



**Hewlett Packard**  
Enterprise

# HPE 960GB SAS 12G MIXED USE LFF LPC VALUE SAS MULTI VENDOR SSD (P37009- H21)

## Server Solid State Drives



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### WHAT'S NEW

- HPE 960 GB, 1.92 TB, 3.84 TB SAS 12G Mixed Use SFF, BC, Value SAS, Multi Vendor SSDs
- Moves data at speeds up to 12 Gb, twice as fast as 6 Gb SATA SSDs
- Lower cost than enterprise 12 Gb SAS

### OVERVIEW

Do you need to accelerate the performance of your mixed use applications?

HPE 12 Gb Value SAS Mixed Use (MU) SSDs optimize your enterprise with faster data transfer rates and near price parity compared to 6 Gb SATA SSDs. HPE Value SAS MU SSDs

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SSDs

- Presented as an HPE Multi Vendor SKU offering

deliver enterprise features at an affordable price for applications requiring a balanced mix of read and write performance, and are ideal for database, transactional applications and virtualization workloads.

HPE 12 Gb Value SAS MU SSDs transfer data at full duplex (bidirectional) allowing greater I/O bandwidth to alleviate bottlenecks at twice the 6 Gb interface of SATA SSDs. A single-ported version of enterprise 12 Gb SAS, HPE Value SAS MU SSDs provide slightly reduced performance in exchange for being price competitive to enterprise SATA SSDs.

HPE 12 Gb Value SAS SSDs are presented as an HPE Multi Vendor SKU offering which provides customers with the shortest lead time to available supply on preferably priced HPE Value SAS SSDs.

## FEATURES

### **Value SAS SSDs Deliver Twice the Interface Speed of SATA SSDs at a Lower Cost than SAS SSDs**

HPE Value SAS Solid State Drives support full-duplex 12 Gb, versus SATA SSDs that are bottlenecked by the simplex 6 Gb SATA interface specification.

Featuring similar price points to 6 Gb SATA SSDs and capacities ranging from 960 GB to 3.84 TB, HPE 12 Gb Value SAS MU SSDs deliver significantly more performance per dollar and are designed to easily replace enterprise SATA SSDs in server applications.

HPE Value SAS Solid State Drives offer a significant random IOPS performance boost over 6 Gb SATA SSDs with 1.94x [1] more random read IOPS and 1.75x [1] more random mixed IOPS performance.

HPE Value SAS SSDs also deliver sequential bandwidth performance gains of 1.5x [1] more read bandwidth and 1.27x [1] more write bandwidth than SATA SSDs.

Built on robust enterprise 12 Gb SAS protocol, Value SAS SSDs offer more enhanced management, error recovery, and error reporting features than the Serial ATA feature set utilized on 6 Gb SATA SSDs.

### **Value SAS SSDs Run More Data Analytic Workloads in Less Time and with Lower Latency than SATA SSDs**

HPE Value SAS Solid State Drives offer faster connection rates that can improve the performance of decision support system applications than SATA SSDs.

Value SAS SSDs delivers faster, lower latency storage performance than SATA SSDs which enables data retrieval sooner with up to 25% [2] less time needed to complete query sets than SATA SSDs.

Value SAS SSDs save time executing data analytic workloads with up to 30% [2] lower read latency needed to access and pull data compared to 6 Gb SATA SSDs.



By improving performance at similar price points, Value SAS SSDs deliver up to 22% [2] better data analytics performance per dollar than 6 Gb SATA SSDs.

**HPE Multi Vendor Offering for Value SAS SSDs Help Simplify Purchasing Decisions While Improving TCO**

HPE Multi Vendor offering provides shorter lead times to best available HPE 12 Gb Value SAS SSD supply.

Preferable pricing on HPE qualified Value SAS SSDs and extended SKU lifecycles simplifies the procurement process.

Assurance that the HPE Value SAS Solid State Drives selected delivers the minimum performance published or better.

**Technical specifications**

**HPE 960GB SAS 12G Mixed Use LFF LPC Value SAS Multi Vendor SSD**

<b>Product Number</b>	P37009-H21
<b>Lifetime Writes</b>	5,250
<b>Endurance DDPD (Drive Writes Per Day)</b>	3
<b>Read IOPS</b>	Random Read IOPS (4KiB, Q=16)=105,000 Max Random Read IOPS (4KiB)=155,000@Q32
<b>Write IOPS</b>	Random Write IOPS (4KiB, Q=16)=47,000 Max Random Write IOPS (4KiB)=48,000@Q4
<b>Power (Watts)</b>	6.52
<b>Plug Type</b>	Hot pluggable
<b>Height</b>	15mm
<b>Product Dimensions (metric)</b>	21.92 x 22.86 x 14.61 cm
<b>Weight</b>	0.5 kg
<b>Warranty</b>	HPE Solid State Drives and Add-In Cards have a standard 3/0/0 warranty Customer Self Repair (CSR) subject to maximum usage limitations. Maximum usage limit is the maximum amount of data that can be written to the drive. Drives that have reached this limit will not be eligible for warranty coverage.



For additional technical information, available models and options, please reference the [QuickSpecs](#)

## HPE POINTNEXT SERVICES

HPE Pointnext Services brings together technology and expertise to help you drive your business forward and prepare for whatever is next.

### Operational Services from HPE Pointnext Services

HPE Pointnext Tech Care provides fast access to product-specific experts, an AI-driven digital experience, and general technical guidance to help enable constant innovation. We have reimagined IT support from the ground up to deliver faster answers and greater value. By continuously searching for better ways to do things—as opposed to just fixing things that break—HPE Pointnext Tech Care helps you focus on achieving your business goals.

HPE Pointnext Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment, and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts.

**HPE Integration and Performance Services** help you customize your experience at any stage of your product lifecycle with a menu of services based on individual needs, workloads, and technologies.

- Advise, design, and transform
- Deploy
- Integrate and migrate
- Operate and improve
- Financial Services
- Greenlake Management Services
- Retire and sanitize
- IT Training and personal development

### Other related services

HPE Education Services delivers a comprehensive range of services to support your people as they expand their skills required for a digital transformation. Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and support options.

**Defective Media Retention** is optional and allows you to retain Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

## HPE GREENLAKE

HPE GreenLake is HPE's market-leading IT as-a-Service offering that brings the cloud experience to apps and data everywhere – data centers, multi-clouds, and edges – with one unified operating model. HPE GreenLake delivers public cloud services and infrastructure for workloads on premises, fully managed in a pay per use model.

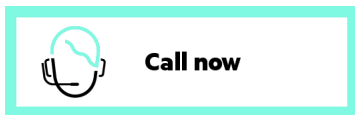
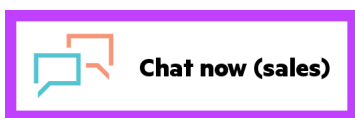
If you are looking for more services, like **IT financing solutions**, please [explore them here](#).

[1] The specified performance capabilities of enterprise SATA and Value SAS SSDs per HPE published SSD QuickSpecs October 2020 comparing the single highest performance specification of any capacity or SKU offering (random mixed performance = 4K Random 70% Read / 30% Write Queue 32 IOPS performance). <https://h20195.www2.hp.com/v2/getdocument.aspx?docname=a00001288enw>

[2] From the Principled Technologies® Report entitled, "Make business decisions faster with value SAS and data center NVMe™ SSDs from Toshiba Memory," and available at: [principledtechnologies.com/KIOXIA/RM5-Series-value-SAS-and-CD5-NVMe-mainstream-vs-SATA-decision-support-1019-v2.pdf](https://www.principledtechnologies.com/KIOXIA/RM5-Series-value-SAS-and-CD5-NVMe-mainstream-vs-SATA-decision-support-1019-v2.pdf)

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Parts and Materials: HPE will provide HPE-supported replacement parts and materials required to maintain the covered hardware.

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 quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

Image may differ from the actual product [PSN1013151896CZEN](#), October, 2022.