

# Samsung SSD 840 PRO Series

Data Sheet



## Highlights

- 2.5" SATA 6Gb/s SSD for Desktop PC & Laptop PC
- Samsung 3-core MDX controller
- Samsung 2x nm Toggle DDR 2.0 NAND Flash memory
- Up to 512MB Samsung DDR2 SDRAM cache memory
- AES 256-bit Encryption
- Worldwide Name (WWN) and LED Indicator support
- Magician software for SSD management
- 7mm profile

## Unrivaled Performance

The Samsung SSD 840 PRO is a high-performance SSD designed for power users. Capable of delivering up to 100,000 IOPS Random Read Speed and 540MB/s Sequential

Read Speed, it is an SSD of unrivaled high performance. Even better, the advanced MDX controller delivers these speeds regardless of data type, unlike some competing controllers that greatly favor compressible data.

## Superior Reliability

As the world's #1 DRAM, NAND Flash, and SSD supplier, Samsung has unique, industry-leading engineering resources, technologies, and manufacturing processes as well as more stringent quality and testing standards. All Samsung SSDs are designed and built completely in-house, rather than sourcing generic parts from the market. The Samsung SSD 840 PRO Series is optimized for exceptional, sustained performance and unrivaled reliability through its specially-engineered wear-leveling and garbage collection algorithms and is backed by a generous 5-year limited warranty.

## Performance Sustainability

The Samsung SSD 840 PRO provides the same excellent performance throughout its entire

lifetime and under extremely heavy workloads. In fact, the sophisticated MDX controller is capable of maintaining peak performance under punishing conditions for more than twice as long as the nearest competitor.

## Business Friendly Features

The 840 PRO Series SSD introduces three important hardware features for businesses: Worldwide Name (WWN), LED Indicator support, and hardware-based AES 256-bit Full Disk Encryption (FDE). The first two of these features make it easier to integrate the 840 PRO SSD into server and storage systems. The third, hardware-based AES Encryption, helps safeguard data against attack by encrypting all information on the disk at the hardware

level, which means there is no detrimental effect on performance. Because the encryption key is stored on the drive itself, it is not at risk of interception or outside attack, even if the drive is placed into a new PC. Also, destroying data is as easy as destroying the encryption key.

In addition to the hardware features mentioned above, Samsung's Magician software has been completely redesigned and includes several business-friendly new features. With the addition of Drive Health Status, Total Bytes Written (TBW), and Disk Scan & Error Reporting functionality, it is now much easier for IT managers to monitor drive health and plan hardware replacement cycles.

## Technical Specifications

Samsung SSD 840 PRO Series	
Capacity	128GB, 256GB, 512GB
Dimensions (L* W* H)	100 x 69.85 x 7 (mm)
Interface	SATA 6Gb/s (compatible with SATA 3Gb/s and SATA 1.5Gb/s)
Form Factor	2.5-inch
NAND Flash Memory	2x nm Samsung Toggle DDR 2.0 NAND Flash Memory (400Mbps)
DRAM Cache Memory	256MB (128GB model) or 512MB(256GB & 512GB models) LPDDR2
Performance*	Sequential Read: Max. 540 MB/s (256GB/512GB) Max. 530MB/s (128GB)
	Sequential Write: Max. 520 MB/s (256GB/512GB) Max. 390 MB/s (128GB)
	4KB Random Read (QD32): Max. 100,000 IOPS (256GB/512GB) Max. 97,000 IOPS (128GB)
	4KB Random Write (QD32): Max. 90,000 IOPS (128GB/256GB/512GB)
	4KB Random Read (QD1): Max. 9,900 IOPS (256GB/512GB) Max. 9,800 IOPS (128GB)
	4KB Random Write (QD1): Max. 31,000 IOPS (128GB/256GB/512GB)
TRIM Support	Yes (Requires OS Support)
Garbage Collection	Yes
S.M.A.R.T	Yes
Encryption	AES 256-bit Full Disk Encryption (FDE)
Weight	Max. 62.5g (256GB/512GB) Max. 61g (128GB)
Reliability	MTBF: 1.5 million hours
Power Consumption	Average : 0.069W ** (Typical)      Idle : 0.054W*** (Typical)
Temperature	Operating: 0°C to 60°C Non-Operating: -55°C to 95°C
Humidity	5% to 95%, non-condensing
Vibration	Operating: Random: 2.17Grms (7~800Hz) Non-Operating: Random: 3.08Grms (7~800Hz) Swept sine: 20G peak @ 10~2KHz
Shock	1500G & 0.5ms (Half sine)
Warranty	5 years limited

\* Sequential performance measurements based on CrystalDiskMark. Random performance measurements based on Iometer. Performance may vary based on firmware version.

\*\* Active power measured during execution of MobileMark 2007 in Windows 7. Values calculated using laptop computer and represent system-level power consumption.

\*\*\* DIPM enabled value

## Product Lineup

Density	Model Name	Box Contents	Model Code
128 GB	MZ-7PD128	Drive only	MZ-7PD128BW
		Bulk	MZ-7PD128Z
256 GB	MZ-7PD256	Drive only	MZ-7PD256BW
		Bulk	MZ-7PD256Z
512 GB	MZ-7PD512	Drive only	MZ-7PD512BW
		Bulk	MZ-7PD512Z

## Accessories

Accessory	Drive Only	Bulk
Samsung software & manual CD	✓	N/A
SSD Installation Guide	✓	N/A

For more information, please visit

[www.samsung.com/ssd](http://www.samsung.com/ssd)

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