

Data Sheet

Barracuda®

The Power of One

Key Advantages

- Double your capacity and drive down costs with the industry's first 1TB-per-disk hard drive technology.
- Up to 3TB capacity with 7200-RPM performance. Why compromise?
- SATA 6Gb/s interface optimizes burst performance
- Seagate AcuTrac™ servo technology delivers dependable performance, even with hard drive track widths of only 75 nanometers.
- Seagate OptiCache™ technology boosts overall performance by as much as 45% over the previous generation.
- Seagate SmartAlign™ technology provides a simple, transparent migration to Advanced Format 4K sectors.
- Free Seagate DiscWizard™ software allows you to install a 3TB hard drive in Windows, including XP, without UEFI BIOS.

Best-Fit Applications

- Desktop or all-in-one PCs
- Home servers
- PC-based gaming systems
- Desktop RAID
- Direct-attached external storage devices (DAS)
- Network-attached storage devices (NAS)



| Specifications | 3TB ¹ | 2TB ¹ | 1.5TB ¹ | 1TB ¹ | 750GB ¹ | 500GB ¹ | 320GB ¹ | 250GB ¹ |
|---|------------------|------------------|--------------------|------------------|--------------------|--------------------------|--------------------------|--------------------------|
| Model Number | ST3000DM001 | ST2000DM001 | ST1500DM003 | ST1000DM003 | ST750DM003 | ST500DM002 ² | ST320DM000 ² | ST250DM000 ² |
| Interface Options | SATA 6Gb/s NCQ | SATA 6Gb/s NCQ | SATA 6Gb/s NCQ | SATA 6Gb/s NCQ | SATA 6Gb/s NCQ | SATA 6Gb/s NCQ | SATA 6Gb/s NCQ | SATA 6Gb/s NCQ |
| Performance | | | | | | | | |
| Spindle Speed (RPM) | 7200 | 7200 | 7200 | 7200 | 7200 | 7200 | 7200 | 7200 |
| Cache, Multisegmented (MB) | 64 | 64 | 64 | 64 | 64 | 16 | 16 | 16 |
| SATA Transfer Rates Supported (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 | 6.0/3.0/1.5 | 6.0/3.0/1.5 | 6.0/3.0/1.5 |
| Seek Average, Read (ms) | <8.5 | <8.5 | <8.5 | <8.5 | <8.5 | <11 | <11 | <11 |
| Seek Average, Write (ms) | <9.5 | <9.5 | <9.5 | <9.5 | <9.5 | <12 | <12 | <12 |
| Average Data Rate, Read/Write (MB/s) | 156 | 156 | 156 | 156 | 156 | 125 | 125 | 125 |
| Max Sustained Data Rate, OD Read (MB/s) | 210 | 210 | 210 | 210 | 210 | 144 | 144 | 144 |
| Configuration/Organization | | | | | | | | |
| Heads/Disks | 6/3 | 6/3 | 4/2 | 2/1 | 2/1 | 2/1 | 2/1 | 1/1 |
| Bytes per Sector | 4096 | 4096 | 4096 | 4096 | 4096 | 4096 or 512 ² | 4096 or 512 ² | 4096 or 512 ² |
| Voltage | | | | | | | | |
| Voltage Tolerance, Including Noise (5V) | +10%/–5.0% | +10%/–5.0% | +10%/–5.0% | +10%/–5.0% | +10%/–5.0% | +10%/–5.0% | +10%/–5.0% | +10%/–5.0% |
| Voltage Tolerance, Including Noise (12V) | +10%/–7.5% | +10%/–7.5% | +10%/–7.5% | +10%/–7.5% | +10%/–7.5% | +10%/–7.5% | +10%/–7.5% | +10%/–7.5% |
| Reliability/Data Integrity | | | | | | | | |
| Contact Start/Stop Cycles | — | — | — | — | — | 50,000 | 50,000 | 50,000 |
| Load/Unload Cycles | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | — | — | — |
| Nonrecoverable Read Errors per Bits Read, Max | 1 per 10E14 | 1 per 10E14 | 1 per 10E14 | 1 per 10E14 | 1 per 10E14 | 1 per 10E14 | 1 per 10E14 | 1 per 10E14 |
| Annualized Failure Rate (AFR) | <1% | <1% | <1% | <1% | <1% | <1% | <1% | <1% |
| Power-On Hours | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 |
| Power Management | | | | | | | | |
| Startup Power (A) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Operating Mode, Typical (W) | 8.0 | 8.0 | 6.70 | 5.90 | 5.90 | 6.19 | 6.19 | 6.19 |
| Idle2 Average (W) | 5.40 | 5.40 | 4.50 | 3.36 | 3.36 | — | — | — |
| Idle Average (W) | — | — | — | — | — | 4.60 | 4.60 | 4.60 |
| Standby Mode (W) | 0.75 | 0.75 | 0.75 | 0.63 | 0.63 | 0.79 | 0.79 | 0.79 |
| Sleep Mode (W) | 0.75 | 0.75 | 0.75 | 0.63 | 0.63 | 0.79 | 0.79 | 0.79 |
| Environmental | | | | | | | | |
| Temperature | | | | | | | | |
| Operating (ambient min °C) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Operating (drive case max °C) | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| Nonoperating (ambient °C) | –40 to 70 | –40 to 70 | –40 to 70 | –40 to 70 | –40 to 70 | –40 to 70 | –40 to 70 | –40 to 70 |
| Physical | | | | | | | | |
| Height (mm/in) | 26.11/1.028 | 26.11/1.028 | 26.11/1.028 | 20.17/0.7825 | 20.17/0.7825 | 19.98/0.787 | 19.98/0.787 | 19.98/0.787 |
| Width (mm/in) | 101.6/4.0 | 101.6/4.0 | 101.6/4.0 | 101.6/4.0 | 101.6/4.0 | 101.6/4.0 | 101.6/4.0 | 101.6/4.0 |
| Depth (mm/in) | 146.99/5.787 | 146.99/5.787 | 146.99/5.787 | 146.99/5.787 | 146.99/5.787 | 146.99/5.787 | 146.99/5.787 | 146.99/5.787 |
| Weight (g/lb) | 626/1.38 | 626/1.38 | 535/1.18 | 400/0.88 | 400/0.88 | 415/0.92 | 415/0.92 | 415/0.92 |
| Carton Unit Quantity | 20 | 20 | 20 | 25 | 25 | 25 | 25 | 25 |
| Cartons per Layer | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| Cartons per Pallet | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Special Features | | | | | | | | |
| Seagate OptiCache™ Technology | Yes | Yes | Yes | Yes | Yes | No | No | No |
| Seagate AcuTrac™ Technology | Yes | Yes | Yes | Yes | Yes | No | No | No |
| Seagate SmartAlign™ Technology | Yes | Yes | Yes | Yes | Yes | Yes ² | Yes ² | Yes ² |

1 One gigabyte, or GB, equals one billion bytes and one terabyte, or TB, equals one trillion bytes when referring to drive capacity.

2 Seagate ships this drive in both 4K- and 512-byte sectors. SmartAlign technology is included on 4K sector drives. Both drives are functionally and physically equivalent.

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