

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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