



Smarter with Intel®. Stronger with Crystal Group.

Energy is essential to modern living and homeland security. That's why power companies are undergoing a major transformation to protect energy resources now and for years to come. The Crystal Group Energy Series™ (ES) delivers optimized solutions—powered by Intel—to ensure long-lasting, high-performance computing in unpredictable conditions.

The ES3604L24 substation server delivers reliable power and performance in a rugged chassis that can withstand the intense conditions of remote locations, such as extreme climates, weather, temperatures, moisture, and dust. Enabling critical power grid capabilities, like constant monitoring, real-time alerts, automation, and remote management, allows power generation, transmission and distribution to flow smoothly while being protected from both physical and cyber threats.

Solution Benefits

Proven performance. Our designs incorporate exceptional thermal protections that are crucial for seamless compute operations in the most remote and unpredictable environments. In addition, all Crystal Group products are field-tested and proven to meet strict military and industrial standards.

Flexible, reliable and protected. With exceptional processing power in a flexible, scalable system, the ES3604L24 is easily integrated, upgraded, and interoperable with legacy equipment. Real-time remote management means system updates and adjustments can be made to one or more substations with the push of a button.

Customized for you. We use leading-edge, commercial-off-the-shelf technologies and open architecture solutions to deliver high-performance systems tailored to your specific compute needs.

Cost effective. Designed to protect your investment, this rugged server delivers reliable, long-life performance, limits maintenance demands, and maximizes system uptime for a low total cost of ownership.

FEATURES

- Lightweight aluminum construction at 25-35 lbs.
- 3U, 19" rack mount server
- Modular I/O
- Up to 384GB of DDR4 ECC memory
- Versatility with four industry standard drive bays supporting up to 12 SSDs
- Expandable with up to six PCIe slots
- Dual Intel® Xeon® Cascade Lake CPUs
- 24" depth chassis

A clear advantage.

Specifications

Mechanical 3U

Height: 5.25" (13.3 cm)
 Width: 17.5" (44.5 cm) EIA-310 rack compliant
 Depth: 24" (61.0 cm)
 Weight: 25-35 lbs. (11.3-15.8 kg); content dependent

CPU

Intel® Xeon CPU architecture options from Intel embedded long-life roadmap
 Single and dual-socket Cascade Lake Scalable processors

Expansion

Six PCIe

External Bay

Four standard 3.5" drive bays supporting up to 12 removable SATA/SAS SSDs

Memory

Up to 384GB, registered, ECC, DDR4 RAM

Mounting

19" rack mount with Accuride rails

Power Supply

Option 1: Dual input, redundant, 400W, 120/240VAC + 125VDC
 Option 2: Dual input, redundant, 400W, 125VDC + 125VDC

Environmental Standards

Operational temperature: -35°C to +55°C¹
 Storage temperature: -40°C to +85°C¹
 Humidity: 95% non-condensing with humidity kit¹
 Altitude: 12,500ft operation, 40,000ft transport¹

Electromagnetic Compatibility Standards

Note: Compliance with some standards may require an internal kit

IEC 61850-3, International Standard Communication Networks and Systems for Power Utility Automation

IEEE 1613, Standard Environmental and Testing Requirements for Communications Networking Devices in Electric Power Substations, EMI category (regarding environment and EMC concerns)¹

Emissions: Radiated FCC Part 15. 109, Class A; conducted FCC Part 15. 107, Class A¹

Testing with solid state drives

Cooling

Multiple, redundant, high-speed, high-volume fans; CPU temperature controlled

Customization

All components and integration services can be customized

Software Compatability

Supports Windows 10®, Windows Server 2019®, VMware®, or Linux®



1 - Testing Underway

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