

Corsair Force MP510

Class-leading performance without the matching price tag makes the Corsair Force a tempting proposition

SCORE ★★★★★

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PRICE MATRIX

£62 240GB (£52 ex VAT)	£118 480GB (£98 ex VAT)	£230 960GB (£192 ex VAT)	£450 1,920GB (£375 ex VAT)
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On specification alone, Corsair's latest M.2 SSD looks like a serious contender. A PCIe Gen 3 x4 drive, it uses Toshiba's 3D BiCS NAND and a Phison PS5012-E12 controller to deliver write speeds of up to 3,480MB/sec and read speeds of up to 3,000MB/sec, beating the 1TB models of the WD Black and the Samsung 970 Pro.

Of course, write speeds drop with the lower capacity models, to 2,000MB/sec on the 480GB drive and



1,050MB/sec on the 240GB version, but if you want a ludicrously speedy SSD and have the money, the MP510 deserves a good look.

In fact, the money isn't as much of a problem as it is with its Samsung rival. You can pick up the 480GB version for under £120 and the 960GB version for around £230, which puts it at the same price point as the Samsung 970 Evo rather than the ultra-high-end Samsung drive. Those prices mean it's competitive with the WD Black, and with a 1,700TB total bytes written lifespan and a 1.8 million hour MBTF, it's a drive that's built for the long-term.

The MP510 lives up to its billing in synthetic benchmarks, with CrystalDiskMark finding sequential read speeds of 3,475MB/sec and write speeds of 3,002MB/sec. AS SSD placed it as the fastest drive on test for sequential read/write speeds, at

ABOVE The MP510's stellar performance and price should put it firmly on your list



2,982MB/sec and 2,672MB/sec. If it's not always at the very top of the leaderboard on random read/write speeds, as you can see if you turn to our results page on p90, but it's usually close.

There was only one minor hiccup, when CrystalDiskMark reported lower-than-expected write speeds in the Q32-T1 and Q1, T1 tests – though read speeds remained excellent throughout.

More importantly, real-world performance is no less stellar. The MP510 slipped just behind the 970 Pro in our mixed file-transfer test and our PC Pro benchmarks, but not by any really huge amount.

What you're getting, then, is 970 Pro performance at 970 Evo prices – and less for the 2TB version. That makes the Corsair Force MP510 something of a bargain and, all in all, an easy drive to recommend.

SSD terminology explained

Confused by all the TLAs (three letter acronyms)? Clear the confusion with this jargon-busting guide

3D NAND: A form of NAND where the memory cells aren't organised on a plane but sit stacked in a three-dimensional structure, increasing density and speeding up access.

BiCS flash: A form of 3D NAND flash designed and manufactured by Toshiba, with higher storage density for higher capacities and faster speeds.

Cache: A small amount of DDR RAM or SLC NAND designed to hold and process incoming and outgoing data on its way to and from the SSD. Different drives will have different architectures and different levels of cache, working around the characteristics of the NAND flash to deliver optimal performance.

Controller: The processor in an SSD that controls its storage functions and routes data through the cache to the NAND flash. Newer, faster controllers can have a major impact on both sequential and random read/write speeds.

MLC: Multi-level cell. A form of NAND where each memory element can store more than one bit of data. With four possible states per cell, you can store two bits of information, and this scales

upwards as you use cells that can exist in more states. Using MLC enables you to add capacity without the same significant increase in cost, but there's more chance of an error and the lifespan of each cell is nearly always reduced.

MTBF: Mean time between failure. A metric and specification for reliability, stating how many hours you'd have to use a device or mechanism before it fails in some way (the between implies that it can fail repeatedly, with the MTBF the period in-between).

NAND: A form of logic gate, but also the principle behind the dominant form of flash memory. NAND flash is a non-volatile storage tech that retains data even when the power has been turned off.

NVMe: A host controller interface and storage protocol designed to accelerate data transfers between the CPU and motherboard chipset and SSDs over the PCIe bus.

PCIe: The high-speed data bus that connects NVMe SSDs to the CPU and motherboard chipset, with differing standards (PCIe Gen3 x2/PCIe Gen3 x4) delivering different levels of bandwidth.

TBW: Terabytes written. A measure for how many terabytes of data can be written to a flash memory device before it starts to fail.

Random read/write speed: The speed at which an SSD can handle many smaller data transfer requests, moving data that isn't stored in sequence on the drive.

SATA: The older storage interface used to connect hard disks and SSDs with the CPU and motherboard chipset, providing up to 6Gbits/sec of bandwidth with the final SATA 3 standard.

Sequential read/write speed: The speed at which an SSD can move large files containing continuous chunks of data from one place to another.

SLC: Single-level cell. The simplest form of NAND memory, where each memory element, or cell, can exist in one of two states and store one bit of data. It means faster write speeds and more longevity, but also lower capacities and higher costs.

TLC: Triple-level cell. A form of MLC NAND where each memory element can store three bits of data. You can guess what quad-level cell means...