

3.5 HDD DATA SHEET

**Tough. Ready. Scalable.**  
**Purpose-built for Creative Pro &  
Medium-to-Large Business NAS  
Environments**



IronWolf™ Pro is designed for commercial and enterprise NAS. Delivering Tough, Ready and Scalable 24x7 performance in multi-bay, multi-user environments



### Best-Fit Applications

- Commercial and Enterprise NAS
- Video Production RAID and Shared Network Storage
- Workstations and Servers



## Key Advantages

**Optimized for NAS with AgileArray™** AgileArray enables Dual-Plane Balancing and Time-Limited Error Recovery to deliver best-in-class RAID performance in multi-bay systems.

**Always On, Always Accessible** IronWolf Pro drives are designed for 24x7 usage, allowing users to access their data any time, anywhere.

**All-CMR Portfolio** All IronWolf Pro drives utilize Conventional Magnetic Recording (CMR) technology for consistent, best-in-class NAS performance.

**Up to 20TB** Broad range of capacity options to deliver scalable and cost-efficient storage solutions.

**Built Tough** IronWolf Pro drives are rated for 300TB/Y workload, allowing commercial and enterprise NAS users to seamlessly store, share and collaborate on large amounts of networked data.

**Class-Leading Reliability and Dependability** IronWolf Pro drives are rated for 1.2M hours MTBF and include a 5-year limited warranty for hassle-free data storage and best-in-class total cost of ownership (TCO).

**Rotational Vibration (RV) sensors.** Built-in RV sensors for vibration tolerance and consistent performance in multi-bay systems.

**IronWolf Health Management (IHM)<sup>1</sup>** Actively protect your NAS data with Prevention, Intervention, and Recovery recommendations to ensure peak system health.

**Peace of mind with Data Recovery<sup>2</sup>** IronWolf Pro drives include 3 years of complimentary Rescue Data Recovery Services - in-house secure facilities, with an industry-leading recovery rate of 95% - so you do not have to incur high recovery costs in the event of accidental data corruption or drive damage.

<sup>1</sup> IHM is enabled on all leading NAS systems. Please check with your NAS vendor or a Seagate sales representative for more details.

<sup>2</sup> Rescue Data Recovery Services not available in all countries. Contact your Seagate sales representative for further details.



Specifications	20TB	18TB	16TB	14TB	12TB
Capacity	20TB	18TB	16TB	14TB	12TB
Standard Model Number	ST20000NE000	ST18000NE000	ST16000NE000	ST14000NE0008	ST12000NE0008
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
<b>Features</b>					
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
Drive Design (Air or Helium)	Helium	Helium	Helium	Helium	Helium
Workload Rate Limit (WRL)	300	300	300	300	300
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes	Yes
Cache (MB)	256	256	256	256	256
<b>Reliability/Data Integrity</b>					
Mean Time Between Failures (MTBF, hours)	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Reliability Rating @ Full 24x7 Operation (AFR)	0.73%	0.73%	0.73%	0.73%	0.73%
Nonrecoverable 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 Data Recovery Services(years) <sup>3</sup>	3	3	3	3	3
Limited Warranty (years)	5	5	5	5	5
<b>Performance</b>					
Spindle Speed (RPM)	7200	7200	7200	7200	7200
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)	285MB/s	260MB/s	255MB/s	255MB/s	240MB/s
Rotational Vibration @ 10-1500 Hz (rad/s)	12.5	12.5	12.5	12.5	12.5
<b>Power Consumption</b>					
Startup Current, Typical (12V, A)	2	2	2	2	2
Idle Power, Average (W)	5.5	5.2	5	5	5
Average Operating Power (W)	7.7W	8W	7.6W	7.6W	7.8W
Standby Mode, Typical (W)	1	1.25	1	1	1
Sleep Mode, Typical (W)	1	1.25	1	1	1
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
<b>Environmental/Temperature</b>					
Operating Temperature (ambient, min °C)	0	0	0	0	0
Operating Temperature (drive reported, max °C) <sup>4</sup>	65	65	60	65	65
Nonoperating Temperature (ambient, min °C)	-40	-40	-40	-40	-40
Nonoperating Temperature (ambient, max °C)	70	70	70	70	70
<b>Environmental/Acoustics</b>					
Vibration, Nonoperating: 10Hz to 500Hz (Grms)	2.27	2.27	2.27	2.27	2.27
Acoustics, Idle (typical, measured in Idle 1 state) (dBA)	28	28	28	28	28
Acoustics, Seek (typical) (dBA)	32	32	32	32	32
<b>Environmental/Shock</b>					
Shock, Operating 2ms (Read/Write) (Gs)	40/40Gs	50/50Gs	50/50Gs	50/50Gs	50/50Gs
Shock, Nonoperating, 1ms and 2ms (Gs)	200	200	200	200	200
<b>Physical</b>					
Height (mm/in)	26.11mm/1.028in	26.11mm/1.028in	26.11mm/1.028in	26.11mm/1.028in	26.11mm/1.028in
Width (mm/in, max)	101.85mm/4.01in	101.85mm/4.01in	101.85mm/4.01in	101.85mm/4.01in	101.85mm/4.01in
Depth (mm/in, max)	146.99mm/5.787in	146.99mm/5.787in	146.99mm/5.787in	146.99mm/5.787in	146.99mm/5.787in
Weight (g/lb, typical)	670g/1.477lb	670g/1.477lb	670g/1.477lb	670g/1.477lb	670g/1.477lb
Carton Unit Quantity	20	20	20	20	20
Cartons per Pallet/Cartons per Layer	40/8	40/8	40/8	40/8	40/8

<sup>3</sup> Rescue Data Recovery Services not available in all countries. Contact your Seagate sales representative for further details.

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



Specifications	10TB	10TB	8TB	6TB	4TB
Capacity	10TB	10TB	8TB	6TB	4TB
Standard Model Number	ST10000NE0008	ST10000NE000	ST8000NE001	ST6000NE000	ST4000NE001
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
<b>Features</b>					
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
Drive Design (Air or Helium)	Helium	Air	Air	Air	Air
Workload Rate Limit (WRL)	300	300	300	300	300
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes	Yes
Cache (MB)	256	256	256	256	256
<b>Reliability/Data Integrity</b>					
Mean Time Between Failures (MTBF, hours)	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Reliability Rating @ Full 24x7 Operation (AFR)	0.73%	0.73%	0.73%	0.73%	0.73%
Nonrecoverable 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 Data Recovery Services(years) <sup>3</sup>	3	3	3	3	3
Limited Warranty (years)	5	5	5	5	5
<b>Performance</b>					
Spindle Speed (RPM)	7200	7200	7200	7200	7200
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)	240MB/s	240MB/s	240MB/s	220MB/s	220MB/s
Rotational Vibration @ 10-1500 Hz (rad/s)	12.5	12.5	12.5	12.5	12.5
<b>Power Consumption</b>					
Startup Current, Typical (12V, A)	2	1.8	2	2	2
Idle Power, Average (W)	5	7.8	7.8	7.1	5.5
Average Operating Power (W)	7.8W	10.1W	10.1W	9.3W	9.02W
Standby Mode, Typical (W)	1.17	1	1	1	1
Sleep Mode, Typical (W)	1.17	1	1	1	1
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
<b>Environmental/Temperature</b>					
Operating Temperature (ambient, min °C)	0	0	0	0	0
Operating Temperature (drive reported, max °C) <sup>4</sup>	65	65	65	65	65
Nonoperating Temperature (ambient, min °C)	-40	-40	-40	-40	-40
Nonoperating Temperature (ambient, max °C)	70	70	70	70	70
<b>Environmental/Acoustics</b>					
Vibration, Nonoperating: 10Hz to 500Hz (Grms)	2.27	2.27	2.27	2.27	2.27
Acoustics, Idle (typical, measured in Idle 1 state) (dBA)	28	28	28	28	28
Acoustics, Seek (typical) (dBA)	30	30	30	30	30
<b>Environmental/Shock</b>					
Shock, Operating 2ms (Read/Write) (Gs)	70/40Gs	70/40Gs	70/40Gs	70/40Gs	70/40Gs
Shock, Nonoperating, 1ms and 2ms (Gs)	250	300	300	300	300
<b>Physical</b>					
Height (mm/in)	26.11mm/1.028in	26.11mm/1.028in	26.11mm/1.028in	26.11mm/1.028in	26.11mm/1.028in
Width (mm/in, max)	101.85mm/4.01in	101.85mm/4.01in	101.85mm/4.01in	101.85mm/4.01in	101.85mm/4.01in
Depth (mm/in, max)	146.99mm/5.787in	146.99mm/5.787in	146.99mm/5.787in	146.99mm/5.787in	146.99mm/5.787in
Weight (g/lb, typical)	690g/1.521lb	720g/1.591lb	720g/1.591lb	716g/1.581lb	650g/1.431lb
Carton Unit Quantity	20	20	20	20	20
Cartons per Pallet/Cartons per Layer	40/8	40/8	40/8	40/8	40/8

<sup>3</sup> Rescue Data Recovery Services not available in all countries. Contact your Seagate sales representative for further details.

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

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