Gaming Desktop

Performance for the gamer.

Ultimate gaming experience

Delivering next level performance for serious gamers

Multitasking master

Incredible multitasking for Microsoft Office, web browsing, and photo editing

Breakthrough 3D content-creation performance

Immersive 3D modeling and game development

13th Gen Intel® Core™ desktop processors—125 W

13th Gen Intel Core desktop processor	Processor cores	Processor threads	Number of Performance-cores (P-cores)	Number of Efficient-cores (E-cores)	Intel® Smart Cache	Maximum turbo frequency (GHz)		Base frequency (GHz)		Processor graphics
						P-cores	E-cores	P-cores	E-cores	
i9-13900K	24	32	8	16	36 MB	5.8	43	3.0	2.2	770
i9-13900KF	24	32	8	16	36 MB	5.8	4.3	3.0	2.2	N/A
i7-13700K	16	24	8	8	30 MB	5.4	4.2	3.4	2.5	770
i7-13700KF	16	24	8	8	30 MB	5.4	4.2	3.4	2.5	N/A
i5-13600K	14	20	6	8	24 MB	5.1	3.9	3.5	2.6	770
i3-13600KF	14	20	6	8	24 MB	5.1	3.9	3.5	2.6	N/A

Intel Core i7-13700K processor versus Intel Core i7-10700K processor

Gaming performance

Up to **75%** higher FPS
Hitman 3: Dartmoor

Up to **73%** higher FPS
Grid Legends

Up to **73%** higher FPS
Marvel's Spider-Man Remastered

Up to **63%** higher FPS
The Riftbreaker

Up to **62%** higher FPS
Far Cry 6

Up to **56%** higher FPS
Counter-Strike: Global Offensive

Up to **32%** higher FPS
Total War: Warhammer III

Office productivity performance

38% better

Productivity performance
CrossMark Overall

Photo editing performance

65% better

Adobe Photoshop
PugetBench Photoshop

3D rendering performance

124% faster

Blender
Secret Deer Render

Video editing performance

48% faster

Adobe Premiere Pro
PugetBench Adobe Premiere

Performance varies by use, configuration and other factors. See second page for workloads and configurations. Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure. Your costs and results may vary. Intel technologies may require enabled hardware, software or service activation.

Configurations

Testing as of October 6, 2022

Processor: 13th Gen Intel® Core™ i7-13700K processor (RPL-S) PL1 set to 125W TDP, 16C/24T (8P + 8E); Motherboard: Intel Internal Validation board; Memory: G.Skill DDR5 CL 28-34-34-89, 2X 16GB DDR5-5600MT/s; Storage: Samsung 980 Pro 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 22621.160; Graphics card: NVIDIA RTX 3090 (FTW3), Graphics driver: 516.59; Motherboard BIOS version: N/A

Processor: 10th Gen Intel® Core™ i7-10700K processor (CML) PL1 set to 125W, 8C/16T, Motherboard: ASUS Z590 ROG Maximus XIII Hero; Memory: G. Skill DDR4 CL 14-14-14-34, 2X 16GB DDR4-2933 MHz; Storage: Samsung 980 Pro 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 22621.160; Graphics card: NVIDIA RTX 3090 (FTW3), Graphics driver: 516.59; Motherboard BIOS version: 1402

Workloads

Crossmark is a benchmark from the BAPCo* consortium that is an easy to run native cross-platform benchmark that measures the overall syste performance and system responsiveness using models of real-world applications. CrossMark® supports devices running Windows, iOS and mac platforms. CrossMark® is available for download in the Windows Store, iTunes and Mac App Store. See https://bapco.com/products/crossmark/ more info.

Far Cry 6- 1080p High- Avg FPS
Hitman 3: Dartmoor- 1080p High- Avg FPS
Counter-Strike: Global Offensive- 1080p High- Avg FPS
The Riftbreaker – 1080p High – Avg FPS
Marvel's Spider-Man Remastered– 1080p High – Avg FPS
Total War: Warhammer III- Battle- 1080P High – Avg FPS
Grid Legends – 1080P High – Avg FPS

Blender CPU Secret Deer- Measures 3D rendering performance run on CPU using Blender, a free and open-source 3D Creation software
PugetBench for Photoshop: Benchmark which tests the performance of Adobe Photoshop on systems made by PugetSystems.
PugetBench for Premiere Pro: Benchmark which tests the performance of Adobe Premiere Pro on systems made by PugetSystems.