



Channel Selection Guide

Q3 2025

Contents

D7-Series	2
D7-PS1030	3
D7-PS1010	4
D7-P5810	5
D7-P5620	6
D7-P5520	7
D5-Series	8
D5-P5336	9
D5-P5430	10
D5-P5316	11
D3-Series	12
D3-S4620	13
D3-S4520	14
Appendix	15

Solidigm™ D7-Series

Our **highest-performing family of SSDs**, the Solidigm D7-Series is engineered for the **most demanding workloads**.

D7-PS1030 Series

Class-leading PCIe 5.0 performance with mid-endurance and capacities up to 12.8TB, designed to accelerate write-centric and mixed workloads.

Interface: PCIe 5.0 x4, NVMe Capacity: 1.6 TB – 12.8 TB

Form Factor: U.2 15mm / E1.S 9.5mm / E1.S 15mm / E1.L 9.5mm

D7-PS1010 Series

Class-leading PCIe 5.0 performance with standard endurance and capacities up to 15.36TB, designed to accelerate mainstream workloads.

Interface: PCIe 5.0 x4, NVMe Capacity: 1.92 TB – 15.36 TB

Form Factor: U.2 15mm / E3.S 7.5mm

D7-P5810 Series

Ultra-fast PCIe 4.0 SSD at 800GB and up to 50 DWPD for workloads with extreme write intensity and high endurance needs.

Interface: PCIe 4.0 x4, NVMe Capacity: 800 GB – 1.6 TB

Form Factor: U.2 15mm

D7-P5620Series

Mid-endurance PCIe 4.0 SSDs with capacities up to 12.8 TB, designed for mixed-workload applications.

Interface: PCIe 4.0 x4, NVMe Form Factor: U.2 15m

D7-P5520 Series

High-performing, standard-endurance PCIe 4.0 SSDs with capacities up to 15.36 TB, designed for read-intensive workloads.

Interface: PCIe 4.0 x4, NVMe Capacity: 1.92 TB – 15.36 TB

Form Factor: U.2 15mm / E1.S 9.5mm / E1.S 15mm / E1.L 9.5mm



Solidigm™

D7-PS1030 Series

Product Overview



Form Factor	U.2 15mm / E3.S 7.5mm
Interface	PCIe 5.0 x4, NVMe
Lithography	176L TLC 3D NAND
User Capacity	1.6 TB – 12.8 TB
Endurance (five-year DWPD)	≤3 DWPD
Endurance (PB written [PBW]) (up to)	8.7 - 70 PBW
Maximum Power	~23 W
Idle Power	5 W
Random Read (100% Span) (up to)	2,350,000 – 3,100,000 IOPS (4K Blocks)
Random Write (100% Span) (up to)	350,000 – 800,000 IOPS (4K Blocks)
Sequential Bandwidth – 100% Read (up to)	14,500 MB/S
Sequential Bandwidth – 100% Write (up to)	4,100 – 10,000 MB/S

Next-Gen Performance and Efficiency, Elevated for Mid-Endurance

Combining class-leading performance and performance optimizations for real-world IO conditions, the Solidigm D7-PS1030 accelerates write-centric workloads such as OLTP, meta data logging, HPC, and more.

PCIe 5.0 Performance Done Right

With powerful PCIe 5.0 performance, Solidigm D7-PS1030 accelerates a wide range of write-centric and mixed workloads, from cloud and enterprise applications to modern AI/ML pipelines.

Storage Optimized for the AI Era

Artificial Intelligence is everywhere and it’s creating higher demands for data infrastructure efficiency and performance. The leading combination of high capacity and high-performance drives help Solidigm partners to save power and space. Step up your AI workloads with the Solidigm SSD portfolio optimized for the AI era.

Fast and Flexible

Experience the class-leading performance of Solidigm D7-PS1030, accelerating a broad range of write-centric workloads, on a PCIe 5.0 or PCIe 4.0 solution. Available in U.2 and E3.S form factors, these products enable both legacy and modern chassis designs to realize their fullest potential.

Form Factor	Capacity	Generic	Opal	FIPS*
U.2 15mm	1.6 TB	SB5PH27E016T001	SB5PH27E016TOP1	SB5PH27E016TOF1
	3.2 TB	SB5PH27E032T001	SB5PH27E032TOP1	SB5PH27E032TOF1
	6.4 TB	SB5PH27E064T001	SB5PH27E064TOP1	SB5PH27E064TOF1
	12.8 TB	SB5PH27E128T001	SB5PH27E128TOP1	SB5PH27E128TOF1
E3.S 15mm	1.6 TB	SB5PHA7E016T001	SB5PHA7E016TOP1	SB5PHA7E016TOF1
	3.2 TB	SB5PHA7E032T001	SB5PHA7E032TOP1	SB5PHA7E032TOF1
	6.4 TB	SB5PHA7E064T001	SB5PHA7E064TOP1	SB5PHA7E064TOF1
	12.8 TB	SB5PHA7E128T001	SB5PHA7E128TOP1	SB5PHA7E128TOF1

Performance data varies by capacity, for product specific performance data please visit Solidigm.com

* Solidigm D7-PS1030 Series FIPS certification in progress



Solidigm™

D7-PS1010 Series

Product Overview



Form Factor	U.2 15mm / E3.S 7.5mm
Interface	PCIe 5.0 x4, NVMe
Lithography	176L TLC 3D NAND
User Capacity	1.92 TB – 15.36 TB
Endurance (five-year DWPD)	≤1 DWPD
Endurance (PB written [PBW]) (up to)	3.5 - 28 PBW
Maximum Power	~23 W
Idle Power	5 W
Random Read (100% Span) (up to)	2,350,000 - 3,100,000 IOPS (4K Blocks)
Random Write (100% Span) (up to)	150,000 - 400,000 IOPS (4K Blocks)
Sequential Bandwidth - 100% Read (up to)	14,500 MB/S
Sequential Bandwidth - 100% Write (up to)	4,100 – 10,000 MB/S

Next-Gen Performance and Efficiency

Combining class-leading performance and performance optimizations for real-world IO conditions, the Solidigm D7-PS1010 accelerates enterprise and cloud workloads such as AI/ML, HPC, databases, general purpose servers, and more.

PCIe 5.0 Performance Done Right

With powerful PCIe 5.0 performance, Solidigm D7-PS1010 accelerates a wide range of cloud and enterprise applications. Built to excel at every stage of the AI data pipeline, the Solidigm D7-PS1010 provides up to 50% higher throughput in certain pipeline phases¹.

Unmatched Performance Efficiency

With class-leading performance and up to 70% better IOPS/watt than leading competitors, the Solidigm D7-PS1010 improves operational efficiency without sacrificing performance². This drive delivers world-class consistency, quality, and reliability.

Fast and Flexible

Whether it's a PCIe 5.0 or PCIe 4.0 solution, the class-leading performance of the Solidigm D7-PS1010 accelerates a wide range of workloads. Available in U.2 and E3.S form factors, these products enable both legacy and modern chassis designs to realize their fullest value.

Form Factor	Capacity	Generic	Opal	FIPS*
U.2 15mm	1.92 TB	SB5PH27X019T001	SB5PH27X019TOP1	SB5PH27X019TOF1
	3.84 TB	SB5PH27X038T001	SB5PH27X038TOP1	SB5PH27X038TOF1
	7.68 TB	SB5PH27X076T001	SB5PH27X076TOP1	SB5PH27X076TOF1
	15.36 TB	SB5PH27X153T001	SB5PH27X153TOP1	SB5PH27X153TOF1
E3.S 15mm	1.92 TB	SB5PHA7X019T001	SB5PHA7X019TOP1	SB5PHA7X019TOF1
	3.84 TB	SB5PHA7X038T001	SB5PHA7X038TOP1	SB5PHA7X038TOF1
	7.68 TB	SB5PHA7X076T001	SB5PHA7X076TOP1	SB5PHA7X076TOF1
	15.36 TB	SB5PHA7X153T001	SB5PHA7X153TOP1	SB5PHA7X153TOF1

Performance data varies by capacity, for product specific performance data please visit [Solidigm.com](#)

* Solidigm D7-PS1010 Series FIPS certification in progress



Solidigm™

D7-P5810 Series

Product Overview



Form Factor	U.2 15mm
Interface	PCIe 4.0 x4, NVMe
Lithography	144L SLC 3D NAND
User Capacity	800 GB - 1.6 TB
Endurance (five-year DWPD)	≤50 DWPD
Endurance (PB written [PBW]) (up to)	73 - 146 PBW
Maximum Power	~14 W
Idle Power	5 W
Random Read (100% Span) (up to)	865,000 - 930,000 IOPS (4K, QD256)
Random Write (100% Span) (up to)	495,000 - 510,000 IOPS (4K, QD256)
Sequential Bandwidth - 100% Read (up to)	6,400 - 6,800 MB/S
Sequential Bandwidth - 100% Write (up to)	4,000 - 4,300 MB/S

Made for Extreme Writes and Endurance

The Solidigm D7-P5810 is a single-level cell (SLC) NVM Express (NVMe) drive that delivers what enterprises need for extremely write-heavy workloads like caching, high-performance computing (HPC), logging, and journaling, with nearly 2x better performance³.

Move More, Do More

An ultra-fast PCIe 4.0 SSD based on 144-layer SLC 3D NAND, delivering 1.6TB capacity with up to 65 DWPD for sequential workloads, and up to 50 DWPD for random workloads with extreme write-intensity and high-endurance needs.

Supercharge Your Storage Solution with Solidigm D7-P5810 & CSAL

The D7-P5810 can be used with QLC drives in a cloud storage acceleration layer (CSAL) deployment. A CSAL is an open-source software layer that uses storage-class media as a write cache to shape write workloads in all forms and sizes (large, small, random, and sequential) to NAND-friendly, large input/output (I/O) sequential writes. This can greatly improve the performance and lifetime of QLC SSDs.

Deploy With Confidence

Solidigm D7 Series drives are designed and tested with a passion for – and a relentless focus on – quality and reliability. Our data reliability is enhanced on multiple levels with additional circuitry for critical data integrity functions, as well as testing that goes above and beyond industry specifications and common practices.

Form Factor	Capacity	Generic	Opal	FIPS
U.2 15mm	800 GB	SSDPF2SQ800GZ01	N/A	N/A
	1.6 TB	SSDPF2SQ016TZ01	N/A	N/A



Solidigm™

D7-P5620 Series

Product Overview



Form Factor	U.2 15mm
Interface	PCIe 4.0 x4, NVMe
Lithography	144L TLC 3D NAND
User Capacity	1.6 TB - 12.8 TB
Endurance (five-year DWPD)	≤3 DWPD
Endurance (PB written [PBW]) (up to)	8.7 - 65.4 PBW
Maximum Power	~20 W
Idle Power	5 W
Random Read (100% Span) (up to)	700,000 - 1,100,000 IOPS (4K Blocks)
Random Write (100% Span) (up to)	200,000 - 390,000 IOPS (4K Blocks)
Sequential Bandwidth - 100% Read (up to)	5,300 - 7,100 MB/S
Sequential Bandwidth - 100% Write (up to)	1,900 - 4200 MB/S

The Highest Performance for the Most Demanding Workloads

At the top of our highest-performing SSD series, the Solidigm D7-P5620 is the industry's most advanced PCIe product, performance-tuned for the real world. It's designed with the highest endurance and tested with zero tolerance for data errors while delivering consistently durable performance.

Accelerate Your Write-Intensive and Mixed Workloads

For highly random, mixed-workload environments requiring low latency for improved user experience, the D7-P5620 delivers consistently amazing response time. For server-based storage solutions using virtualization software with random and sequential read/writes, it offers substantial random read IOPS and increases sequential write throughput.

Advanced Feature Set

Building on our previous generation PCIe 4.0 data center SSDs, the Solidigm D7-P5520 and D7-P5620 offer a wide range of new features that are essential to building modern data centers, including device self-test, dynamic multiple namespaces, variable sector size, and OPAL 2.0 drive security.

Deploy With Confidence

Solidigm D7 Series drives are designed and tested with a passion for – and a relentless focus on – quality and reliability. Our data reliability is enhanced on multiple levels with additional circuitry for critical data integrity functions, as well as testing that goes above and beyond industry specifications and common practices.

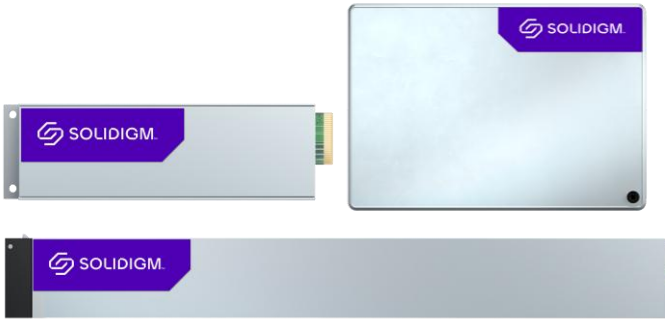
Form Factor	Capacity	Generic	Opal	FIPS
U.2 15mm	1.6 TB	SSDPF2KE016T11Z	SSDPF2KE016T1OZ	N/A
	3.2 TB	SSDPF2KE032T11Z	SSDPF2KE032T1OZ	N/A
	6.4 TB	SSDPF2KE064T11Z	SSDPF2KE064T1OZ	N/A
	12.8 TB	SSDPF2KE128T11Z	SSDPF2KE128T1OZ	N/A



Solidigm™

D7-P5520 Series

Product Overview



Form Factor	U.2 15mm / E1.S 9.5mm / E1.S 15mm / E1.L 9.5mm
Interface	PCIe 4.0 x4, NVMe
Lithography	144L TLC 3D NAND
User Capacity	1.92 TB – 15.36 TB
Endurance (five-year DWPD)	≤1 DWPD
Endurance (PB written [PBW]) (up to)	3.5 - 28 PBW
Maximum Power	~20 W
Idle Power	5 W
Random Read (100% Span) (up to)	700,000 – 1,100,000 IOPS (4K Blocks)
Random Write (100% Span) (up to)	114,000 – 220,000 IOPS (4K Blocks)
Sequential Bandwidth - 100% Read (up to)	5,300 – 7,100 MB/S
Sequential Bandwidth - 100% Write (up to)	1,900 – 4,200 MB/S

The Highest Performance for the Most Demanding Workloads

Our highest-performing SSD Series includes the Solidigm D7-P5520: one of the industry's most advanced PCIe products, performance-tuned for the real world. Designed with the highest standard endurance and tested with zero tolerance for data errors, it delivers consistently durable performance.

The Industry's Broadest PCIe 4.0 Portfolio

Form factor and capacity expansion enable server modernization opportunities spanning a broad range of 1U and 2U configurations for compute and storage servers. The Solidigm D7-P5520 is available in U.2, E1.L, E1.S 9.5 mm and E1.S 15 mm form factors.

Form Factor	Capacity	Generic	Opal	FIPS*
 U.2 15mm	1.92 TB	SSDPF2KX019T11Z	SSDPF2KX019T1OZ	SSDPF2KX019T1GF
	3.84 TB	SSDPF2KX038T11Z	SSDPF2KX038T1OZ	SSDPF2KX038T1GF
	7.68 TB	SSDPF2KX076T11Z	SSDPF2KX076T1OZ	SSDPF2KX076T1GF
	15.36 TB	SSDPF2KX153T11Z	SSDPF2KX153T1OZ	SSDPF2KX153T1GF
 E1.S 9.5mm	1.92 TB	SSDPFUKX019T11Z	N/A	N/A
	3.84 TB	SSDPFUKX038T11Z	SSDPFUKX038T1OZ	N/A
	7.68 TB	SSDPFUKX076T11Z	SSDPFUKX076T1OZ	N/A
 E1.S 15mm	1.92 TB	SSDPFVKX019T11Z	N/A	N/A
	3.84 TB	SSDPFVKX038T11Z	N/A	N/A
	7.68 TB	SSDPFVKX076T11Z	N/A	N/A
 E1.L 9.5mm	15.36 TB	SSDPFWKX153T1N1	SSDPFWKX153T1OZ	N/A

Performance data varies by capacity, for product specific performance data please visit [Solidigm.com](#)

* Solidigm D7-P5520 Series FIPS 140-3 Level 2 Certified

Solidigm™ D5-Series

Hyper-dense, cost-efficient SSDs optimized for
read intensive workloads.

D5-P5336 Series

Optimized for the edge to the core, the D5-P5336 is a hyper-scalable, cost-effective solution that lets you efficiently accelerate data.

Interface: PCIe 4.0 x4, NVMe Capacity: 7.68 TB – 122.88 TB

Form Factor: U.2 15mm / E3.S 7.5mm / E1.L 9.5mm

D5-P5430 Series

Discover the hyper-dense D5-P5430 QLC SSD, a PCIe 4.0 drive with capacities up to 30.72TB. TLC-level performance for mainstream, read-intensive workloads.

Interface: PCIe 4.0 x4, NVMe Capacity: 1.92 TB – 15.36 TB

Form Factor: U.2 15mm / E3.S 7.5mm / E1.S 9.5mm

D5-P5316 Series

Discover the D5-P5316, highly efficient, read-optimized PCIe 4.0 drives with capacities up to 30.72 TB, designed for read-intensive and sequential workloads.

Interface: PCIe 4.0 x4, NVMe Capacity: 1.6 TB – 12.8 TB

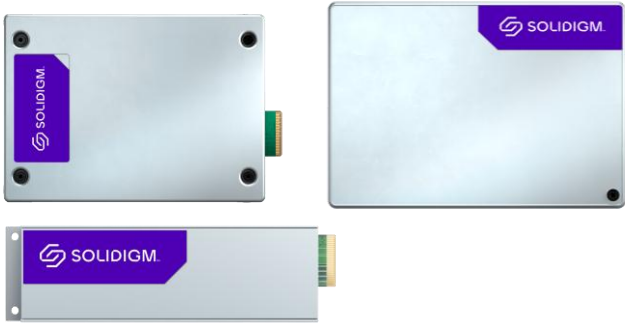
Form Factor: U.2 15mm / E1.L 9.5mm



Solidigm™

D5-P5430 Series

Product Overview



Form Factor	U.2 15mm / E3.S 7.5mm / E1.S 9.5mm
Interface	PCIe 4.0 x4, NVMe
Lithography	192L 3D QLC NAND
User Capacity	3.84 TB - 30.72 TB
Endurance (five-year DWPD)	≤0.57 DWPD (8K RW)
Endurance (PB written [PBW]) (up to)	3.8 - 31.93 PBW
Maximum Power	~25 W
Idle Power	5 W
Random Read (100% Span) (up to)	516,000 - 971,000 IOPS (4K, QD256)
Random Write (100% Span) (up to)	54,500 - 120,000 IOPS (4K, QD256)
Sequential Bandwidth - 100% Read (up to)	5,200 - 7,000 MB/S
Sequential Bandwidth - 100% Write (up to)	900 - 3,000 MB/S

Value. Performance. Density. Pick Three.

Get the performance you need at substantial cost-savings for mainstream and read-intensive workloads. The D5-P5430 is a drop-in replacement for PCIe applications, offering up to 27% TCO savings⁴. Plus, store up to 4x more in the same space⁵, while delivering equivalent read performance and up to 14% higher lifetime writes as compared to entry TLC SSDs⁶.

Deploy With Confidence in an Array of Configurations

Available in a range of form factors (U.2, E3.S, E1.S) and capacities (3.84TB to 30.72TB), the D5-P5430 SSD is optimized with industry-leading data reliability, including zero SDC errors detected in over 6 million years of simulated operational life^{7,8}. Deploy with confidence, knowing your SSD is validated and tested beyond industry standards.

Form Factor	Capacity	Generic	Opal	FIPS*
U.2 15mm 	3.84 TB	SBFPF2BU038T001	SBFPF2BU038TOP1	SBFPF2BU038TOF1
	7.68 TB	SBFPF2BU076T001	SBFPF2BU076TOP1	SBFPF2BU076TOF1
	15.36 TB	SBFPF2BU153T001	SBFPF2BU153TOP1	SBFPF2BU153TOF1
	30.72 TB	SBFPF2BU307T001	SBFPF2BU307TOP1	SBFPF2BU307TOF1
E3.S 7.5mm 	3.84 TB	SBFPFABU038T001	SBFPFABU038TOP1	N/A
	7.68 TB	SBFPFABU076T001	SBFPFABU076TOP1	N/A
	15.36 TB	SBFPFABU153T001	SBFPFABU153TOP1	N/A
	30.72 TB	SBFPFABU307T001	SBFPFABU307TOP1	N/A
E1.S 9.5mm 	3.84 TB	SBFPFUBU038T001	SBFPFUBU038TOP1	N/A
	7.68 TB	SBFPFUBU076T001	SBFPFUBU076TOP1	N/A
	15.36 TB	SBFPFUBU153T001	SBFPFUBU153TOP1	N/A

Performance data varies by capacity, for product specific performance data please visit [Solidigm.com](#)

* Solidigm D5-P5430 Series FIPS certification in progress

Solidigm™
D5-P5336 Series
Product Overview



The World’s Highest Capacity PCIe SSD

Combining read performance exceeding that of some cost-optimized TLC SSDs with capacities up to 122.88TB*, the D5-P5336 has been architected to efficiently accelerate and scale with the increasingly massive datasets found in widely deployed, modern read-intensive workloads, while increasing storage density, infrastructure efficiency, and enabling a more sustainable storage infrastructure.

Significantly Improve TCO Across a Broad Range of Configurations

Offering the highest capacities and incredible energy-efficiency advantages, the D5-P5336 is a perfect solution for AI and data-intensive workloads from the edge to the core and everywhere in between.

Form Factor	U.2 15mm / E3.S 7.5mm / E1.L 9.5mm
Interface	PCIe 4.0 x4, NVMe
Lithography	192L 3D QLC NAND
User Capacity	7.68 TB - 122.88 TB
Endurance (five-year DWPD)	0.42 - 0.58 DWPD (16K RW), 122 TB: 0.60 (32KB RW)
Endurance (PB written [PBW]) (up to)	5.9 - 65.2 PBW (16K RW), 122 TB:134.3 PBW (32KB RW)
Maximum Power	~24 W
Idle Power	5 W
Random Read (100% Span) (up to)	770,000 - 1,005,000 IOPS (16K, QD256), 122 TB: 900,000 IOPS (4K QD256)
Random Write (100% Span) (up to)	17,900 - 42,600 IOPS (4K, QD256), 122 TB: 19,000 IOPS (32K RW QD256)
Sequential Bandwidth - 100% Read (up to)	6,800 - 7,000 MB/S
Sequential Bandwidth - 100% Write (up to)	1,800 - 3,000 MB/S

Form Factor	Capacity	Generic	Opal	FIPS*
U.2 15mm	7.68 TB	SBFFP2BV076T001	SBFFP2BV076TOP1	SBFFP2BV076TOF1
	15.36 TB	SBFFP2BV153T001	SBFFP2BV153TOP1	SBFFP2BV153TOF1
	30.72 TB	SBFFP2BV307T001	SBFFP2BV307TOP1	SBFFP2BV307TOF1
	61.44 TB	SBFFP2BV614T001	SBFFP2BV614TOP1	SBFFP2BV614TOF1
	122.88 TB	SBFFP2BV0P12001	SBFFP2BV0P120P1	SBFFP2BV0P120F1
E1.L 9.5mm	15.36 TB	SBFFFWBV153T001	N/A	SBFFFWBV153TOF1
	30.72 TB	SBFFFWBV307T001	N/A	SBFFFWBV307TOF1
	61.44 TB	SBFFFWBV614T001	N/A	SBFFFWBV614TOF1
	122.88 TB	SBFFFWBV0P12001	N/A	SBFFFWBV0P120F1
E3.S 7.5mm	7.68 TB	SBFFPABV076T001	SBFFPABV076TOP1	SBFFPABV076TOF1
	15.36 TB	SBFFPABV153T001	SBFFPABV153TOP1	SBFFPABV153TOF1
	30.72 TB	SBFFPABV307T001	SBFFPABV307TOP1	SBFFPABV307TOF1

* Solidigm D5-P5336 Series FIPS certification in progress

Performance data varies by capacity, for product specific performance data please visit Solidigm.com

Solidigm™

D5-P5316 Series

Product Overview



Form Factor	U.2 15mm / E1.L 9.5mm
Interface	PCIe 4.0 x4, NVMe
Lithography	144L 3D QLC NAND
User Capacity	15.36 TB - 30.72 TB
Endurance (five-year DWPD)	≤0.41 DWPD (64KB RW)
Endurance (PB written [PBW]) (up to)	10.78 - 22.93 PBW (64K RW)
Maximum Power	~25 W
Idle Power	5 W
Random Read (100% Span) (up to)	800,000 IOPS (4K Blocks)
Random Write (100% Span) (up to)	399 - 510 MB/s (64K Blocks)
Sequential Bandwidth - 100% Read (up to)	7,000 MB/s
Sequential Bandwidth - 100% Write (up to)	3,200 - 3,600 MB/s

Combining the industry's first 144-layer QLC NAND and PCIe 4.0, the read-optimized Solidigm D5-P5316 enables significant TCO savings while accelerating warm storage

The Intel SSD D5-P5316 includes up to 30.72TB of capacity, and as an E1.L, provides up to 1 petabyte of storage in just 1U of rack space. The result is massive storage consolidation for lower TCO.

Accelerate a Range of Data Center Workloads

The D5-P5316 Series is designed from the ground up to optimize and accelerate storage in a range of Data Center workloads including but not limited to Content Delivery Network (CDN), Hyper Converged Infrastructure (HCI), Big Data, Artificial Intelligence (AI), Cloud Elastic Storage (CES) and High-Performance Computing (HPC).

Key architectural improvements accelerate a broad range of read workloads as well as large block sequential/random writes, while maintaining fast response time SLAs. The D5-P5316 can support all write sizes with a Quality-of-Service improvement scheme that maintains low read latency under write pressure.

Firmware Enhancements for Drive Performance, IT Efficiency, Data Security, and Manageability

The Solidigm D5-P5316 Series includes numerous firmware enhancements specifically optimized for both enterprise and cloud workloads to deliver better latency¹⁰, expanded management capabilities, and critical new NVMe features.

- NVMe 1.3c and NVMe-MI1.0a-compliant.
- Scatter Gather List (SGL) removes the need to double-buffer host data.
- Persistent Event Log exposes deeper drive history for debugging at scale.
- Designed to enhance security with AES-256 Hardware Encryption, NVMe Sanitize, Firmware Measurement

Form Factor	Capacity	Generic	Opal	FIPS
U.2 15mm 	15.36 TB	SSDPF2NV153TZ1Z	SSDPF2NV153TZOZ	N/A
	30.72 TB	SSDPF2NV307TZ1Z	SSDPF2NV307TZOZ	N/A
E1.L 9.5mm 	15.36 TB	SSDPFWNV153TZ1Z	SSDPFWNV153TZOZ	N/A
	30.72 TB	SSDPFWNV307TZ1Z	SSDPFWNV307TZOZ	N/A

Solidigm™ D3-Series

SSDs designed to improve storage performance and costs on **legacy SATA infrastructure.**

D3-S4620 Series

Mid-endurance SATA drives available in capacities up to 3.84 TB, designed to increase server efficiency and boost IOPS/TB performance over legacy hard disk drives (HDDs).

Interface: SATA 3.0 6Gb/s

Capacity: 480 GB - 3.84 TB

Form Factor: 2.5" 7mm

D3-S4520 Series

Standard-endurance SATA drives with capacities up to 7.68 TB, designed to increase server efficiency and boost IOPS/TB performance over legacy hard disk drives (HDDs) for cloud storage.

Interface: SATA 3.0 6Gb/s

Capacity: 240 GB - 7.68 TB

Form Factor: 2.5" 7mm / M.2 80mm



Solidigm™ D3-S4620 Series Product Overview



Form Factor	2.5" 7mm
Interface	SATA 3.0 6Gb/s
Lithography	144L TLC 3D NAND
User Capacity	480 GB - 3.84 TB
Endurance (five-year DWPD)	≤5.0 DWPD
Endurance (PB written [PBW]) (up to)	4.0 - 35.1 PBW
Maximum Power	~3.9 W
Idle Power	≤1.3 W
Random Read (100% Span) (up to)	85,000 - 91,000 IOPS
Random Write (100% Span) (up to)	48,000 - 60,000 IOPS
Sequential Bandwidth - 100% Read (up to)	550 MB/S
Sequential Bandwidth - 100% Write (up to)	500-510 MB/S

Reduce Operating Costs while Preserving Infrastructure Investment

Mid-endurance SATA drives available in capacities up to 3.84 TB, designed to increase server efficiency and boost IOPS/TB performance over legacy hard disk drives (HDDs).

Accelerate Read-Intensive Workloads with Power-Efficient Performance

Replace HDDs with the highly-efficient Solidigm D3-S4620 to reduce storage operating costs and accelerate mixed-use workloads with power-efficient performance.

Minimize Service Disruptions

Solidigm is a leader in providing trusted data center SSDs that maximize data continuity in enterprise and cloud data centers. That reputation continues with the D3-S4620 and its key capabilities that help ensure more uptime:

- Consistently delivers durable performance to optimize service level continuity
- End-to-end data protection helps keep data safe - even in the event of a sudden power loss
- Innovative firmware completes updates without server reset, reducing downtime
- Simplified configurations reduce risk of component failure and streamline maintenance

Form Factor	Capacity	Generic	Opal	FIPS
2.5" 7mm	480 GB	SSD5C2KG480GZ1Z	N/A	N/A
	960 GB	SSD5C2KG960GZ1Z	N/A	N/A
	1.92 TB	SSD5C2KG019TZ1Z	N/A	N/A
	3.84 TB	SSD5C2KG038TZ1Z	N/A	N/A



Solidigm™ D3-S4520 Series Product Overview



Form Factor	2.5" 7mm / M.2 80mm
Interface	SATA 3.0 6Gb/s
Lithography	144L TLC 3D NAND
User Capacity	240 GB - 7.68 TB
Endurance (five-year DWPD)	≤3.0 DWPD
Endurance (PB written [PBW]) (up to)	1.0 - 36.5 PBW
Maximum Power	~4.3 W
Idle Power	≤1.4 W
Random Read (100% Span) (up to)	42,000 - 92,000 IOPS
Random Write (100% Span) (up to)	14,500 - 48,000 IOPS
Sequential Bandwidth - 100% Read (up to)	400 - 550 MB/S
Sequential Bandwidth - 100% Write (up to)	233 - 510 MB/S

Storage inspired. Infrastructure optimized.

Standard-endurance SATA drives with capacities up to 7.68TB, designed to increase server efficiency and boost IOPS/TB performance over legacy hard disk drives (HDDs) for cloud storage.

Replace HDDs with the highly-efficient Solidigm D3-S4520

Built for compatibility with legacy infrastructures, the D3-S4520 reduces the costs associated with modernizing your data center.

Available in a variety of capacities from 240GB up to 7.68TB, and in standard 2.5-inch and M.2 80mm form factors, the larger capacity drives consume up to 5x lower power and have up to 5x lower cooling requirements than 2.5-inch HDDs¹¹. The D3-S4520 also enables 3.2x more data to be stored in the same amount of space¹².

Form Factor	Capacity	Generic	Opal	FIPS
2.5" 7mm 	240 GB	SSDSC2KB240GZ1Z	N/A	N/A
	480 GB	SSDSC2KB480GZ1Z	N/A	N/A
	960 GB	SSDSC2KB960GZ1Z	N/A	N/A
	1.92 TB	SSDSC2KB019TZ1Z	N/A	N/A
	3.84 TB	SSDSC2KB038TZ1Z	N/A	N/A
	7.68 TB	SSDSC2KB076TZ1Z	N/A	N/A
M.2 80mm 	240 GB	SSDSCCKB240GZ1Z	N/A	N/A
	480 GB	SSDSCCKB480GZ1Z	N/A	N/A

Appendix

1. Workload IO characteristics based on research of publicly available materials conducted by Solidigm. Solidigm D7-PS1010 7.68TB (32KB SW QD32 9.03GB/s 113us) vs Samsung PM1743 7.68TB (32K SW QD32 6.03GB/s 170us) System Configuration: System Config 1 and 2, see Appendix for config details. IO measured using FIO tool.
2. Comparing 7.68TB, Samsung PM1743 and Solidigm D7-PS1010. Power is measured using Quarch Technology. D7-PS1010 (128KB SW QD128 IOPS/Watt 3,874), Samsung PM1743 (128KB SW QD128 IOPS/Watt 2,272). System Configuration: System Config 2, see Appendix for config details. Throughput measured using FIO tool.
3. Measuring 4K random write IOPS performance at QD128 versus a 960 GB Micron XTR NVMe SSD. Source: Micron, "Micron® XTR NVMe™ SSD." May 2023. https://www.micron.com/-/media/client/global/documents/products/product-flyer/xtr_nvme_ssd_product_brief.pdf?la=en&rev=1804383771b74425b1ad2546c6b7db20
4. Comparing TCO of a 30.72TB Solidigm™ D5-P5430 with 7000MB/s throughput, 25W average active power, 5W idle power vs a 15.36TB (highest capacity available) Micron 7450 (datasheet) with 6800 MB/s throughput, 20W average active write power, 5W idle power. Assumes 42U rack capacity, 34U available for storage, 2U servers @ 24x U.3 TLC and 24x U.2 P5430 drives per server. Calculated duty cycles to deliver equivalent throughput per TB: 20% for TLC array, 38.9% for P5430 solution. RAID1 mirroring and 5-year refresh used for both. Key common cost assumptions: Power Cost = \$0.15/KWhr, PUE factor = 1.60, Empty Rack Purchase Cost = \$1,200, System Cost = \$10,000, Rack Cost for Deployment Term = \$171,200. Calculations based on Solidigm TCO estimations as of March 2023 using internal Solidigm TCO estimator tool.
5. Maximum 48 E3.S drives and 24 U.2 drives per 2U chassis. U.2 vs. U.2-based – 15.36TB Micron 7450 Pro yields 15.36TB x 24 = 368.64TB while 30.72TB D5-P5430 yields 30.72TB x 24 = 737.28TB resulting in D5-P5430 supporting 2X more capacity per 2U. E3.S vs. U.2-based – 15.36TB U.2 Micron 7450 Pro yields 15.36TB x 24 = 368.64TB while 30.72TB D5-P5430 yields 30.72TB x 48 = 1474.56TB resulting in D5-P5430 supporting 4X more capacity per 2U.
6. Comparing maximum capacity 30.72TB Solidigm D5-P5430 with 7000MB/s SR bandwidth, 934.5K RR IOPS and 31.92PBW to maximum capacity 15.36TB Micron 7450 Pro with 6800MB/s SR bandwidth, 1000K RR IOPS and estimated 28PBW.
7. Enhanced Power Loss Imminent – Designed-in firmware check to validate data is saved accurately upon power restoration. Unclear if others provide this additional firmware check. Robust End-to-End Data Protection – Built-in redundancy where both ECC and CRC can be active at the same time. Protecting all critical storage arrays within the controller – instruction cache, data cache, indirection buffers and phy buffers. ECC coverage of SRAM to over 99% of array is among the highest in the industry.
8. Solidigm drives are tested at the neutron source at Los Alamos National Labs to measure Silent Data Corruption susceptibility to 1E-23 and modeled to 1E-25. Test prefills drives with a certain data pattern. Next, the neutron beam is focused on the center of the drive controller while IO commands are continuously issued and checked for accuracy. If the drive fails and hangs/bricks, the test script powers down the drives and the neutron beam. The drive is subsequently rebooted, and data integrity is checked to analyze the cause of failure. SDC can be observed during run time causing a power down command or after reboot if the neutron beam has hit the control logic hanging the drive as a result of inflight data corruption. Because drives go into a disable logical (brick) state when they cannot guarantee data integrity, brick AFR is used as the measure of error handling effectiveness. Solidigm drives have used this testing procedure across 4 generations. Cumulative testing time across generations is the equivalent of over 6M years of operational life in which zero SDC errors have been detected. The most recent testing used the Solidigm D5-P5520 drives which served as a proxy for the Solidigm D5-P5430 drives since they share the same controller and similar firmware. Competitor drives tested were the Samsung 983 ZET, Samsung PM9A3, Samsung PM1733, Micron 7400, Micron 7450, Kioxia XD6, Toshiba XD5 and, WD SN840.

Appendix

9. Solidigm D5-P5336 U.2, E3.S, now shipping in all capacities.
10. Up to 48% better latency performance at 99.999%: Source-Intel product specification. Comparing measured performance for 4KB Random Read, QD1 latency performance at 99.999% between Intel® SSD D5-P5316 15.36TB with Intel® SSD D5-P4326 15.36TB. Measured performance are 600us and 1150 us for Intel® SSD D5-P5316 and Intel® SSD D5-P4326 respectively. Percentage change is 48%.
11. Power and cooling claims are based on datasheet figures versus a market-available HDD. Comparing max sequential read data transfer rate & typical sequential read power consumption for Intel® SSD D3-S4520 1.92TB 2.5" and Seagate Enterprise Performance 10K HDD 1.8TB 2.5" SAS 12Gb/s Model ST1800MM0129. The benefit calculated as a function of the workload efficiency ratio by lower power ratio. Source for Intel® SSD D3-S4520 - Intel datasheet. Source for Seagate drive - <https://www.seagate.com/files/www-content/product-content/enterprise-performance-savvio-fam/ent-perf-10k-hdd-v9-skybolt/en-us/docs/100818015f.pdf>.
12. Source - Intel. Increase data stored per rack unit up to 3.2x vs. 2.5" HDDs; Intel® SSD D3-S4520 2.5" 7.68TB vs. Seagate Enterprise Performance 10K SAS HDD 2.5" 2.4TB. Assuming both configurations use 24 drives, the SSD configuration would have 3.2x the capacity of the HDD configuration.

Appendix: System Configuration

System config 1: Server: Intel® Server System M50CYP, Mainboard: Intel® Server Board M50CYP2SB2U, Version: S2W3SIL4B; BIOS:SE5C6200.86B.4018.D65.2010201151; CPU: Intel® ICE LAKE - P5 4GXRAV D, CPU Sockets: 2, Number of Cores: 36; DRAM:DDR4 64GB, Linux Release 7.5.1804, Kernal version:3.10.0-862.el7.x86 64 used for Solidigm D7-P5220

System Config 2: Server: SuperMicro ASG-2115S-NE332R, Mainboard: Super H13SSF, BIOS: 5.27, CPU: AMD EPYC 9374F, CPU Sockets 1, Cores:32, DDR5 128GB, OS: Kernal version:3.10.0-862.el7.x86 64, Storage interface:E3.S AI Data Pipeline

Disclaimers

All product plans, roadmaps, specifications, and product descriptions are subject to change without notice.

Nothing herein is intended to create any express or implied warranty, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, or any warranty arising from course of performance, course of dealing, or usage in trade.

The products described in this document may contain design defects or errors known as "errata," which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Contact your Solidigm representative or your distributor to obtain the latest specifications before placing your product order.

For copies of this document, documents that are referenced within, or other Solidigm literature, please contact your Solidigm representative.

All products, computer systems, dates, and figures specified are preliminary based on current expectations, and are subject to change without notice.

Solidigm may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Solidigm reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information.

Tests document performance of components on a particular test, in specific systems. Differences in hardware, software, or configuration will affect actual performance. Consult other sources of information to evaluate performance as you consider your purchase.

Performance results are based on testing as of dates shown in the configurations and may not reflect all publicly available updates. See configuration disclosure for details. No product or component can be modeling and.

Solidigm or Intel optimizations, for Solidigm or Intel compilers or other products, may not provide optimized performance to the same degree for non-Solidigm or Intel products. Solidigm or Intel technologies may require enabled hardware, software, or service activation.

Your costs and results may vary.

Solidigm does not control or audit third-party data. You should consult other sources to evaluate accuracy.

Some results have been estimated or simulated using internal Solidigm analysis or architecture simulation or modeling and provided to you for information purposes only. Any differences in your system hardware, software or configuration may affect your actual performance.

© Solidigm. "Solidigm" is a trademark of SK hynix NAND Product Solutions Corp (d/b/a Solidigm), registered in the United States, People's Republic of China, Taiwan, Hong Kong, Singapore, Japan, the European Union, the United Kingdom, Mexico, and other countries. Other names and brands may be claimed as the property of others.

