

Intel Core i9-12900 processor 30 MB Smart Cache Box

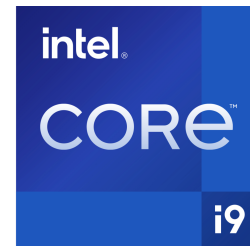
Brand : Intel

Product family: Core

Product code: BX8071512900

Product name : i9-12900

Boxed Intel® Core™ i9-12900 Processor (30M Cache, up to 5.10 GHz) FC-LGA16A
 Intel Core i9-12900. Processor family: Intel® Core™ i9, Processor socket: LGA 1700, Processor manufacturer: Intel. Memory channels: Dual-channel, Maximum internal memory supported by processor: 128 GB, Memory types supported by processor: DDR4-SDRAM, DDR5-SDRAM. On-board graphics card model: Intel UHD Graphics 770, On-board graphics card outputs supported: Embedded DisplayPort (eDP) 1.4b, DisplayPort 1.4a, HDMI 2.1, On-board graphics card base frequency: 300 MHz. Market segment: Desktop, Use conditions: PC/Client/Tablet, Workstation, PCI Express slots version: 5.0, 4.0. Intel® Turbo Boost Max Technology 3.0 frequency: 5.1 GHz



| Processor | | Features | |
|--|---|--|----------|
| Processor manufacturer * | Intel | Direct Media Interface (DMI) Revision | 4.0 |
| Processor generation | 12th gen Intel® Core™ i9 | Harmonized System (HS) code | 85423119 |
| Processor model * | i9-12900 | Export Control Classification Number (ECCN) | 5A992CN3 |
| Processor family * | Intel® Core™ i9 | Commodity Classification Automated Tracking System (CCATS) | G167599 |
| Processor cores * | 16 | Processor special features | |
| Processor socket * | LGA 1700 | Intel® Hyper Threading Technology (Intel® HT Technology) | ✓ |
| Processor threads | 24 | Intel® Turbo Boost Technology | 2.0 |
| Processor operating modes * | 64-bit | Intel® Quick Sync Video Technology | ✓ |
| Performance cores | 8 | Intel® Clear Video HD Technology (Intel® CVT HD) | ✓ |
| Efficient cores | 8 | Intel® AES New Instructions (Intel® AES-NI) | ✓ |
| Processor boost frequency | 5.1 GHz | Enhanced Intel SpeedStep Technology | ✓ |
| Performance-core boost frequency | 5 GHz | Intel Trusted Execution Technology | ✓ |
| Performance-core base frequency | 2.4 GHz | Intel® Speed Shift Technology | ✓ |
| Efficient-core boost frequency | 3.8 GHz | Intel® Turbo Boost Max Technology 3.0 frequency | 5.1 GHz |
| Efficient-core base frequency | 1.8 GHz | Intel® Total Memory Encryption | ✓ |
| Processor cache | 30 MB | Intel® Gaussian & Neural Accelerator (Intel® GNA) 3.0 | ✓ |
| Processor cache type | Smart Cache | Intel® Control-flow Enforcement Technology (CET) | ✓ |
| Box * | ✓ | Intel® Thread Director | ✓ |
| Processor base power | 65 W | Intel VT-x with Extended Page Tables (EPT) | ✓ |
| Maximum turbo power | 202 W | Intel® Secure Key | ✓ |
| Stepping | C0 | Intel® Active Management Technology (Intel® AMT) | ✓ |
| Bus type | DMI4 | Intel Stable Image Platform Program (SIPP) | ✓ |
| Maximum number of DMI lanes | 8 | Intel® OS Guard | ✓ |
| Memory bandwidth supported by processor (max) | 76.8 GB/s | Intel 64 | ✓ |
| Processor codename | Alder Lake | Intel Virtualization Technology (VT-x) | ✓ |
| Memory | | Intel Virtualization Technology for Directed I/O (VT-d) | ✓ |
| Maximum internal memory supported by processor | 128 GB | Intel Turbo Boost Max Technology 3.0 | ✓ |
| Memory types supported by processor | DDR4-SDRAM, DDR5-SDRAM | Intel® Optane™ Memory Ready | ✓ |
| Memory channels * | Dual-channel | Intel® Boot Guard | ✓ |
| ECC | ✓ | | |
| Memory bandwidth (max) | 76.8 GB/s | | |
| Graphics | | | |
| On-board graphics card * | ✓ | | |
| Discrete graphics card * | ✗ | | |
| On-board graphics card model * | Intel UHD Graphics 770 | | |
| On-board graphics card outputs supported | Embedded DisplayPort (eDP) 1.4b, DisplayPort 1.4a, HDMI 2.1 | | |
| On-board graphics card base frequency | 300 MHz | | |

| Graphics | | Processor special features | |
|---|-------------------------------|---|-----------------------------|
| On-board graphics card dynamic frequency (max) | 1550 MHz | Intel® Deep Learning Boost (Intel® DL Boost) | ✓ |
| Number of displays supported (on-board graphics) | 4 | Intel® Volume Management Device (VMD) | ✓ |
| On-board graphics card DirectX version | 12.0 | Mode-based Execute Control (MBE) | ✓ |
| On-board graphics card OpenGL version | 4.5 | Intel® vPro™ Platform Eligibility | ✓ |
| On-board graphics card maximum resolution (DisplayPort) | 7680 x 4320 pixels | Intel® Standard Manageability (ISM) | ✓ |
| On-board graphics card maximum resolution (eDP - Integrated Flat Panel) | 5120 x 3200 pixels | Intel® One-Click Recovery | ✓ |
| On-board graphics card maximum resolution (HDMI) | 4096 x 2160 pixels | Intel® Virtualization Technology with Redirect Protection (VT-rp) | ✓ |
| On-board graphics card refresh rate at maximum resolution (DisplayPort) | 60 Hz | Intel vPro® Enterprise Platform Eligibility | ✓ |
| On-board graphics card refresh rate at maximum resolution (eDP - Integrated Flat Panel) | 120 Hz | Intel® Threat Detection Technology (TDT) | ✓ |
| On-board graphics card refresh rate at maximum resolution (HDMI) | 60 Hz | Intel® Hardware Shield Eligibility | ✓ |
| On-board graphics card ID | 0x4680 | Intel® Total Memory Encryption - Multi Key | ✓ |
| Discrete graphics card model * | Not available | Intel vPro® Essentials Platform Eligibility | ✓ |
| Number of execution units | 32 | | |
| Multi-Format Codec Engines | 2 | | |
| Features | | Operational conditions | |
| Execute Disable Bit | ✓ | Tjunction | 100 °C |
| Idle States | ✓ | Technical details | |
| Thermal Monitoring Technologies | ✓ | Target market | Gaming, Content Creation |
| Market segment | Desktop | OpenCL version | 2.1 |
| Use conditions | PC/Client/Tablet, Workstation | Launch date | Q1'22 |
| Maximum number of PCI Express lanes | 20 | Status | Launched |
| PCI Express slots version | 5.0, 4.0 | Packaging data | |
| PCI Express configurations | 1x16+1x4, 2x8+1x4 | Package type | Retail box |
| Supported instruction sets | SSE4.1, SSE4.2, AVX 2.0 | Weight & dimensions | |
| Scalability | 1S | Processor package size | 45 x 37.5 mm |
| CPU configuration (max) | 1 | Other features | |
| Embedded options available | ✗ | Maximum internal memory | 128 GB |
| | | Graphics output | eDP 1.4b, DP 1.4a, HDMI 2.1 |



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