![intel]

Intel Core i9-12900KF processor 30 MB Smart Cache Box

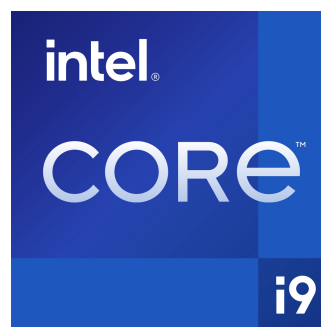**Brand :** Intel

Product family: Core

Product code:
BX8071512900KF

Product name : Intel® Core™
i9-12900KF Processor (30M
Cache, up to 5.20 GHz)

Intel® Core™ i9-12900KF Processor (30M Cache, up to 5.20 GHz)
Intel Core i9-12900KF. 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. Market
segment: Desktop, Use conditions: PC/Client/Tablet, PCI Express slots version: 5.0, 4.0. Intel® Turbo
Boost Max Technology 3.0 frequency: 5.2 GHz. Package type: Retail box

Processor

Processor manufacturer *	Intel
Processor generation	12th gen Intel® Core™ i9
Processor model *	i9-12900KF
Processor family *	Intel® Core™ i9
Processor cores *	16
Processor socket *	LGA 1700
Component for	PC
Processor threads	24
Processor operating modes *	64-bit
Performance cores	8
Efficient cores	8
Processor boost frequency	5.2 GHz
Performance-core boost frequency	5.1 GHz
Performance-core base frequency	3.2 GHz
Efficient-core boost frequency	3.9 GHz
Efficient-core base frequency	2.4 GHz
Processor cache	30 MB
Processor cache type	Smart Cache
Box *	✓
Processor base power	125 W
Maximum turbo power	241 W
Bus type	DMI4
Maximum number of DMI lanes	8
Memory bandwidth supported by processor (max)	76.8 GB/s
Processor codename	Alder Lake

Memory

Maximum internal memory supported by processor	128 GB
Memory types supported by processor	DDR4-SDRAM, DDR5-SDRAM
Memory channels *	Dual-channel
Memory bandwidth (max)	76.8 GB/s

Graphics

On-board graphics card *	✗
Discrete graphics card *	✗
On-board graphics card model *	Not available
Discrete graphics card model *	Not available

Features

CPU configuration (max)	1
Embedded options available	✗
Thermal solution specification	PCG 2020A
Harmonized System (HS) code	8542310001
Export Control Classification Number (ECCN)	5A992CN3
Commodity Classification Automated Tracking System (CCATS)	G167599

Processor special features

Intel® Hyper Threading Technology (Intel® HT Technology)	✓
Intel® Turbo Boost Technology	2.0
Intel® AES New Instructions (Intel® AES-NI)	✓
Enhanced Intel SpeedStep Technology	✓
Intel® Speed Shift Technology	✓
Intel® Turbo Boost Max Technology 3.0 frequency	5.2 GHz
Intel® Control-flow Enforcement Technology (CET)	✓
Intel® Thread Director	✓
Intel VT-x with Extended Page Tables (EPT)	✓
Intel® Secure Key	✓
Intel® OS Guard	✓
Intel 64	✓
Intel Virtualization Technology (VT-x)	✓
Intel Virtualization Technology for Directed I/O (VT-d)	✓
Intel Turbo Boost Max Technology 3.0	✓
Intel® Optane™ Memory Ready	✓
Intel® Boot Guard	✓
Intel® Deep Learning Boost (Intel® DL Boost)	✓
Intel® Volume Management Device (VMD)	✓
Mode-based Execute Control (MBE)	✓

Features

Execute Disable Bit	✔
Idle States	✔
Thermal Monitoring Technologies	✔
Market segment	Desktop
Use conditions	PC/Client/Tablet
Maximum number of PCI Express lanes	20
PCI Express slots version	5.0, 4.0
PCI Express configurations	1x16+1x4, 2x8+1x4
Supported instruction sets	SSE4.1, SSE4.2, AVX 2.0
Scalability	1S

Operational conditions

Tjunction	100 °C

Packaging data

Package type	Retail box

Technical details

Target market	Gaming, Content Creation
Launch date	Q4'21
Status	Launched

Weight & dimensions

Processor package size	45 x 37.5 mm

Other features

Maximum internal memory	128 GB

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