

## Product Overview

# Barracuda® ES.2

**The highest-capacity drives in Tier 2 nearline, business-critical storage**

**1-TB, 750-GB, 500-GB and 250-GB capacities • SAS 3Gb/s, SATA 3Gb/s and SATA 1.5Gb/s**

### Key Features and Benefits

- Specifically designed for Tier 2 nearline applications, with one terabyte of second-generation perpendicular recording available on a single, four-platter drive
- The industry's highest-reliability 7200-RPM drive, designed for 24x7 operation
- Seagate® PowerTrim™ technology dynamically optimizes power consumption by improving GB/watt by 55 percent over prior generation of Barracuda ES drives.
- Best-in-class rotational vibration tolerance provides unrivalled performance in high spindle-density systems.
- Available with SATA or SAS interfaces
- Full internal IOEDC/IOECC\* data integrity protection on SAS models
- Dual-ported, multi-initiator SAS provides full-duplex compatibility and a 135 percent average\*\* performance improvement over SATA.

### Best-Fit Applications

- Storage-hungry business applications
- Network attached storage (NAS)
- Storage area networks (SAN)
- Maximum capacity servers
- Rich media content storage—audio, video, image
- Reference and compliance data storage
- Enterprise backup and restore—D2D, virtual tape
- Collaboration—email, messaging
- Infrastructure—Web, print, file



\*IOEDC/IOECC on SATA (writes only), IOEDC/IOECC on SAS (both reads and writes)  
\*\*Averaged from random/sequential, read/write activities with write cache off

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## Product Description

The Seagate® Barracuda® ES.2 drive uses second-generation Seagate perpendicular recording technology to provide up to one terabyte of storage in a single, 4-platter hard drive. This 7200-RPM drive with best-in-class reliability and rotational vibration tolerance was developed for 24x7 availability in high-density, Tier 2 storage applications. The drive's integrated workload management feature aids in drive cooling during periods of prolonged activity. The integrated PowerTrim™ technology optimizes power consumption during operation and idle without any host interaction or performance loss. The Barracuda ES.2 drive comes with in-drive data integrity protection guaranteed through Seagate IOEDC/IOECC\* technology and is available with a choice of either SATA or SAS interfaces for convenient system initiators. SAS offers improved performance over SATA due in part to the dual processors, hardware sequential streaming, the 2.4 GHz SAS ASIC data rate and the SAS clock rate of 75 MHz.

The SAS interface allows Barracuda ES.2 drives to be freely attached to any SAS host in single- or dual-ported configurations and provides

full-duplex support, with two active data channels, to as many as 16 concurrent initiators.

## The Seagate Advantage

- 1-TB capacity and second-generation perpendicular recording technology provide 33 percent more storage than the previous highest-capacity nearline drive while substantially improving value in \$/GB and GB/W.
- Highest-reliability 7200-RPM drive with best-in-class rotational vibration tolerance to maintain performance in densely packed, multi-drive system designs.
- Proprietary Seagate internal data protection features from a trusted source, backed by a 5-year limited warranty
- Industry's only nearline SAS drive provides 135 percent average\* power boost over SATA drives and superior data integrity with full IOECC/IOEDC.

## Enabling New Opportunities

- Seagate has applied its unparalleled enterprise technology and manufacturing expertise to deliver a 7200-RPM drive that meets the needs of 24x7, multi-drive, nearline applications.
- The Barracuda ES.2 drive now makes SAS available for seamless migration of aging Tier 1 transactional data to Tier 2 nearline storage.
- With breakthrough capacity enabled by perpendicular recording technology, Barracuda ES.2 drives ensure maximum cost-effectiveness for capacity-intensive storage applications.

\*Averaged from random/sequential, read/write activities with write cache off

Specifications	
Capacity	
SATA 3Gb/s, 1.5Gb/s	1 TB, 750 GB, 500 GB, 250 GB
SAS 3Gb/s	1 TB, 750 GB, 500 GB
Spindle Speed (RPM)	7200
Cache, Multisegmented (MB)	
SATA 3Gb/s, 1.5Gb/s	32
SAS 3Gb/s	16
Seek Time, Read/Write (average, msec)	8.5/9.5
Mean Time Between Failures (MTBF) (hours)	1.2 million
Reliability Rating at Full 24x7 Operation (AFR)	0.73%
Transfer Rate, Sustained (MB/s)	105 (SATA), 116 (SAS)
Power Consumption (W, idle)	
SATA 3Gb/s, 1.5Gb/s	8.0
SAS 3Gb/s	10.2
Rotational Vibration @ 1500 Hz max (rad/sec <sup>2</sup> )	12.5
Limited Warranty (years)	5

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