



SATA Product Manual



Standard models

ST8000VX009
ST6000VX008
ST4000VX015
ST3000VX014
ST2000VX016
ST1000VX012
ST1000VX013

+Rescue Models*

ST8000VX010
ST6000VX009
ST4000VX016
ST3000VX015
ST2000VX017

* Seagate Rescue Data Recovery Services plan is only offered in selected regions only. Please check with reseller on availability.

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When referring to drive capacity, one gigabyte, or GB, equals one billion bytes and one terabyte, or TB, equals one trillion bytes. Your computer's operating system may use a different standard of measurement and report a lower capacity. In addition, some of the listed capacity is used for formatting and other functions, and thus will not be available for data storage. Actual quantities will vary based on various factors, including file size, file format, features and application software. Actual data rates may vary depending on operating environment and other factors. The export or re-export of hardware or software containing encryption may be regulated by the U.S. Department of Commerce, Bureau of Industry and Security (for more information, visit www.bis.doc.gov), and controlled for import and use outside of the U.S. Seagate reserves the right to change, without notice, product offerings or specifications.

2.0 Drive Specifications

Unless otherwise noted, all specifications are measured under ambient conditions, at 25°C, and nominal power. For convenience, the phrases *the drive* and *this drive* are used throughout this manual to indicate the following drive models:

Standard models	+Rescue models
ST8000VX009	ST8000VX010
ST6000VX008	ST6000VX009
ST4000VX015	ST4000VX016
ST3000VX014	ST3000VX015
ST2000VX016	ST2000VX017
ST1000VX012	
ST1000VX013	

2.1 Specification summary tables

The specifications listed in [Table 1](#) are for quick reference.

For details on specification measurement or definition, refer to the appropriate section of this manual.

Table 1 Drive specifications summary

Drive Specification*	ST8000VX009, ST8000VX010	ST6000VX008, ST6000VX009	ST4000VX015, ST4000VX016	ST3000VX014, ST3000VX015	ST2000VX016, ST2000VX017	ST1000VX012, ST1000VX013
Formatted capacity (512 bytes/sector)**	8000GB (8TB)	6000GB (6TB)	4000GB (4TB)	3000GB (3TB)	2000GB (2TB)	1000GB (1TB)
Guaranteed sectors	15,628,053,168	11,721,045,168	7,814,037,168	5,860,533,168	3,907,029,168	1,953,525,168;
Heads	8		4		2	
Disks	4		2		1	
Bytes per sector (emulated at 512-byte sectors)	4096 (physical)					
Default sectors per track	63					
Default read/write heads	16					
Default cylinders	16,383					
Recording density	2448 kB/in					
Track density (avg)	480 ktracks/in					
Areal density (avg)	1175 Gb/in ²					
SATA interface transfer rate	600 MB/s					
Maximum data transfer rate	180 MB/s					
ATA data-transfer modes supported	PIO modes: 0 to 4 Multiword DMA modes: 0 to 2 Ultra DMA modes 0 to 6					
Cache buffer	256MB					
Height	26.1mm / 1.028 in (max)		20.20mm / 0.795 in (max)			
Width	101.6mm (± 0.25) / 4.0 in (± 0.010)					
Length	146.99mm / 5.787 in (max)					
Weight (typical)	630g / 1.389 lb		490g / 1.08 lb		415g / 0.915 lb	
Average latency	6.0 ms					
Power-on to ready (typ)	15.0s		10.0		8.0	
Standby to ready (typ)	15.0s		10.0		8.0	
Startup current (typical) 12V	1.8A					
Voltage tolerance (including noise)	5V ±5% 12V ±10%					
Non-Operating (Ambient °C)	-40° to 70°					

Table 1 Drive specifications summary (continued)

Drive Specification*	ST8000VX009, ST8000VX010	ST6000VX008, ST6000VX009	ST4000VX015, ST4000VX016	ST3000VX014, ST3000VX015	ST2000VX016, ST2000VX017	ST1000VX012, ST1000VX013
Operating ambient temperature (min °C) #	0°					
Operating temperature (drive reported max °C)	65†					
Temperature gradient	20°C per hour max (operating) 30°C per hour max (non-operating)					
Relative humidity	5% to 90% (operating) 5% to 95% (non-operating)					
Relative humidity gradient (max)	30% per hour					
Wet bulb temperature (max)	30°C max (operating) 40°C max (non-operating)					
Altitude, operating	–304m to 3048m (–1000 ft to 10,000 ft)					
Altitude, non-operating (below mean sea level, max)	–304m to 12,192m (–1000 ft to 40,000+ ft)					
Operational shock (max)	80 Gs (read) / 70 Gs (write) at 2ms					
Non-operational shock (max)	300 Gs at 2ms				350 Gs at 2ms	
Vibration, operating	10Hz to 22Hz: 0.25 Gs, Limited displacement 22Hz to 350Hz: 0.50 Gs 350Hz to 500Hz: 0.25 Gs					
Vibration, non-operating	5Hz to 22Hz: 3.0 Gs 22Hz to 350Hz: 3.0 Gs 350Hz to 500Hz: 3.0 Gs					
Drive acoustics, sound power						
Idle***	2.6 bels (typical) 2.7 bels (max)		2.3 bels (typical) 2.4 bels (max)			
Seek	2.8 bels (typical) 2.9 bels (max)		2.7 bels (typical) 2.8 bels (max)			
Non-recoverable read errors	1 per 10 ¹⁴ bits read					
Rated workload	Average annualized workload rating: <180TB/year. The specifications for the product assumes the I/O workload does not exceed the average annualized workload rate limit of 180TB/year. Workloads exceeding the annualized rate may degrade and impact reliability as experienced by the particular application. The average annualized workload rate limit is in units of TB per calendar year.					
Warranty	To determine the warranty for a specific drive, use a web browser to access the following web page: www.seagate.com/support/warranty-and-replacements/ From this page, click on “Is my Drive under Warranty”. Users will be asked to provide the drive serial number, model number (or part number) and country of purchase. The system will display the warranty information for the drive.					
Load/unload cycles (at 25°C, 50% rel. humidity)	600,000					
Supports hotplug operation per the Serial ATA Revision 3.3 specification	Yes					

* All specifications above are based on native configurations.

** One GB equals one billion bytes and 1TB equals one trillion bytes when referring to hard drive capacity. Accessible capacity may vary depending on operating environment and formatting.

*** During periods of drive idle, some offline activity may occur according to the S.M.A.R.T. specification, which may increase acoustic and power to operational levels.

† Seagate does not recommend operating at sustained case temperatures above 60°C. Operating at higher temperatures will reduce useful life of the product.

The operating temperature is 0 to 65°C (32 to 149°F).

Note	If the drive is powered-off before issuing flush cache command, in some instances, the end user data in the DRAM cache might not be committed to the disk.
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