

UPE | Compare Intel® Products
Intel® Core™ i9 processor 14900 (36M Cache- up to 5.80 GHz)

Essentials

Product Collection	Intel® Core™ i9 Processors (14th gen)
Code Name	Products formerly Raptor Lake
Vertical Segment	Desktop
Processor Number	i9-14900
Lithography	Intel 7
Use Conditions	PC/Client/Tablet Workstation

CPU Specifications

Total Cores	24
# of Performance-cores	8
# of Efficient-cores	16
Total Threads	32
Max Turbo Frequency	5.8 GHz
Intel® Thermal Velocity Boost Frequency	5.8 GHz
Intel® Turbo Boost Max Technology 3.0 Frequency ‡	5.6 GHz
Performance-core Max Turbo Frequency	5.4 GHz
Efficient-core Max Turbo Frequency	4.3 GHz
Performance-core Base Frequency	2 GHz
Efficient-core Base Frequency	1.5 GHz
Cache	36 MB Intel® Smart Cache
Total L2 Cache	32 MB
Processor Base Power	65 W
Maximum Turbo Power	219 W

Supplemental Information

Marketing Status	Launched
Launch Date	Q1'24
Embedded Options Available	Yes

Memory Specifications

Max Memory Size (dependent on memory type)	192 GB
Memory Types	Up to DDR5 5600 MT/s Up to DDR4 3200 MT/s
Max # of Memory Channels	2
Max Memory Bandwidth	89.6 GB/s
ECC Memory Supported ‡	Yes

GPU Specifications

GPU Name‡	Intel® UHD Graphics 770
Graphics Base Frequency	300 MHz
Graphics Max Dynamic Frequency	1.65 GHz
Graphics Output	eDP 1.4b DP 1.4a HDMI 2.1
Execution Units	32
Max Resolution (HDMI)‡	4096 x 2160 @ 60Hz
Max Resolution (DP)‡	7680 x 4320 @ 60Hz
Max Resolution (eDP - Integrated Flat Panel)‡	5120 x 3200 @ 120Hz

DirectX* Support		12
OpenGL* Support		4.5
OpenCL* Support		3
Multi-Format Codec Engines		2
Intel® Quick Sync Video	Yes	
Intel® Clear Video HD Technology	Yes	
# of Displays Supported ‡		4
Device ID	0xA780	

Expansion Options		
Direct Media Interface (DMI) Revision		4
Max # of DMI Lanes		8
Scalability	1S Only	
PCI Express Revision	5.0 and 4.0	
PCI Express Configurations ‡	Up to 1x16+4 2x8+4	
Max # of PCI Express Lanes		20

Package Specifications		
Sockets Supported	FCLGA1700	
Max CPU Configuration		1
Thermal Solution Specification	PCG 2020C	
TJUNCTION	100°C	
Package Size	45.0 mm x 37.5 mm	

Advanced Technologies		
Intel® Gaussian & Neural Accelerator		3
Intel® Thread Director	Yes	
Intel® Deep Learning Boost (Intel® DL Boost) on CPU	Yes	
Intel® Speed Shift Technology	Yes	
Intel® Adaptive Boost Technology	Yes	
Intel® Thermal Velocity Boost	Yes	
Intel® Turbo Boost Max Technology 3.0 ‡	Yes	
Intel® Turbo Boost Technology ‡		2
Intel® Hyper-Threading Technology ‡	Yes	
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	
Intel® Volume Management Device (VMD)	Yes	

Security & Reliability		
Intel® Standard Manageability (ISM) ‡	Yes	
Intel® Control-Flow Enforcement Technology	Yes	
Intel® AES New Instructions	Yes	
Secure Key	Yes	
Intel® OS Guard	Yes	
Execute Disable Bit ‡	Yes	

Intel® Boot Guard	Yes
Mode-based Execute Control (MBEC)	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