



**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 (SKU)</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<br>Max Random Read IOPS (4KiB)=155,000@Q32  |
| <b>Write IOPS</b>                            | Random Write IOPS (4KiB, Q=16)=47,000<br>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

Access expertise at every step of your IT journey with [HPE Pointnext Services](#). [Advisory Services](#) focuses on your business outcomes and goals, to design your transformation and build a roadmap tuned to your unique challenges. Our [Professional](#) and [Operational Services](#) help speed up time-to-production and keep your IT stable and reliable.

### Operational Services from HPE Pointnext Services

- [HPE Datacenter Care](#) helps modernize and simplify IT operations. Partner with an assigned account team, access technical expertise, an enhanced call experience gives you priority access, choose hardware and software support, implement proactive monitoring to help stay ahead of issues, and access HPE IT best practices and IP.
- [HPE Proactive Care](#) offers an enhanced call experience and helps reduce problems with personalized proactive reports and advice. This also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.). [Read more](#)
- [HPE Foundation Care](#) helps when there is a problem and has a choice of response levels. Collaborative software support is included and provides troubleshooting help for ISVs running on your server. [Read more.](#)

### Other related services

[Defective Media Retention](#) is optional and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

[HPE Service Credits](#) offers a menu of technical services, access additional resources, and specialist skills.

[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.

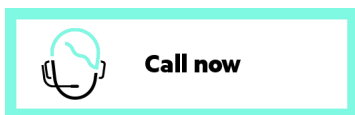
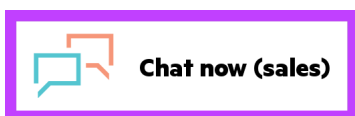
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[1] The specified performance capabilities of enterprise SATA and Value SAS SSDs per HPE published SSD QuickSpecs October 2020 comparing the single highest performance specification of any capacity or SKU offering (random mixed performance = 4K Random 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  
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