

Enterprise SSD

ESR1610

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Specification

Interface	<ul style="list-style-type: none"> • SATA Gen3 • SATA Revision 3.2
Form Factor	<ul style="list-style-type: none"> • 2.5" SSD
Flash	<ul style="list-style-type: none"> • Capacity: 1920GB, 3840GB 7680GB, 15360GB • Flash transfer rate up to 533 MT/s • Support 3D QLC NAND flash memory
Temperature Range	<ul style="list-style-type: none"> • Operating range: 0°C to 70°C • Storage range: -40°C to 85°C
Data Reliability	<ul style="list-style-type: none"> • Phison 3th generation LDPC ECC & RAID ECC (160bits/2Kbytes) • DDR ECC engine
Security	<ul style="list-style-type: none"> • NA
Environment Conditions	<ul style="list-style-type: none"> • Commercial grade temperature and humidity test • Shock: 1500G/0.5ms • Vibration: 20Hz~80Hz/1.52mm 80Hz~2000Hz/20G • Drop: 80cm height/each face • Bending: ≥ 20N force • Thermal cycling: -40°C-85°C/1000 cycles with 50% cumulative failure. (IPC-9701)
Compliance & Certification	<ul style="list-style-type: none"> • RoHS compliant • CE/FCC/BSMI
Peripheral	<ul style="list-style-type: none"> • HW Pfail : Support Tantalum Capacitor

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Capacity	1920GB	3840GB	7680GB	15360GB
Form Factors	2.5" SSD			
Flash Type	Micron N28			
Sustained Performance ^{3,4}				
Seq. Read	530 MB/s	530 MB/s	530 MB/s	520 MB/s
Seq. Write	215 MB/s	295 MB/s	225 MB/s	220 MB/s
4K Ran. Read	90K IOPS	95K IOPS	95K IOPS	90K IOPS
4K Ran. Write	11K IOPS	15K IOPS	10K IOPS	10K IOPS
8K Ran. Read	48K IOPS	57K IOPS	58K IOPS	42K IOPS
8K Ran. Write	4K IOPS	4K IOPS	4K IOPS	3K IOPS
Power Consumption				
Active Read (typ.) ⁵	2.7 W	3.1 W	3.1 W	3.3 W
Active Write (typ.) ⁶	4.6 W	6.6 W	6.3 W	6.9 W
Idle ⁷	1.4 W	1.7 W	1.8 W	1.8 W
Reliability				
MTBF	1.5 million hours			
UBER	< 1 sector per 10 ¹⁷ bits read			
Power On/Off Cycles	24 times per day			
DWPD (5 year)	0.03	0.03	0.05	0.06
TBW ⁸	107TB	218TB	655TB	1646TB

1. All measured operating voltage 5.0V ±5.0% for 2.5" SSD
2. Operation temperature is measured by device temperature sensor. Airflow is suggested and it will allow device to be operated at appropriate temperature for each component during heavy workloads environment.
3. Seq. R/W: Unformatted drive tested on Linux FIO 128K sequential write with QD32 and 1 worker for full drive.
4. Random R/W: Unformatted drive tested on Linux FIO 4KB random write with QD32 and 1 for full drive and 8KB random write with QD32 and 1 for full drive.
5. Use iometer with QD32 and worker 1 for 4KB random read test to measure the power of active read.
6. Use iometer with QD32 and worker 1 for 128KB sequential write test to measure the power of active write.
7. The power of idle is measured with DIPM off.
8. TBW is measured by JEDEC Enterprise 219A workload. Based on 5 years use time calculation for DWPD.

The data within this specification is subject to change by Phison without notice. Performance numbers may vary based on system configuration and testing conditions.

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