SATA III M.2 Solid State Drive

# M.2 SSD 820S

Transcend's ultra-compact SATA III 6Gb/s M.2 SSD 820S addresses the high-performance needs and strict size limitations of small form factor devices, best suited for Ultrabooks and thin, light notebooks. Boasting high-quality flash chips and enhanced firmware algorithms, Transcend's M.2 SSD 820S delivers optimal reliability.

### Perfect for your Ultrabook

Measured at just 80mm in length, the M.2 SSD 820S makes for an easy upgrade to your computer, taking up little space while giving it a much needed energy boost.

### Superior transfer speeds

Transcend's M.2 SSD 820S reaches incredible read and write speeds of up to 550MB/s and 500MB/s. When used as a cache, the M.2 SSD 820S provides 1.5 times faster boot time than conventional hard drives.

### Store more in less space

The M.2 form factor enables expansion and integration of functions onto a single form factor module solution. M.2 SSDs include a smaller form factor but with larger capacities than that of mSATA and half-slim SSDs.

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## Features

- Space-saving M.2 Type 2280 form factor
- Up to 550 MB/s read; 500 MB/s write
- 3D NAND flash memory
- RAID engine and LDPC coding for data integrity; DDR3 DRAM cache for short access times
- Supports S.M.A.R.T., TRIM, and NCQ commands

### SSD Scope Software

Transcend SSD Scope is advanced, user-friendly software that makes it easy to ensure your Transcend SSD remains healthy, and continues to run fast and error-free by determining the condition and optimizing the performance of your drive.

## Specifications

### Appearance

| | |
|---|---|
| Dimensions (Max.) | 80.0 mm x 22.0 mm x 3.58 mm (3.15" x 0.87" x 0.14") |
| Weight (Max.) | 9 g (0.32 oz) |

### Interface

| | |
|---|---|
| Bus Interface | SATA III 6Gb/s |

### Storage

| | |
|---|---|
| Flash Type | 3D NAND flash |
| Capacity | 120 GB/240 GB/480 GB/960 GB |

### Operating Environment

| | |
|---|---|
| Operating Temperature | 0°C (32°F) ~ 70°C (158°F) |
| Operating Voltage | 3.3V±5% |

### Performance

| | |
|---|---|
| Sequential Read/Write (CrystalDiskMark, max.) | Read: 550 MB/s Write: 500 MB/s |
| 4K Random Read/Write (IOmeter, max.) | Read: 70,000 IOPS Write: 75,000 IOPS |
| Mean Time Between Failures (MTBF) | 1,000,000 hour(s) |
| Terabytes Written (Max.) | 320 TB |
| Drive Writes Per Day (DWPD) | 0.3 (3 yrs) |

### Note

Speed may vary due to host hardware, software, usage, and storage capacity.

### Warranty

| | |
|---|---|
| Certificate | CE/FCC/BSMI |
| Warranty | Three-year Limited Warranty |

### Ordering Information

| | |
|---|---|
| 120GB | TS120GMTS820S |
| 240GB | TS240GMTS820S |
| 480GB | TS480GMTS820S |
| 960GB | TS960GMTS820S |

Product specifications are subject to change without notice. Pictures shown may differ from actual products. When used as a storage capacity unit, one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on operating environment.

# SATA III M.2 SSDs Comparison

| | SATA III 6Gb/s M.2 SSD 420S | SATA III 6Gb/s M.2 SSD 430S | SATA III 6Gb/s M.2 SSD 820S | SATA III 6Gb/s M.2 SSD 830S | SATA III 6Gb/s M.2 SSD 832S |
|---|---|---|---|---|---|
| **Appearance** | | | | | |
| Dimensions | 42.0 mm x 22.0 mm x 3.88 mm (1.65" x 0.87" x 0.15") | 42.0 mm x 22.0 mm x 3.58 mm (1.65" x 0.87" x 0.14") | 80.0 mm x 22.0 mm x 3.58 mm (3.15" x 0.87" x 0.14") | 80.0 mm x 22.0 mm x 3.58 mm (3.15" x 0.87" x 0.14") | 80.0 mm x 22.0 mm x 2.23 mm (3.15" x 0.87" x 0.09") |
| Weight | 5 g (0.18 oz) | 5 g (0.18 oz) | 9 g (0.32 oz) | 9 g (0.32 oz) | 9 g (0.32 oz) |
| **Storage** | | | | | |
| Flash Type | 3D NAND flash | | | | |
| Capacity | 120GB ~ 240GB | 128GB ~ 512GB | 120GB ~ 960GB | 128GB ~ 2TB | 256GB ~ 1TB |
| **Operating Environment** | | | | | |
| Operating Temperature | 0°C (32°F) ~ 70°C (158°F) | | | | |
| **Performance** | | | | | |
| Sequential Read/Write (CrystalDiskMark, max.) | Read: 500 MB/s Write: 500 MB/s | Read: 560 MB/s Write: 500 MB/s | Read: 550 MB/s Write: 500 MB/s | Read: 560 MB/s Write: 520 MB/s | Read: 560 MB/s Write: 500 MB/s |
| 4K Random Read/Write (IOmeter, max.) | Read: 40,000 IOPS Write: 75,000 IOPS | Read: 80,000 IOPS Write: 85,000 IOPS | Read: 70,000 IOPS Write: 75,000 IOPS | Read: 90,000 IOPS Write: 85,000 IOPS | Read: 85,000 IOPS Write: 85,000 IOPS |
| Mean Time Between Failures (MTBF) | 1,000,000 hour(s) | 1,000,000 hour(s) | 1,000,000 hour(s) | 2,000,000 hour(s) | 2,000,000 hour(s) |
| Terabytes Written (Max.) | 80 TB | 280 TB | 320 TB | 1,120 TB | 560 TB |
| Drive Writes Per Day (DWPD) | 0.3 (3 yrs) | 0.3 (5 yrs) | 0.3 (3 yrs) | 0.3 (5 yrs) | 0.3 (5 yrs) |
| **Warranty** | | | | | |
| Warranty | Three-year Limited Warranty | Five-year Limited Warranty | Three-year Limited Warranty | Five-year Limited Warranty | Five-year Limited Warranty |
| **Technology** | | | | | |
| TRIM & NCQ Command | ✓ | ✓ | ✓ | ✓ | ✓ |
| S.M.A.R.T. | ✓ | ✓ | ✓ | ✓ | ✓ |
| DDR3 DRAM Cache | - | ✓ | - | ✓ | ✓ |
| Advanced Garbage Collection | ✓ | ✓ | ✓ | ✓ | ✓ |
| RAID Engine | ✓ | ✓ | ✓ | ✓ | ✓ |
| LDPC Coding | ✓ | ✓ | ✓ | ✓ | ✓ |

*Speed may vary due to host hardware, software, usage, and storage capacity.