

Intel® Core™ Ultra 9 Processor 285K (36M Cache- up to 5.70 GHz)

Essentials

Product Collection: Intel® Core™ Ultra Processors (Series 2)

Code Name:Products formerly Arrow Lake

Vertical Segment:Desktop

Processor Number:285K

Overall Peak TOPS (Int8):36

CPU Specifications

Total Cores: 24

of Performance-cores: 8

of Efficient-cores: 16

Total Threads: 24

Max Turbo Frequency: 5.7 GHz

Intel® Thermal Velocity Boost Frequency: 5.7 GHz

Intel® Turbo Boost Max Technology 3.0 Frequency: 5.6 GHz

Performance-core Max Turbo Frequency: 5.5 GHz

Efficient-core Max Turbo Frequency: 4.6 GHz

Performance-core Base Frequency: 3.7 GHz

Efficient-core Base Frequency:3.2 GHz

Cache: 36 MB Intel® Smart Cache

Total L2 Cache: 40 MB

Processor Base Power: 125 W

Maximum Turbo Power: 250 W

Intel® Deep Learning Boost (Intel® DL Boost) on CPU: Yes

AI Software Frameworks Supported by CPU: OpenVINO™ | WindowsML | DirectML | ONNX RT
| WebNN

CPU Lithography: TSMC N3B

Supplemental Information

Marketing Status: Launched

Launch Date: Q4'24

Embedded Options Available: No

Use Conditions: PC/Client/Tablet | Workstation

Memory Specifications

Max Memory Size (dependent on memory type): 192 GB

Memory Types: Up to DDR5 6400 MT/s

Maximum Memory Speed: 6400 MHz

Max # of Memory Channels: 2

ECC Memory Supported: Yes

GPU Specifications

GPU Name: Intel® Graphics

Graphics Base Frequency: 300 MHz

Graphics Max Dynamic Frequency: 2 GHz

GPU Peak TOPS (Int8): 8

Graphics Output: DP2.1 UHBR20 | HDMI2.1 FRL 12GHz | eDP1.4b

Xe-cores: 4

Max Resolution (HDMI): 4K @ 60Hz (HDMI 2.1 TMDS) 8K @ 60Hz (HDMI2.1 FRL)

Max Resolution (DP): 8K @ 60Hz

Max Resolution (eDP - Integrated Flat Panel): 4K @ 60Hz

DirectX* Support: 12

OpenGL* Support: 4.5

OpenCL* Support: 3

Intel® Quick Sync Video: Yes

of Displays Supported: 4

Device ID: 0x7D67

Intel® Deep Learning Boost (Intel® DL Boost) on GPU: Yes

NPU Specifications

NPU Name: Intel® AI Boost

NPU Peak TOPS (Int8): 13

Sparsity Support: Yes

Windows Studio Effects Support: Yes

AI Software Frameworks Supported by NPU: OpenVINO™ | WindowsML | DirectML | ONNX RT
| WebNN

Expansion Options

Direct Media Interface (DMI) Revision: 4

Max # of DMI Lanes: 8

Intel® Thunderbolt™ 4: Yes

Scalability: 1S Only

PCI Express Revision: 5.0 and 4.0

PCI Express Configurations: Up to 1x16+2x4 | 2x8+2x4 | 1x8+4x4

Max # of PCI Express Lanes: 24

Package Specifications

Sockets Supported: FCLGA1851

Thermal Solution Specification: PCG 2020A

Max Operating Temperature: 105 °C

Advanced Technologies

Intel® Volume Management Device (VMD): Yes

Intel® Gaussian & Neural Accelerator: 3.5

Intel® Thread Director: Yes

Intel® Speed Shift Technology: Yes

Intel® Thermal Velocity Boost: Yes

Intel® Turbo Boost Max Technology 3.0: Yes

Intel® Turbo Boost Technology: 2.0

Intel® 64: Yes

Instruction Set: 64-bit

Instruction Set Extensions: Intel® SSE4.1 | Intel® SSE4.2 | Intel® AVX2

Idle States: Yes

Enhanced Intel SpeedStep® Technology: Yes

Thermal Monitoring Technologies: Yes

Security & Reliability

Intel vPro® Eligibility: Intel vPro® Enterprise | Intel vPro® Platform

Intel® Threat Detection Technology (TDT): Yes

Intel® Active Management Technology (AMT): Yes

Intel® Standard Manageability (ISM): Yes

Intel® Remote Platform Erase (RPE): Yes

Intel® One-Click Recovery: Yes

Intel® Hardware Shield Eligibility: Yes

Intel® Control-Flow Enforcement Technology: Yes

Intel® Total Memory Encryption - Multi Key: Yes

Intel® AES New Instructions: Yes

Secure Key: Yes

Intel® Trusted Execution Technology: Yes

Execute Disable Bit: Yes

Intel® OS Guard: Yes

Intel® Boot Guard: Yes

Mode-based Execute Control (MBEC): Yes

Intel® Stable IT Platform Program (SIPP): Yes

Intel® Virtualization Technology with Redirect Protection (VT-rp): Yes

Intel® Virtualization Technology (VT-x): Yes

Intel® Virtualization Technology for Directed I/O (VT-d): Yes

Intel® VT-x with Extended Page Tables (EPT): Yes