



Hewlett Packard
Enterprise

HPE 3.84TB SATA 6G VERY READ OPTIMIZED LFF (3.5IN) LPC 3YR WTY SSD (P23491-H21)

Server Solid State Drives



WHAT'S NEW

- HPE 1.92 TB, 3.84 TB, 7.68 TB SATA 6G Very Read Optimized SFF (2.5-inch), SC, 3-year Warranty SSDs
- HPE 3.84 TB, 7.68 TB SATA 6G Very Read Optimized LFF (3.5-inch), LPC, 3-year Warranty SSDs

OVERVIEW

Do you need to increase performance at 10K HDD price points for performance-sensitive and very read optimized workloads?

HPE SATA Very Read Optimized Solid State Drives deliver up to 175X faster performance, 4X lower latencies, and 3X better energy efficiency than 10K HDDs at a comparable price [1]. Designed for very read optimized workloads – vSAN capacity tiers, NoSQL databases, business intelligence, Hadoop,

analytics, object stores, content delivery, and AI and machine learning data lakes.

Hewlett Packard Enterprise SSDs are backed by over 3.35 million hours of testing and qualification [2], certifying reliability and high performance. HPE Digitally Signed Firmware prevents unauthorized access to your data by providing the verification that drive firmware comes from a trusted source. You can also monitor the lifespan of your SSD with HPE Smart WearGauge compatibility in management tools.

FEATURES

The Speed of SSDs Fused with the Affordability of HDDs

HPE SATA Very Read Optimized Solid State Drives feature better value than 10K HDDs – thanks to QLC NAND technology targeting very read optimized (VRO) workloads.

Experience up to 175X faster performance and 4X better latencies than 10K HDDs [1].

3X more energy efficient than 10K HDDs, providing annual savings on power and cooling [1].

HPE SATA VRO SSDs are the Reliable Replacement for 2 - 8 TB HDDs in Targeted Workloads

HPE SATA Very Read Optimized Solid State Drives can help future-proof your storage by transitioning from lower capacity HDDs.

Feature hardware that is 10X more reliable than 10K HDDs and 100X more reliable than 7.2K HDDs [3].

Optimized for Hewlett Packard Enterprise servers that have used 10K and 7.2K HDDs for years.

Includes full enterprise Hewlett Packard Enterprise SSD feature set for improved data security, end-to-end data path protection, and power loss protection.

HPE VRO SATA SSDs are Optimized for Performance-Sensitive and Very Read Optimized Workloads

HPE SATA Very Read Optimized Solid State Drives fuse HDD-optimized sequential performance with SSD-optimized random performance.

The VRO targeted workloads revolve around a typical mix of >80% random reads and <20% sequential writes (large block size), for which HPE SATA VRO SSDs are designed.

Endurance ratings are engineered to exceed the need of HPE VRO SSD targeted workloads [4].

Target HPE SATA VRO SSD workloads: vSAN capacity tiers, SQL databases (business intelligence), NoSQL databases, Hadoop, analytics, object stores, CDN, and AI and machine learning data lakes.



High Performance, Exceptional Reliability, and Efficiency for Faster Business Results

HPE SATA Very Read Optimized Solid State Drives are ideal for big data analytics, cloud computing, active archiving, database applications, and data warehousing.

Achieve higher IOPs to enhance the performance of your data center.

Maintain data accuracy with full data-path error detection.

Choose from a broad portfolio of enhanced SSD solutions in a wide variety of capacities.

Features 12 Gb/s SAS, 6 Gb/s SATA, NVMe, M.2, and M.2 Enablement Kits.

Technical specifications

HPE 3.84TB SATA 6G Very Read Optimized LFF (3.5in) LPC 3yr Wty SSD

Product Number (SKU)	P23491-H21
Lifetime Writes	630
Endurance DWPD (Drive Writes Per Day)	0.09
Read IOPS	Random Read IOPS (4KiB, Q=16)=53,000 MAX Random Read IOPS (4KiB)=65,000@Q32
Write IOPS	Random Write IOPS (4KiB, Q=16)=7,000 MAX Random Write IOPS (4KiB)=7,100@Q1
Power (Watts)	5.3
Plug Type	Hot Pluggable
Height	7mm
Minimum dimensions (H x W x D)	25.4 x 25.4 x 21.92 cm
Weight	1.36 kg
Warranty	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 leverages our breadth and depth of technical expertise and innovation to help to accelerate digital transformation. A comprehensive portfolio that includes – Advisory, Professional, and Operational Services is designed to help you evolve and grow today and into the future.

Operational Services

- **HPE Datacenter Care** offers a tailored operational support solution built on core deliverables. It includes hardware and software support, a team of experts to help personalise deliverables and share best practices, as well as optional building blocks to address specific IT and business needs.
- **HPE Proactive Care** is an integrated set of hardware and software support including an enhanced call experience with start to finish case management helping resolve incidents quickly and keeping IT reliable and stable.
- **HPE Foundation Care** helps when there is a hardware or software problem offering several response levels dependent on IT and business requirements.

Advisory Services includes design, strategy, road map, and other services to help enable the digital transformation journey, tuned to IT and business needs. Advisory Services helps customers on their journey to Hybrid IT, Big Data, and the Intelligent Edge.

Professional Services helps integrate the new solution with project management, installation and startup, relocation services, and more. We help mitigate risk to the business so there is no interruption when new technology is being integrated in the existing IT environment.

HPE GREENLAKE

HPE Greenlake is an as-a-service offering that delivers on-demand capacity and planning, combining the agility and economics of public cloud with the security and performance of on-premises IT.

[1] Based on datasheet comparisons of the HPE SATA VRO SSD (1.92 TB) and HPE 10K HDDs (2.4 TB). Actual performance varies by capacity and may vary slightly in your configuration.

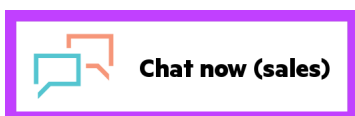
[2] HPE internal lab testing. 3.35 million hour test quant is derived from a combination of drive qualification test plans, specifically HDDQ spec-supplier responsibility to perform, HDDQ spec-HPE responsibility to perform, Reliability Demonstration Test (RDT) spec, CSI integration test spec and pilot test requirements. Test conducted in May 2017.

[3] Based on HPE SATA VRO SSDs and HPE 10K and HPE 7.2K HDD datasheet comparisons of unrecoverable bit error rates (UBER values). UBER values quantify the rate at which data stored on a device is lost, making UBER values one of the most important reliability metrics.

[4] Endurance for QLC NAND based VRO SSDs will vary depending on the write block size and write usage of the drive resulting in a maximum usage limitation. All SSDs are consumable and have a maximum amount of writes that can be done - once a drive has written to its maximum usage limitation it is no longer covered under any Hewlett Packard Enterprise warranty coverage.

Make the right purchase decision.
Contact our presales specialists.

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