# 12th Generation Intel® Core™ Mobile Processors—
# P-Series

Enthusiast levels of performance in a thin-and-light form factor.

**Incredible scale**

Up to 70% faster multi-threaded performance[1]

**Superior productivity**

Up to 30% faster photo editing[1]

**Cutting-edge connectivity**

Intel Wi-Fi 6E (Gig+) and Thunderbolt™ 4 cable connection interface[2,3]

## 12th Gen Intel Core mobile processors SKU comparison—P series

| 12th Gen Intel Core mobile processor | Processor cores | Processor threads | Number of P-cores[4] | Number of E-cores[4] | Intel® Smart Cache | Max turbo frequency (GHz) up to[5] | | Base frequency (GHz)[5] | | Processor graphics | Max graphics frequency (GHz) up to | Compare to this processor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | P-core | E-core | P-core | E-core | | | |
| i7-1280P | 14 | 20 | 6 | 8 | 24 MB | 4.8 | 3.6 | 1.8 | 1.3 | 96EU | 1.45 | AMD Ryzen 7 6800U |
| i7-1270P | 12 | 16 | 4 | 8 | 18 MB | 4.8 | 3.5 | 2.2 | 1.6 | 96EU | 1.4 | AMD Ryzen 7 6800U |
| i7-1260P | 12 | 16 | 4 | 8 | 18 MB | 4.7 | 3.4 | 2.1 | 1.5 | 96EU | 1.4 | AMD Ryzen 7 6800U |
| i5-1250P | 12 | 16 | 4 | 8 | 12 MB | 4.4 | 3.3 | 1.7 | 1.2 | 80EU | 1.4 | AMD Ryzen 7 6800U |
| i5-1240P | 12 | 16 | 4 | 8 | 12 MB | 4.4 | 3.3 | 1.7 | 1.2 | 80EU | 1.3 | AMD Ryzen 7 6800U |
| i3-1220P | 10 | 12 | 2 | 8 | 12 MB | 4.4 | 3.3 | 1.5 | 1.1 | 64EU | 1.1 | AMD Ryzen 5 6600U |

## Performance gains in content creation with P-series based sytems

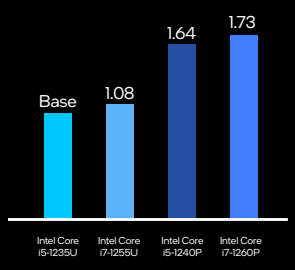
12th Gen Intel Core i5-1235U
2 P-cores/8 E-cores
Measured on an HP Pavilion
16 GB DDR4; 256 GB SSD; 14″

12th Gen Intel Core i7-1255U
4 P-cores/8 E-cores
HP ProBook 440 G9
16 GB DDR4; 256 GB SSD; 14″

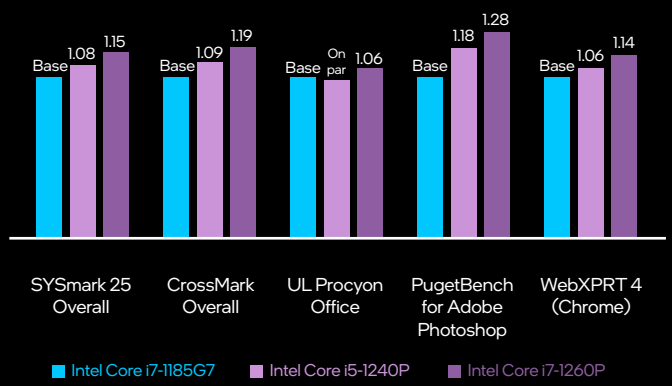
12th Gen Intel Core i5-1240P
4 P-cores/8 E-cores
Measured on ASUS ZenBook 14
16 GB LPDDR5; 512 GB SSD; 14″

12th Gen Intel Core i7-1260P
4 P-cores/8 E-cores
Measured on ASUS ZenBook 14
16 GB LPDDR5; 512 GB SSD; 14″

PugetBench: Adobe Premiere Pro




## Intel Core i5 and i7 processors cross-generation comparisons for P-series: 11th Generation vs. 12th Generation



**Workloads**

Testing by Intel as of 7/14/2022.

SYSmark 25 is a benchmark from the BAPCo consortium that measures the performance of Windows platforms. SYSmark 25 tests three usage scenarios: Productivity, Creativity, and Responsiveness. SYSmark contains real applications from ISVs such as Microsoft and Adobe.

CrossMark is an easy-to-run native cross-platform benchmark that measures overall system performance and system responsiveness using models of real-world applications. CrossMark supports devices running Windows, iOS, and macOS platforms. CrossMark is available for download in the Windows Store, iTunes, and the Mac App Store.

The UL Procyon Office Productivity Benchmark uses Microsoft Office apps to measure PC performance for office productivity work. The benchmark workloads feature relevant, real-world tasks using Microsoft Word, Excel, PowerPoint, and Outlook.

PugetBench for Adobe Photoshop is a photo editing performance measurement benchmark developed by Puget Systems and is a part of Content creation benchmark suite. The benchmark can be accessed from: https://www.pugetsystems.com/labs/articles/PugetBench-for-Photoshop-1132/

PugetBench for Adobe Premiere Pro is video editing performance measurement benchmark developed by Puget Systems and is a part of Content creation benchmark suite. The benchmark can be accessed from: https://www.pugetsystems.com/labs/articles/PugetBench-for-Premiere-Pro-1519/

WebXPRT 4 is a browser benchmark that compares the performance of almost any web-enabled device. It contains HTML5, JavaScript, and WebAssembly-based scenarios created to mirror the tasks you do every day: Photo Enhancement, Organize Album Using AI, Stock Option Pricing, Encrypt Notes, and optical character recognition (OCR) Scan using WASM, Sales Graphs, and Online Homework. Use WebXPRT to see exactly how well different devices handle real-world tasks.

**Configurations**

Processor: Intel Core i7-1185G7 processor (up to 4.8 GHz, 4 cores, 8 threads); tested on reference platform; memory: 32 GB LPDDR5, 5,200 MHz; storage: 512 GB Samsung SSD; display resolution: 1920x1080; PC BIOS: 2021; OS: Windows 11 Enterprise v.97.0.1072.76; Intel® Iris® Xe graphics, GFX driver version: 30.0.101.1298; power mode: best performance (balanced plan).

Processor: Intel Core i5-1235U processor (up to 4.4 GHz, 2 P-cores, 8 E-cores); tested on reference platform; memory: 16 GB LPDDR4, 5,200 MHz; storage: 512 GB Samsung SSD; display resolution: 1920x1080; PC BIOS: 2021; OS: Windows 11 Enterprise v.97.0.1072.76; Intel Iris Xe graphics, GFX driver version: 30.0.101.1298; power mode: best performance (balanced plan).

Processor: Intel Core i5-1240P processor (up to 4.4 GHz, 4 P-cores, 8 E-cores); tested on reference platform; memory: 16 GB LPDDR5, 4,800 MHz; storage: 512 GB Samsung SSD; display resolution: 2880*1800; PC BIOS: 304; OS: Windows 11 21H2; Intel Iris Xe graphics, GFX driver version: 30.0.101.1369; power mode: best performance (balanced plan).

Processor: Intel Core i5-1255U processor (up to 4.7 GHz, 2 P-cores, 8 E-cores); tested on reference platform; memory: 16 GB LPDDR4, 5,200 MHz; storage: 512 GB Samsung SSD; display resolution: 1920x1080; PC BIOS: 2021; OS: Windows 11 Enterprise 21H2 2200.739; Intel Iris Xe graphics, GFX driver version: 30.0.101.1298; power mode: best performance (balanced plan).

Processor: Intel Core i7-1260P processor (up to 4.7 GHz, 4 P-cores, 8 E-cores); tested on reference platform; memory: 16 GB LPDDR5, 4,800 MHz; storage: 512 GB Samsung SSD; display resolution: 2880*1800; PC BIOS: 304; OS: Windows 11 21H2; Intel Iris Xe graphics, GFX driver version: 30.0.101.1369; power mode: best performance (balanced plan).

[1] Intel. "Intel Expands Mobile Leadership, Brings Enthusiast Performance to Thin-and-Light Laptops" February 2022. https://www.intel.com/content/www/us/en/newsroom/news/enthusiast-performance-thin-light-laptops.html
[2] Wi-Fi 6E usage subject to 6 GHz band availability, operating system support, and router compatibility. Details at www.intel.com/performanceindex (connectivity).
[3] Thunderbolt performance will vary depending on the specific hardware and software used. Must use a Thunderbolt-enabled device.
[4] Performance hybrid architecture combines two core microarchitectures, Performance-cores (P-cores) and Efficient-cores (E-cores), on a single processor die. Select 12th Gen Intel Core processors (certain 12th Gen Intel Core i5 processors and lower) do not have performance hybrid architecture, only P-cores.
[5] The frequency of cores and core types varies by workload, power consumption, and other factors. Visit www.intel.com/content/www/us/en/architecture-and-technology/turbo-boost/turbo-boost-technology.html for more information.


Printed in USA 0822/SB/PRW/PDF Please Recycle 352382-001US