IRONWOLF PRO™

SEAGATE

3.5 HDD DATA SHEET

Tough. Ready. Scalable.
Purpose-built for Creative Pro, Medium-to-Large Business NAS Storage Solutions

IronWolf Pro is designed to deliver reliable and dependable performance in 24x7 intensive workload environments. It is engineered to perform in commercial and enterprise multi-bay, multi-user, multi-application NAS storage solutions.

Best-Fit Applications

- Commercial and Enterprise NAS
- Video Production RAID Storage
- Shared Storage for Media Editing
- Workstations and Servers
- Archive and Backup

Rescue DATA RECOVERY SERVICES

Key Advantages

Optimised for NAS with AgileArray™ AgileArray uses dual-plane balancing and time-limited error recovery (TLER) to deliver best-in-class RAID performance in multi-bay systems.

Always On, Always Accessible IronWolf Pro drives are designed for 24x7 performance, allowing users to access their data anytime, anywhere.

All-CMR Portfolio All IronWolf Pro drives utilise conventional magnetic recording (CMR) technology for consistent, best-in-class NAS performance.

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

Built Tough IronWolf Pro drives are rated for up to 550 TB/year workload rate, allowing commercial and enterprise NAS users to seamlessly store, share, and collaborate on large amounts of data over a network.

Class-Leading Reliability and Dependability IronWolf Pro drives are rated for up to 2.5M 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 coupled with dynamic fly-height technology correct for external vibration to deliver consistently high performance and reliability in multi-bay systems.

IronWolf Health Management (IHM)[1] Actively protect your data with prevention, intervention, and recovery recommendations to ensure peak system health.

Peace of mind with Data Recovery[2] IronWolf Pro drives include three years of complimentary Rescue Data Recovery Services so users don't incur high recovery costs. In-house secure facilities with an industry-leading 95% success rate enable data recovery in the event of accidental data corruption or drive damage.

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

2 Rescue Data Recovery Services are not available in some countries. Contact your Seagate sales representative for further details.

IRONWOLF PRO™

Specifications	20 TB	20 TB	18 TB	18 TB
Capacity	20 TB	20 TB	18 TB	18 TB
Standard Model Number	ST20000NT001	ST20000NE000	ST18000NT001	ST18000NE000
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Features				
Drive Bays Supported	Unlimited	Up to 24-bay	Unlimited	Up to 24-bay
Recording Technology	CMR	CMR	CMR	CMR
Drive Design (Air or Helium)	Helium	Helium	Helium	Helium
Workload Rate Limit (WRL)	550	300	550	300
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes
Cache (MB)	256	256	256	256
Reliability/Data Integrity				
Mean Time Between Failures (MTBF, hours)	2,500,000	1,200,000	2,500,000	1,200,000
Non-recoverable Read Errors per Bits Read, Max	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
Sector Size (Bytes per Logical Sector)	512E	512E	512E	512E
Rescue Data Recovery Services (years)[3]	3	3	3	3
Limited Warranty (years)	5	5	5	5
Performance				
Spindle Speed (RPM)	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
Max. Sustained Transfer Rate OD (MB/s)	285MB/s	285MB/s	285MB/s	260MB/s
Rotational Vibration @ 10-1500 Hz (rad/s)	12.5	12.5	12.5	12.5
Power Consumption				
Startup Current, Typical (12V, A)	2	2	2	2
Idle Power, Average (W)	5.5	5.5	5.2	5.2
Average Operating Power (W)	7.7 W	7.7 W	8 W	8 W
Standby Mode, Typical (W)	1	1	1	1
Sleep Mode, Typical (W)	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
Environmental/Temperature				
Operating Temperature (ambient, min °C)	0	0	0	0
Operating Temperature (drive reported, max °C)[4]	65	65	65	65
Non-operating Temperature (ambient, min °C)	-40	-40	-40	-40
Non-operating Temperature (ambient, max °C)	70	70	70	70
Environmental/Acoustics				
Vibration, Non-operating: 10 Hz to 500 Hz (Grms)	2.27	2.27	2.27	2.27
Acoustics, Idle (typical, measured in Idle 1 state) (dBA)	20	20	20	20
Acoustics, Seek (typical) (dBA)	26	26	26	26
Environmental/Shock				
Shock, Operating 2 ms (Read/Write) (Gs)	40/40 Gs	40/40 Gs	40/40 Gs	50/50 Gs
Shock, Non-operating, 1 ms and 2 ms (Gs)	200	200	200	200
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
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
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
Weight (g/lb, typical)	670 g/1.477 lb	670 g/1.477 lb	670 g/1.477 lb	670 g/1.477 lb
Carton Unit Quantity	20	20	20	20
Cartons per Pallet / Cartons per Layer	40/8	40/8	40/8	40/8

3 Rescue Data Recovery Services not available in some countries.
4 Seagate does not recommend operating at sustained drive temperatures above 60C. Operating at higher temperatures may affect drive health.

IRONWOLF PRO™

Specifications	16 TB	16 TB	14 TB	14 TB
Capacity	16 TB	16 TB	14 TB	14 TB
Standard Model Number	ST16000NT001	ST16000NE000	ST14000NT001	ST14000NE0008
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Features				
Drive Bays Supported	Unlimited	Up to 24-bay	Unlimited	Up to 24-bay
Recording Technology	CMR	CMR	CMR	CMR
Drive Design (Air or Helium)	Helium	Helium	Helium	Helium
Workload Rate Limit (WRL)	550	300	550	300
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes
Cache (MB)	256	256	256	256
Reliability/Data Integrity				
Mean Time Between Failures (MTBF, hours)	2,500,000	1,200,000	2,500,000	1,200,000
Non-recoverable Read Errors per Bits Read, Max	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
Sector Size (Bytes per Logical Sector)	512E	512E	512E	512E
Rescue Data Recovery Services (years)[3]	3	3	3	3
Limited Warranty (years)	5	5	5	5
Performance				
Spindle Speed (RPM)	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
Max. Sustained Transfer Rate OD (MB/s)	270MB/s	255MB/s	270MB/s	255MB/s
Rotational Vibration @ 10-1500 Hz (rad/s)	12.5	12.5	12.5	12.5
Power Consumption				
Startup Current, Typical (12V, A)	2	2	2	2
Idle Power, Average (W)	5	5	5	5
Average Operating Power (W)	7.6 W	7.6 W	7.6 W	7.6 W
Standby Mode, Typical (W)	1	1	1	1
Sleep Mode, Typical (W)	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
Environmental/Temperature				
Operating Temperature (ambient, min °C)	0	0	0	0
Operating Temperature (drive reported, max °C)[4]	65	65	65	65
Non-operating Temperature (ambient, min °C)	-40	-40	-40	-40
Non-operating Temperature (ambient, max °C)	70	70	70	70
Environmental/Acoustics				
Vibration, Non-operating: 10 Hz to 500 Hz (Grms)	2.27	2.27	2.27	2.27
Acoustics, Idle (typical, measured in Idle 1 state) (dBA)	20	20	20	20
Acoustics, Seek (typical) (dBA)	26	26	26	26
Environmental/Shock				
Shock, Operating 2 ms (Read/Write) (Gs)	50/50 Gs	50/50 Gs	50/50 Gs	50/50 Gs
Shock, Non-operating, 1 ms and 2 ms (Gs)	200	200	200	200
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
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
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
Weight (g/lb, typical)	670 g/1.477 lb	670 g/1.477 lb	670 g/1.477 lb	670 g/1.477 lb
Carton Unit Quantity	20	20	20	20
Cartons per Pallet / Cartons per Layer	40/8	40/8	40/8	40/8

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IRONWOLF PRO™

Specifications	12 TB	12 TB	10 TB	10 TB	10 TB
Capacity	12 TB	12 TB	10 TB	10 TB	10 TB
Standard Model Number	ST12000NT001	ST12000NE0008	ST10000NT001	ST10000NE0008	ST10000NE000
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Features					
Drive Bays Supported	Unlimited	Up to 24-bay	Unlimited	Up to 24-bay	Up to 24-bay
Recording Technology	CMR	CMR	CMR	CMR	CMR
Drive Design (Air or Helium)	Helium	Helium	Air	Helium	Air
Workload Rate Limit (WRL)	550	300	550	300	300
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes	Yes
Cache (MB)	256	256	256	256	256
Reliability/Data Integrity					
Mean Time Between Failures (MTBF, hours)	2,500,000	1,200,000	2,000,000	1,200,000	1,200,000
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 Data Recovery Services (years)[3]	3	3	3	3	3
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)	270MB/s	240MB/s	263MB/s	240MB/s	240MB/s
Rotational Vibration @ 10-1500 Hz (rad/s)	12.5	12.5	12.5	12.5	12.5
Power Consumption					
Startup Current, Typical (12V, A)	2	2	1.8	2	1.8
Idle Power, Average (W)	5	5	7.8	5	7.8
Average Operating Power (W)	7.8 W	7.8 W	10.1 W	7.8 W	10.1 W
Standby Mode, Typical (W)	1	1	1	1.17	1
Sleep Mode, Typical (W)	1	1	1	1.17	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
Environmental/Temperature					
Operating Temperature (ambient, min °C)	0	0	0	0	0
Operating Temperature (drive reported, max °C)[4]	65	65	65	65	65
Non-operating Temperature (ambient, min °C)	-40	-40	-40	-40	-40
Non-operating Temperature (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) (dBA)	20	20	28	20	28
Acoustics, Seek (typical) (dBA)	26	26	30	26	30
Environmental/Shock					
Shock, Operating 2 ms (Read/Write) (Gs)	50/50 Gs	50/50 Gs	70/40 Gs	70/40 Gs	70/40 Gs
Shock, Non-operating, 1 ms and 2 ms (Gs)	200	200	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	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	720 g/1.59 lb	690 g/1.521 lb	720 g/1.59 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

3 Rescue Data Recovery Services not available in some countries.
4 Seagate does not recommend operating at sustained drive temperatures above 60C. Operating at higher temperatures may affect drive health.

IRONWOLF PRO™

Specifications	8 TB	8 TB	6 TB	6 TB
Capacity	8 TB	8 TB	6 TB	6 TB
Standard Model Number	ST8000NT001	ST8000NE001	ST6000NT001	ST6000NE000
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Features				
Drive Bays Supported	Unlimited	Up to 24-bay	Unlimited	Up to 24-bay
Recording Technology	CMR	CMR	CMR	CMR
Drive Design (Air or Helium)	Air	Air	Air	Air
Workload Rate Limit (WRL)	550	300	550	300
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes
Cache (MB)	256	256	256	256
Reliability/Data Integrity				
Mean Time Between Failures (MTBF, hours)	2,000,000	1,200,000	2,000,000	1,200,000
Non-recoverable Read Errors per Bits Read, Max	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
Sector Size (Bytes per Logical Sector)	512E	512E	512E	512E
Rescue Data Recovery Services (years)[3]	3	3	3	3
Limited Warranty (years)	5	5	5	5
Performance				
Spindle Speed (RPM)	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
Max. Sustained Transfer Rate OD (MB/s)	255MB/s	240MB/s	250MB/s	220MB/s
Rotational Vibration @ 10-1500 Hz (rad/s)	12.5	12.5	12.5	12.5
Power Consumption				
Startup Current, Typical (12V, A)	2	2	2	2
Idle Power, Average (W)	7.8	7.8	7.1	7.1
Average Operating Power (W)	10.1 W	10.1 W	9.3 W	9.3 W
Standby Mode, Typical (W)	1	1	1	1
Sleep Mode, Typical (W)	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
Environmental/Temperature				
Operating Temperature (ambient, min °C)	0	0	0	0
Operating Temperature (drive reported, max °C)[4]	65	65	65	65
Non-operating Temperature (ambient, min °C)	-40	-40	-40	-40
Non-operating Temperature (ambient, max °C)	70	70	70	70
Environmental/Acoustics				
Vibration, Non-operating: 10 Hz to 500 Hz (Grms)	2.27	2.27	2.27	2.27
Acoustics, Idle (typical, measured in Idle 1 state) (dBA)	28	28	28	28
Acoustics, Seek (typical) (dBA)	30	30	30	30
Environmental/Shock				
Shock, Operating 2 ms (Read/Write) (Gs)	70/40 Gs	70/40 Gs	70/40 Gs	70/40 Gs
Shock, Non-operating, 1 ms and 2 ms (Gs)	300	300	300	300
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
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
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
Weight (g/lb, typical)	720 g/1.59 lb	720 g/1.59 lb	716 g/1.58 lb	716 g/1.58 lb
Carton Unit Quantity	20	20	20	20
Cartons per Pallet / Cartons per Layer	40/8	40/8	40/8	40/8

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IRONWOLF PRO™

Specifications	4 TB	4 TB	2 TB	2 TB
Capacity	4 TB	4 TB	2 TB	2 TB
Standard Model Number	ST4000NT001	ST4000NE001	ST2000NT001	ST2000NE001
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Features				
Drive Bays Supported	Unlimited	Up to 24-bay	Unlimited	Up to 24-bay
Recording Technology	CMR	CMR	CMR	CMR
Drive Design (Air or Helium)	Air	Air	Air	Air
Workload Rate Limit (WRL)	550	300	550	300
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes
Cache (MB)	256	256	256	256
Reliability/Data Integrity				
Mean Time Between Failures (MTBF, hours)	2,000,000	1,200,000	2,000,000	1,200,000
Non-recoverable Read Errors per Bits Read, Max	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
Sector Size (Bytes per Logical Sector)	512E	512E	512E	512E
Rescue Data Recovery Services (years)[3]	3	3	3	3
Limited Warranty (years)	5	5	5	5
Performance				
Spindle Speed (RPM)	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
Max. Sustained Transfer Rate OD (MB/s)	250MB/s	220MB/s	226MB/s	220MB/s
Rotational Vibration @ 10-1500 Hz (rad/s)	12.5	12.5	12.5	12.5
Power Consumption				
Startup Current, Typical (12V, A)	2	2	2	2
Idle Power, Average (W)	5.5	5.5	3.8	3.8
Average Operating Power (W)	8.7 W	8.7 W	6.7 W	6.7 W
Standby Mode, Typical (W)	1	1	1	1
Sleep Mode, Typical (W)	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
Environmental/Temperature				
Operating Temperature (ambient, min °C)	0	0	0	0
Operating Temperature (drive reported, max °C)[4]	65	65	65	65
Non-operating Temperature (ambient, min °C)	-40	-40	-40	-40
Non-operating Temperature (ambient, max °C)	70	70	70	70
Environmental/Acoustics				
Vibration, Non-operating: 10 Hz to 500 Hz (Grms)	2.27	2.27	2.27	2.27
Acoustics, Idle (typical, measured in Idle 1 state) (dBA)	28	28	28	28
Acoustics, Seek (typical) (dBA)	30	30	30	30
Environmental/Shock				
Shock, Operating 2 ms (Read/Write) (Gs)	70/40 Gs	70/40 Gs	70/40 Gs	70/40 Gs
Shock, Non-operating, 1 ms and 2 ms (Gs)	300	300	300	300
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
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
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
Weight (g/lb, typical)	650 g/1.431 lb	650 g/1.431 lb	620 g/1.37 lb	620 g/1.37 lb
Carton Unit Quantity	20	20	20	20
Cartons per Pallet / Cartons per Layer	40/8	40/8	40/8	40/8

3 Rescue Data Recovery Services not available in some countries.
4 Seagate does not recommend operating at sustained drive temperatures above 60C. Operating at higher temperatures may affect drive health.