IRONWOLF PRO NAS

SEAGATE

3.5 HDD DATA SHEET

The Power of Agility for Creative Pro and SME NAS Enclosures

IronWolf™ Pro is designed for everything business NAS. Get used to tough, ready, and scalable 24×7 performance that can handle multi-drive environments across a wide range of capacities.

Best-Fit Applications

- Commercial and enterprise network-attached storage (NAS)
- 1- to 24-bay network attached storage (NAS)
- Backup, archiving, and disaster recovery
- On-premise private cloud
- Virtual storage

Rescue DATA RECOVERY SERVICES

Key Advantages

Optimised for NAS with AgileArray™. AgileArray enables dual-plane balancing and RAID optimisation in multi-bay environments, with the most advanced power management possible.

Actively protect your NAS with IronWolf Health Management focusing on prevention, intervention, and recovery.[1]

High performance means no lag time or downtime for users during workload traffic for the NAS. Seagate leads the competition with the highest-performing NAS drive portfolio.[2]

Seagate® Rescue Data Recovery.[3] IronWolf Pro comes with extra peace of mind for any mechanical, accidental, or natural disaster. With a 90% success rate of in-house recovery, Seagate has your back with a 3-year included Rescue Data Recovery plan.[4]

Rotational Vibration (RV) sensors. First in its class of drives to include RV sensors to maintain high performance in multi-drive NAS enclosures.[3]

Range of capacities up to 18 TB. More capacity options means more choices that will fit within the budget. Seagate provides a scalable solution for any NAS use-case scenario.

Do more in multi-user environments. IronWolf provides a workload rate of 300 TB/year. Multiple users can confidently upload and download data to the NAS server, knowing IronWolf can handle the workload, whether you are a creative professionalor a small business.

Designed for always on, always accessible 24×7 performance. Access data on your NAS any time, remotely or on site.

1.2 M hours MTBF, 5-year limited warranty represents an improved total cost of ownership (TCO) over desktop drives with reduced maintenance costs.

1 Contact your Seagate sales representative for further information.

2 Performance may vary depending on user's hardware configuration and operating system.

3 Registration required to activate. Rescue recovery services not available in all countries. Contact your Seagate sales representative for further details.

4 Three-year coverage for product models shipped January 1, 2020, or later

IRONWOLF PRO NAS

Specifications	18 TB	16 TB	14 TB	12 TB	10 TB
Capacity	18TB	16TB	14TB	12TB	10TB
Standard Model Number[1]	ST18000NE000	ST16000NE000	ST14000NE0008	ST12000NE0008	ST10000NE0008
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Features					
Drive Bays Supported	Up to 24-bay	Up to 24-bay	Up to 24-bay	Up to 24-bay	Up to 24-bay
Recording Technology	CMR	CMR	CMR	CMR	CMR
Workload Rate Limit (WRL)	300	300	300	300	300
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes	Yes
Hot-Plug Support[2]	Yes	Yes	Yes	Yes	Yes
Cache (MB)	256	256	256	256	256
Reliability/Data Integrity					
Mean Time Between Failures (MTBF, hours)	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Reliability Rating @ Full 24×7 Operation (AFR)	0.73%	0.73%	0.73%	0.73%	0.73%
Non-recoverable Read Errors per Bits Read, Max	1 per 10E15	1 per 10E15	1 per 10E15	1 per 10E15	1 per 10E15
Power-On Hours (per year)	8,760	8,760	8,760	8,760	8,760
Sector Size (Bytes per Logical Sector)	512E	512E	512E	512E	512E
Rescue Services[3]	Yes	Yes	Yes	Yes	Yes
Limited Warranty (years)	5	5	5	5	5
Performance					
Spindle Speed (RPM)	7,200	7,200	7,200	7,200	7,200
Interface Access Speed (Gb/s)	6.0, 3.0, 1.5	6.0, 3.0, 1.5	6.0, 3.0, 1.5	6.0, 3.0, 1.5	6.0, 3.0, 1.5
Max. Sustained Transfer Rate OD (MB/s)	260MB/s	255MB/s	255MB/s	240MB/s	240MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16	4.16
Rotational Vibration @ 10-1,500 Hz (rad/s^2)	12.5	12.5	12.5	12.5	12.5
Power Consumption					
Startup Current, Typical (12V, A)	2	2	2	2	2
Idle Power, Average (W)	5.2	5	5	5	5
Average Operating Power (W)	8 W	7.6 W	7.6 W	7.8 W	7.8 W
Standby Mode, Typical (W)	1.25	1	1	1	0.8
Sleep Mode, Typical (W)	1	1	1	1	0.8
Power Supply Requirements	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V
Environmental/Temperature					
Operating (ambient, min °C)	5	5	5	5	5
Operating (drive reported temperature °C)[4]	65	60	60	60	60
Non-operating (ambient, min °C)	-40	-40	-40	-40	-40
Non-operating (ambient max °C)	70	70	70	70	70
Environmental/Acoustics					
Vibration, Non-operating: 10 Hz to 500 Hz (Grms)	2.27	2.27	2.27	2.27	2.27
Acoustics, Idle (typical, measured in Idle 1 state)	2.8 bels	2.8 bels	2.8 bels	2.8 bels	2.8 bels
Acoustics, Seek (typical)	3.2 bels	3.2 bels	3.2 bels	3.2 bels	3bels
Environmental/Shock					
Shock, Operating 2 ms (Read/Write) (Gs)	50/50 Gs	50/50 Gs	50/50 Gs	50/50 Gs	70/40 Gs
Shock, Non-operating, 1 ms and 2 ms (Gs)	200	200	200	200	250
Physical					
Height (mm/in)	26.11 mm/1.028 in	26.11 mm/1.028 in	26.11 mm/1.028 in	26.11 mm/1.028 in	26.11 mm/1.028 in
Width (mm/in, max)	101.85 mm/4.01 in	101.85 mm/4.01 in	101.85 mm/4.01 in	101.85 mm/4.01 in	101.85 mm/4.01 in
Depth (mm/in, max)	146.99 mm/5.787 in	146.99 mm/5.787 in	146.99 mm/5.787 in	146.99 mm/5.787 in	146.99 mm/5.787 in
Weight (g/lb, typical)	670 g/1.477 lb	670 g/1.477 lb	670 g/1.477 lb	670 g/1.477 lb	690 g/1.521 lb
Carton Unit Quantity	20	20	20	20	20
Cartons per Pallet / Cartons per Layer	40/8	40/8	40/8	40/8	40/8

1 Seagate recommends validating your configuration with your HBA/RAID controller manufacturer to ensure full capacity capabilities.

2 Supports Hot-Plug operation per Serial ATA Revision 3.3 specification.

3 Rescue recovery services not available in all countries. Contact your Seagate sales representative for further details. Register an IronWolf Pro drive to activate your 2-year Rescue plan at seagate.com/register.

4 Seagate does not recommend operating at sustained drive temperatures above 60C. Operating at higher temperatures may affect drive health.

IRONWOLF PRO NAS

Specifications	8 TB	6 TB	4 TB
Capacity	8TB	6TB	4TB
Standard Model Number[1]	ST8000NE001	ST6000NE000	ST4000NE001
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Features			
Drive Bays Supported	Up to 24-bay	Up to 24-bay	Up to 24-bay
Recording Technology	CMR	CMR	CMR
Workload Rate Limit (WRL)	300	300	300
Rotational Vibration (RV) Sensors	Yes	Yes	Yes
Hot-Plug Support[2]	Yes	Yes	Yes
Cache (MB)	256	256	128
Reliability/Data Integrity			
Mean Time Between Failures (MTBF, hours)	1,200,000	1,200,000	1,200,000
Reliability Rating @ Full 24×7 Operation (AFR)	0.73%	0.73%	0.73%
Non-recoverable Read Errors per Bits Read, Max	1 per 10E15	1 per 10E15	1 per 10E15
Power-On Hours (per year)	8,760	8,760	8,760
Sector Size (Bytes per Logical Sector)	512E	512E	512E
Rescue Services[3]	Yes	Yes	Yes
Limited Warranty (years)	5	5	5
Performance			
Spindle Speed (RPM)	7,200	7,200	7,200
Interface Access Speed (Gb/s)	6.0, 3.0, 1.5	6.0, 3.0, 1.5	6.0, 3.0, 1.5
Max. Sustained Transfer Rate OD (MB/s)	240MB/s	220MB/s	220MB/s
Average Latency (ms)	4.16	4.16	4.16
Rotational Vibration @ 10-1,500 Hz (rad/s^2)	12.5	12.5	12.5
Power Consumption			
Startup Current, Typical (12V, A)	2	2	2
Idle Power, Average (W)	7.06	7.06	5.5
Average Operating Power (W)	9.2 W	8.1 W	9 W
Standby Mode, Typical (W)	1	1	1
Sleep Mode, Typical (W)	1	1	1
Power Supply Requirements	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V
Environmental/Temperature			
Operating (ambient, min °C)	5	5	5
Operating (drive reported temperature °C)[4]	60	60	60
Non-operating (ambient, min °C)	-40	-40	-40
Non-operating (ambient max °C)	70	70	70
Environmental/Acoustics			
Vibration, Non-operating: 10 Hz to 500 Hz (Grms)	2.27	3	3
Acoustics, Idle (typical, measured in Idle 1 state)	1.8 bels	2.7 bels	2.7 bels
Acoustics, Seek (typical)	2.8 bels	2.7 bels	2.8 bels
Environmental/Shock			
Shock, Operating 2 ms (Read/Write) (Gs)	70/40 Gs	70/40 Gs	70/40 Gs
Shock, Non-operating, 1 ms and 2 ms (Gs)	250	250	300
Physical			
Height (mm/in)	26.11 mm/1.028 in	26.11 mm/1.028 in	26.11 mm/1.028 in
Width (mm/in, max)	101.85 mm/4.01 in	101.85 mm/4.01 in	101.85 mm/4.01 in
Depth (mm/in, max)	146.99 mm/5.787 in	146.99 mm/5.787 in	146.99 mm/5.787 in
Weight (g/lb, typical)	722 g/1.59 lb	705 g/1.55 lb	643 g/1.42 lb
Carton Unit Quantity	20	20	20
Cartons per Pallet / Cartons per Layer	40/8	40/8	40/8

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