

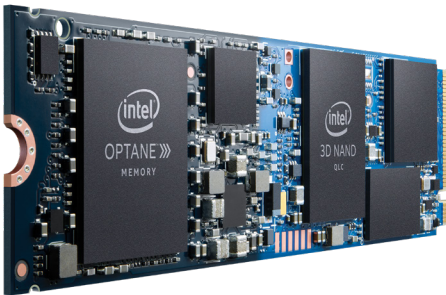
PRODUCT BRIEF

Intel® Optane™ Memory H10 with Solid State Storage



Amazing Responsiveness and High Capacity Storage in an M.2 Form Factor

Introducing the industry's first drive that combines Intel® Optane™ memory and Intel® QLC 3D NAND storage to deliver a personalized computing experience with a new level of performance and large storage capacity.



By combining the best attributes of Intel® Optane technology and Intel® QLC 3D NAND technology, the Intel® Optane™ Memory H10 with solid state storage brings together two revolutionary memory and storage technologies on a single M.2 2280 form factor. Delivering innovation in storage through Intel platforms, the Intel® Optane™ Memory H10 offers a personalized computing experience with a new level of performance and large storage capacity options, now available for gamers, media and content creators, everyday users, and professionals.

The versatile M.2 form factor works in everything from thin and light notebooks to traditional desktops, as well as AIOs and mini PCs. Providing system responsiveness with storage capacities, the Intel Optane memory H10 accelerates what you use most, from everyday tasks to managing large media and gaming files and applications.



Less Waiting, More Creation, Gaming, and Productivity

The Intel Optane memory H10 offers low latency and high performance with mixed random read/write speeds at low queue depths, and under demanding workloads. This kind of performance makes the Intel Optane memory H10 an ideal OS drive—delivering fast boot and application launch, as well as smooth multitasking.

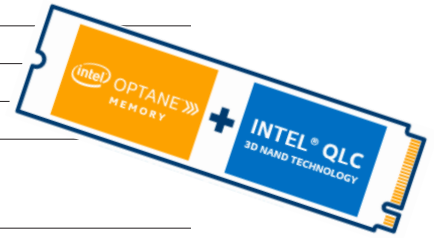
In addition, the Intel Optane memory H10 includes Intel® QLC technology with an aerial density advantage of 33% more¹ bits per cell than the prior generation of Intel® 3D NAND. That means large, reliable capacities in a small footprint.

Smart Storage for Faster Access to Most Used Files and Apps

With the intelligent Intel® Rapid Storage Technology (Intel® RST) driver working behind the scenes, Intel Optane memory H10 recognizes and remembers content needed for important and frequent tasks—quickly accelerating them for use—providing even faster access to your frequently used data. Furthermore, as your computing habits change over time, Intel® RST will adapt to ensure what you use most often has a responsive accelerated experience.



Features At-a-Glance	
Model	Intel® Optane™ Memory H10 with Solid State Storage
Capacities	16GB Intel® Optane™ Memory + 256GB Intel® QLC 3D NAND 32GB Intel® Optane™ Memory + 512GB Intel® QLC 3D NAND 32GB Intel® Optane™ Memory + 1TB Intel® QLC 3D NAND
Form Factor	M.2 2280-S3-M
Weight	Less than 10 grams
Interface	PCIe* 3.0x4 with NVMe* interface
Performance ²	Sequential R/W: Up to 2400/1800 MB/s QD1 4KB Random R/W: Up to 32K/30K IOPs QD2 4KB Random R/W: Up to 55K/55K IOPs
Latency (avg sequential)	Read 6.5 μs (TYP) Write: 18 μs (TYP)
Endurance Rating	16GB Intel® Optane™ Memory + 256GB Intel® QLC 3D NAND: Up to 75TBW 32GB Intel® Optane™ Memory + 512GB Intel® QLC 3D NAND: Up to 150TBW 32GB Intel® Optane™ Memory + 1TB Intel® QLC 3D NAND: Up to 300TBW
Reliability	1.6 million hours Mean Time Between Failure (MTBF) 1 sector per 10 ¹⁵ bits read Uncorrectable Bit Error Rate (UBER)
Power ³	3.3V Supply Rail Deep Sleep/L1.2 (PCIe* Low Power Link State): <15mW (Combined)
Temperature	Operating: 0 to 70° c; Non-Operating: -40 to 85° c; temperature monitoring
Operating System Support	Windows 10* 64 bit
Supported Platforms	8th Gen and 9th Gen or newer Intel® Core™ processor-based platforms <i>See intel.com/support/optane-memory for a list of compatible processors and platforms</i>
Compliance	NVM Express* 1.1 PCI Express* Rev 3.0 PCI M.2 HW Specifications Ecological: European Union (ED) RoHS Compliance Directives
Software Driver	Intel® Rapid Storage Technology Driver 17.2 or later
Warranty	5-year limited warranty



For more information, visit [intel.com/optanememory](https://www.intel.com/optanememory)

¹ Source: Intel. 33% more bits per cell. TLC (tri-level cell) contains 3 bits per cell and QLC (quad level cell) contains 4 bits per cell. Calculated as (4-3)/3 = 33% more bits per cell.

² Performance values based on Intel® Optane™ memory performance driver. Performance values vary by capacity.

³ Power values vary by capacity measurement estimate based on worst case (peak) values.

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more complete information visit www.intel.com/benchmarks.

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