PERFORMANCE GUIDE

Intel® Xeon® Processor E3-1200 v5 and
Intel® Xeon® Processor E3-1500M v5 Product Families
Intel® HD Graphics P530 and Intel® Iris™ Pro Graphics P580

Intel® HD Graphics P530 & Intel® Iris™ Pro Graphics P580

Professional-grade graphics for Intel® Xeon® processor-based workstations.

Integrated directly into the die on Intel® Xeon® processors E3-1500M, Intel® HD graphics P530 and Intel® Iris™ Pro graphics P580 graphics make it possible to deliver professional-grade performance in smaller, thinner, and lighter form factors. Intel® HD graphics P530 and Intel® Iris™ Pro graphics P580 are optimized for professional graphics and imagery applications used by designers, engineers, and media creators - for more advanced graphics needs the new Intel® Iris™ Pro graphics P580 may eliminate the need for a discrete graphics card for some of the most commonly used workstation workloads.

Either way, by offering performance previously out of reach without discrete graphics cards, these processor-based graphics enable workstations powered by Intel® Xeon® processors to meet the demands of today's graphics-intensive workloads.

Intel® Xeon® with processor-based Intel® HD graphics P530 and Intel® Iris™ Pro graphics P580 graphics are built on Intel's 14nm process using 3D Tri-Gate transistors. The advanced processors are a new offering for entry-level workstations used by professional designers, engineers, and media creators with demanding graphics requirements.

Intel® HD graphics P530 and Intel® Iris™ Pro graphics P580 graphics technology offers improvements in both 2D and 3D graphics performance, with support for Microsoft DirectX* 12.1, OpenGL* 4.4, and OpenCL* 2.0. Integrated into the silicon, Intel® Quick Sync Video technology improves the transcoding speed of previous versions of the technology and now supports up to 4K display resolution.

Optimized performance

With optimized performance for a range of some of the most commonly used workstation and Computer Aided Design (CAD) applications, Intel® HD graphics P530 and Intel® Iris™ Pro graphics P580 provide designers, engineers, and media creators with entry-level workstation performance and visuals. With built-in graphics capabilities, designers no longer need a discrete graphics card for some of the most commonly used workloads.

Certified to support some of the most commonly used applications

More than 15 of the most commonly used workstation and CAD applications are certified on Intel® HD graphics P530 and Intel® Iris™ Pro graphics P580. These applications help ensure compatibility for the software's features. Learn more about Certified Applications.

New form factors

Intel® HD graphics P530 and Intel® Iris™ Pro graphics P580 pack desktop workstation performance into smaller, lighter, and thinner form factors, allowing reduced entry price and improved battery life.

Reliability

Intel® Xeon® processors support Error Correcting Code (ECC) memory, enhancing workstation reliability. ECC memory catches and corrects single-bit errors on-the-fly to keep applications running reliably and without error. Learn more about ECC Memory Brief.

Powerful performance with Intel® HD Graphics P530 and Intel® Iris™ Pro Graphics P580

Intel® HD graphics P530 and Intel® Iris™ Pro graphics P580 marks a major shift in graphics performance. Leveraging the advancements of the Intel® Xeon® E3-1200 and E3-1500 processor families, this built-in technology supports the imagery and media performance professionals need for vector and bitmap visualizations, video transcoding, and ultra-high definition display. Now workers have the flexibility to take vivid, powerful workstation experiences anywhere.

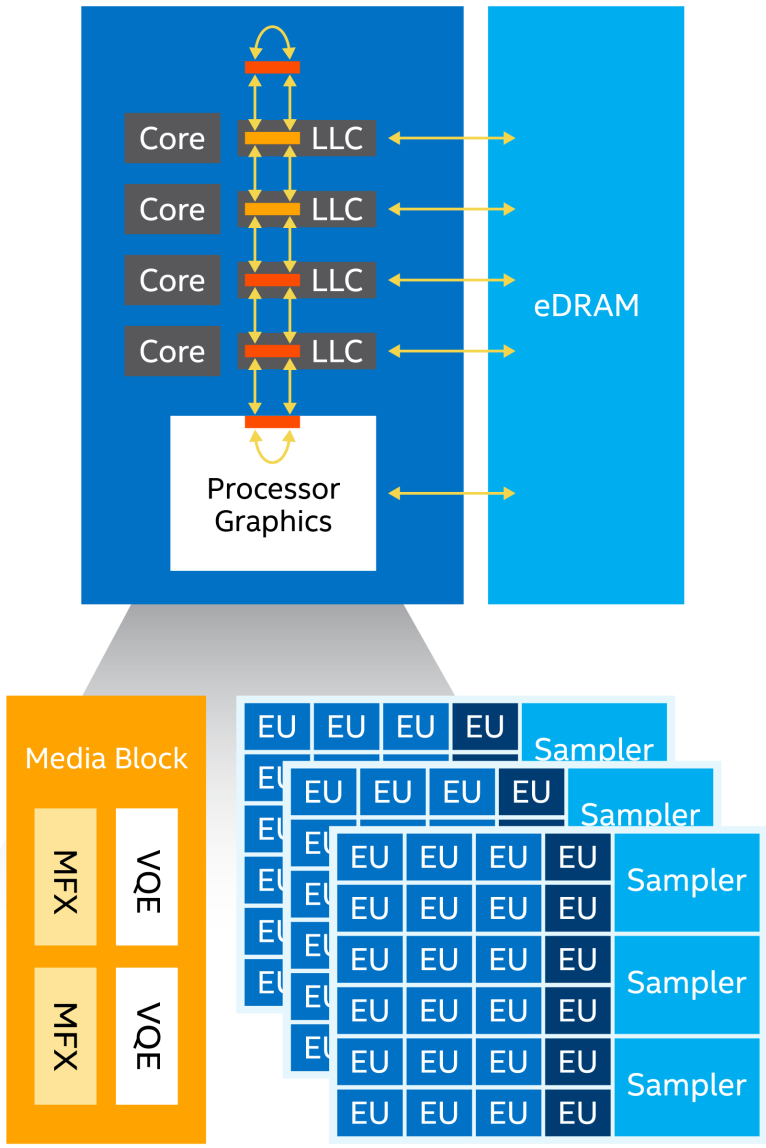
With up to a 33% performance increase over an Intel® Core™ i7 processor-based system, this integrated graphics technology supports low-to-medium-complexity 2D/3D CAD, 3D modeling, and 3D animation applications.1 Compared to Intel® HD graphics P4000, suitable for legacy applications, Intel® HD graphics P530 and Intel® Iris™ Pro graphics P580 delivers nearly double the performance—all on the latest mobile workstations.[2]

Premium performance with Intel® Iris™ Pro Graphics P580

For higher-intensity applications, refresh to processors with Intel® Iris™ Pro graphics P580. This new technology leverages 128MB of embedded DRAM (eDRAM) to deliver increased bandwidth and throughput for stunning visuals. In fact, compared to Intel® HD graphics P530, Intel® Iris™ Pro graphics P580 delivers a 50% increase in performance.[3]

Thanks to its improved performance, Intel® Iris™ Pro P580 is built to handle high-complexity 2D/3D CAD, 3D modeling, and 3D animation applications. Plus, support for real-time-capable applications makes video editing and special effects easier than ever.

Intel® Iris™ Pro Graphics P580
128MB eDRAM for stunning visuals



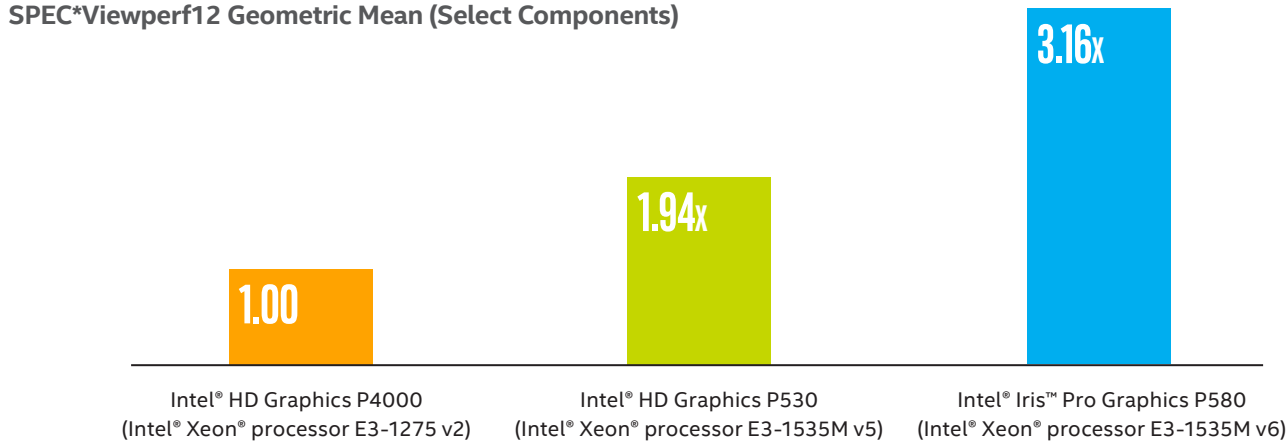
Processor Graphics Components

INTEL® HD GRAPHICS P530 & INTEL® IRIS™ PRO GRAPHICS P580 DELIVER NEARLY 2X PERFORMANCE

Graphics Performance

Intel® HD Graphics P530 and Intel® Iris™ Pro Graphics P580

Generational Performance Gains

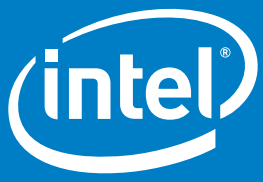


FEATURE	IMPACT AND BENEFIT
Intel® HD Graphics	Integrated graphics, certified for leading applications from Adobe, Autodesk, Bentley, Dassault, PTC, and Siemens.
Intel® Quick Sync Video	Delivers fast video editing and authoring along with fast video conversion.
Intel® Clear Video HD	Visual quality and color fidelity enhancements for HD playback.
Intel® Pro Wireless Display	Lets you beam your content to an HDTV with a simple wireless connection.
Intel® Turbo Boost Technology 2.0	Dynamically increases the processor's frequency, as needed, by taking advantage of thermal and power headroom when operating below specified limits.
Integrated Memory Controller	Offers stunning memory read/write performance through efficient prefetching algorithms, lower latency, and higher memory bandwidth.

FEATURE	INTEL® XEON® PROCESSOR E3-1200 V5 PRODUCT FAMILY	INTEL® XEON® PROCESSOR E3-1500M V5 PRODUCT FAMILY	6TH GEN INTEL® CORE™ i7 PROCESSOR	6TH GEN INTEL® CORE™ i5 PROCESSOR	6TH GEN INTEL® CORE™ i3 PROCESSOR
Cache Size	8 MB	8 MB	8 MB	6 MB	4 MB
TDP	Up to 80 W	Up to 45 W	Up to 91 W	Up to 91 W	Up to 47 W
Maximum Core Count	4	4	4	4	2
Intel® Hyper-Threading Technology	Yes	Yes	Yes	No	Yes
Intel® vPro™ Technology	Yes	Yes	Yes	Yes	No
Intel® Turbo Boost Technology	Yes	Yes	Yes	Yes	No
Intel® HD Graphics & Intel® Iris™ Pro Graphics	P530 & P580	P530 & P580	530 & 580	530 & 580	530 & 580
Max Number of 4K Displays	3	3	3	3	3
Professional CAD/Imaging/DCC Application Certifications	Certified on 15 applications from Adobe, Autodesk, Bentley,Dassault,PTC, and Siemens	Certified on 15 applications from Adobe, Autodesk, Bentley,Dassault,PTC, and Siemens	No	No	No

For more information, visit:

http://www.intel.com/workstations



1.Geometric mean of select sub-components of SPEC*viewperf 12. Configurations: Intel® Xeon® E3-1505M processor-based system: Intel Reference Platform, Intel® Xeon™ E3-1505M 45W TDP, 4C8T, Turbo up to 3.7GHz/2.8GHz, Memory: 2x4GB DDR4-2133, Storage: Intel® SSD, Display Resolution: 1920x1080. Graphics driver: 15.40.4281, OS: Windows® 10 Professional build 10240 x64.

2.Workstation Performance: Geometric mean of all components of SPEC*wpc v1.0, Graphics Performance: Geometric mean of all components of SPEC*viewperf 12. System Configurations: Intel® Xeon® E3-1535M processor-based system: Intel Reference Platform, Intel® Xeon™ E3-1535M 45W TDP, 4C8T, Turbo up to 3.8GHz/2.9GHz, Memory: 2x4GB DDR4-2133, Storage: Intel SSD, Display Resolution:1920x1080. Graphics driver: 15.40.4281, OS: Windows® 10 Professional build 10240 x64. Compared to: Intel® Xeon™ E3-1275v2 – Carlow-based platform, BIOS ACRVMBY1.86C.0096.P0009/09/2012, Intel® Xeon™ E3-1275 v2 77W TDP, 4C8T, 3.5GHz turbo up to 3.9GHz, 8MB Cache, Intel® HD Graphics P4000; Memory: 8GB (2x4GB) DDR3-1600 ECC UDIMM; Storage: WD2000FYYZ; Display resolution: 1920x1080. Graphics Driver: 8.15.10.2712D; OS: Microsoft Windows* 7 SP1 64 Bit. HT Enabled, Turbo on.

3.Intel® Xeon® E3-1535M Based System: Intel Reference Platform, Intel® Xeon® E3-1535M 45W TDP, 4C8T, Turbo up to 3.8GHz/2.9GHz, Memory: 2x4GB DDR4-2133, Storage: Intel SSD, Display Resolution: 1920x1080. Graphics driver: 15.40.4281, OS: Windows 10 Professsional build 10240 x64

Benchmark information for workstation graphics performance

Compute Intensive Application Performance: Estimated based on measurements on internal reference platform for the Intel® Xeon® processor E3-1535M using SPEC* CPU2006

Compute Intensive Application Performance: Estimated based on measurements on internal reference platform for the Intel® Xeon® processor E3-1505M

Workstation Performance: Geometric mean of all components of SPEC*wpc v1.0

Graphics Performance: Geometric mean of all components of SPEC*viewperf 12

Software and workloads used in performance tests may have been optimized for performance only on Intel® microprocessors.

Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more information go to http://www.intel.com/performance

Intel® Xeon® E3-1535M Based System: Intel® Reference Platform, Intel® Xeon® E3-1535M 45W TDP, 4C8T, Turbo up to 3.8GHz/2.9GHz, Memory: 2x4GB DDR4-2133, Storage: Intel® SSD, Display Resolution: 1920x1080. Graphics driver: 15.40.4281, OS: Windows 10 Professsional build 10240 x64

Intel® Xeon® E3-1275v2 Carlow based platform, BIOS ACRVMBY1.86C.0096.P0009/09/2012, Intel® Xeon® E3-1275 v2 77W TDP, 4C8T, 3.5GHz turbo up to 3.9GHz, 8MB Cache, Intel® HD Graphics P4000; Memory: 8GB (2x4GB) DDR3-1600 ECC UDIMM; Storage: WD2000FYYZ; Display resolution: 1920x1080. Graphics Driver: 8.15.10.2712; OS: Microsoft Windows* 7 SP1 64 Bit. HT Enabled, Turbo on.

Intel® Xeon® E3-1505M Based System: Intel® Reference Platform, Intel® Xeon® E3-1505M 45W TDP, 4C8T, Turbo up to 3.7GHz/2.8GHz, Memory: 2x4GB DDR4-2133, Storage: Intel® SSD, Display Resolution: 1920x1080. Graphics driver: 15.40.4281, OS: Windows 10 Professsional build 10240 x64

Intel® Xeon® E3-1575M V5 Based System: Intel® Reference Platform, Intel® Xeon® E3-1575M 45W TDP, 4C8T, Turbo up to 3.9GHz/3.0GHz, Intel® Iris™ Pro Graphics P580, Memory: 2x4GB DDR4-2133, Storage: Intel® SSD, Display Resolution: 1900x1060, OS: Windows 10 Professional TH2 Build 10586 x64\

Intel® Core™ i7-3720QM Based System: Lenovo Thinkpad* W530, Intel® Core™ i7-3720QM 45W TDP, 4C8T, Turbo up to 3.4GHz/2.6GHz, Memory: 2x4GB DDR3-1600, Storage: Intel® SSD, Display Resolution: 1920x1080. Graphics driver: 10.18.10.4252, OS: Windows 10 Professsional build 10240 x64

Intel® technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. Check with your system manufacturer or retailer or learn more at intel.com.

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