# NYTRO
## ENTERPRISE

**SEAGATE**

## Lightspeed. Solid. Impressive.
# Nytro 3000 SAS SSD

The Seagate® Nytro® 3000 SAS SSD family includes the next generation of high-capacity, high-performance SAS SSDs designed with endurance offerings optimized for demanding enterprise applications and improved TCO.

### Key Features and Benefits

- Dual-port and wide-port 12Gb/s SAS interface
- Industry-leading storage density range up to 15TB
- Ultra-fast performance of up to 2100MB/s

### Best-Fit Applications

- Server virtualization
- OLTP databases
- Software-defined storage
- All flash arrays
- Caching and tiering

**SEAGATE SECURE**™

### Enhanced Reliability, Data Protection, and Security

Seagate has decades of enterprise SAS expertise in mission-critical applications. The Nytro 3000 SSD family helps deliver exceptional data protection and reliability with full internal and external data path protection (T10 DIF), advanced ECC algorithms, media lifecycle management, and other techniques for extending flash memory life. Advanced power-loss data protection helps maintain data integrity in the event of unexpected power interruptions. Advanced security levels to prevent unauthorized access to an SSD and safeguard stored data include Seagate Downloads & Diagnostics, TCG-compliant Self-Encrypting Drive and government-grade FIPS/Common Criteria tamper-resistant drive.[1]

### Industry-Leading Performance up to 2100MB/s

The Nytro 3000 SSD family delivers ultra-fast, consistent, and easily scalable performance that saturates dual 12Gb/s SAS bandwidth, providing an effective 24Gb/s interface with dual-port dynamic configurations. By removing the storage bottleneck, overall system and application responsiveness is significantly improved.

### High-Capacity Solution With Multiple Endurance Offerings

Enterprise applications have different storage workload requirements. Databases or virtualization with a typically mixed read/write workload require the highest random read/write IOPS, ultra-low latency, and high endurance. Content streaming applications demand high sequential read throughput and high storage density at the lowest cost per gigabyte. The Nytro 3000 SSD family offers an industry-leading range of capacities up to 15TB in a 2.5-inch form factor to increase enterprise storage density in data centers. It also enables lower TCO by offering endurance categories to match cost and performance requirements of all enterprise workloads.

1 Self-Encrypting Drives (SED) are not available in all models or countries. May require TCG-compliant host or controller support.

| Specifications | Nytro 3530—Light Endurance | | | |
|---|---|---|---|---|
| Capacity | 3.2TB | 1.6TB | 800GB | 400GB |
| Standard Model Number | XS3200LE10003 | XS1600LE10003 | XS800LE10003 | XS400LE10003 |
| Seagate Secure™ SED Model[1] | XS3200LE10013 | XS1600LE10013 | XS800LE10013 | XS400LE10013 |
| Seagate Secure FIPS 140-2/Common Criteria Model[1] | — | XS1600LE10023 | — | — |
| **Features** | | | | |
| Interface | Dual 12Gb/s SAS | Dual 12Gb/s SAS | Dual 12Gb/s SAS | Dual 12Gb/s SAS |
| NAND Flash Type | 3D eMLC | 3D eMLC | 3D eMLC | 3D eMLC |
| Form Factor | 2.5 in × 7mm | 2.5 in × 7mm | 2.5 in × 7mm | 2.5 in × 7mm |
| **Performance at Max Power Limit** | | | | |
| Sequential Read (MB/s) Sustained, 128KB[2,3] | 2100 | 2100 | 2100 | 2100 |
| Sequential Write (MB/s) Sustained, 128KB[2,3] | 1400 | 1400 | 1200 | 810 |
| Random Read (IOPS) Sustained, 4KB[2,3] | 250,000 | 250,000 | 250,000 | 160,000 |
| Random Write (IOPS) Sustained, 4KB[2,3] | 60,000 | 80,000 | 80,000 | 45,000 |
| Random 30% Write (IOPS) Sustained, 4KB[2,3] | 160,000 | 160,000 | 160,000 | 120,000 |
| **Endurance/Reliability** | | | | |
| Lifetime Endurance (Drive Writes per Day) | 3.0 | 3.0 | 3.0 | 3.0 |
| Nonrecoverable Read Errors per Bits Read | 1 per 10E18 | 1 per 10E18 | 1 per 10E18 | 1 per 10E18 |
| Annualized Failure Rate (AFR) | 0.35% | 0.35% | 0.35% | 0.35% |
| Limited Warranty (years) | 5 | 5 | 5 | 5 |
| **Power Management** | | | | |
| +5/+12V Max Start Current (A) | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 |
| Configurable Power Limit Settings (W) | 9 and Max | 9 and Max | 9 and Max | 9 and Max |
| Average Idle Power (W) | 4.4 | 4.4 | 4.4 | 4.4 |
| **Physical** | | | | |
| Height (mm/in, max)[4] | 7.00mm/0.276in | 7.0mm/0.276in | 7.0mm/0.276in | 7.0mm/0.276in |
| Width (mm/in, max)[4] | 70.10mm/2.760in | 70.10mm/2.760in | 70.10mm/2.760in | 70.10mm/2.760in |
| Depth (mm/in, max)[4] | 100.45mm/3.955in | 100.45mm/3.955in | 100.45mm/3.955in | 100.45mm/3.955in |
| Weight (g/lb) | 85g/0.187lb | 85g/0.187lb | 85g/0.187lb | 80g/0.176lb |
| Carton Unit Quantity | 10 | 10 | 10 | 10 |
| Cartons per Pallet/Cartons per Layer | 90/9 | 90/9 | 90/9 | 90/9 |

1 Not all drives may be available in all countries. Seagate Secure drives meet ISO/IEC 27040 and NIST 800-88 standards and may require use of TCG-compliant host or controller support.

2 Dual-port performance. All performance measured at queue depth of 32 per PHY at beginning of life. System application performance may vary based on SAS host and prior system workload.

3 The single-port performance will be the same as the dual-port performance up to the limits of the single port interface as follows: 1100MB/s of 64KB sequential reads and writes; 225,000 IOPS of 4KB random reads and writes.

4 These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at www.sffcommittee.org. For connector-related dimensions, see SFF-8223 (SAS models).

| Specifications | Nytro 3330—Scaled Endurance | | | | |
|---|---|---|---|---|---|
| Capacity | 15.36TB | 7.68TB | 3.84TB | 1.92TB | 960GB |
| Standard Model Number | XS15360SE70103 | XS7680SE70103 | XS3840SE10103 | XS1920SE10103 | XS960SE10003 |
| Seagate Secure™ SED Model[1] | XS15360SE70113 | XS7680SE70113 | XS3840SE10113 | XS1920SE10113 | XS960SE10013 |
| Seagate Secure FIPS 140-2/Common Criteria Model[1] | — | — | — | XS1920SE10123 | — |
| **Features** | | | | | |
| Interface | Dual 12Gb/s SAS | Dual 12Gb/s SAS | Dual 12Gb/s SAS | Dual 12Gb/s SAS | Dual 12Gb/s SAS |
| NAND Flash Type | 3D eTLC | 3D eTLC | 3D eTLC | 3D eTLC | 3D eTLC |
| Form Factor | 2.5 in × 15mm | 2.5 in × 15mm | 2.5 in × 7mm | 2.5 in × 7mm | 2.5 in × 7mm |
| **Performance at Max Power Limit** | | | | | |
| Sequential Read (MB/s) Sustained, 128KB[2,3] | 1300 | 1800 | 2100 | 2100 | 2100 |
| Sequential Write (MB/s) Sustained, 128KB[2,3] | 1000 | 1200 | 1200 | 1200 | 900 |
| Random Read (IOPS) Sustained, 4KB[2,3] | 115,000 | 250,000 | 250,000 | 250,000 | 160,000 |
| Random Write (IOPS) Sustained, 4KB[2,3] | 17,000 | 50,000 | 50,000 | 40,000 | 26,000 |
| Random 30% Write (IOPS) Sustained, 4KB[2,3] | 40,000 | 150,000 | 130,000 | 110,000 | 80,000 |
| **Endurance/Reliability** | | | | | |
| Lifetime Endurance (Drive Writes per Day) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Nonrecoverable Read Errors per Bits Read | 1 per 10E18 | 1 per 10E18 | 1 per 10E18 | 1 per 10E18 | 1 per 10E18 |
| Annualized Failure Rate (AFR) | 0.35% | 0.35% | 0.35% | 0.35% | 0.35% |
| Limited Warranty (years) | 5 | 5 | 5 | 5 | 5 |
| **Power Management** | | | | | |
| +5/+12V Max Start Current (A) | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 |
| Configurable Power Limit Settings (W) | 7 to 14 | 7 to 14 | 7 to 14 | 7 to 14 | 7 to 14 |
| Average Idle Power (W) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| **Physical** | | | | | |
| Height (mm/in, max)[4] | 15.00mm/0.591in | 15.00mm/0.591in | 7.00mm/0.276in | 7.00mm/0.276in | 7.00mm/0.276in |
| Width (mm/in, max)[4] | 70.10mm/2.760in | 70.10mm/2.760in | 70.10mm/2.760in | 70.10mm/2.760in | 70.10mm/2.760in |
| Depth (mm/in, max)[4] | 100.45mm/3.955in | 100.45mm/3.955in | 100.45mm/3.955in | 100.45mm/3.955in | 100.45mm/3.955in |
| Weight (g/lb) | 165g/0.364lb | 165g/0.364lb | 85g/0.187lb | 80g/0.176lb | 80g/0.176lb |
| Carton Unit Quantity | 10 | 10 | 10 | 10 | 10 |
| Cartons per Pallet/Cartons per Layer | 90/9 | 90/9 | 90/9 | 90/9 | 90/9 |

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