Server SSD: ES-Series

ESS-50: Highly Customizable High-Endurance SATA SSD for the Enterprise

Key Product Features

- Self-Encrypting Drive option
    - TCG Opal 2.0 Support
    - AES-XTS 256-bit Encryption
- End-to-End Data Path Protection
- Power Loss Protection (PLP)

Key Product Metrics	
Sequential Read	Up to 530 MB/s
Sequential Write	Up to 500 MB/s
Random Read	Up to 98K IOPS
Random Write	Up to 77K IOPS
Interface	SATA III
Capacity	Up to 15.36 TB
Form Factor	2.5"
Drive Write Per Day	0.4, 1, or 3

ESS-50E

Form Factor 2.5"				
Capacity[1]	480GB	960GB	1920GB	3840GB
Interface	SATA III	SATA III	SATA III	SATA III
NAND Flash	3D TLC	3D TLC	3D TLC	3D TLC
Performance [2,3,4]				
Sequential Read (MB/s)	500	530	530	530
Sequential Write (MB/s)	440	500	500	500
4K Random Read (IOPS)	95K	98K	98K	98K
4K Random Write (IOPS)	40K	67K	77K	68K
Read Latency (Typ.,μs)	130	125	130	125
Write Latency (Typ.,μs)	30	30	30	30
Power Consumption [5]				
Active (W)	2.8	3.0	3.1	3.5
Idle (W)	1.3	1.4	1.5	1.7
Endurance/Reliability				
DWPD[6]	3	3	3	3
UBER	< 1 sector per 10^{17} bits read	< 1 sector per 10^{17} bits read	< 1 sector per 10^{17} bits read	< 1 sector per 10^{17} bits read
MTBF (million hours)	2.0	2.0	2.0	2.0
Limited Warranty (years)	5	5	5	5
Temperature				
Operating Temp. (°C)	0 - 70	0 - 70	0 - 70	0 - 70
Non-Operating Temp. (°C)	-40 - 85	-40 - 85	-40 - 85	-40 - 85
Physical Dimension				
Length (mm)	100.00	100.00	100.00	100.00
Width (mm)	69.85	69.85	69.85	69.85
Height (mm)	7.00	7.00	7.00	7.00
Weight (g)	59	60	62	64

(1) 1 GB = 10^9 bytes.
(2) Sequential Performance is based on FIO on Linux, 128KB data size, with QD=32, 1 job.
(3) Random Performance is based on FIO on Linux, 4KB data size, QD=32, 1 job.
(4) Latency is measured with random workloads based on FIO on Linux, 4KB data size, QD=1, 1 job.
(5) Power consumption (average RMS) is measured during the sequential read/write and random read/write operations performed by iometer.
(6) The results of DWPD are obtained in compliance with JESD219A standards.

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ESS-50P

Form Factor 2.5"					
Capacity[1]	480GB	960GB	1920GB	3840GB	7680GB
Interface	SATA III	SATA III	SATA III	SATA III	SATA III
NAND Flash	3D TLC	3D TLC	3D TLC	3D TLC	3D TLC
Performance [2,3,4]					
Sequential Read (MB/s)	530	530	530	530	530
Sequential Write (MB/s)	360	500	500	500	500
4K Random Read (IOPS)	92K	98K	98K	98K	97K
4K Random Write (IOPS)	20K	33K	40K	30K	23K
Read Latency (Typ.,μs)	140	120	120	130	160
Write Latency (Typ.μs)	50	40	30	35	45
Power Consumption [5]					
Active (W)	2.6	3.0	3.1	3.3	3.7
Idle (W)	1.3	1.3	1.4	1.5	1.7
Endurance/Reliability					
DWPD[6]	1	1	1	1	1
UBER	< 1 sector per 10^{17} bits read	< 1 sector per 10^{17} bits read	< 1 sector per 10^{17} bits read	< 1 sector per 10^{17} bits read	< 1 sector per 10^{17} bits read
MTBF (million hours)	2.0	2.0	2.0	2.0	2.0
Limited Warranty (years)	5	5	5	5	5
Temperature					
Operating Temp. (°C)	0 - 70	0 - 70	0 - 70	0 - 70	0 - 70
Non-Operating Temp. (°C)	-40 - 85	-40 - 85	-40 - 85	-40 - 85	-40 - 85
Physical Dimension					
Length (mm)	100.00	100.00	100.00	100.00	100.00
Width (mm)	69.85	69.85	69.85	69.85	69.85
Height (mm)	7.00	7.00	7.00	7.00	7.00
Weight (g)	59	61	62	63	63

(1) 1 GB = 10^9 bytes.
(2) Sequential Performance is based on FIO on Linux, 128KB data size, with QD=32, 1 job.
(3) Random Performance is based on FIO on Linux, 4KB data size, QD=32, 1 job.
(4) Latency is measured with random workloads based on FIO on Linux, 4KB data size, QD=1, 1 job.
(5) Power consumption (average RMS) is measured during the sequential read/write and random read/write operations performed by iometer.
(6) The results of DWPD are obtained in compliance with JESD219A standards.

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ESS-50V

Form Factor 2.5"				
Capacity[1]	1920GB	3840GB	7680GB	15360GB
Interface	SATA III	SATA III	SATA III	SATA III
NAND Flash	3D TLC	3D TLC	3D TLC	3D TLC
Performance [2,3,4]				
Sequential Read (MB/s)	530	530	530	530
Sequential Write (MB/s)	500	500	500	500
4K Random Read (IOPS)	94K	97K	97K	94K
4K Random Write (IOPS)	13K	20K	14K	10K
Read Latency (Typ.,μs)	135	130	140	165
Write Latency (Typ.μs)	55	40	55	65
Power Consumption [5]				
Active (W)	3.3	3.6	3.9	4.2
Idle (W)	1.4	1.5	1.9	1.9
Endurance/Reliability				
DWPD[6]	0.5	0.5	0.4	0.4
UBER	< 1 sector per 10^{17} bits read	< 1 sector per 10^{17} bits read	< 1 sector per 10^{17} bits read	< 1 sector per 10^{17} bits read
MTBF (million hours)	2.0	2.0	2.0	2.0
Limited Warranty (years)	5	5	5	5
Temperature				
Operating Temp. (°C)	0 - 70	0 - 70	0 - 70	0 - 70
Non-Operating Temp. (°C)	-40 - 85	-40 - 85	-40 - 85	-40 - 85
Physical Dimension				
Length (mm)	100.00	100.00	100.00	100.00
Width (mm)	69.85	69.85	69.85	69.85
Height (mm)	7.00	7.00	7.00	7.00
Weight (g)	59	66	71	73

(1) 1 GB = 10^9 bytes.
(2) Sequential Performance is based on FIO on Linux, 128KB data size, with QD=32, 1 job.
(3) Random Performance is based on FIO on Linux, 4KB data size, QD=32, 1 job.
(4) Latency is measured with random workloads based on FIO on Linux, 4KB data size, QD=1, 1 job.
(5) Power consumption (average RMS) is measured during the sequential read/write and random read/write operations performed by iometer.
(6) The results of DWPD are obtained in compliance with JESD219A standards.

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Product Configurations

For more information on available configurations, please contact us at: inquiries@rpics.com.

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