IRONWOLF PRO™

SEAGATE

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

Rescue DATA RECOVERY SERVICES

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 24TB Broad range of capacity options to deliver scalable and cost-efficient storage solutions.

Built Tough IronWolf Pro drives are rated for 550TB/yr 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 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 for vibration tolerance and consistent performance in multi-bay systems.

IronWolf Health Management (IHM)[1] Actively protect your NAS data with Prevention, Intervention, and Recovery recommendations to ensure peak system health.

Peace of mind with Data Recovery[2] 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.

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 not available in all countries. Contact your Seagate sales representative for further details.

IRONWOLF PRO™

Specifications	24TB	22TB	20TB	18TB	16TB
Standard Model Number	ST24000NT002	ST22000NT001	ST20000NT001	ST18000NT001	ST16000NT001
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Features					
Drive Bays Supported	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Recording Technology	CMR	CMR	CMR	CMR	CMR
Drive Design (Air or Helium)	Helium	Helium	Helium	Helium	Helium
Workload Rate Limit (WRL)	550	550	550	550	550
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes	Yes
Cache (MB)	512MB	512MB	256MB	256MB	256MB
Reliability/Data Integrity					
Mean Time Between Failures (MTBF, hours)	2500000hr	2500000hr	2500000hr	2500000hr	2500000hr
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) [3]	3	3	3	3	3
Limited Warranty (years)	5	5	5	5	5
Performance					
Spindle Speed (RPM)	7200RPM	7200RPM	7200RPM	7200RPM	7200RPM
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)	285	285	285	285	270
Rotational Vibration @ 10-1500 Hz (rad/s)	12.5	12.5	12.5	12.5	12.5
Power Consumption					
Startup Current, Typical (12V, A)	2.0A	2.0A	2.0A	2.0A	2.0A
Idle Power, Average (W)	6.3W	6.0W	5.7	5.0	5.0
Average Operating Power (W)	7.8W	7.9W	7.7W	7.5W	7.6W
Standby Mode, Typical (W)	1.1W	1.2W	1.2W	1.0	1.0W
Sleep Mode, Typical (W)	1.1W	1.2W	1.2W	1.0	1.0W
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)	5°C	0°C	0°C	0°C	0°C
Operating Temperature (drive reported, max °C) [4]	65°C	65°C	65°C	65°C	65°C
Nonoperating Temperature (ambient, min °C)	-40°C	-40°C	-40°C	-40°C	-40°C
Nonoperating Temperature (ambient, max °C)	70°C	70°C	70°C	70°C	70°C
Environmental/Acoustics					
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)	20	20	20	20	20
Acoustics, Seek (typical) (dBA)	26	26	26	26	26
Environmental/Shock					
Shock, Operating 2ms (Read/Write) (Gs)	40/40Gs	40/40Gs	40/40Gs	40	50/50Gs
Shock, Nonoperating, 1ms and 2ms (Gs)	200	200	200	200	200
Physical					
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)	685g/1.512lb	690g/1.512lb	690g/1.521lb	680g/1.499lb	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

IRONWOLF PRO™

Specifications	14TB	12TB	10TB	8TB	6TB
Standard Model Number	ST14000NT001	ST12000NT001	ST10000NT001	ST8000NT001	ST6000NT001
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Features					
Drive Bays Supported	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Recording Technology	CMR	CMR	CMR	CMR	CMR
Drive Design (Air or Helium)	Helium	Helium	Air	Air	Air
Workload Rate Limit (WRL)	550	550	550	550	550
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes	Yes
Cache (MB)	256MB	256MB	256MB	256MB	256MB
Reliability/Data Integrity					
Mean Time Between Failures (MTBF, hours)	2500000hr	2500000hr	2000000hr	2000000hr	2000000hr
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) [3]	3	3	3	3	3
Limited Warranty (years)	5	5	5	5	5
Performance					
Spindle Speed (RPM)	7200RPM	7200RPM	7200RPM	7200RPM	7200RPM
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	270MB/s	263MB/s	255MB/s	250MB/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)	2.0A	2.0A	1.8A	2.0A	2.0A
Idle Power, Average (W)	5.0	5.0	7.8W	7.8	7.1
Average Operating Power (W)	7.6W	7.8W	10.1W	10.1W	9.3W
Standby Mode, Typical (W)	1.0W	1.0W	1.0W	1.0W	1.0W
Sleep Mode, Typical (W)	1.0W	1.0W	1.0W	1.0W	1.0W
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°C	0°C	0°C	0°C	0°C
Operating Temperature (drive reported, max °C) [4]	65°C	65°C	65°C	65°C	65°C
Nonoperating Temperature (ambient, min °C)	-40°C	-40°C	-40°C	-40°C	-40°C
Nonoperating Temperature (ambient, max °C)	70°C	70°C	70°C	70°C	70°C
Environmental/Acoustics					
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)	20	20	28	28	28
Acoustics, Seek (typical) (dBA)	26	26	30	30	30
Environmental/Shock					
Shock, Operating 2ms (Read/Write) (Gs)	50/50Gs	50/50Gs	70/40Gs	70/40Gs	70/40Gs
Shock, Nonoperating, 1ms and 2ms (Gs)	200	200	250	300	300
Physical					
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	720g/1.59lb	720g/1.59lb	716g/1.58lb
Carton Unit Quantity	20	20	20	20	20
Cartons per Pallet/Cartons per Layer	40/8	40/8	40/8	40/8	40/8

IRONWOLF PRO™

Specifications	4TB	2TB
Standard Model Number	ST4000NT001	ST2000NT001
Interface	SATA 6Gb/s	SATA 6Gb/s
Features		
Drive Bays Supported	Unlimited	Unlimited
Recording Technology	CMR	CMR
Drive Design (Air or Helium)	Air	Air
Workload Rate Limit (WRL)	550	550
Rotational Vibration (RV) Sensors	Yes	Yes
Cache (MB)	256MB	256MB
Reliability/Data Integrity		
Mean Time Between Failures (MTBF, hours)	2000000hr	2000000hr
Nonrecoverable Read Errors per Bits Read, Max	1 per 10E15	1 per 10E15
Power-On Hours (per year)	8,760	8,760
Sector Size (Bytes per Logical Sector)	512E	512E
Rescue Data Recovery Services(years) [3]	3	3
Limited Warranty (years)	5	5
Performance		
Spindle Speed (RPM)	7200RPM	7200RPM
Interface Access Speed (Gb/s)	6.0, 3.0, 1.5	6.0, 3.0, 1.5
Max. Sustained Transfer Rate OD (MB/s)	250	226MB/s
Rotational Vibration @ 10-1500 Hz (rad/s)	12.5	12.5
Power Consumption		
Startup Current, Typical (12V, A)	2.0	2.0
Idle Power, Average (W)	5.5	5.5
Average Operating Power (W)	8.7W	6.7W
Standby Mode, Typical (W)	1.0W	1.0W
Sleep Mode, Typical (W)	1.0W	1.0W
Power Supply Requirements	+12 V and +5 V	+12 V and +5 V
Environmental/Temperature		
Operating Temperature (ambient, min °C)	0°C	0°C
Operating Temperature (drive reported, max °C) [4]	65°C	65°C
Nonoperating Temperature (ambient, min °C)	-40°C	-40°C
Nonoperating Temperature (ambient, max °C)	70°C	70°C
Environmental/Acoustics		
Vibration, Nonoperating: 10Hz to 500Hz (Grms)	2.27	2.27
Acoustics, Idle (typical, measured in Idle 1 state) (dBA)	28	28
Acoustics, Seek (typical) (dBA)	30	30
Environmental/Shock		
Shock, Operating 2ms (Read/Write) (Gs)	70/40Gs	70/40Gs
Shock, Nonoperating, 1ms and 2ms (Gs)	300	300
Physical		
Height (mm/in)	26.11mm/1.028in	26.11mm/1.028in
Width (mm/in, max)	101.85mm/4.01in	101.85mm/4.01in
Depth (mm/in, max)	146.99mm/5.787in	146.99mm/5.787in
Weight (g/lb, typical)	650g/1.431lb	620g/1.37lb
Carton Unit Quantity	20	20
Cartons per Pallet/Cartons per Layer	40/8	40/8

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