Technical Specifications

		860 PRO	860 EVO	860 QVO
General Feature	Form Factor	2.5-inch	2.5-inch, M.2, mSATA	2.5-inch
	Application	Client PCs		
	Capacity	4TB, 2TB, 1TB, 512GB, 256GB	[2.5-inch] 4TB, 2TB, 1TB, 500GB, 250GB [M.2] 2TB, 1TB, 500GB, 250GB [mSATA] 1TB, 500GB, 250GB	4TB, 2TB, 1TB
	Interface	SATA 6 Gb/s Interface, compatible with SATA 3 Gb/s & SATA 1.5 Gb/s Interface		
	Dimension (WxHxD)	100 X 69.85 X 6.8 (mm)	[2.5-inch] 100 x 69.85 x 6.8 (mm) [M.2] 80.15 x 22.15 x 2.38 (mm) [mSATA] 30 x 50.9 x 3.85 (mm)	100 X 69.85 X 6.8 (mm)
	Weight	Max 62.0g Weight	[2.5-inch] Max. 62.0g Weight [M.2] Max. 8.0g Weight [mSATA] Max. 8.5g Weight	Max 62.0g Weight
	Storage Memory	Samsung V-NAND 2bit MLC	Samsung V-NAND 3bit MLC	Samsung V-NAND 4bit MLC
	Controller	Samsung MJX Controller		
	Cache Memory	4GB LPDDR4 (4TB) / 2GB LPDDR4 (2TB) 1GB LPDDR4 (1TB) / 512MB LPDDR4 (256/512GB)	4GB LPDDR4 (4TB) / 2GB LPDDR4 (2TB) 1GB LPDDR4 (1TB) / 512MB LPDDR4 (250/500GB)	4GB LPDDR4 (4TB) / 2GB LPDDR4 (2TB) 1GB LPDDR4 (1TB)
Performance	Sequential Read / Write	Max. 560 MB/s / 530 MB/s	Max. 550 MB/s / 520 MB/s	Max. 550 MB/s / 520 MB/s
	Random Read/Write (4KB, QD32)	Max. 100K IOPS / 90K IOPS	Max. 98K IOPS / 90K IOPS	Max. 97K IOPS / 89K IOPS
	Random Read/Write (4KB, QD1)	Max. 11K IOPS / 43K IOPS	Max. 10K IOPS / 42K IOPS	Max. 7.5K IOPS / 42K IOPS
Special Features	TRIM	Supported		
	S.M.A.R.T			
	Device Sleep Mode			
	GC (Garbage Collection)	Auto Carbage Collection Algorithm		
	Data Encryption	Class 0 (AES 256), TCG/Opal v2.0, MS eDrive (IEEE1667)		
Environment	Average Power Consumption	Active Read / Write: Max. 4.5 W / Avg. 2.2 W (4TB) Device Sleep: 7 mW (4TB)	Active Read / Write: Max. 4.0 W (4TB) / Avg. 3.0 W (4TB) Device Sleep: 8 mW (4TB)	Active Read / Write: Max. 5.4 W / Avg. 3.1 W (4TB) Device Sleep: 7 mW (4TB)
	Power Consumption (Idle)	Max. 50 mW (4TB)		Max. 30 mW (4TB)
	Allowable Voltage	5V ± 5% Allowable voltage		
	Reliability (MTBF)	2 Million Hours Reliability (MTBF)	1.5 Million Hours Reliability (MTBF)	
	Operating Temperature	0 - 70 ℃ Operating Temperature		
	Shock	1,500 G & 0.5 ms (Half sine)		
Software	Management SW	Magician Software		
Warranty (Total Bytes Written)		5-Year Limited Warranty or TBW Limited Warranty		3-Year Limited Warranty or TBW Limited Warranty
		4TB: 4,800TB / 2TB: 2,400TB / 1TB: 1,200TB 512GB: 600TB / 256GB: 300TB	4TB: 2,400TB / 2TB: 1,200TB / 1TB: 600TB 500GB: 300TB / 250GB: 150TB	4TB: 1,440TB / 2TB: 720TB / 1TB: 360TB

· Performances may vary depending on SSD's firmware version and system hardware & configuration. For 860 EVO and 860 QVO, performances were measured with activated Intelligent TurboWrite technology. Performances may not be sustained for the portion of data exceeding over Intelligent TurboWrite buffer size. Sequential performance measurements based on CrystalDiskMark v.5.0.2. and Random performance measurements based on IOmeter 1.1.0.
· [860 PRO/EVO] Test system configuration: Intel® Core i5-3550 CPU @ 3.3 GHz, DDR3 1333 MHz 4GB, OS-Windows 7 Ultimate x64, Chipset: ASUS P8H77-V
· [860 QVO] Test system configuration: Intel® Core i7-4790k CPU @ 4 GHz, DDR3 1600 MHz 8GB, OS-Windows 7 Ultimate x64, Chipset: ASUS Z97-PRO
· The Intelligent TurboWrite buffer size varies based on the capacity of the SSD: Up to 12GB for 250GB model, up to 22 GB for 500GB model, up to 42GB for 1TB model and up to 78GB for 2/4TB models.
  For more information on the TurboWrite, please visit www.samsungssd.com.
· 1GB=1,000,000,000 bytes by IDEMA. A certain portion of capacity may be used for system file and maintenance use, so the actual capacity may differ from what is indicated on the product label.
· Actual power consumption may vary depending on system hardware & configuration.

For more information about the Samsung SSD, visit **samsung.com/ssd** or **samsungssd.com.**

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The SSDs that make the difference.
Performance that endures.

V-NAND SSD 860 PRO | EVO | QVO

Small upgrade. Huge difference.

Now's the time to upgrade from HDD to SSD

Traditional HDDs have high-risk moving parts and fragmented files that create a bottleneck in speed. The 860 Series SSD, the 860 PRO, 860 EVO, and 860 QVO, is NAND flash-based storage with no moving parts to slow you down. These SSDs improve your overall computing experience, giving you rapid boot and file transfer speeds, and outstanding reliability.

No moving parts
Better shock resistance
Less power consumption
Faster read/write speeds
Broad range of form factors
No vibration, noise, and less heat

860 PRO

Designed for creative/IT professionals seeking outstanding reliability even under heavy workloads for workstation, NAS and more.

- The 2-bit MLC NAND is highly reliable, guaranteeing the industry's top endurance of up to 4,800 TBW
- Huge variety of capacity options, available from 256GB up to 4TB
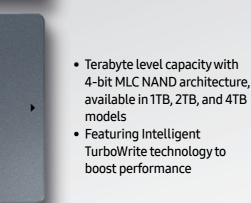
860 EVO

Ideal for mainstream laptop and PC users looking to enhance their everyday computing experience.

- Reliable Samsung 3-bit MLC NAND
- Accelerated performance with Intelligent TurboWrite technology
- Wide range of form factors (2.5-inch, mSATA, and M.2)
- Huge variety of capacity options, available from 250GB up to 4TB

860 QVO

Designed for general users who require a quality high capacity SSD at a reasonable price.

- Terabyte level capacity with 4-bit MLC NAND architecture, available in 1TB, 2TB, and 4TB models
- Featuring Intelligent TurboWrite technology to boost performance

Solid Performance

The 860 Series accelerate your computer's performance up to 3.6 times more than traditional HDDs. Each model features Samsung's latest V-NAND and the proven MJX controller to deliver solid speeds. The EVO and QVO integrate Intelligent TurboWrite technology to achieve faster speeds and maintain long-term high performance by allocating a variable buffer area.

860 PRO
Sequential
Reads up to **560 MB/s**
Writes up to **530 MB/s**

860 EVO | QVO
Sequential
Reads up to **550 MB/s**
Writes up to **520 MB/s**

860 EVO | QVO
Intelligent Turbowrite

* Comparing the sequential read speeds of the 860 EVO 1TB and the 2.5-inch 7200rpm 1TB HDD

Reinforced Reliability

The SSD series you can count on with top-rated endurance. Each SSD has been engineered to offer the optimal TBW rate, based on years of industry-leading experience in consumer SSDs. Choose the most appropriate product with the reliability that suits your predicted PC usage and environment. Features a 3-year or 5-year warranty for your full trust.

	860 PRO	860 EVO	860 QVO
TBW*	Up to 4,800TB	Up to 2,400TB	Up to 1,440TB
Warranty	5-Year Limited Warranty		3-Year Limited Warranty

* TBW(Total Bytes Written): The total amount of data that can be written on an SSD before it is likely to fail.

Expanded Compatibility

Benefit from fluid communication and seamless system compatibility. The refined ECC* algorithm and MJX controller generate higher speeds, and improved queued trim enhances Linux compatibility. All 860 PRO, EVO, QVO come in the widely compatible 2.5-inch form factor. The 860 EVO is even available in mSATA and M.2 for ultra-slim computing systems.

* ECC: Error Correction Code

Magician Software

The simple, intuitive way to monitor, manage, and maintain your SSD. Get notifications for new firmware with easy update installations and performance benchmark tests to help keep your system at its fastest. Security options support AES 256-bit hardware-based encryption and are compliant with TCG/Opal and IEEE1667.

Performance Benchmark
Data Security
Firmware Update