

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

**Optimised 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 utilise conventional magnetic recording (CMR) technology for consistent, best-in-class NAS performance.

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

**Built Tough** IronWolf Pro drives are rated for 550 TB/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)<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  | 24 TB              | 22 TB              | 20 TB              | 18 TB              | 16 TB              |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|
| Standard Model Number                                       | ST24000NT002       | ST22000NT001       | ST20000NT001       | ST18000NT001       | ST16000NT001       |
| Interface   | SATA 6Gb/s         | SATA 6Gb/s         | SATA 6Gb/s         | SATA 6Gb/s         | SATA 6Gb/s         |
| <b>Features</b>   |                    |                    |                    |                    |                    |
| 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)  | 512 MB             | 512 MB             | 256 MB             | 256 MB             | 256 MB             |
| <b>Reliability/Data Integrity</b>                           |                    |                    |                    |                    |                    |
| Mean Time Between Failures (MTBF, hours)                    | 2500000 hr         | 2500000 hr         | 2500000 hr         | 2500000 hr         | 2500000 hr         |
| 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) <sup>3</sup>          | 3                  | 3                  | 3                  | 3                  | 3                  |
| Limited Warranty (years)                                    | 5                  | 5                  | 5                  | 5                  | 5                  |
| <b>Performance</b>  |                    |                    |                    |                    |                    |
| 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               |
| <b>Power Consumption</b>                                    |                    |                    |                    |                    |                    |
| Startup Current, Typical (12V, A)                           | 2.0 A              | 2.0 A              | 2.0 A              | 2.0 A              | 2.0 A              |
| Idle Power, Average (W)                                     | 6.3 W              | 6.0 W              | 5.7                | 5.0                | 5.0                |
| Average Operating Power (W)                                 | 7.8 W              | 7.9 W              | 7.7 W              | 7.5 W              | 7.6 W              |
| Standby Mode, Typical (W)                                   | 1.1 W              | 1.2 W              | 1.2 W              | 1.0                | 1.0 W              |
| Sleep Mode, Typical (W)                                     | 1.1 W              | 1.2 W              | 1.2 W              | 1.0                | 1.0 W              |
| 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)                     | 5°C                | 0°C                | 0°C                | 0°C                | 0°C                |
| Operating Temperature (drive reported, max °C) <sup>4</sup> | 65°C               | 65°C               | 65°C               | 65°C               | 65°C               |
| Non-operating Temperature (ambient, min °C)                 | -40°C              | -40°C              | -40°C              | -40°C              | -40°C              |
| Non-operating Temperature (ambient, max °C)                 | 70°C               | 70°C               | 70°C               | 70°C               | 70°C               |
| <b>Environmental/Acoustics</b>                              |                    |                    |                    |                    |                    |
| 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                 | 20                 | 20                 | 20                 |
| Acoustics, Seek (typical) (dBA)                             | 26                 | 26                 | 26                 | 26                 | 26                 |
| <b>Environmental/Shock</b>                                  |                    |                    |                    |                    |                    |
| Shock, Operating 2 ms (Read/Write) (Gs)                     | 40/40 Gs           | 40/40 Gs           | 40/40 Gs           | 40                 | 50/50 Gs           |
| Shock, Non-operating, 1 ms and 2 ms (Gs)                    | 200                | 200                | 200                | 200                | 200                |
| <b>Physical</b>   |                    |                    |                    |                    |                    |
| 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)                                      | 685 g/1.512 lb     | 690 g/1.512 lb     | 690 g/1.521 lb     | 680 g/1.499 lb     | 670 g/1.477 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               |



| Specifications  | 14 TB              | 12 TB              | 10 TB              | 8 TB               | 6 TB               |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|
| Standard Model Number                                       | ST14000NT001       | ST12000NT001       | ST10000NT001       | ST8000NT001        | ST6000NT001        |
| Interface   | SATA 6Gb/s         | SATA 6Gb/s         | SATA 6Gb/s         | SATA 6Gb/s         | SATA 6Gb/s         |
| <b>Features</b>   |                    |                    |                    |                    |                    |
| 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)  | 256 MB             | 256 MB             | 256 MB             | 256 MB             | 256 MB             |
| <b>Reliability/Data Integrity</b>                           |                    |                    |                    |                    |                    |
| Mean Time Between Failures (MTBF, hours)                    | 2500000 hr         | 2500000 hr         | 2000000 hr         | 2000000 hr         | 2000000 hr         |
| 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) <sup>3</sup>          | 3                  | 3                  | 3                  | 3                  | 3                  |
| Limited Warranty (years)                                    | 5                  | 5                  | 5                  | 5                  | 5                  |
| <b>Performance</b>  |                    |                    |                    |                    |                    |
| 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)                      | 270 MB/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               |
| <b>Power Consumption</b>                                    |                    |                    |                    |                    |                    |
| Startup Current, Typical (12V, A)                           | 2.0 A              | 2.0 A              | 1.8 A              | 2.0 A              | 2.0 A              |
| Idle Power, Average (W)                                     | 5.0                | 5.0                | 7.8 W              | 7.8                | 7.1                |
| Average Operating Power (W)                                 | 7.6 W              | 7.8 W              | 10.1 W             | 10.1 W             | 9.3 W              |
| Standby Mode, Typical (W)                                   | 1.0 W              | 1.0 W              | 1.0 W              | 1.0 W              | 1.0 W              |
| Sleep Mode, Typical (W)                                     | 1.0 W              | 1.0 W              | 1.0 W              | 1.0 W              | 1.0 W              |
| 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°C                | 0°C                | 0°C                | 0°C                | 0°C                |
| Operating Temperature (drive reported, max °C) <sup>4</sup> | 65°C               | 65°C               | 65°C               | 65°C               | 65°C               |
| Non-operating Temperature (ambient, min °C)                 | -40°C              | -40°C              | -40°C              | -40°C              | -40°C              |
| Non-operating Temperature (ambient, max °C)                 | 70°C               | 70°C               | 70°C               | 70°C               | 70°C               |
| <b>Environmental/Acoustics</b>                              |                    |                    |                    |                    |                    |
| 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                 | 28                 | 28                 |
| Acoustics, Seek (typical) (dBA)                             | 26                 | 26                 | 30                 | 30                 | 30                 |
| <b>Environmental/Shock</b>                                  |                    |                    |                    |                    |                    |
| 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                | 300                | 300                |
| <b>Physical</b>   |                    |                    |                    |                    |                    |
| 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      | 720 g/1.59 lb      | 716 g/1.58 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               |



| Specifications  | 4 TB               | 2 TB               |
|---|--------------------|--------------------|
| Standard Model Number                                       | ST4000NT001        | ST2000NT001        |
| Interface   | SATA 6Gb/s         | SATA 6Gb/s         |
| <b>Features</b>   |                    |                    |
| 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)  | 256 MB             | 256 MB             |
| <b>Reliability/Data Integrity</b>                           |                    |                    |
| Mean Time Between Failures (MTBF, hours)                    | 2000000 hr         | 2000000 hr         |
| Non-recoverable 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) <sup>3</sup>          | 3                  | 3                  |
| Limited Warranty (years)                                    | 5                  | 5                  |
| <b>Performance</b>  |                    |                    |
| 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               |
| <b>Power Consumption</b>                                    |                    |                    |
| Startup Current, Typical (12V, A)                           | 2.0                | 2.0                |
| Idle Power, Average (W)                                     | 5.5                | 5.5                |
| Average Operating Power (W)                                 | 8.7 W              | 6.7 W              |
| Standby Mode, Typical (W)                                   | 1.0 W              | 1.0 W              |
| Sleep Mode, Typical (W)                                     | 1.0 W              | 1.0 W              |
| Power Supply Requirements                                   | +12 V and +5 V     | +12 V and +5 V     |
| <b>Environmental/Temperature</b>                            |                    |                    |
| Operating Temperature (ambient, min °C)                     | 0°C                | 0°C                |
| Operating Temperature (drive reported, max °C) <sup>4</sup> | 65°C               | 65°C               |
| Non-operating Temperature (ambient, min °C)                 | -40°C              | -40°C              |
| Non-operating Temperature (ambient, max °C)                 | 70°C               | 70°C               |
| <b>Environmental/Acoustics</b>                              |                    |                    |
| Vibration, Non-operating: 10 Hz to 500 Hz (Grms)            | 2.27               | 2.27               |
| Acoustics, Idle (typical, measured in Idle 1 state) (dBA)   | 28                 | 28                 |
| Acoustics, Seek (typical) (dBA)                             | 30                 | 30                 |
| <b>Environmental/Shock</b>                                  |                    |                    |
| Shock, Operating 2 ms (Read/Write) (Gs)                     | 70/40 Gs           | 70/40 Gs           |
| Shock, Non-operating, 1 ms and 2 ms (Gs)                    | 300                | 300                |
| <b>Physical</b>   |                    |                    |
| Height (mm/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  |
| Depth (mm/in, max)  | 146.99 mm/5.787 in | 146.99 mm/5.787 in |
| Weight (g/lb, typical)                                      | 650 g/1.431 lb     | 620 g/1.37 lb      |
| Carton Unit Quantity  | 20                 | 20                 |
| Cartons per Pallet / Cartons per Layer                      | 40/8               | 40/8               |

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