Client Computing Group Speakers

Daniel Rogers
Director
Mobile Product Marketing

Mandy Mock
Vice President
CCG General Manager
Desktop, Workstation, & Channel

Josh Newman
Vice President
CCG General Manager
Mobile Innovation

Kate Porter
Senior Director of Segmentation & Scale, Business Client Platforms
12th Gen Intel Core H-series Processors

Daniel Rogers
Director, Mobile Product Marketing
12th Gen Intel Core

Reinventing Multi Core Architecture

Single, Scalable SoC Architecture
All Client Segments – 9W to 125W – built on Intel 7 process

All-New Core Design
Performance Hybrid with Intel® Thread Director

Industry-Leading Memory & I/O
Support for DDR5, PCIe Gen5, Thunderbolt™ 4, Intel ® Wi-Fi 6E (Gig+)
Announcing
12th Gen Intel Core Mobile Processor Family

H-series
Enthusiast
45W

P-series
Performance Thin & Light
28W

U-series
Modern Thin & Light
15W 9W

Scalable Architecture For All Laptop Segments
Introducing

12th Gen Intel® Core™ H-series Processors

The Fastest Mobile Processor. Ever.
Performance hybrid design – up to 40% faster

World’s Best Mobile Gaming Platform
Ultimate gameplay on a laptop – low-latency Wi-Fi 6E

Built for Content Creators
Blazing fast video editing, 3D modeling, and rendering


"Performance hybrid design – up to 40% faster" Source: Intel. Based on superior performance of 12th Gen Intel Core processor. Intel Core i9 12900HK and Core i9 11980HK performance is estimated based on measurements with Intel Reference Validation Platform running SPECrate_base2017-v1.1.8 -IC2021.2. LLVM (n-copy).

"World’s Best Mobile Gaming Platform" based on unique features and superior in-game benchmark mode performance of 12th Gen Intel Core i9-12900HK with NVIDIA RTX 3080 GPU vs 11th Gen Intel Core i9-11980HK with same GPU and vs AMD R9-5900HX with same GPU. Configurations for all systems include Windows 11 21H2 (OS Build 22000.282) and 1920x1080 Resolution – High Quality Graphics Preset. See www.intel.com/PerformanceIndex for additional workload and configuration details. Results may vary. Other names and brands may be claimed as the property of others.
What's New

12th Gen Intel® Core™ H-series Processors

All-New Core Architecture
Up to 14-cores: 6 P-cores + 8 E-cores with Intel Thread Director

Broad Memory Support
DDR5-4800, DDR4-3200
LPDDR5-5200, LPDDR4x-4267

Best-In-Class Connectivity
Intel Wi-Fi 6E (Gig+)
Thunderbolt™ 4

Intel® Wi-Fi 6E (Gig+) are best-in-class Wi-Fi technologies. See intel.com/PerformanceIndex (connectivity) for details.
# SKU Stack

## 12th Gen Intel® Core™ H-series Processors

<table>
<thead>
<tr>
<th>Processor Number</th>
<th>Processor Cores</th>
<th>Processor Threads</th>
<th>Performance Cores</th>
<th>Efficient Cores</th>
<th>L3 Cache</th>
<th>Max Turbo Frequency</th>
<th>Base Power</th>
<th>Intel vPro®</th>
</tr>
</thead>
<tbody>
<tr>
<td>i9-12900HK</td>
<td>14-core</td>
<td>20T</td>
<td>6P</td>
<td>8E</td>
<td>24MB</td>
<td>5.0 GHz</td>
<td>45W</td>
<td>Essentials</td>
</tr>
<tr>
<td>i9-12900H</td>
<td>14-core</td>
<td>20T</td>
<td>6P</td>
<td>8E</td>
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<td>5.0 GHz</td>
<td>45W</td>
<td>Enterprise</td>
</tr>
<tr>
<td>i7-12800H</td>
<td>14-core</td>
<td>20T</td>
<td>6P</td>
<td>8E</td>
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<td>4.8 GHz</td>
<td>45W</td>
<td>Enterprise</td>
</tr>
<tr>
<td>i7-12700H</td>
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<td>6P</td>
<td>8E</td>
<td>24MB</td>
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<td>i7-12650H</td>
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<td>6P</td>
<td>4E</td>
<td>24MB</td>
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<td>-</td>
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<tr>
<td>i5-12600H</td>
<td>12-core</td>
<td>16T</td>
<td>4P</td>
<td>8E</td>
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<td>i5-12500H</td>
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<td>18MB</td>
<td>4.5 GHz</td>
<td>45W</td>
<td>Essentials</td>
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<tr>
<td>i5-12450H</td>
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<td>4E</td>
<td>12MB</td>
<td>4.4 GHz</td>
<td>45W</td>
<td>-</td>
</tr>
</tbody>
</table>
12th Gen Intel® Core™ H-series Processors

The Fastest Mobile Processor. Ever.

**Power-Performance**

- **Intel Core i9-12900HK**
- **M1 Max**
- **Ryzen 9 5900HX**
- **Intel Core i9-11980HK**


**Relative Performance**

- **100% = Core i9-11980HK at 45W**

"The Fastest Mobile Processor. Ever." Source: Intel. Based on superior performance of 12th Gen Intel Core processor. Intel Core i9 12900HK and Core i9 11980HK performance is estimated based on measurements with Intel internal reference platforms. AMD Ryzen 9 5900HX performance is estimated based on measurements on a Lenovo Legion R9000K with RTX 3080. Apple M1 Max performance is estimated based on public statement made by Apple on 10/18/2021 and measurements on Apple M1 Max 16" 64GB RAM Model A2485. The metric used is the geometric mean of an n-copy SPECrate run of the C/C++ integer benchmarks in SPEC CPU 2017. Best available compilers selected for all processors. Binaries compiled with ICC for Intel/AMD, binaries compiled with Xcode 13.1 for Apple. See [www.intel.com/PerformanceIndex](http://www.intel.com/PerformanceIndex) for additional workload and configuration details. Results may vary. Other names and brands may be claimed as the property of others.
World’s Best Mobile Gaming Platform

12th Gen Intel® Core™ H-series Processors

"World’s Best Mobile Gaming Platform" based on unique features and superior in-game benchmark mode performance of 12th Gen Intel Core i9-12900HK with NVIDIA RTX 3080 GPU vs 11th Gen Intel Core i9-11980HK with same GPU and vs AMD R9-5900HX with same GPU. Configurations for all systems include Windows 11 21H2 (OS Build 22000.282) and 1920x1080 Resolution – High Quality Graphics Preset. See www.intel.com/PerformanceIndex for additional workload and configuration details. Results may vary. Other names and brands may be claimed as the property of others.
World’s Best Mobile Gaming Platform

12th Gen Intel® Core™ H-series Processors

up to 28% Faster Gaming

“World’s Best Mobile Gaming Platform” based on unique features and superior in-game benchmark mode performance of 12th Gen Intel Core i9-12900HK with NVIDIA RTX 3080 GPU vs 11th Gen Intel Core i9-11980HK with same GPU and vs AMD R9-5900HX with same GPU. Configurations for all systems include Windows 11 21H2 (OS Build 22000.282) and 1920x1080 Resolution—High Quality Graphics Preset. See www.intel.com/PerformanceIndex for additional workload and configuration details. Results may vary. Other names and brands may be claimed as the property of others.
Game Optimization Example - Hitman 3

High QoS
Render Thread
Game Thread

Asynchronous
Physics, Animation, AI

Low QoS
Background, Audio

up to 8% higher FPS

For workload and configuration details, see www.intel.com/performanceindex. Results may vary.
Designed for Creators

Graphic Design
Broadcast & Streaming
Media & Entertainment
Architecture, Engineering & Construction
Product Design & Manufacturing
Scientific Visualization & Simulation

Adobe
AUTODESK
AVID
Blackmagicdesign
blender
Bentley
chaos
DASSAULT SYSTEMES
DOLBY DIGITAL
MAGIX
FFmpeg
HandBrake
FOUNDROY
MAXON
wondershare
12th Gen Intel® Core™ H-series Processors
Built for Content Creators

Adobe* Creative Cloud

- Core i9-12900HK
- Core i9-11980HK
- Ryzen R9 5900HX
- M1 Max
- M1 Pro

Baseline: +44%

Autodesk*

- Core i9-12900HK
- Core i9-11980HK
- Ryzen R9 5900HX
- M1 Max
- M1 Pro

Baseline: +14%

For workload and configuration details, see [www.intel.com/performanceindex](http://www.intel.com/performanceindex). Results may vary. *Other names and brands may be claimed as the property of others.
12th Gen Intel® Core™ H-series Processors

Built for Content Creators

**Blender**
BMW Car Demo – render time

- **Lower is better**
- **Core i9-12900HK**
- **30% less time**
- **Ryzen R9 5900HX**
- **M1 Max**
- **M1 Pro**
- **Core i9-11980HK** (baseline)

**CrossMark**
Creativity Scenario
Photo Editing, Photo Organization, Video Editing

- **Core i9-12900HK** (baseline)
- **M1 Max**
- **M1 Pro**
- **Ryzen R9 5900HX**

For workload and configuration details, see [www.intel.com/performanceindex](http://www.intel.com/performanceindex). Results may vary.

*Other names and brands may be claimed as the property of others*
12th Gen Intel® Core™ H-series Processors

Leading Platform Technologies

Intel® Killer™ Wi-Fi 6E
- Exclusive 6 GHz Channels
- Low Latency Gameplay
- Intel® Double Connect

Thunderbolt™ 4
- Universal Cable
- 40Gbps
- Mandatory Certification

Intel Deep Link
- Power Sharing
- Hyper Encode
- Additive AI
Intel’s Fastest H-series Ramp

Ultraportable
- ≥14” Display
- ≥16mm
- ~35W SoC
- Performance
  On The Go.

Thin Enthusiast
- ≥15” Display
- ≥18mm
- ~45W SoC
- Amazing Performance in sleek form factor.

Halo Enthusiast
- ≥15” Display
- ≥20mm
- ~65W SoC
- Uncompromised Performance.

>100 Designs
Summary

12th Gen Intel® Core™ H-series Processors

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Performance hybrid design – up to 40% faster

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Intel CES 2022
Client Computing Group
Press and Industry Analyst Presentation

12th Gen Intel® Core™
Desktop Processors
Mainstream Consumer

Mandy Mock
Vice President, Client Computing Group
General Manager, Desktop, Workstation, and Channel
12th Gen Intel® Core™ Desktop Processors

World’s Best Gaming Processor

Best Overclocking Experience

Giant Leap for Content Creation

As measured by unique features and superior in-game benchmark mode performance (score or frames per second) on majority of the 31 game titles tested (as of Oct 1, 2021), including in comparison to AMD Ryzen 5950X. Based on enhanced overclocking ability enabled by Intel’s comprehensive tools and unique architectural tuning capabilities. Overclocking may void warranty or affect system health. Learn more at intel.com/overclocking.

For workload and configuration details, see www.intel.com/performanceindex. Results may vary. Other names and brands may be claimed as the property of others.
Introducing the Full 12th Gen Intel® Core™ Desktop Processor Family

Ultimate scalable power and performance for gaming, creation and productivity

22 new SKUs (65w & 35w)
# New Intel® Laminar Coolers

Available In-Box With 12th Gen Intel® Core™ Desktop Processors (65W)

<table>
<thead>
<tr>
<th>Intel® Laminar RH1 Cooler</th>
<th>Intel® Laminar RM1 Cooler*</th>
<th>Intel® Laminar RS1 Cooler*</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="RH1 Cooler" /></td>
<td><img src="image2.png" alt="RM1 Cooler*" /></td>
<td><img src="image3.png" alt="RS1 Cooler*" /></td>
</tr>
<tr>
<td><strong>Controllable aRGB Lighting</strong></td>
<td><strong>Standard size</strong></td>
<td><strong>Standard size</strong></td>
</tr>
<tr>
<td><strong>2.6 BA Near-silent Performance</strong></td>
<td><strong>3.9 BA Quiet Performance</strong></td>
<td><strong>Intel Validated Compatibility</strong></td>
</tr>
<tr>
<td><strong>Larger / Copper Heat Column</strong></td>
<td><strong>Intel Validated Compatibility</strong></td>
<td><strong>Three-year Limited Warranty</strong></td>
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<tr>
<td><strong>Intel Validated Compatibility</strong></td>
<td><strong>Three-year Limited Warranty</strong></td>
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</tr>
<tr>
<td><strong>Three-year Limited Warranty</strong></td>
<td></td>
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</tr>
</tbody>
</table>

*Also available in bulk pack
Leadership performance & Amazing Value

Leadership across mainstream office productivity & light browsing

For workload and configuration details, see www.intel.com/performanceindex. Results may vary.

Other names and brands may be claimed as the property of others.
Leadership performance & Amazing Value Productivity

Leadership across mainstream office productivity & light browsing

For workload and configuration details, see www.intel.com/performanceindex. Results may vary. Other names and brands may be claimed as the property of others.
Leadership performance & Amazing Value

Content Creation

Leadership across popular & representative Photo & Video editing applications

For workload and configuration details, see www.intel.com/performanceindex. Results may vary.
Other names and brands may be claimed as the property of others.
Leadership performance & Amazing Value

Content Creation

Leadership across popular & representative Photo & Video editing applications

For workload and configuration details, see www.intel.com/performanceindex. Results may vary.
Other names and brands may be claimed as the property of others.
Huge Leap in Performance for Content Creation

Workloads
Intel Core i9-12900 vs Intel Core i9-11900

Leap in Gen on Gen performance for the Mainstream Creator

For workload and configuration details, see www.intel.com/performanceindex. Results may vary. Other names and brands may be claimed as the property of others.
Great Option for the Mainstream Gamer!

Intel Core i9-12900 vs Intel Core i9-11900

Huge Leap in Gaming Performance

As measured by unique features and superior in-game benchmark mode performance of 12th Gen Intel Core i9-12900 with Z690 and DD R5 4400MHz DRAM vs 11th Gen Intel Core i9-11900 with Z590 and DDR4 3200MHz DRAM. Configuration for both systems include Windows 11, 1920x1080 Resolution—High Quality Graphics Preset with EVGA RTX 3080 GPU. For workload and configuration details, see www.intel.com/performanceindex. Results may vary. Other names and brands may be claimed as the property of others.
### Introducing NEW Intel® 600 Series Chipset SKUs

#### Platform Capabilities

**NEW Additional Consumer SKUs:** H670, B660, H610

**NEW Chipset PCIe 4.0 lanes**

**NEW** x8 & x4 DMI Gen 4.0 options for increased bandwidth CPU-to-PCH interconnect

**NEW** Integrated Intel® Wi-Fi 6E (Gig+)

**NEW** Intel® Volume Management Device (Intel® VMD) for user friendly PCIe device management

#### Feature / Capability

<table>
<thead>
<tr>
<th>Feature / Capability</th>
<th>Z690</th>
<th>H670</th>
<th>B660</th>
<th>H610</th>
</tr>
</thead>
<tbody>
<tr>
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<td>✓</td>
<td>×</td>
<td>×</td>
<td>×</td>
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<tr>
<td>Memory Overclocking</td>
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<td>✓</td>
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<td>System Memory Channels Supported</td>
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<td>DMI 4.0 Lanes</td>
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<td>4</td>
<td>4</td>
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<tr>
<td>Chipset PCIe* 4.0 Lanes¹</td>
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<td>Up to 12</td>
<td>Up to 6</td>
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<tr>
<td>Chipset PCIe* 3.0 Lanes¹</td>
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<td>Up to 12</td>
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<td>SATA 3.0 (6 Gb/s) Ports²</td>
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<td>Maximum USB Ports:</td>
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<td>• Total USB 2 Ports¹</td>
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<td>• USB 3.2 Gen 2x2 (20G)³</td>
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<td>4</td>
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<td>• USB 3.2 Gen 2x1 (10G)</td>
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<td>Intel® Rapid Storage Technology 19.x</td>
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<tr>
<td>• Intel® VMD</td>
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<tr>
<td>• PCIe* Storage Support</td>
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<td>✓</td>
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<tr>
<td>• PCIe RAID 0,1,5 Support</td>
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<td>✓</td>
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<td>✓</td>
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<tr>
<td>Integrated Intel® Wi-Fi 6E (Gig+)</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

¹ USB 3.2 Gen 2x2 compared to USB 3.2 Gen 2x1 10Gbps.
²Intel Hybrid Storage devices such as Pyramid Glacier (H20) can’t attach to CPU PCIe due to PCIe 2x2 requirement. See [www.intel.com/PerformanceIndex](http://www.intel.com/PerformanceIndex) for additional workload and configuration details.
Introducing the next evolution in desktop computing

New Project Athena-based desktop designs powered by 12th Generation Intel® Core™ processors on the Intel vPro® platform will transform the desktop experience with both modern innovations and breakthrough performance.

- **Modern Work Environment**
  - Modernize the form factor to adapt to new work environments and requirements

- **Technology Advancements**
  - Performance
  - Responsiveness
  - Security
  - Immersion

- **UX Evolution**
  - Bring new experiences to the desktop PC on par with modern usages

4 Pillars of Project Athena-based Desktop Designs

Modern innovations transform desktops

Breakthrough performance powered by 12th Generation Intel® Core™ processors on the Intel vPro® Enterprise and Intel vPro® Essential platforms

**PRIVACY**
Walk away lock functionality to help protect your information privacy from passersby

**ENGAGEMENT**
More immersive collaboration experiences with artificial intelligence-based noise reduction and simplified cable connections.

**PREPARED**
Business desktops designed to sense your presence and authenticate you automatically, freeing you from password frustration

**SUSTAINABILITY**
Smaller, more efficient form factors designed to help OEMs meet EPEAT environmental and social responsibility standards
Broad Ecosystem Support & Readiness

Incredible partnerships for product readiness at launch

- 140+ customers
- 30+ countries
- 200+ motherboards

Not a comprehensive list of customers and partners. Other names and brands may be claimed as the property of others.
**12th Gen Intel® Core™ Desktop Processors**

| Processor Number | Processor Cores (P+E)¹ | Processor Threads¹ | Intel® Smart Cache (L3) | Total L2 Cache | Intel® TurboBoost Max Technology 3.0 Frequency (GHz)¹ | P-core Max Turbo Frequency (GHz)² | E-core Max Turbo Frequency (GHz)² | P-core Max Base Frequency (GHz)² | E-core Max Base Frequency (GHz)² | Processor Graphics | Total CPU PCIe Lanes | Max Memory Speed (MT/s)² | Memory Channels | Maximum Memory Capacity³ | Processor Base Power (W) | Maximum Turbo Power (W) | RCP Pricing (USD 1K) |
|------------------|------------------------|--------------------|------------------------|-----------------|-----------------------------------------------|----------------------------------|---------------------------------|---------------------------------|---------------------------------|------------------|---------------------------|---------------------|-------------------------|-----------------------------|------------------------|---------------------|
| Socket LGA 1700 – Mainstream | | | | | | | | | | | | | | | | |
| i9-12900 | 16 (8P + 8E) | 24 | 30MB | 14MB | Up to 5.1 | Up to 5.0 | Up to 3.8 | 2.4 | 1.8 | Intel® UHD Graphics 770 | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 65 | 202 | $489 |
| i9-12900F | 16 (8P + 8E) | 24 | 30MB | 14MB | Up to 5.1 | Up to 5.0 | Up to 3.8 | 2.4 | 1.8 | n/a | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 65 | 202 | $464 |
| i7-12700 | 12 (8P + 4E) | 20 | 25MB | 12MB | Up to 4.9 | Up to 4.8 | Up to 3.6 | 2.1 | 1.6 | Intel® UHD Graphics 770 | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 65 | 180 | $339 |
| i7-12700F | 12 (8P + 4E) | 20 | 25MB | 12MB | Up to 4.9 | Up to 4.8 | Up to 3.6 | 2.1 | 1.6 | n/a | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 65 | 180 | $314 |
| i5-12600 | 6 (6P + 0E) | 12 | 18MB | 7.5MB | n/a | Up to 4.8 | n/a | 3.3 | n/a | Intel® UHD Graphics 770 | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 65 | 117 | $223 |
| i5-12500 | 6 (6P + 0E) | 12 | 18MB | 7.5MB | n/a | Up to 4.6 | n/a | 3.0 | n/a | Intel® UHD Graphics 770 | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 65 | 117 | $202 |
| i5-12400 | 6 (6P + 0E) | 12 | 18MB | 7.5MB | n/a | Up to 4.4 | n/a | 2.5 | n/a | Intel® UHD Graphics 730 | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 65 | 117 | $192 |
| i5-12400F | 6 (6P + 0E) | 12 | 18MB | 7.5MB | n/a | Up to 4.4 | n/a | 2.5 | n/a | n/a | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 65 | 117 | $167 |
| i3-12300 | 4 (4P + 0E) | 8 | 12MB | 5MB | n/a | Up to 4.4 | n/a | 3.5 | n/a | Intel® UHD Graphics 730 | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 60 | 89 | $143 |
| i3-12100 | 4 (4P + 0E) | 8 | 12MB | 5MB | n/a | Up to 4.3 | n/a | 3.3 | n/a | Intel® UHD Graphics 730 | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 60 | 89 | $122 |
| Pentium Gold G7400 | 2 (2P + 0E) | 4 | 6MB | 2.5MB | n/a | n/a | n/a | 3.7 | n/a | Intel® UHD Graphics 710 | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 46 | n/a | $64 |
| Celeron G6900 | 2 (2P + 0E) | 2 | 4MB | 2.5MB | n/a | n/a | n/a | 3.4 | n/a | Intel® UHD Graphics 710 | 20 | DDR5 4800 | DDR4 3200 | 2 | 128GB | 46 | n/a | $42 |

Intel® processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. All processors support Intel® Virtualization Technology (Intel® VT-x). All processors support Intel® Software Guard Extensions (Intel® SGX). 1. Unlocked features are present with select chipsets and processor combinations. Altering clock frequency or voltage may void a product warranty and reduce stability, security, performance, and life of the processor and other components. Check with system and component manufacturers for details. 2. Memory speeds are associated with 1DPC configurations. Maximum memory capacity of 128GB is achievable with 2DPC configuration. 3. Processor cores listed first are the total number of cores in the processor. The number of Performance cores and the number of Efficient cores are listed in parentheses (P+E). 4. Intel® Hyper-Threading Technology and Intel® Turbo Boost Max Technology 3.0 are only available on Performance cores. 5. Efficient-core frequencies are lower to optimize power usage. The frequency of cores and core types varies by workload, power consumption and other factors. Visit [https://www.intel.com/content/www/us/en/architecture-and-technology/turbo-boost/turbo-boost-technology.html](https://www.intel.com/content/www/us/en/architecture-and-technology/turbo-boost/turbo-boost-technology.html) for more information.
## 12th Gen Intel® Core™ Desktop Processors

<table>
<thead>
<tr>
<th>Processor Number</th>
<th>Processor Cores (P+E)</th>
<th>Processor Threads</th>
<th>Intel® Smart Cache (L3)</th>
<th>Total L2 Cache</th>
<th>Processor Turbo Frequency</th>
<th>Processor Base Frequency</th>
<th>Processor Graphics</th>
<th>Total CPU PCIe Lanes</th>
<th>Max Memory Speed (MT/s)</th>
<th>Memory Channels</th>
<th>Maximum Memory Capacity (GB)</th>
<th>Processor Base Power (W)</th>
<th>Maximum Turbo Power (W)</th>
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</table>

Intel® processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. All processors support Intel® Virtualization Technology (Intel® VT-x).

1. Unlocked features are present with select chipsets and processor combinations. Altering clock frequency or voltage may void a product warranties and reduce stability, security, performance, and life of the processor and other components. Check with system and component manufacturers for details.

2. Memory speeds are associated with 1DPC configurations. Maximum memory capacity of 128GB is achievable with 2DPC configuration.

3. Processor cores listed first are the total number of cores in the processor. The number of Performance-cores and the number of Efficient-cores are listed in parentheses (P+E).

4. Intel® Hyper-Threading Technology and Intel® TurboBoost Max Technology 3.0 are only available on Performance-cores.

Intel CES 2022
Client Computing Group
Press and Industry Analyst Presentation

Intel Evo Evolution

Josh Newman
Vice President, Client Computing Group
General Manager, Mobile Innovation
Our Vision

To deliver purposeful computing experiences that unlock people’s potential – allowing each person to focus, create and connect in ways that matter most to them.
Enhancing Experiences Through Platforms

Intel Delivers Beyond the SoC

Co-Engineering
Ecosystem Leadership
Verifying Experiences
LG™ Evo® Momentum

>100 Designs

Acer, ASUS, Dell, dynabook, Fujitsu, HP, Lenovo, Microsoft Surface, MSI, Razer, Samsung, Xiaomi, Intel

Intel™ Evo®
# Evo: What’s New with 3rd Edition

## Key Experiences

<table>
<thead>
<tr>
<th>Responsiveness from Anywhere</th>
<th>Real World Battery Life</th>
<th>Instant Wake</th>
<th>Fast Charge</th>
<th>NEW Intelligent Collaboration</th>
</tr>
</thead>
</table>

## New Key Spec Technologies

<table>
<thead>
<tr>
<th>12th Gen SoC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel® Wi-Fi 6E (Gig+)*</td>
</tr>
<tr>
<td>Intel Connectivity Performance Suite***</td>
</tr>
<tr>
<td>Dynamic Background Noise Suppression</td>
</tr>
<tr>
<td>≥FHD camera **</td>
</tr>
<tr>
<td>Intel Visual Sensing Technology (Innovation Option)</td>
</tr>
</tbody>
</table>

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* WIFI6e: Subject to 6 GHz band availability, operating system support, and router compatibility. Not available in all markets.

**Not all designs will have >FHD camera, best designs have Intel IPU6/MIPI

***Windows Only
Intelligent Collaboration Experience

1. User Journey
2. Real World Conditions
3. Key Experience Indicators
4. Foundational Technologies

Uncompromising Responsiveness
Long Battery Life

AI Based dynamic background noise cancellation
Intel WI-FI 6E
Intel Connectivity Performance Suite *
AI accelerated system level camera imaging effects

*Windows Only

Great Video Conferencing Experience
Enabling Intelligent Collaboration Experience

Intel® Wi-Fi 6E (Gig+)
Your New VIP Wi-Fi network

Legacy Wi-Fi 5 GHz
New/Exclusive 6 GHz
Wi-Fi 6E only

Biggest Wi-Fi advancement In 20 years

Intel® Connectivity Performance Suite
Automatic Traffic Prioritization & Connection Optimization

Critical Traffic Prioritization

Dynamic Wi-Fi Connection Optimization

Noise Reduction
Intel® GNA – Gaussian & Neural Accelerator
New Higher Performance Option

H-series Joins Intel® Evo™

Meets all Intel Evo Requirements

AND

12th Gen Intel Core H (35-45W TDP)

Intel® Arc™ Discrete Graphics with Intel Deep Link Technology

Key Attributes

▪ Larger Screen Size (15-16”)
▪ Creator-oriented display
New Brand Badges

intel

![evo](image)
i7

intel

vPRO
An Evo Design
i7
Engineered For Intel® Evo™ and Intel® Evo™ vPro® Laptops

Extending the Experience through Accessories

The Intel Engineered For Program continues to build end to end experience. Based on Intel® Evo™ Laptop Featured Accessory Program with Thunderbolt™ Expanding to Bluetooth® Accessories. Backed by Intel co-engineering and testing.
Expanding the Innovation

Announcement of Foldable Display Spec

Meets all Intel Evo Key Experience Requirements

AND

New Form Factor to adapt to new use cases and experiences

Large Foldable Screen Laptop

Coming to Market 2022
Intel CES 2022
Client Computing Group
Press and Industry Analyst Presentation

Intel vPro®

Kate Porter
Senior Director of Segmentation and Scale
Business Client
Security is more challenging in a remote environment

Employees need support everywhere

Employee effectiveness and experience matters more than ever

Security Starts with Intel
Comprehensive security built into hardware

Complete Management
Full life-cycle management optimized for modern cloud environments

Professional Grade Performance
Tuned for the real world demands of today’s professionals

Built for All Businesses

Introducing Intel vPro®, powered by 12th Gen Intel® Core™ processors
The right Intel vPro® offering for all business needs

Intel vPro®, an Intel® Evo™ Design
All the enterprise features PLUS responsiveness and experiences.

NEW Intel vPro® Enterprise
Continues to raise the bar for enterprise grade computing in PCs and Workstations.

Intel vPro® Enterprise for Chrome
Offering Built for Business PCs on select Chrome devices.

NEW Intel vPro® Essentials
Small business computing foundation with built-in business features.
It’s Simple: Intel vPro® is Built for All Businesses

Intel vPro® Enterprise

The full-featured platform: enterprise grade computing, premium security features, modern manageability & stability

Where IT drives employee experience & global scale matters

Now available on both Windows and Chrome!

Intel vPro® Essentials

Small business computing foundation with premium connectivity support, built-in security features, partner-ready manageability

Where IT is lean or non-existent

New option for Small Business
Launching all new 12th Gen Intel Core H-series processors

Introducing the full 12th Gen Intel Core S-series desktop family now available

Sharing new Intel Evo specifications and expanded KEIs

Previewing new Intel vPro platform brand levels
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Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See configuration disclosure for details.

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Performance hybrid architecture combines two new 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.

Built into the hardware, Intel® Thread Director is provided only in performance hybrid architecture configurations of 12th Gen Intel® Core™ processors; OS enablement is required. Available features and functionality vary by OS.

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### 12th Gen Intel® Core™ H-series Processors

<table>
<thead>
<tr>
<th>Processor Number</th>
<th>Processor Cores</th>
<th>Processor Threads</th>
<th>Performance Cores</th>
<th>Efficient Cores</th>
<th>L3 Cache</th>
<th>Max Turbo Frequency P-cores</th>
<th>Max Turbo Frequency E-cores</th>
<th>Base Frequency P-cores</th>
<th>Base Frequency E-cores</th>
<th>Processor Graphics</th>
<th>Max Graphics Frequency</th>
<th>Processor Base Power</th>
<th>Max Turbo Power</th>
<th>Intel vPro®</th>
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</thead>
<tbody>
<tr>
<td>i9-12900HK</td>
<td>14C</td>
<td>20T</td>
<td>6P</td>
<td>8E</td>
<td>24MB</td>
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<td>2.5 GHz</td>
<td>1.8 GHz</td>
<td>96EU</td>
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<td>45W</td>
<td>115W</td>
<td>Essentials</td>
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<td>8E</td>
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<td>1.8 GHz</td>
<td>96EU</td>
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# 12th Gen Intel® Core™ P-series Processors

For Performance Thin & Light Laptops

<table>
<thead>
<tr>
<th>Processor Number</th>
<th>Processor Cores</th>
<th>Processor Threads</th>
<th>Performance Cores</th>
<th>Efficient Cores</th>
<th>L3 Cache</th>
<th>Max Turbo Frequency P-cores</th>
<th>Max Turbo Frequency E-cores</th>
<th>Base Frequency P-cores</th>
<th>Base Frequency E-cores</th>
<th>Processor Graphics</th>
<th>Max Graphics Frequency</th>
<th>Processor Base Power</th>
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## 12th Gen Intel® Core™ U-series Processors

<table>
<thead>
<tr>
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<th>Processor Cores</th>
<th>Processor Threads</th>
<th>Performance Cores</th>
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<th>Max Graphics Frequency</th>
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# 12th Gen Intel® Core™ U-series Processors

For Modern Thin & Light Laptops

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<th>Processor Threads</th>
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<th>Efficient Cores</th>
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<th>Max Turbo Frequency/E-cores</th>
<th>Base Frequency/P-cores</th>
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