



## SPECIFICATIONS

<b>Model Name</b>	VORTIQ E21SYMWT SATA					
<b>Capacity</b>	240GB	480GB	960GB	1.92TB	3.84TB	7.68TB
<b>Flash Memory</b>	3D NAND					
<b>DRAM Cache</b>	0.5GB DDR4	1GB DDR4	2GB DDR4	2GB DDR4	8GB DDR4	8GB DDR4
<b>Form Factor</b>	2.5 inch					
<b>Interface</b>	SATA Gen3					
<b>Compatibility</b>	SATA Gen3 / Gen2 / Gen1					
<b>Dimensions</b>	100mm (L) x 69.85mm (W) x 7.00mm (H)					
<b>Latency Read</b>	110 µs	100 µs	110 µs	110 µs	100 µs	115 µs
<b>Latency Write</b>	80 µs	40 µs	40 µs	30 µs	30 µs	30 µs
<b>Sequential Read up to (MB/s)</b>	530					
<b>Sequential Write up to (MB/s)</b>	350	500	500	500	500	500
<b>Random Read 4KB up to (IOPS)</b>	90 KIOPS	98 KIOPS	98 KIOPS	98 KIOPS	98 KIOPS	98 KIOPS
<b>Random Write 4KB up to (IOPS)</b>	12 KIOPS	28 KIOPS	32 KIOPS	39 KIOPS	35 KIOPS	31 KIOPS
<b>Maximum Operating Power (W)</b>	2.3	2.9	3.2	3.3	2.9	3.1
<b>Idle Power PS3 (mW)</b>	1.3	1.3	1.4	1.4	1.7	1.7
<b>Operating Temperatures</b>	0°C - 70°C					
<b>Storage Temperatures</b>	-40°C - 85°C					
<b>Terabytes Written (TBW)</b>	438	876	1752	3504	7008	14016
<b>Mean Time Between Failure (MTBF)</b>	Up to 2.0 Million Hours					
<b>Limited Warranty</b>	5 Years, or the coverage for the maximum TBW as stated, whichever comes first.					
<b>Advanced Features</b>	Hardware-based Power Loss Protection - prevents data corruption during unexpected power failures Thermal Throttling Mechanism for temperature control End-to-End Data Path Protection - ensures data integrity throughout the transfer path TCG Opal 2.0 - complies with self-encrypting drive security standards					

## FEATURES



### HIGH ENDURANCE GUARANTEE

Features 1 DWPD (Drive Writes Per Day), specifically engineered for enterprise read/write mixed-use scenarios.



### Comprehensive Data Protection

Supports End-to-End Data Path Protection to guarantee data integrity throughout the entire transmission process.



### Advanced Security Encryption

Hardware AES-XTS 256-bit Encryption for data security compliance.



### Hardware-Level Power Protection

Integrated Power Loss Data Protection (PLDP) prevents data loss during sudden power outages.



### Industrial-Grade Vibration Resistance

Tested to withstand up to 1500G (non-operating shock), adapting to the most demanding physical environments.



### 3D NAND Flash

3D NAND flash technology brings dense storage in a compact design and allows storage capacities up to 960GB.



### Security & Reliability

Built-in data security and error-correction capabilities extend the longevity of the NAND flash storage.



### Low Latency Gaming

Enjoy minimal latency in smooth gameplay and loading games with optimized high-performance bandwidth and throughput.



### MSI Center

Monitor SSD health status and key performance metrics in real time via MSI Center for stable and reliable system performance.



### 5 Years Warranty

MSI stands by the quality and reliability of their SSD's with a 5 year limited warranty.

## TEST CONFIGURATION

Sequential and random performance, and power consumption were measured with the system configurations listed below. All performance data was tested with the SSD as a secondary drive.

<b>Interface</b>	SATA Gen3
<b>Operating System</b>	Ubuntu 20.04.2 LTS
<b>CPU</b>	AMD Ryzen 5 7600X 6-Core Processor
<b>Memory</b>	ASUSTeK COMPUTER INC. ROG STRIX X670E-E GAMING WIFI
<b>Kernel</b>	Linux version 5.10.32-pim-20211006
<b>RAM</b>	32064652 kB