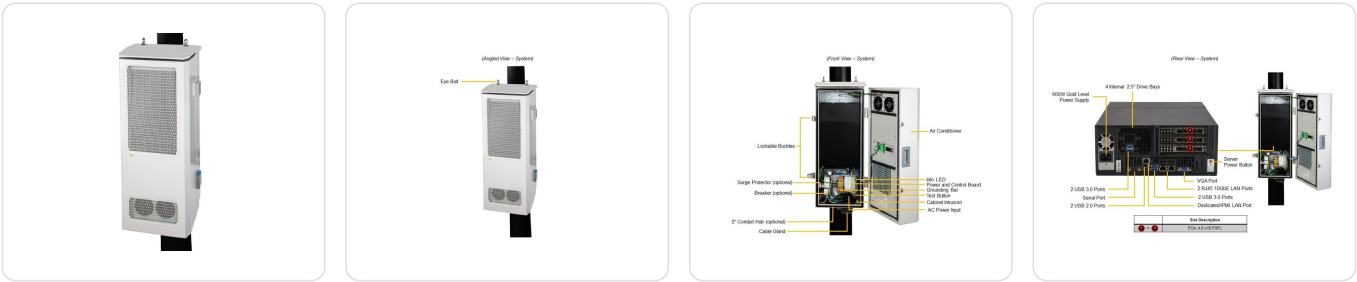
ServerInvest configures every SYS-E403-12P-IPA2-C to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Intel Xeon Scalable 3rd Gen
- Up to 2 TB memory · 8 DIMM slots
- Total 4 bays 4 internal fixed 2.5" SATA drive bays
- Power: 1x 680W
- Networking: 2 RJ45 10GBASE-T with Intel X550-AT2

KEY SPECIFICATIONS

Processor	Intel Xeon Scalable 3rd Gen
Socket	LGA4189
Memory	8 DIMM slots, up to 2 TB
Drive bays	4
Power supply	1× 680 W
Typical power draw	450 W
Networking	2 RJ45 10GBASE-T with Intel X550-AT2



02 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
73 W	190 W	306 W	1,044 BTU/h	0.3 kW	45%

Typical 190 W · max 306 W · single PSU rating 680 W

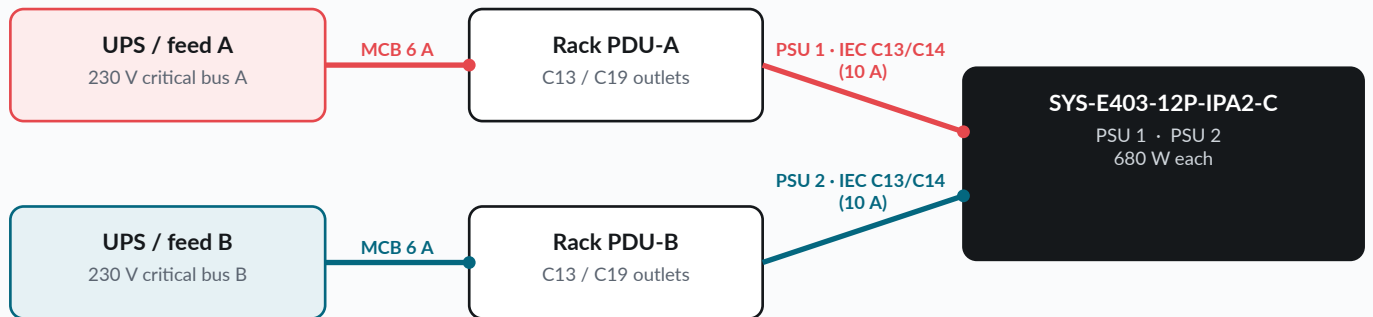
Annual IT energy (24/7)	1,357 kWh
Annual facility energy (PUE 1.5)	2,036 kWh
Annual energy cost	€271 IT · €407 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	0.53 t (grid factor 0.26 kg/kWh)
Power supplies	1× 680 W

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	38 W	59 W	85 W
CPU (base configuration)	25 W	110 W	185 W
2× Memory (base configuration)	6 W	10 W	18 W

DC loads converted to wall power at 94% PSU efficiency; typical load assumed 70% of the time. Engineering estimates — confirm with the manufacturer's power calculator for critical designs.

03 Power connection diagram

Dual-feed (A/B) connection for redundant power supplies



- Connect PSU 1 to PDU-A and PSU 2 to PDU-B (independent feeds) using IEC C13/C14 (10 A) power cords.
- Maximum current per feed: 1.4 A at 230 V — each feed must be able to carry the full load if the other fails.
- Recommended protection per PDU circuit: MCB 6 A, curve C; RCD according to local regulations.
- Heat to remove at full load: 306 W = 1,044 BTU/h (0.3 kW).

04 Full specifications

MOTHERBOARD

Super X12SPW-TF

PROCESSOR

CPU	Single Socket P+ (LGA-4189) 3rd Gen Intel Xeon Scalable processors
Note	Supports up to 205W TDP CPUs (Air Cooled)

SYSTEM MEMORY

Memory	Slot Count: 8 DIMM slots Max Memory (2DPC): Up to 2TB 3200MT/s ECC DDR4 RDIMM/LRDIMM View Memory Options
Memory Voltage	1.2V

ON-BOARD DEVICES

SATA	SATA (6Gbps) via Intel C621A; RAID 0/1/5/10 support
Network Connectivity	2 RJ45 10GBASE-T with Intel X550-AT2 View AOC Options

INPUT / OUTPUT

LAN	1 RJ45 1 GbE Dedicated BMC LAN port 2 RJ45 10 GBASE-T LAN ports (Intel X550-AT2)
USB	2 USB 2.0 Type-A ports (rear) 4 USB 3.0 Type-A ports (Rear)
Video	1 VGA port (Rear)
TPM	1 TPM header

SYSTEM BIOS

BIOS Type	AMI 32MB SPI Flash
BIOS Features	ACPI 6.0 Plug and Play (PnP) Riser Card audio detection support SMBIOS 3.0 or later

MANAGEMENT

Software	SuperCloud Composer (SCC) Supermicro Server Manager (SSM) Supermicro Update Manager (SUM) Supermicro SuperDoctor 5 (SD5) Super Diagnostics Offline (SDO) Supermicro Thin-Agent Service (TAS) SuperServer Automation Assistant (SAA) New!
Power configurations	Power-on mode for AC power recovery ACPI Power Management

SECURITY

Hardware	Trusted Platform Module (TPM) 2.0 Silicon Root of Trust (RoT) – NIST 800-193 Compliant
Features	Cryptographically Signed Firmware Secure Boot Secure Firmware Updates Automatic Firmware Recovery System Lockdown

CHASSIS

Form Factor	Outdoor
Model	CSE-B403-C500S1-IP65

DIMENSIONS AND WEIGHT

Height	30.95" (786 mm)
Width	12.58" (319.4 mm)
Depth	11.83" (300.4 mm)
Package	45.35" (H) x 25.6" (W) x 27.56" (D)
Weight	Net Weight: 58.37 lbs (26.48 kg)
Available Color	Beige

EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 3 PCIe 4.0 x16 FHFL slots View AOC Options
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DRIVE BAYS / STORAGE

Drive Bays Configuration	Default: Total 4 bays 4 internal fixed 2.5" SATA drive bays View Drive Options
M.2	1 M.2 PCIe 3.0 x4 NVMe/SATA slot (M-key 2280/22110) View M.2 Options

SYSTEM COOLING

Fans	Up to 3 heavy duty fans with optimal fan speed control(In server) 80x80x38mm Fan(s) Up to 1 Active Air Conditioner Module (On IP65 enclosure) with build-in Fan(s)
Air Shroud	1 Air Shroud

POWER SUPPLY

1x 680W
1x 680W Gold Level (92%) power supply
Dimension (WxHxL)
100 x 40 x 220 mm

OPERATING ENVIRONMENT

Environmental Spec.	Operating Temperature: -40°C to 46°C + solar load (-40°F to 115°F + solar load) Non-operating Temperature: -40°C to 70°C (-40°F to 158°F) Operating Relative Humidity: 8% to 90% (non-condensing) Non-operating Relative Humidity: 5% to 95% (non-condensing)
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05 Built, tested & supported by ServerInvest

Engineered configuration

Every option validated for socket, memory channels, PCIe lanes, power and cooling.

48-hour burn-in

Assembled, firmware-updated and stress-tested before it leaves our workshop.

3-year warranty

Standard on every system, with on-site next-business-day upgrades available.

Rack-ready delivery

Rails, cable management and labelling included — delivered across Europe.



Interested in this solution?

Request a quotation online or talk to a solutions engineer — we reply within one business day.
office@serverinvest.com

Official manufacturer datasheet: serverinvest.com/product/sys-e403-12p-ipa2-c/datasheet/manufacture

