The Samsung SSD 840 PRO

Performance at a different level.
Professional-level performance. Now available to anyone.

An essential element for professional and safe computing
As a perfectionist in search of the best performance and with a desire to be among the best in your field, you deserve Samsung’s SSD 840 PRO. The 840 PRO is the fastest and most-reliable SSD on the market - unlike anything you’ve ever seen before. It assures a first-class user experience, which guarantees superior output on your behalf. Also, with 840 PRO’s AES-256bit Self-Encrypting Drive (SED) technology you can enjoy enforced data security without performance degradation compared to software based encryption by simply enabling an HDD password via your computer’s BIOS to lock your SSD. The 840 PRO is the best choice for professionals looking to keep their workflow supercharged and safe.

Performance at a different level
The Samsung SSD 840 PRO is a high-performance SSD designed for power users. Capable of delivering up to 100,000 IOPS, the 840 PRO is the ultimate in power computing, offering superior performance when it matters the most. Sophisticated performance enhancing features deliver consistent speed for demanding applications under heavy workloads.

Industry-leading reliability
From the world’s leading data storage engineers and the #1 maker of SSD components comes Samsung’s SSD 840 Series deliveries rock-solid reliability and sustained high performance over time and under heavy use. Additionally, to ensure you are fully covered the 840 PRO carries a generous 5-year limited warranty.

Ultra Low Power Consumption for Longer Battery Life
Samsung has made major strides in power efficiency. It boasts the lowest idle power consumption of any SSD*, an extremely important achievement considering that SSDs spend the vast majority of their time sitting idle (a positive byproduct of their accelerated processing speeds). In fact, Samsung’s new MDX controller consumes only 40m Watt of power during idle mode - half that of its predecessor and up to 97% less than other SSD controllers. Further improvements come from the use of LPDDR2 cache memory, which offers higher performance while consuming 30% less power when active and 93% less power when idle than regular DDR2 or DDR3 memory. All of these results in an improvement of up to 30 minutes in battery life over the 830 Series, letting you get even more out of your mobile experience.

<table>
<thead>
<tr>
<th></th>
<th>MCX (DDR2)</th>
<th>MDX (LPDDR2)</th>
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<tr>
<td>Power use</td>
<td>1.8V</td>
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<tr>
<td>ID06 (Self refresh power)</td>
<td>14.4mW</td>
<td>1mW</td>
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</table>

*Based on internal testing. Results may vary. For more information, see samsung.com/840PRO
A True End-to-End, Integrated Solution

Samsung SSDs are designed completely in-house for quality control assurance. Furthermore, Samsung manufactures all of the main SSD components itself to arrive at the perfect solution. The result is enhanced performance with Toggle DDR2 NAND flash, lower power consumption with LPDDR2 cache memory, and improved energy efficiency with the 3-core MDX controller.

Enjoy rapid performance by switching to a higher gear

Just like changing gears in a car, you have the option of RAPID mode with Magician software, which greatly enhances performance by processing data on a system level through the use of free PC memory (DRAM) as a cache. Depending on your PC memory (DRAM), you can expect higher performance and more efficient command processing, which improves with repeated tasking. Boost into a higher gear to vastly improve QD1 random write performance to almost the same level as QD32 and achieve blazing fast speeds.

"Samsung 840 PRO: The Makings Of A New King
This makes the 840 PRO the fastest, most efficient SSD we’ve seen to date.
-Tom’s Hardware-

"Samsung has a proven track record in terms of reliability and quality.
-Hardware.info-

"The performance and power characteristics of Samsung’s SSD 840 PRO are as close to perfect as we’ve seen from any drive this generation.
-AnandTech-

"Samsung’s new flagship is laying great hopes of being able to directly build on the success of its predecessor.
-HardwareLuxx-
Technical Specifications

**Samsung SSD 840 PRO Series**

**Usage Application(s):** Client PCs, Enterprise Computing

**Capacity:**
- 128GB
- 256GB
- 512GB

**Dimensions (L x W x H):** 100 x 69.85 x 6.8 (mm)

**Interface:** SATA 6Gb/s (Compatible with SATA 3Gb/s and SATA 1.5Gb/s)

**Form Factor:** 2.5-inch

**NAND Flash Memory:** Samsung Toggle DDR 2.0 NAND Flash Memory (400Mbps, 2xnm/1xnm)

**DRAM Cache Memory:**
- 256MB (128GB model)
- 512MB (256GB & 512GB models)

**Performance**

| Sequential Read | Max. 540 MB/s (256GB/512GB) | Max. 530 MB/s (128GB) |
| Sequential Write | Max. 520 MB/s (256GB/512GB) | Max. 390 MB/s (128GB) |
| 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) | |
| 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) | |

**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. 54g (128GB/256GB/512GB)

**Reliability:**
- MTBF: 1.5 million hours

**Power Consumption**

| Operating: | 0°C to 70°C |
| Non-Operating: | -40°C to 85°C |

**Humidity:**
- 5% to 95%, non-condensing

**Temperature:**
- Non-Operating: 20~2000Hz, 20G

**Warranty:**
- 5 years limited (client PC use only)**

**System Configuration:**
- Intel Core i7-3770 @3.4GHz, 4GB DDR3 (2GBx2) 1333Mbps; Asus motherboard with Intel 7 Series Z77 Chipset, Windows 7 Ultimate x64 SP1; IRST 11.2, MS performance guide pre-condition.

† For enterprise PC usage (e.g. servers), a minimum of 6.7% over-provisioning (OP) is required and can be set through Magician.

* Sequential performance measurements based on CrystalDiskMark v.3.0.1. Random performance measurements based on Iometer 2010. Performance may vary based on SSD’s firmware version, system hardware & configuration.

** Power consumption measured with MobileMark 2007 in Windows 7. Values calculated using laptop computer and represent system-level power consumption.

*** For enterprise applications, 5 years limited warranty assumes a maximum average workload of 40GB/day (calculated based on host writes and on the industry standard of 3-month data retention). Workloads in excess of 40GB/day are not covered under warranty.

### Package-Set

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<thead>
<tr>
<th>Model Name</th>
<th>Box Contents</th>
<th>Model Code</th>
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<thead>
<tr>
<th>Samsung software &amp; manual CD</th>
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<tr>
<td>SSD Installation Guide (Printed)</td>
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For more information, please visit www.samsung.com/ssp
To download the latest software & manuals, please visit www.samsung.com/samsungssd

Features and specifications are subject to change without prior notification.