DATA SHEET

Lightspeed. Solid. Impressive.

# Nytro 3031 SAS SSD Series

The Seagate® Nytro® 3031 SAS SSD Series delivers high performance, industry-leading security features, and a broad selection of capacity and endurance offerings optimised for demanding enterprise applications and improved TCO.


### Key Features and Benefits

- Industry-leading hardware-based data encryption
- Dual-port 12 Gb/s SAS interface
- Broad selection of endurance and capacity options including 15 TB
- Ultra-fast performance of up to 2,200 MB/s

### Best-Fit Applications

- Server virtualisation
- 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 3031 SSD Series 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 unauthorised 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]

## Consistent Performance up to 2,200 MB/s

The Nytro 3031 SSD Series delivers ultra-fast, consistent, and easily scalable performance that saturates dual 12 Gb/s SAS bandwidth, providing an effective 24 Gb/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 virtualisation 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 3031 SSD Series offers a range of capacities up to 15 TB in a 2.5-inch form factor to increase enterprise storage density in data centres. 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.

NYTRO ENTERPRISE


| Specifications | Nytro 3131 — Read Intensive | | |
|---|---|---|---|
| Capacity | 15.36TB | 7.68TB | 3.84TB |
| Standard Model Number | XS15360TE70004 | XS7680TE70004 | XS3840TE70004 |
| Seagate Secure™ SED Model[1] | XS15360TE70014 | XS7680TE70014 | XS3840TE70014 |
| Seagate Secure FIPS 140-2/Common Criteria Model[1] | XS15360TE70024 | — | — |
| **Features** | | | |
| Interface | Dual 12 Gb/s SAS | Dual 12 Gb/s SAS | Dual 12 Gb/s SAS |
| NAND Flash Type | 3D eTLC | 3D eTLC | 3D eTLC |
| Form Factor | 2.5 in × 15 mm | 2.5 in × 15 mm | 2.5 in × 15 mm |
| **Performance — Single Port 12 Gb\s** | | | |
| Sequential Read (MB/s) Sustained, 128 KB[2] | 1050 | 1100 | 1100 |
| Sequential Write (MB/s) Sustained, 128 KB[2] | 1,000 | 1,000 | 1,000 |
| Random Read (IOPS) Sustained, 4 KB[2] | 135,000 | 170,000 | 180,000 |
| Random Write (IOPS) Sustained, 4 KB[2] | 13,000 | 45,000 | 50,000 |
| Random 30% Write (IOPS) Sustained, 4 KB[2] | 50,000 | 120,000 | 130,000 |
| **Performance — Dual Port 12 Gb\s** | | | |
| Sequential Read (MB/s) Sustained, 128 KB[2] | 2,100 | 2,000 | 2,100 |
| Sequential Write (MB/s) Sustained, 128 KB[2] | 1,000 | 1,550 | 1,550 |
| Random Read (IOPS) Sustained, 4KB[2] | 145,000 | 230,000 | 220,000 |
| Random Write (IOPS) Sustained, 4KB[2] | 13,000 | 45,000 | 50,000 |
| Random 30% Write (IOPS) Sustained, 4KB[2] | 50,000 | 120,000 | 130,000 |
| **Endurance/Reliability** | | | |
| Lifetime Endurance (Drive Writes per Day) | 0.7 | 0.8 | 0.8 |
| Total Bytes Written (TB) | 20,000 | 13,600 | 6800 |
| Non-recoverable Read Errors per Bits Read | 1 per 10E17 | 1 per 10E17 | 1 per 10E17 |
| Annualised Failure Rate (AFR) | 0.35% | 0.35% | 0.35% |
| Limited Warranty (years) | 5 | 5 | 5 |
| **Power Management** | | | |
| +5/+12 V Max Start Current (A) | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 |
| Average Idling Power (W) | 4.4 | 4.4 | 4.4 |
| **Physical** | | | |
| Height (mm/in, max)[4] | 15 mm/0.591 in | 15 mm/0.591 in | 15 mm/0.591 in |
| Width (mm/in, max)[4] | 70.1 mm/2.76 in | 70.1 mm/2.76 in | 70.1 mm/2.76 in |
| Depth (mm/in, max)[4] | 100.45 mm/3.955 in | 100.45 mm/3.955 in | 100.45 mm/3.955 in |
| Weight (lb/g) | 165 g/0.364 lb | 165 g/0.364 lb | 165 g/0.364 lb |
| Carton Unit Quantity | 10 | 10 | 10 |
| Cartons per Pallet / Cartons per Layer | 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 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 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).

NYTRO ENTERPRISE


| Specifications | Nytro 3331 — Scaled Endurance | | | |
|---|---|---|---|---|
| Capacity | 7.68TB | 3.84TB | 1.92TB | 960GB |
| Standard Model Number | XS7680SE70004 | XS3840SE70004 | XS1920SE70004 | XS960SE70004 |
| Seagate Secure™ SED Model[1] | XS7680SE70014 | XS3840SE70014 | XS1920SE70014 | XS960SE70014 |
| Seagate Secure FIPS 140-2/Common Criteria Model[1] | XS7680SE70024 | XS3840SE70024 | XS1920SE70024 | XS960SE70024 |
| **Features** | | | | |
| Interface | Dual 12 Gb/s SAS | Dual 12 Gb/s SAS | Dual 12 Gb/s SAS | Dual 12 Gb/s SAS |
| NAND Flash Type | 3D eTLC | 3D eTLC | 3D eTLC | 3D eTLC |
| Form Factor | 2.5 in × 15 mm | 2.5 in × 15 mm | 2.5 in × 15 mm | 2.5 in × 15 mm |
| **Performance — Single Port 12 Gb\s** | | | | |
| Sequential Read (MB/s) Sustained, 128 KB[2] | 1100 | 1100 | 1100 | 1100 |
| Sequential Write (MB/s) Sustained, 128 KB[2] | 1,000 | 1,000 | 1,000 | 950 |
| Random Read (IOPS) Sustained, 4 KB[2] | 170,000 | 180,000 | 180,000 | 165,000 |
| Random Write (IOPS) Sustained, 4 KB[2] | 70,000 | 80,000 | 80,000 | 65,000 |
| Random 30% Write (IOPS) Sustained, 4 KB[2] | 150,000 | 150,000 | 135,000 | 100,000 |
| **Performance — Dual Port 12 Gb\s** | | | | |
| Sequential Read (MB/s) Sustained, 128 KB[2] | 2,000 | 2,200 | 2,200 | 2,150 |
| Sequential Write (MB/s) Sustained, 128 KB[2] | 1,550 | 1,550 | 1,550 | 1,000 |
| Random Read (IOPS) Sustained, 4KB[2] | 230,000 | 230,000 | 230,000 | 210,000 |
| Random Write (IOPS) Sustained, 4KB[2] | 70,000 | 80,000 | 80,000 | 65,000 |
| Random 30% Write (IOPS) Sustained, 4KB[2] | 160,000 | 160,000 | 160,000 | 120,000 |
| **Endurance/Reliability** | | | | |
| Lifetime Endurance (Drive Writes per Day) | 1 | 1 | 1 | 1 |
| Total Bytes Written (TB) | 13,600 | 6800 | 3400 | 1700 |
| Non-recoverable Read Errors per Bits Read | 1 per 10E17 | 1 per 10E17 | 1 per 10E17 | 1 per 10E17 |
| Annualised Failure Rate (AFR) | 0.35% | 0.35% | 0.35% | 0.35% |
| Limited Warranty (years) | 5 | 5 | 5 | 5 |
| **Power Management** | | | | |
| +5/+12 V Max Start Current (A) | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 |
| Average Idling Power (W) | 4.4 | 4.4 | 4.4 | 4.4 |
| **Physical** | | | | |
| Height (mm/in, max)[4] | 15 mm/0.591 in | 15 mm/0.591 in | 15 mm/0.591 in | 15 mm/0.591 in |
| Width (mm/in, max)[4] | 70.1 mm/2.76 in | 70.1 mm/2.76 in | 70.1 mm/2.76 in | 70.1 mm/2.76 in |
| Depth (mm/in, max)[4] | 100.45 mm/3.955 in | 100.45 mm/3.955 in | 100.45 mm/3.955 in | 100.45 mm/3.955 in |
| Weight (lb/g) | 165 g/0.364 lb | 165 g/0.364 lb | 165 g/0.364 lb | 165 g/0.364 lb |
| 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 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 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).

NYTRO ENTERPRISE


| Specifications | Nytro 3531 — Mixed Workloads | | | |
|---|---|---|---|---|
| Capacity | 6.4TB | 3.2TB | 1.6TB | 800GB |
| Standard Model Number | XS6400LE70004 | XS3200LE70004 | XS1600LE70004 | XS800LE70004 |
| Seagate Secure™ SED Model[1] | XS6400LE70014 | XS3200LE70014 | XS1600LE70014 | XS800LE70014 |
| Seagate Secure FIPS 140-2/Common Criteria Model[1] | — | XS3200LE70024 | XS1600LE70024 | XS800LE70024 |
| **Features** | | | | |
| Interface | Dual 12 Gb/s SAS | Dual 12 Gb/s SAS | Dual 12 Gb/s SAS | Dual 12 Gb/s SAS |
| NAND Flash Type | 3D eTLC | 3D eTLC | 3D eTLC | 3D eTLC |
| Form Factor | 2.5 in × 15 mm | 2.5 in × 15 mm | 2.5 in × 15 mm | 2.5 in × 15 mm |
| **Performance — Single Port 12 Gb\s** | | | | |
| Sequential Read (MB/s) Sustained, 128 KB[2] | 1100 | 1100 | 1100 | 1100 |
| Sequential Write (MB/s) Sustained, 128 KB[2] | 1,000 | 1,000 | 1,000 | 950 |
| Random Read (IOPS) Sustained, 4 KB[2] | 170,000 | 180,000 | 180,000 | 165,000 |
| Random Write (IOPS) Sustained, 4 KB[2] | 110,000 | 120,000 | 120,000 | 100,000 |
| Random 30% Write (IOPS) Sustained, 4 KB[2] | 150,000 | 160,000 | 150,000 | 120,000 |
| **Performance — Dual Port 12 Gb\s** | | | | |
| Sequential Read (MB/s) Sustained, 128 KB[2] | 2,000 | 2,200 | 2,200 | 2,150 |
| Sequential Write (MB/s) Sustained, 128 KB[2] | 1,550 | 1,550 | 1,550 | 1,000 |
| Random Read (IOPS) Sustained, 4KB[2] | 230,000 | 230,000 | 230,000 | 210,000 |
| Random Write (IOPS) Sustained, 4KB[2] | 115,000 | 120,000 | 120,000 | 100,000 |
| Random 30% Write (IOPS) Sustained, 4KB[2] | 210,000 | 210,000 | 210,000 | 150,000 |
| **Endurance/Reliability** | | | | |
| Lifetime Endurance (Drive Writes per Day) | 3 | 3 | 3 | 3 |
| Total Bytes Written (TB) | 35,000 | 17,500 | 8700 | 4300 |
| Non-recoverable Read Errors per Bits Read | 1 per 10E17 | 1 per 10E17 | 1 per 10E17 | 1 per 10E17 |
| Annualised Failure Rate (AFR) | 0.35% | 0.35% | 0.35% | 0.35% |
| Limited Warranty (years) | 5 | 5 | 5 | 5 |
| **Power Management** | | | | |
| +5/+12 V Max Start Current (A) | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 |
| Average Idling Power (W) | 4.4 | 4.4 | 4.4 | 4.4 |
| **Physical** | | | | |
| Height (mm/in, max)[4] | 15 mm/0.591 in | 15 mm/0.591 in | 15 mm/0.591 in | 15 mm/0.591 in |
| Width (mm/in, max)[4] | 70.1 mm/2.76 in | 70.1 mm/2.76 in | 70.1 mm/2.76 in | 70.1 mm/2.76 in |
| Depth (mm/in, max)[4] | 100.45 mm/3.955 in | 100.45 mm/3.955 in | 100.45 mm/3.955 in | 100.45 mm/3.955 in |
| Weight (lb/g) | 165 g/0.364 lb | 165 g/0.364 lb | 165 g/0.364 lb | 165 g/0.364 lb |
| 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 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 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).

NYTRO ENTERPRISE


| Specifications | Nytro 3731 — Write Intensive | | | |
|---|---|---|---|---|
| Capacity | 3.2TB | 1.6TB | 800GB | 400GB |
| Standard Model Number | XS3200ME70004 | XS1600ME70004 | XS800ME70004 | XS400ME70004 |
| Seagate Secure™ SED Model[1] | XS3200ME70014 | XS1600ME70014 | XS800ME70014 | XS400ME70014 |
| Seagate Secure FIPS 140-2/Common Criteria Model[1] | XS3200ME70024 | XS1600ME70024 | — | — |
| **Features** | | | | |
| Interface | Dual 12 Gb/s SAS | Dual 12 Gb/s SAS | Dual 12 Gb/s SAS | Dual 12 Gb/s SAS |
| NAND Flash Type | 3D eTLC | 3D eTLC | 3D eTLC | 3D eTLC |
| Form Factor | 2.5 in × 15 mm | 2.5 in × 15 mm | 2.5 in × 15 mm | 2.5 in × 15 mm |
| **Performance — Single Port 12 Gb\s** | | | | |
| Sequential Read (MB/s) Sustained, 128 KB[2] | 1100 | 1100 | 1100 | 1100 |
| Sequential Write (MB/s) Sustained, 128 KB[2] | 1,000 | 1,000 | 1,000 | 950 |
| Random Read (IOPS) Sustained, 4 KB[2] | 170,000 | 180,000 | 180,000 | 165,000 |
| Random Write (IOPS) Sustained, 4 KB[2] | 180,000 | 180,000 | 180,000 | 140,000 |
| Random 30% Write (IOPS) Sustained, 4 KB[2] | 170,000 | 180,000 | 170,000 | 140,000 |
| **Performance — Dual Port 12 Gb\s** | | | | |
| Sequential Read (MB/s) Sustained, 128 KB[2] | 2,000 | 2,200 | 2,200 | 2,150 |
| Sequential Write (MB/s) Sustained, 128 KB[2] | 1,550 | 1,550 | 1,550 | 1,000 |
| Random Read (IOPS) Sustained, 4KB[2] | 230,000 | 230,000 | 230,000 | 210,000 |
| Random Write (IOPS) Sustained, 4KB[2] | 180,000 | 180,000 | 180,000 | 140,000 |
| Random 30% Write (IOPS) Sustained, 4KB[2] | 240,000 | 240,000 | 240,000 | 180,000 |
| **Endurance/Reliability** | | | | |
| Lifetime Endurance (Drive Writes per Day) | 10 | 10 | 10 | 10 |
| Total Bytes Written (TB) | 35,000 | 17,500 | 8700 | 4300 |
| Non-recoverable Read Errors per Bits Read | 1 per 10E17 | 1 per 10E17 | 1 per 10E17 | 1 per 10E17 |
| Annualised Failure Rate (AFR) | 0.35% | 0.35% | 0.35% | 0.35% |
| Limited Warranty (years) | 5 | 5 | 5 | 5 |
| **Power Management** | | | | |
| +5/+12 V Max Start Current (A) | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 | 0.80/0.21 |
| Average Idling Power (W) | 4.4 | 4.4 | 4.4 | 4.4 |
| **Physical** | | | | |
| Height (mm/in, max)[4] | 15 mm/0.591 in | 15 mm/0.591 in | 15 mm/0.591 in | 15 mm/0.591 in |
| Width (mm/in, max)[4] | 70.1 mm/2.76 in | 70.1 mm/2.76 in | 70.1 mm/2.76 in | 70.1 mm/2.76 in |
| Depth (mm/in, max)[4] | 100.45 mm/3.955 in | 100.45 mm/3.955 in | 100.45 mm/3.955 in | 100.45 mm/3.955 in |
| Weight (lb/g) | 165 g/0.364 lb | 165 g/0.364 lb | 165 g/0.364 lb | 165 g/0.364 lb |
| 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 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 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).

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