

Product Name	Intel® Xeon® Processor E3-1280 (8M Cache, 3.50 GHz)	Intel® Xeon® Processor E3-1275 (8M Cache, 3.40 GHz)	Intel® Xeon® Processor E3-1270 (8M Cache, 3.40 GHz)	Intel® Xeon® Processor E3-1245 (8M Cache, 3.30 GHz)	Intel® Xeon® Processor E3-1240 (8M Cache, 3.30 GHz)	Intel® Xeon® Processor E3-1235 (8M Cache, 3.20 GHz)	Intel® Xeon® Processor E3-1230 (8M Cache, 3.20 GHz)	Intel® Xeon® Processor E3-1225 (6M Cache, 3.10 GHz)	Intel® Xeon® Processor E3-1220 (8M Cache, 3.10 GHz)	Intel® Core™ i3-2120 Processor (3M Cache, 3.30 GHz)
Code Name	Sandy Bridge	Sandy Bridge	Sandy Bridge	Sandy Bridge	Sandy Bridge	Sandy Bridge	Sandy Bridge	Sandy Bridge	Sandy Bridge	Sandy Bridge
Essentials										
Status	Launched	Launched	Launched	Launched	Launched	Launched	Launched	Launched	Launched	Launched
Launch Date	Q2'11	Q2'11	Q2'11	Q2'11	Q2'11	Q2'11	Q2'11	Q2'11	Q2'11	Q1'11
Processor Number	E3-1280	E3-1275	E3-1270	E3-1245	E3-1240	E3-1235	E3-1230	E3-1225	E3-1220	i3-2120
# of Cores	4	4	4	4	4	4	4	4	4	2
# of Threads	8	8	8	8	8	8	8	4	4	4
Clock Speed	3.5 GHz	3.4 GHz	3.4 GHz	3.3 GHz	3.3 GHz	3.2 GHz	3.2 GHz	3.1 GHz	3.1 GHz	3.3 GHz
Max Turbo Frequency	3.9 GHz	3.8 GHz	3.8 GHz	3.7 GHz	3.7 GHz	3.6 GHz	3.6 GHz	3.4 GHz	3.4 GHz	
Cache	8 MB Intel® Smart Cache	8 MB Intel® Smart Cache	8 MB Intel® Smart Cache	8 MB Intel® Smart Cache	8 MB Intel® Smart Cache	8 MB Intel® Smart Cache	8 MB Intel® Smart Cache	6 MB Intel® Smart Cache	8 MB Intel® Smart Cache	3 MB Intel® Smart Cache
Bus/Core Ratio	35	34	34	33	33	32	32	31	31	33
Bus Type	DMI	DMI	DMI	DMI	DMI	DMI	DMI	DMI	DMI	DMI
System Bus	5 GT/s	5 GT/s	5 GT/s	5 GT/s	5 GT/s	5 GT/s	5 GT/s	5 GT/s	5 GT/s	5 GT/s
Instruction Set	64-bit	64-bit	64-bit	64-bit	64-bit	64-bit	64-bit	64-bit	64-bit	64-bit
Instruction Set Extensions	SSE4.1/4.2, AVX	SSE4.1/4.2, AVX	SSE4.1/4.2, AVX	SSE4.1/4.2, AVX	SSE4.1/4.2, AVX	SSE4.1/4.2, AVX	SSE4.1/4.2, AVX	SSE4.1/4.2, AVX	SSE4.1/4.2, AVX	SSE4.1/4.2, AVX
Embedded Options Available	No	Yes	No	No	No	No	No	Yes	No	Yes
Lithography	32 nm	32 nm	32 nm	32 nm	32 nm	32 nm	32 nm	32 nm	32 nm	32 nm
Max TDP	95 W	95 W	80 W	95 W	80 W	95 W	80 W	95 W	80 W	65 W
Recommended Customer Price	612.00	339.00	328.00	262.00	250.00	240.00	215.00	194.00	189.00	117.00
Memory Specifications										

Max Memory Size (dependent on memory type)	32 GB	32 GB	32 GB	32 GB	32 GB	32 GB	32 GB	32 GB	32 GB	32 GB
Memory Types	DDR3-1066/1333	DDR3-1066/1333	DDR3-1066/1333	DDR3-1066/1333	DDR3-1066/1333	DDR3-1066/1333	DDR3-1066/1333	DDR3-1066/1333	DDR3-1066/1333	DDR3-1066/1333
# of Memory Channels	2	2	2	2	2	2	2	2	2	2
Max Memory Bandwidth	21 GB/s	21 GB/s	21 GB/s	21 GB/s	21 GB/s	21 GB/s	21 GB/s	21 GB/s	21 GB/s	21 GB/s
ECC Memory Supported	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Graphics Specifications										
Processor Graphics	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Graphics Model		Intel® HD Graphics P3000		Intel® HD Graphics P3000		Intel® HD Graphics P3000		Intel® HD Graphics P3000		Intel® HD Graphics 2000
Graphics Base Frequency		850 MHz		850 MHz		850 MHz		850 MHz		850 MHz
Graphics Max Dynamic Frequency		1.35 GHz		1.35 GHz		1.35 GHz		1.35 GHz		1.1 GHz
Intel® Quick Sync Video	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Intel® InTru™ 3D Technology	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Intel® Insider™										Yes
Intel® Wireless Display	No	No	No	No	No	No	No	No	No	No
Intel® Flexible Display Interface (Intel® FDI)	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Intel® Clear Video HD Technology	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Dual Display Capable		Yes		Yes		Yes		Yes		Yes
Expansion Options										
PCI Express Revision	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
# of PCI Express Ports	2	2	2	2	2	2	2	2	2	2
Package Specifications										
Max CPU Configuration	1	1	1	1	1	1	1	1	1	1
T _{CASE}	73.6°C	72.6°C	69.1°C	72.6°C	69.1°C	72.6°C	69.1°C	72.6°C	69.1°C	69.1°C
Package Size	37.5mm x 37.5mm	37.5mm x 37.5mm	37.5mm x 37.5mm	37.5mm x 37.5mm	37.5mm x 37.5mm	37.5mm x 37.5mm	37.5mm x 37.5mm	37.5mm x 37.5mm	37.5mm x 37.5mm	37.5mm x 37.5mm
Sockets Supported	LGA1155	LGA1155	LGA1155	LGA1155	LGA1155	LGA1155	LGA1155	LGA1155	LGA1155	FCLGA1155
Low Halogen Options Available	See MDDS	See MDDS	See MDDS	See MDDS	See MDDS	See MDDS	See MDDS	See MDDS	See MDDS	See MDDS
Advanced Technologies										
Intel® Turbo Boost Technology	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	No
Intel® vPro Technology	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Intel® Hyper-Threading Technology	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Intel® Virtualization Technology (VT-x)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Intel®

Virtualization

Technology for
Directed I/O
(VT-d)

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

No

Intel® Trusted
Execution
Technology

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

No

AES New
Instructions

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

No

Intel® 64

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Idle States

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Enhanced Intel
SpeedStep®
Technology

Yes

Intel® Demand
Based Switching

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Thermal
Monitoring
Technologies

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Intel® Fast
Memory Access

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Intel® Flex
Memory Access

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Execute Disable
Bit

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

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