

DATA SHEET

Tough. Ready. Scalable.

# IronWolf 525 SSD



Seagate® IronWolf® 525 enables fast caching and tiered storage for best-in-class NAS performance. Designed with PCIe Gen 4 support and class-leading endurance and reliability, IronWolf 525 is the ideal choice for creative pros and businesses with demanding performance needs.



## Best-Fit Applications

- Commercial and Entry-Level Enterprise NAS
- High performance Workstations and PCs
- U.2 to M.2 adapters for U.2 NVMe SSD drive bays

## Key Advantages

**Future-Proof Speed** IronWolf 525 boosts NAS caching and tiered storage solutions with PCIe Gen 4 speeds up to 5000MB/s<sup>1</sup> while maintaining backward compatibility with PCIe Gen 3 systems.

**Always On, Always Accessible** Designed to deliver performance in demanding 24x7 low latency, multi-user environments, enabling fast access to data any time, anywhere.

**Built Tough** Endurance rating of 0.7 DWPD<sup>2</sup> ensures robust performance in NAS and other intensive client workloads.

**Class-Leading Reliability** Rated for 1.8M hours MTBF and includes a 5-year limited warranty for best-in-class total cost of ownership (TCO).

**Purpose-Built Capacities** Choose from 500GB, 1TB and 2TB, ideal for primary storage or fast caching

**IronWolf Health Management (IHM)**<sup>3</sup> Actively monitor and protect your NAS data with error Prevention, Intervention and Recovery recommendations.

**Data Recovery** Includes 3-year complimentary Rescue Data Recovery Services<sup>4</sup> in the event of accidental data corruption or drive damage

<sup>1</sup> Fresh Out of Box (FOB) sequential read, measured using CrystalDiskMark v.8.0.1 x64 with Windows 10 PCIe Gen 4 system

<sup>2</sup> Calculated from Total Bytes Written over 5 years. Refer to specifications table on page 2 for Total Bytes Written (TB).

<sup>3</sup> IHM is enabled on all leading NAS systems. Please check with your NAS vendor or a Seagate sales representative for more details.

<sup>4</sup> Rescue Data Recovery Services not available in all countries. Contact your Seagate sales representative for further details.



Specifications	2TB	1TB	500GB
Standard Model	ZP2000NM30002	ZP1000NM30002	ZP500NM30002
Interface	PCIe Gen4 x4, NVMe 1.3	PCIe Gen4 x4, NVMe 1.3	PCIe Gen4 x4, NVMe 1.3
NAND Flash Type	3D TLC	3D TLC	3D TLC
Form Factor	M.2 2280-D2	M.2 2280-D2	M.2 2280-D2
Random Read (Max, IOPS) Sustained, 4KB QD256 <sup>5</sup>	425,000	445,000	230,000
Random Write (Max, IOPS) Sustained, 4KB QD256 <sup>5</sup>	19,500	19,500	10,800
<b>Performance (PCIe Gen4 x4)</b>			
Sequential Read (Max, MB/s) FOB, 128KB QD32 <sup>5</sup>	5000	5000	5000
Sequential Write (Max, MB/s) FOB, 128KB QD32 <sup>5</sup>	4400	4400	2500
Random Read (Max, IOPS) FOB, 4KB QD32 T8 <sup>5</sup>	740,000	760,000	420,000
Random Write (Max, IOPS) FOB, 4KB QD32 T8 <sup>5</sup>	700,000	700,000	630,000
Sequential Read (Max, MB/s) Sustained, 128KB QD32 <sup>6</sup>	4300	4350	3300
Sequential Write (Max, MB/s) Sustained, 128KB QD32 <sup>6</sup>	965	995	525
<b>Performance (PCIe Gen3 x4)</b>			
Sequential Read (Max, MB/s) FOB, 128KB QD32 <sup>5</sup>	3400	3400	3400
Sequential Write (Max, MB/s) FOB, 128KB QD32 <sup>5</sup>	3200	3200	2500
Random Read (Max, IOPS) FOB, 4KB QD32 T8 <sup>5</sup>	640,000	640,000	420,000
Random Write (Max, IOPS) FOB, 4KB QD32 T8 <sup>5</sup>	565,000	565,000	550,000
Sequential Read (Max, MB/s) Sustained, 128KB QD32 <sup>6</sup>	3300	3300	3250
Sequential Write (Max, MB/s) Sustained, 128KB QD32 <sup>6</sup>	965	995	525
<b>Endurance/Reliability</b>			
Total Bytes Written (TB)	2,800	1,400	700
Nonrecoverable Read Errors per Bits Read	1 per 10E16	1 per 10E16	1 per 10E16
Mean Time Between Failures (MTBF, hours)	1,800,000	1,800,000	1,800,000
Rescue Data Recovery Services (years) <sup>7</sup>	3	3	3
Warranty, Limited (years)	5	5	5
<b>Power Management</b>			
Power Supply	3.3V	3.3V	3.3V
Active Max Average Power (W)	6.5	6.5	5.6
Average Idle Power PS3 (mW)	30	20	20
<b>Environmental</b>			
Temperature, Operating Internal (°C)	0°C – 70°C	0°C – 70°C	0°C – 70°C
Temperature, Nonoperating (°C)	-40°C – 85°C	-40°C – 85°C	-40°C – 85°C
Shock, Nonoperating: 0.5ms (Gs)	1,500	1,500	1,500
<b>Physical</b>			
Height (mm/in, max)	3.58mm/0.14in	3.58mm/0.14in	3.58mm/0.14in
Width (mm/in, max)	22.15mm/0.872in	22.15mm/0.872in	22.15mm/0.872in
Length (mm/in, max)	3.156in	3.156in	3.156in
Weight (g/lb)	8.7g/0.019lb	8.5g/0.018lb	8g/0.017lb

5 Fresh Out of Box (FOB) performance of newly formatted drive measured with CrystalDiskMark v.8.0.1 x64 on Windows 10 host. Performance may vary based on SSD firmware version, system hardware, and configuration.

6 Sustained performance measured with FIO on Linux host. Performance is based on testing under certain workload conditions and may vary based on SSD firmware version, system hardware, and configuration.

7 Rescue Data Recovery Services not available in all countries. Contact your Seagate sales representative for further details.



Specifications			
Retail Packaging	Box Dimensions	Master Carton Dimensions	Pallet Dimensions
Length (in/mm)	0.945in/24mm	6.024in/153mm	47.992in/1,219mm
Width (in/mm)	4.291in/109mm	11.496in/292mm	20in/508mm
Depth (in/mm)	6.102in/155mm	5.512in/140mm	27.795in/706mm
Weight (lb/kg)	0.139lb/0.063kg	1.984lb/0.9kg	104.808lb/47.54kg
Quantities			
Boxes per Master Carton	10		
Master Cartons per Pallet	48		
Pallet Layers	4		

System Requirements	What's Included
---------------------	-----------------

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• M.2 (M key) slot, PCIe<sup>®</sup> Gen4 x4, PCIe Gen3 x4</li> <li>• Windows<sup>®</sup> 10</li> <li>• Linux</li> </ul> | <ul style="list-style-type: none"> <li>• Seagate<sup>®</sup> IronWolf<sup>®</sup> 525 SSD</li> </ul> |
|---|--|

Region	Model Number	Capacity	Limited Warranty (years)	UPC Code	EAN Code	Multi-Pack UPC
WW	ZP500NM3A002	500GB	5	763649170748	8719706427883	10763649170745
WW	ZP1000NM3A002	1TB	5	763649170755	8719706427890	10763649170752
WW	ZP2000NM3A002	2TB	5	763649170762	8719706427906	10763649170769

[seagate.com](https://www.seagate.com)



© 2021 Seagate Technology LLC. All rights reserved. Seagate, Seagate Technology, and the Spiral logo are registered trademarks of Seagate Technology LLC in the United States and/or other countries. IronWolf and the IronWolf logo are either trademarks or registered trademarks of Seagate Technology LLC or one of its affiliated companies in the United States and/or other countries. All other trademarks or registered trademarks are the property of their respective owners. When referring to drive capacity, one gigabyte, or GB, equals one billion bytes and one terabyte, or TB, equals one trillion bytes. Your computer's operating system may use a different standard of measurement and report a lower capacity. In addition, some of the listed capacity is used for formatting and other functions, and thus will not be available for data storage. Actual data rates may vary depending on operating environment and other factors, such as chosen interface and disk capacity. Seagate reserves the right to change, without notice, product offerings or specifications. DS2083.1-2108US August 2021