Overview

HPE Edgeline EL1000 Converged Edge System

HPE Edgeline is the industry's first "Converged Edge System" - leading the expansion from data center and cloud computing to the edge, and the integration of precision data capture and control systems, all in one converged box. These rugged and compact systems are designed to thrive in harsh edge environments and can handle extremes of shock, vibration and temperature. They are designed to accelerate IoT insights and control actions in real-time through three points of convergence in one box:

1. Unprecedented deep edge compute and high capacity storage based on open standards

Traditional data center or cloud compute solutions for IoT require data to be transferred from the edge – exposing them to issues of latency, bandwidth, cost, security, duplication, corruption and compliance. HPE Edgeline can acquire data with precision, analyze it on an industry-standard x86 deep compute platform with GPU accelerator and initiate a control action from the edge itself - eliminating these concerns, and resulting in faster insight for better business agility. Run full enterprise-class SW stacks at the Edge – close to the source of the data.

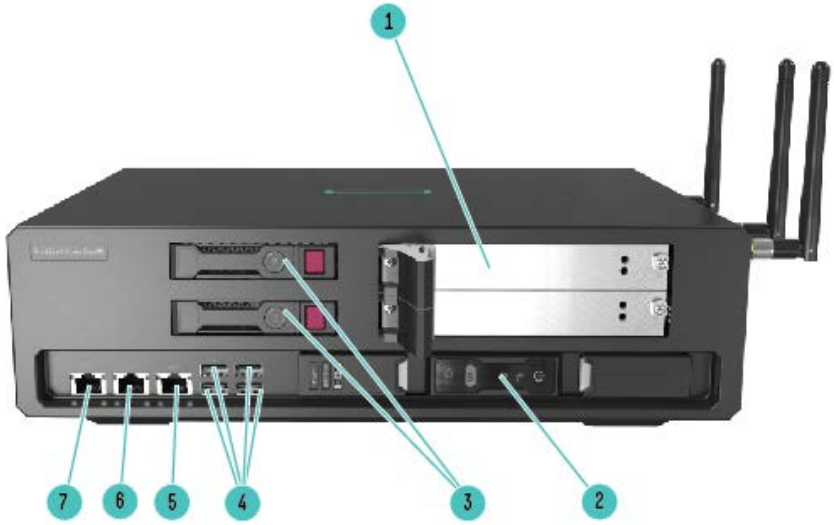
2. Unique integration of precision data acquisition, measurement and control systems based on open standards

Precision data capture and control capability is achieved through open PXI standards and Edgeline OT Link Platform SW, and when coupled with advanced techniques such as Artificial Intelligence (AI), opens up new horizons for equipment monitoring and management, predictive analytics to detect impending failures and augmented reality for manual-less servicing – key facets of Smart Factory initiatives such as Industry 4.0.

3. Data center class security, device and remote systems management

HPE Edgeline brings our industry leading Integrated Lights Out (iLO) systems management and security technology to the edge. Gain visibility and manage infrastructure at the edge using identical IT tools and personnel as the datacenter.

The HPE Edgeline EL1000 System allows deployment of 1 HPE ProLiant server blade, along with associated storage and I/O options to locations both inside and outside the traditional datacenter (e.g. factories, branch office and retail outlet).

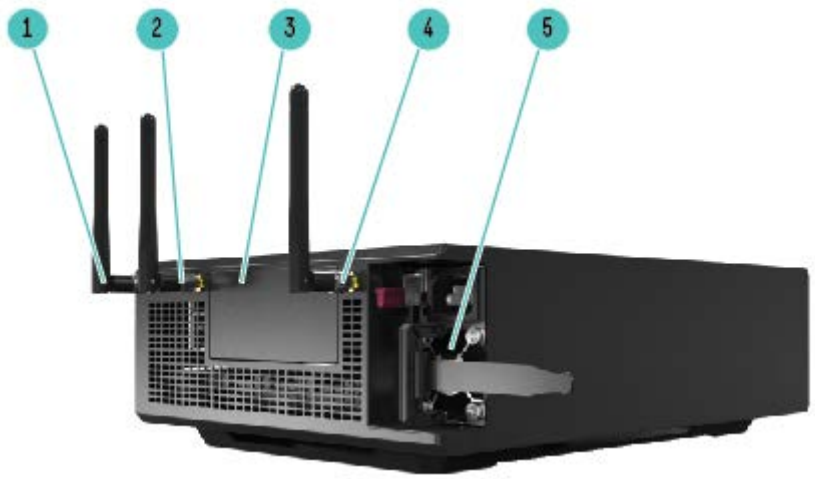


HPE Edgeline EL1000 Front View

Item	Description	Item	Description
1.	Two (2) PXI/PXIe modules (PXI SKU) -or- Blank (PCIe SKU)	5	Network Port 1* - 1GbE RJ45 or 10GbE SFP+
2	HPE ProLiant server blade (selectable option; integrates power, health and UID LEDs/Buttons)	6	Network Port 2* - 1GbE RJ45 or 10GbE SFP+
3	Two (2) 2.5" SFF HDD or SSDs	7	iLO Network Port -1GbE RJ45
4	Four (4) USB 3.0 Ports		

Notes:* Chassis selection available between 1GbE RJ45 and 10GbE SFP+ network. Only the 1GbE option is shown.

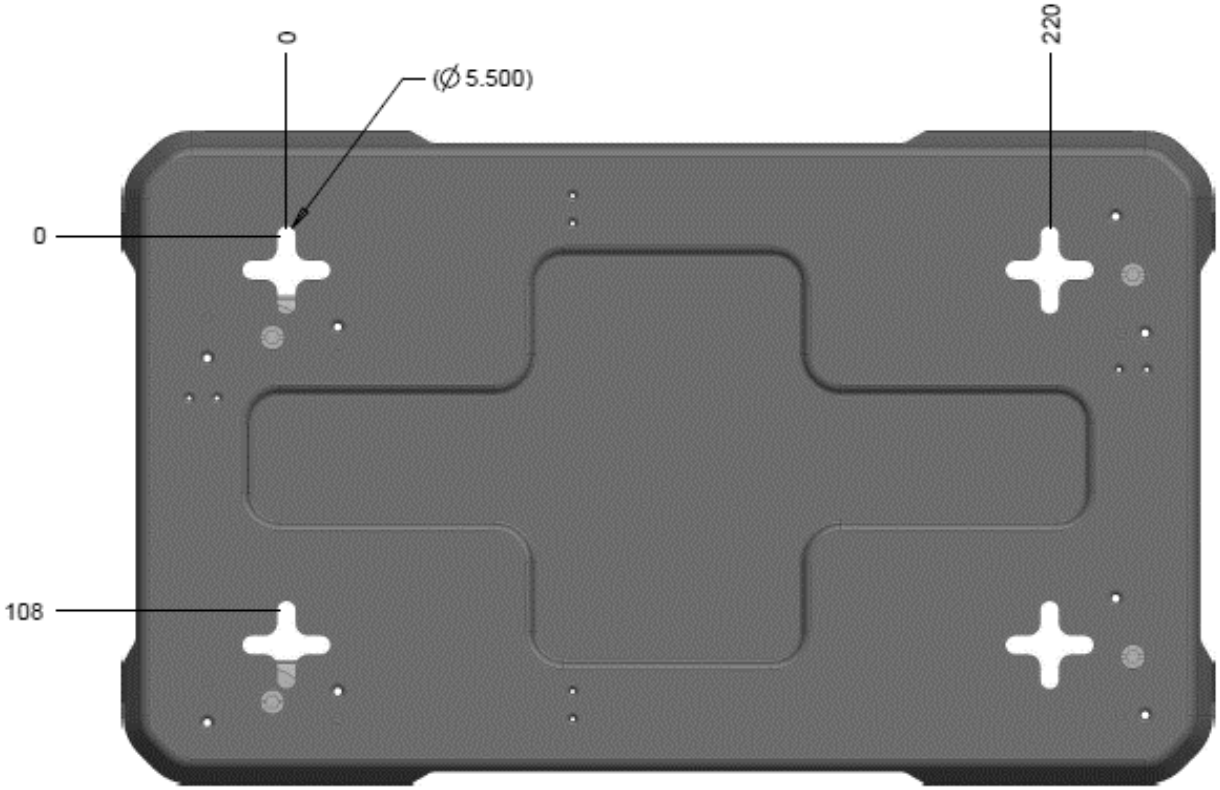
Overview



HPE Edgeline EL1000 Right View

Item	Description	Item	Description
1.	Two (2) PXI/PXIe modules (PXI SKU) -or- Blank (PCIe SKU)	4.	Antenna 3 Connector
2	HPE ProLiant server blade (selectable option; integrates power, health and UID LEDs/Buttons)	5.	Power supply
3	Two (2) 2.5" SFF HDD or SSDs		

Notes: Only the PXI SKU with blanks is shown in the picture



HPE Edgeline EL1000 Wall Mount Kit

Notes: Dimensions for the bracket are in millimeters

Standard Features

Enclosure

The HPE Edgeline EL1000 system holds 1 HPE ProLiant server blade (supported types are listed in this document). The base system is available in a variety of SKUs:

- PCIe I/O cards with 1G networking (Enterprise)
- PCIe I/O cards with 10G networking (Enterprise), or
- PXI modules with 1G networking (Data Capture and Control).

The PCIe SKUs support 1-2 Full-Height Half-Length PCIe I/O cards (x16 physical), while the PXI SKU supports 1-2 PXI or PXIe modules (hybrid slot) for precision data capture and control.

The core network is not switched (i.e. pass-through). A separate 1G RJ45 network port is provided for access to the iLO management network.

All HPE Edgeline EL1000 SKUs support 2 SFF 2.5" HDDs or SSDs, 2 ports for 1G (RJ45) or 10G (SFP+) network and 4 ports for USB 3.0. An optional carrier supports 2 mini-PCIe cards with SIM slots, and which can be wired to 5 chassis antennas for wireless connectivity. Three non-hot swappable fans are used for left-to-right cooling airflow. One HPE Flex Slot power supply can be installed per system. The system is designed to connect all power and I/O along just 2 sides, and with left-to-right cooling airflow – features which permit shelf placement against a wall. EL1000 v2 supports up to 2 GPUs such as Nvidia Tesla for accelerated deep learning inference at the edge. EL1000 v2 also supports Wi-Fi and LTE simultaneously.

The HPE Edgeline EL1000 System is rated for indefinite operation at extended operating temperatures of up to 55°C ambient, which allows it to be located in environments unsuitable for traditional datacenter servers.

Notes: Allowable system operating temperature will be determined by the I/O and drive options selected. Refer to the appendix for details.

Server Blade

HPE Edgeline EL1000 System uses proven HPE ProLiant server blades shared with the HPE Moonshot family. One (1) modular hot-pluggable server blade of a supported type can be installed in each system. Examples:

- HPE ProLiant m510 Server Blade (Intel® Xeon® D – 8 or 16 cores, up to 128GB RAM)
- HPE ProLiant m710x Server Blade (Intel® Xeon® E3 – 4 cores with GPU, up to 64GB RAM)
- HPE ProLiant m750 Server Blade (Intel® Xeon E-2286M – 8 cores with GPU, up to 128GB RAM)

HPE Flexible Slot Power Supply

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HPE ProLiant servers. HPE's Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

The HPE Edgeline EL1000 system supports 1 HPE Flex Slot power supply (both AC and DC input options are available).

Embedded Management

Each HPE ProLiant server blade plugged into a HPE Edgeline EL1000 has its own HPE iLO management processor, which can be accessed directly through the management network. The HPE Edgeline EL1000 System implements a light-weight chassis controller to monitor and control common chassis elements. The iLO on the server blade communicates with the Chassis Controller to gather and report status information on the chassis itself.

Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO.

Learn more at **http://www.hpe.com/info/ilo.**

Standard Features

HPE Edgeline Component Pack

The HPE Edgeline Component Pack, is the delivery mechanism for firmware updates on the HPE Edgeline System. Before using your system for the first time, verify that you have the latest drivers, firmware, and system software installed. Update your system with the Edgeline Component Pack.

For more information, see the Edgeline Component Pack Update Guide on the Hewlett Packard Enterprise website:
http://www.hpe.com/info/edgeline-docs

Warranty

This product is covered by a global limited warranty and supported by Hewlett Packard Enterprise Services and a worldwide network of Hewlett Packard Enterprise Authorized Partner Ready Resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to the warranty services are available through HPE services or customized service agreements. Hard drives have either a one year or three-year warranty; refer to the specific hard drive QuickSpecs for details.

Notes:

- Chassis Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge.
- Additional information regarding worldwide limited warranty and technical support is available at: **http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/**

Optional Features

Factory Express Portfolio for Servers and Storage

HPE Factory Express offers configuration, customization, integration and deployment services for Hewlett Packard Enterprise servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as asset tagging, and custom packaging. Hewlett Packard Enterprise products supported through Factory Express include a wide array of servers and storage: HPE Moonshot, HPE Integrity, HPE ProLiant, HPE ProLiant Server Blades, and HPE BladeSystem, HPE 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to:
https://www.hpe.com/us/en/services/factory-express.html

Services and Support

HPE Pointnext - Service and Support

Get the most from your HPE Products. Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Pointnext **Advisory Services**, focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

Consume IT on your terms

HPE GreenLake brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake accelerates digital transformation in a distributed, edge-to-cloud world..

- Get Faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

Recommended Services

HPE Pointnext Tech Care.

HPE Pointnext Tech Care is the new operational service experience for HPE products. Tech Care goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Pointnext Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Pointnext Tech Care is available in three response levels. Basic, which provides 9x5 business hour availability and a 2 hour response time. Essential which provides a 15 minute response time 24x7 for most enterprise level customers, and Critical which includes a 6 hour repair commitment where available and outage management response for severity 1 incidents.
https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00108652enw

HPE Datacenter Care

HPE Datacenter Care helps customers address the pressing needs of IT today and smoothly transform to a more agile cloud-like IT operations model. We help run and monitor your IT by offloading the day to day routine tasks, helping customers be more predictive and proactive, and saving time with one place to call with for all of their IT.

Partner with an assigned account team backed by local and global experts, access HPE enhanced call experience with priority access, use specialized support for complex, technologies, choose hardware and software support for your devices, implement proactive monitoring to stay ahead of issues , and access HPE IT best practices and IP. HPE Datacenter Care advantage options are available to add to your agreement to give you specialized expertise for performance, security, back up analysis, and much more. Datacenter Care is available as both tailored statement of work and as a packaged service for 3, 4, and 5 year terms.
https://www.hpe.com/us/en/services/datacenter-hybrid-services.html

For more information: **http://www.hpe.com/services**

Services and Support

Other related services from HPE Pointnext

HPE Server Hardware Installation

Provides for the basic hardware installation of your new Edgeline System. It is part of a suite of HPE deployment services that are designed to give you the peace of mind that comes from knowing your HPE products have been installed by an HPE authorized service specialist in accordance with the product's documentation.
https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00062322enw

HPE Installation and Startup Service

Provides for the installation of your new Edgeline System. This service will assist you in bringing your new HPE Edgeline System into operation and make it remotely accessible in a timely and professional manner. The HPE service delivery technician will connect the product to the network as appropriate and enable remote support to allow for automatic case creation for hardware failures. Installation and start up services also includes the installation of one supported operating system type (Windows® or Linux).
https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00062211enw

HPE Service Credits

Offers flexible services and technical skills to meet your IT demands as your business evolves. With a menu of services, you can access additional resources and specialist skills to help you maintain peak performance of your IT. HPE Service Credits help you proactively respond to your dynamic IT and business needs.

HPE Education Services

Provides comprehensive training designed to expand the skills of your IT staff and keep them up to speed with the latest technologies.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and support options.

Parts and Materials

HPE will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

Defective Media Retention is an option available with HPE Datacenter Care, HPE Proactive Care, Proactive Care Advanced, and HPE Foundation Care and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Configuration Information

This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

- Factory Integrated Models must start with an HPE Edgeline EL1000 System and require at a minimum:
  - One (1) HPE ProLiant Server Blade
  - One (1) HPE Flex Slot Power Supply
- Networking (1G or 10G) and option I/O type (PCIe or PXI) cannot be changed once the HPE Edgeline EL1000 system has been ordered. However, the server blade, I/O cards and SFF drives can be replaced

Step 1: Base Configuration (Choose System)

HPE Edgeline EL1000 System

HPE Edgeline EL1000 1GbE 2xRJ45 v3 Pass Thru System	880271-B22
HPE Edgeline EL1000 10GbE 2xSFP+ v2 Pass Thru System	880273-B21
HPE Edgeline EL1000 1GbE 2xRJ45 Pass Thru PXIe System	847555-B21

Notes: Edgeline EL1000 v2 models support 2 PCIe cards with wattage up to 75W per card in a PCIe x16 physical slot (x8 Gen3 electrical), such as GPU cards. These models also support WiFi & BT.

Step 2: Configure Server Blade (Min:0, Max:1)

See HPE ProLiant Server Blade QuickSpecs for Blade Configurations

- HPE ProLiant m750 Server Blade
  https://h20195.www2.hpe.com/v2/getdocument.aspx?docname=a00073555enw
- HPE ProLiant m510 Server Blade
  https://www.hpe.com/us/en/product-catalog/servers/proliant-servers.hits-12.html
- HPE ProLiant m710x Server Blade
  https://www.hpe.com/us/en/product-catalog/servers/proliant-servers.hits-12.htm

Notes:

- Functional systems require at least 1 server blade to be configured
- HPE ProLiant m750 Server Blade is NOT supported with the following options;
  - PXIe chassis (EL1000/EL4000 common)
  - NEBS Kit (EL1000/EL4000 common)
  - NVMe HH M.2 Kit (P07671-B21) (EL1000/EL4000 common)*m750 On-board NVMe SSD options available
  - InfiniBand NIC options (EL1000/EL4000 common)
  - m750 integrated EL1000 can support only 10/25 2p NIC (EL1000/EL4000 common)-> Networking section.
  - H240 RAID Controller related options (EL1000 only)
  - WiFi/LTE wireless options (EL1000 only)

Step 3: Choose Required Power Options

Power Supplies

HPE Flex Slot Power Supplies (Min:0, Max:1)

HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	865408-B21
HPE 800W Flex Slot -48VDC Hot Plug Low Halogen Power Supply Kit	865434-B21

Notes: Functional systems require at least 1 power supply to be configured. Only 1 power supply is supported per system. All current server blades support power-capping.

Configuration Information

Step 4: Choose Factory Integration Options

HPE I/O Expansion

HPE Edgeline EL1000 M.2 Expansion Board Kit P40733-B21

Notes:

- The EL1000 M.2 Expansion Board FIO Kit (P40733-B21) has two slots and can support both 1 WiFI (HPE EL WiFi/BT Intel AC9260 Opt Kit P06088-B21) and 1 LTE (HPE WWAN LTE EM7565 Module Kit P40737-B21).
- This option is supported only on EL1000 v3 1GbE model, and EL1000 10GbE v2 model; it is NOT supported on any other EL1000 models.

HPE WiFi & BT, LTE

HPE Edgeline IP67 MIMO 3G LTE and Wi-Fi Combo Antenna with 2m Cable 876592-B21

Intel Wireless/Bluetooth AC 9260 Adapter for HPE Edgeline P06088-B21

Notes:

- Min 0, Max 1
- This option is NOT supported with EL1000 1G v2 and EL1000 PXIe models
- Requires the selection of HPE EL1000 M.2 Expansion Board FIO Kit

HPE Edgeline Wireless WAN LTE EM7565 Option Kit P40737-B21

Notes:

- Min 0, Max 1
- This option is NOT supported with EL1000 1G v2 and EL1000 PXI2 models.
- Requires the selection of HPE EL1000 M.2 Expansion Board FIO Kit.

HPE Storage Controllers (Internal)

Storage Controllers (Min:0, Max:1)

Notes:

- When an internal storage controller is selected the Edgeline EL1000 specific cable for linking it to the 2 SFF drives in the system will automatically be configured.
- If no storage controller is configured in the Edgeline system, the 2 SFF drives will be connected to the SATA HBA integrated on the server blade by default.
- These controllers cannot be connected to any M.2 SSDs on the server blade.

HPE Smart Array E208i-p SR Gen10 (8 Internal Lanes/No Cache) 12G SAS PCIe Plug-in Controller 804394-B21

HPE Edgeline Extended Storage Adapter option kit

HPE Edgeline NVMe HHHL M.2 Enablement Kit P07671-B21

Notes:

- This M.2 Kit extends m.2 storage by providing two M.2 slots through PCIe SSD card.
- The M.2 Kit option is not supported when the EL1000 is configured with the ProLiant m750 Server Blade

Cable Assembly

HPE EL1000 CA Assy Pwr H240 885017-B21

Notes: This cable assembly is required to support the addition of a Smart Array E208i in EL1000.

HPE Edgeline EL1000 PoE Cable Assembly 880681-B21

Notes: This cable assembly is required to support POE card in EL1000.

HPE Edgeline EL1000/EL4000 System Console USB to RS232 Cable Kit 871947-B21

Notes:

- The system console kit plugs into the Edgeline USB port corresponding to a server blade and allows serial port access to its boot-time BIOS ROM Based Setup Utility (RBSU) console. The RBSU can be used to set various server configuration parameters such as an iLO Static IP address.

Configuration Information

- This cable can also be used for connecting the server to any RS232 compliant serial device (e.g. UPS). In this scenario, BIOS console redirection to serial port should be turned off in RBSU to prevent boot-time messages from going to the attached serial device.
- Sys Console Cbl Kit cable is required in some environments to set static IP as well as other functions when the Edgeline system is present in non DHCP serving environments

HPE Drives (Min:0, Max:2)

HPE 1TB SATA 6G Business Critical 7.2K SFF SC 1-year Warranty HDD	655710-H21
HPE 2TB SATA 6G Business Critical 7.2K SFF SC 1-year Warranty 512e HDD	765455-H21

HPE Storage

HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21

HPE Networking

HPE Ethernet 10/25Gb 2-port SFP28 MCX4121A-ACUT Adapter	817753-B21
HPE Ethernet 1Gb 4-port BASE-T I350-T4V2 Adapter	811546-B21
HPE Ethernet 10Gb 2-port SFP+ X520-DA2 Adapter	665249-B21

HPE InfiniBand

HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter	872726-H21

Notes: The Infiniband options are not supported when the EL1000 is configured with a ProLiant m750 Server Blade

HPE Transceivers

HPE BladeSystem c-Class Virtual Connect 1G SFP SX Transceiver	453151-B21
HPE BladeSystem CClass Virtual Connect 1G SFP RJ45 Transceiver	453154-B21
HPE BladeSystem c-Class 10Gb SFP+ SR Transceiver	455883-B21
HPE X120 1G SFP RJ45 T Transceiver	JD089B

Notes: SFP transceivers are only supported with the EL1000 10GbE SKU.

HPE GPU Accelerator

NVIDIA T4 16GB Computational Accelerator for HPE	R0W29A

Notes: HPE GPU Accelerator are supported only with Edgeline EL1000 v2 system, and up to 2 Qty can be installed

NVIDIA Quadro P1000 Graphics Accelerator for HPE	R3K70A

Notes: The P1000 GPU accelerator is only supported with the EL1000 when configured with ProLiant m750 Server Blade

Step 5: Choose Additional Options

Notes: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information.

Mounting Kits

HPE Edgeline EL1000 Wall Mount Kit	871652-B21

Notes: The Wall Mount kit allows system installation on a wall instead of a rack. Please reference the drawing in the overview section. There should be ~15-20cm (6-8 inches) of space around the inlet/outlet sides of the chassis to limit airflow losses. Well ventilated space is recommended for the air to flow through.

HPE Edgeline EL1000 19inch 2-post Rack Mount Kit	P00689-B21

Notes: The rack mount kit should be used for all 19” 2-post racks and ETSI installations. The rack mount has limited space available for PCie card cables. It is front/rear cabled and mounting solution is 10.5 inches deep.

HPE Edgeline EL1000 23inch 2-post Rack Mount Kit	P00682-B21

Notes: The rack mount kit should be used for all 23” 2-post racks. It is Front/rear cabled and mounting solution is 10.5 inches deep.

Configuration Information

HPE Edgeline EL1000 Enterprise Rack Mount Kit 878576-B21

Notes:

- The rack mount should be used for all HPE and 3rd party 4 post, 19" racks. It provides front to back cooling and for in-rack serviceability. Mounting solution is 34 inches deep including Cable Management Arm (CMA).
- This also requires the HPE EL4000 Full Rack Mount Kit 868577-B21

Filter Kits

HPE Edgeline EL1000 Air Filter Replacement Kit P40735-B21

Notes: This dust filter kit includes 10 individual dust filters for an EL1000 chassis

Install and Startup Services

HPE Installation Edgeline 1000 Service H2EL1E

HPE Installation and Startup Edgeline EL1000 Service H2US7E

HPE Installation ProLiant Blade Server Service UE493E

Notes: This service is for the basic hardware installation by HPE of a newly ordered HPE ProLiant Server Blade into an existing Moonshot or Edgeline chassis

HPE Installation AddOn/In Option Service UH745E

Notes: This service is for the installation by HPE of options such as memory, disk drives, etc on HPE ProLiant Server Blades

Support Services

HPE 3 Year Foundation Care Next Business Day Edgeline 1000 Service H2EG8E

HPE 3 Year Foundation Care 24x7 Edgeline 1000 Service H2EH1E

HPE 3 Year Proactive Care 24x7 Edgeline 1000 Service H2EX2E

Notes: Enhanced Service Level Agreements (SLAs) and 4-year or 5-year support options are also available. See HPE Support Services Central for additional services at: **http://ssc.hpe.com**

Additional Options

HPE Power Cords

HPE C13 - C14 WW 250V 10Amp Flint Gray 2.0m Jumper Cord	AF573A
HPE C13 - C14 WW 250V 10Amp 2.0m Jumper Cord	A0K02A
HPE C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord	AF556A
HPE C13 - GB-1002 CN 250V 10Amp 1.83m Power Cord	AF557A
HPE C13 - IRAM -2073 AR 250V 10A 2.5m Power Cord	AF558A
HPE C13 - Nema 5-15P TH/PH 250V 10Amp 1.83m Power Cord	AF559A
HPE C13 - CNS-690 TW 110V 13Amp 1.83m Power Cord	AF561A
HPE C13 - IS-1293 IN 240V 6Amp LV 2.0m Power Cord	AF562A
HPE C13 - KSC- 8305 KR 250V 10Amp 1.83m Power Cord	AF560A
HPE C13 - SI-32 IL 250V 10Amp 1.83m Power Cord	AF564A
HPE C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
HPE C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
HPE C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A
HPE C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord	AF568A
HPE C13 - AS3112-3 AU 250V 10Amp 2.5m Power Cord	AF569A
HPE C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord	AF570A
HPE C13 - JIS C8303 JP 100V 12Amp 2.0m Power Cord	AF572A
HPE C13 - IS-1293 IN 250V 10Amp HV 2.5m Power Cord	SG579A
HPE C13-NEMA 6-15P 10A/250V 3.6m Black Power Cord	A0N33A
HPE C13 - NBR-14136 BR 250V 10Amp 1.83m Power Cord	AF591A
HPE C13 - C14 WW 250V 10A Gray 0.7m Jumper Cord	A0K03A

HPE Rack Options

HPE 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HPE 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HPE 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A

HPE Basic Power Distribution Units

HPE 277 Volt options for H3X07A and H3X08A

HPE 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A

Notes: Please see the QuickSpecs for Technical Specifications and additional information:
https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111392

Technical Specifications

Power Supply Specifications								
720478-B21	**HPE 500W Flex Slot Platinum Hot Plug Power Supply Kit**							
Input Voltage (V rms)	100-240							
Frequency Range (Nominal) (Hz)	50-60							
Nominal Input Voltage (V rms)	100	120	127	200	208	220	230	240
Maximum Rated Output Wattage Rating (Watts)	500	500	500	500	500	500	500	500
Nominal Input Current (A rms)	5.6	4.6	4.3	2.7	2.6	2.5	2.4	2.3
Maximum Rated Input Wattage Rating (Watts)	558	550	543	539	538	538	537	537
Maximum Rated VA (Volt-Amp)	564	556	549	544	544	543	542	542
Efficiency (%)	89.6	90.9	92.1	92.8	92.9	93.0	93.1	93.1
Power Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Leakage Current (mA)	0.32	0.38	0.40	0.63	0.65	0.69	0.72	0.75
Maximum Inrush Current (A peak)	30							
Maximum Inrush Current duration (ms)	10							
Maximum British Thermal Unit Rating (BTU-Hr)	1904	1877	1853	1839	1837	1834	1832	1832

To review typical system power ratings use the HPE Power Advisor which is available via the online tool located at:
https://paonline56.itcs.hpe.com/?Page=Index
Notes: Power Specification and Technical Content for supported power supplies can be found at:
https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111541

System Unit

Chassis Dimensions (H x W x D)

87.5mm (3.44") tall, 350.5mm (13.8") wide by 232.6 (9.16") deep.

Weight

853995-B21: HPE Edgeline EL1000 1Gb System - 8.36 KG (18.43 lbs)
Notes: Configuration used includes 1 server blade, 1 power supply, 2 SFF HDDs, 2 PCIe I/O cards

Power

- Typical: 100-150W
- Maximum: 225W

Technical Specifications

System Inlet Temperature	
The Edgeline EL1000 is a ruggedized system designed to operate indefinitely at extended system inlet temperatures of up to 55°C (131°F) – well beyond the operating temperature limits of typical datacenter servers. **Notes:** Configuration of peripherals such as I/O cards or drives in the base system will limit operating temperature of the entire system to that of the lowest rated option.	
Standard Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000ft) above sea level to a maximum of 3050m (10,000ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
Extended Operating	For approved hardware configurations, the supported Edgeline system inlet range can be extended to up to 55°C (131°F) . The approved hardware configurations for this system are listed in the appendix.
Non-Operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidify	
Operating	8 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, noncondensing.
Non-Operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	
Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Non-Operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Base System Mechanical Specifications

Operational Vibration

- 3.0 Grms nominal, flat random profile, 10Hz to 500 Hz

Operational Shock

- 30G, 10ms, half-sine, 3 each axis, positive and negative pulse

Non-operational Vibration

- 5.0 Grms nominal, flat random profile, 5 Hz to 500 Hz

Non-operational Vibration

- 40G, 346 cm/sec, square wave, 1 shock to each of the six faces

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment.

Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

Idle	
L Wad	53.5dB
L pAm	50.8dB
Operating	
L Wad	59.6dB
L pAm	57.5dB

Technical Specifications

Emissions Classification (EMC)

FCC Rating

- Class A

Normative Standards

- CISPR 22; EN55022; EN55024; FCC CFR 47,
- Pt 15; ICES-003; CNS13438; K22;K24; EN
- 61000-3-2; EN 61000-3-3; EN 60950-1; IEC
- 60950-1

Notes: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

Hewlett Packard Enterprise Extended Ambient Operating Temperature Support

The American Society of Heating Refrigeration and Air-Conditioning Engineers set standards for building systems, energy efficiency, indoor air quality, refrigeration and sustainability. The ASHRAE A3 and A4 classes are the latest classes that have been defined in an effort to support the Fresh Air Data cooling initiative. Hewlett Packard Enterprise Extended Ambient Operating Support is defined below as comparable to an ASHRAE class.

The following table provides a summary of environmental ranges supported, with altitude de-ratings, by Hewlett Packard Enterprise ProLiant servers. Items in bold are ProLiant features that exceed the ASHRAE comparable class feature set.

Extended Ambient Operating Support Specification	**Dry bulb temp range (°C)**	**Relative humidity range (%RH)**	**Dew point limits (°C)**	**Maximum altitude**	**Altitude de-rating***
Standard Operating	10°C to 35°C (50°F to 95°F)	8% to 90%	-12°C (min) to 24°C (max)	3050 meters	1.0°C/305m above sea level
Extended Ambient 40°C Operating (ASHRAE Class A3 compliant)	5°C to 40°C (41°F to 104°F)	8% to 90%	-12°C (min) to 24°C (max)	3050 meters	1.0°C/175m above 900m
Extended Ambient 45°C Operating (ASHRAE Class A4 compliant)	5°C to 45°C (41°F to 113°F)	8% to 90%	-12°C (min) to 24°C (max)	3050 meters	1.0°C/125m above 900m

Notes:

- *Altitude de-rating assumes no direct sustained sunlight
- The maximum rate of change for Inlet Ambient Temperature is 20°C/hr (36°F/hr). The upper limit and rate of change can be limited by the type and number of options selected.

Technical Specifications

Hewlett Packard Enterprise Operating Support

Notes: Edgeline base systems are designed to indefinitely operate at Extended Ambient temperatures of up to 55°C (131°F). Configuration of peripherals such as I/O cards or drives in the base system will limit operating temperature of the entire system to that of the lowest rated option.

Component	Support Status			
Type	Standard [1]	Extended Ambient	Extended Ambient	Extended Edgeline Ambient
Operating Support	10°C to 35°C	40°C (ASHRAE Class A3 compliant)	45°C (ASHRAE Class A4 compliant)	55°C
Base System	Supported	Supported	Supported	Supported [2]
Fans	Supported with Redundancy	Supported with Redundancy	Supported with Redundancy [3]	Supported with Redundancy [3]
2.5" SFF Drives	Supported	Supported	Supported	NOT Supported
SATA M.2	Supported	Supported	Supported	Supported
NVMe M.2	Supported	Supported	Supported	Supported
PCIe I/O Cards	Supported			
PXIe I/O Cards	Up to 38W	Up to 38W	Up to 38W	Up to 38W

Notes:

- [1]HPE EL1000 1G 2xRJ45 PThru Sys (853995-B21), HPE EL1000 10G 2xSFP+ PThru Sys (866585-B21), HPE EL1000 Converged PXI Compute System (847555-B21)
- [2]Near 55°C inlet ambient AND when the CPU is stressed at 100%, the HPE ProLiant m510-16c server may reduce performance. There is no impact for other server models.
- [3]Upon fan failure the servers in the system may reduce performance

Carrier Grade HPE Edgeline EL1000 System

Carrier-grade servers are designed to meet the specific needs of network equipment providers (NEPs) and independent software vendors (ISVs) that supply fixed and mobile operators. Typically, such servers host network elements, such as media gateways, signaling gateways, media servers, and soft-switches.

Selected configurations of the HPE Edgeline EL1000 System are certified to a carrier grade level E.g. Network Equipment Building Standards (NEBS) Level 3.

Environment-friendly Products and Approach- End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs,** in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities.

This information (product disassembly instructions) is posted on the **Hewlett Packard Enterprise web** site. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
02-Aug-2021	Version 22	Changed	Configuration Information and Additional Options sections were updated. Service and Support Pointnext information added
06-Jul-2021	Version 21	Changed	Additional Options and Technical Specifications sections were updated
07-Jun-2021	Version 20	Changed	Standard Features, Additional Options and Technical Specifications sections were updated
04-May-2021	Version 19	Changed	Updated options list Configuration Information and Additional Options sections were updated.
01-Feb-2020	Version 18	Changed	Overview, Standard features, Optional Features, Configuration information, Additional optios, and Technical Specifications sections were updated SKUs added in Configuration Information and Additional Options sections.
09-Dec-2019	Version 17	Changed	Overview, Standard features, Optional Features, Configuration information and Additional optios sections were updated
02-Dec-2019	Version 16	Changed	SKUs were updated in Additional Options sections Obsolete SKUs were removed.
07-Oct-2019	Version 15	Changed	Overview, Standard features, Configuration information, Additional options and Technical Specifications sections were updated.
10-Jun-2019	Version 14	Changed	Overview , Standard Features , Configuration Information, Additional Options sections were updated Obsolete SKUs were removed
01-Oct-2018	Version 13	Changed	SKU and descriptions in Configuration Information, Core Options and Additional Options were updated.
04-Sep-2018	Version 12	Changed	Overview, SKU and descriptions in Additional Features, Configuration Information, Core Options and Additional Options were updated.
06-Aug-2018	Version 11	Changed	URLs, SKU and descriptions in Additional Features, Configuration Information and Additional Options were updated.
02-Apr-2018	Version 10	Changed	Update throughout the QuickSpecs
05-Feb-2018	Version 9	Changed	Change the Technical specifications section / dimensions
04-Dec-2017	Version 8	Changed	Update throughout the QuickSpecs
16-Oct-2017	Version 7	Changed	Update Technical specifications, standard features and configuration information.
25-Sep-2017	Version 6	Changed	Updates throughout the QuickSpecs
07-Aug-2017	Version 5	Changed	Configuration Information and Environment-friendly Products were updated.
27-Mar-2017	Version 4	Changed	Update Technical specifications, standard features and configuration information.
13-Feb-2017	Version 3	Changed	Update the QuickSpecs
28-Nov-2016	Version 2	Changed	Added more option details. Updated thermal and acoustic specifications.
26-Sep-2016	Version 1	New	New QuickSpecs

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