ManePC - Dell Latitude E6330 - 13.3' Core I5-3340M 2.70 Ghz 8Gb Ram

Autor:
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Dell Latitude E6330 - 13.3" - Core i3 2350M - 8 GB RAM - 320 GB HDD

Part Number: 469-3191

20+ Related Models

GENERAL

Packaged Quantity

1

Notebook type

HD display, Budget, 13-inch

Manufacturer

Dell, Inc.

PROCESSOR / CHIPSET

CPU

Intel Core i3 (2nd Gen) 2350M / 2.3 GHz

Number of Cores

Dual-Core

Cache

3 MB

64-bit Computing

Yes

Chipset Type

Mobile Intel QM77 Express

CACHE MEMORY

Installed Size

3 MB

RAM

Memory Speed

1600 MHz

Configuration Features

1 x 8 GB

Technology

DDR3 SDRAM

Installed Size

8GB

STORAGE

Interface

Serial ATA-300

Optical Drive

DVD±RW

Read Speed

8x

MEMORY

Max Supported Size

16 GB

Technology

DDR3 SDRAM

Speed

1600 MHz

Form Factor

SO-DIMM 204-pin

Slots Qty

2

Empty Slots

1

ENVIRONMENTAL PARAMETERS

Humidity Range Operating

10 - 90% (non-condensing)

DISPLAY

LCD Backlight Technology

WLED backlight

Resolution

1366 x 768 (HD)

Widescreen Display

Yes

Image Aspect Ratio

16:9

Monitor Features

anti-glare

Type

LED

Diagonal Size (metric)

33.8 cm

Display Resolution Abbreviation

HD

AUDIO & VIDEO

Graphics Processor

Intel HD Graphics 3000

Memory Allocation Technology

Dynamic Video Memory Technology

Integrated Webcam - Yes

Sound - Stereo speakers, microphone

Audio Codec - IDT 92HD93

HARD DRIVE

Spindle Speed

7200 rpm

Type - HDD

Capacity - 320 GB

INPUT

Type

keyboard, touchpad

Features

multi-touch touchpad

COMMUNICATIONS

Wireless Protocol

802.11b/g/n, Bluetooth 4.0

Wireless Controller

Dell Wireless 1504

Wired Protocol

Gigabit Ethernet

OPTICAL STORAGE

Drive Type

DVD-Writer

Type

DVD±RW

PROCESSOR

CPU Type

2nd Gen Core i3

Processor Number

i3-2350M

Generation

2

Manufacturer

Intel

Clock Speed

2.3 GHz

BATTERY

Technology

6-cell lithium ion

Cells

6-cell

Technology

lithium ion

CARD READER

Type

8 in 1 card reader

CONNECTIONS & EXPANSION

Slots

1 x ExpressCard/34 (1 free)
1 x PCI Express Mini Card (1 free)
2 x PCI Express Half Mini Card (2 free)

Interfaces

LAN
USB 2.0
USB 2.0/eSATA
2 x USB 3.0
Headphone/microphone combo jack
Dock
VGA
Mini-HDMI

Memory Card Reader

8 in 1

HEADER

Brand

Dell

Product Line

Dell Latitude

Model

E6330

Packaged Quantity

1

Compatibility

PC

SYSTEM

Notebook Type

notebook

Platform

Windows

Hard Drive Capacity

320 GB

Dockable

Yes

Security Devices

fingerprint reader

MISCELLANEOUS

Security

Fingerprint reader

NETWORKING

Data Link Protocol

Bluetooth 4.0, Ethernet, Fast Ethernet, Gigabit Ethernet, IEEE 802.11g, IEEE 802.11n

Wireless NIC

Dell Wireless 1504

MONITOR

Diagonal Size

13.3 in

SOFTWARE

Microsoft Office Preloaded

Includes a pre-loaded image of select Microsoft Office 2010 suites. Purchase an Office 2010 Product Key Card or disc to activate preloaded software on this PC.

DIMENSIONS & WEIGHT

Width

13.2 in

Depth

8.8 in

Height

1.2 in

MANUFACTURER WARRANTY

Type

3 years warranty

AUDIO OUTPUT

Compliant Standards

High Definition Audio

MAINBOARD

Chipset Type

Mobile Intel QM77 Express

ENVIRONMENTAL STANDARDS

ENERGY STAR Certified

Yes

PHYSICAL CHARACTERISTICS

Weight

3.55 lbs

POWER

Min Operating Temperature

50 °F

Max Operating Temperature

95 °F

OPERATING SYSTEM / SOFTWARE

OS Provided: Type

Microsoft Windows 7 Professional 32-bit

Type

Microsoft Office 2010 Starter

VIDEO OUTPUT

Graphics Processor

Intel HD Graphics 3000

Graphics Processor Series

Intel HD Graphics

VIDEO MEMORY

Memory Allocation Technology

Dynamic Video Memory Technology

NOTEBOOK CAMERA

Integrated Webcam

Yes

INPUT DEVICE

Backlight

Yes

SERVICE & SUPPORT

Type

3 years warranty

SERVICE & SUPPORT DETAILS

Type

limited warranty

Location

on-site

Full Contract Period

3 years

Response Time

next business day

SUSTAINABILITY

Greenpeace policy rating (Nov 2011)

5.1

GENERAL

Manufacturer

Dell, Inc.

Tabla de contenido:

Necesita saber
Matriz de compatibilidad del modelo

1. Necesita saber
Hay cierta confusión debido a la diferencia que existe entre el anuncio real de velocidad ("MHz") y la forma en que se describe la memoria desde un punto de vista de ventas ("PC XXXXXX"). Las siguientes listas deberían resolver cualquier tipo de confusión.

PC3-6400 = 800 MHz
PC3-8500 = 1066 MHz

PC3-10666 = 1333 MHz
PC3-12800 = 1600 MHz

Para utilizar completamente los 4 GB o más de memoria, se necesita un procesador habilitado para 64 bits y un sistema operativo de 64 bits. Con un sistema operativo de 32 bits, la cantidad total de memoria disponible será menor que 4 GB. La cantidad menor dependerá de la configuración real del sistema. Consulte los límites de memoria para las versiones Windows

mejor práctica es instalar la memoria en pares de tamañode memoria con coincidencia, velocidad y tecnología. Si los módulos de memoria no se instalan en grupos acordes, la computadora seguirá funcionando, pero presentará una leve reducción en el rendimiento.

NOTA: DDR3 no es compatible con versiones anteriores de DDR2.

Volver al principio

Causa

2. Matriz de compatibilidad del modelo

NOTA: Nota: En el caso de los sistemas existentes más antiguos que no se mencionan a continuación, consulte los manuales de servicio del sistema.

www.dell.com/support/manuals

NOTA: Nota: la memoria de bajo voltaje DDR3L NO es compatible con versiones anteriores de la memoria DDR3. ¿Qué es la memoria DDR3l?

ModeloTipo de memoriaRanuras de módulo DIMMMemoria máxima del sistemaCompatibilidad de memoria

Latitude 3330
DDR3/DDR3L
2
16 GB
1600MHz de 1333 MHz (Sandy Bridge)
(puente de Ivy)

Latitude E6430u
DDR3 SODIMM
2
16 GB
1600 MHz

Latitude E6230
DDR3
2
16 GB
1333/1600 MHz

Latitude E6330
DDR3
2
16 GB
1333/1600 MHz

Latitude E6330s
DDR3
2
16 GB
1333/1600 MHz

Latitude E6430
DDR3
2
16 GB
1333/1600 MHz

Latitude E6430 ATG
DDR3
2
16 GB

1333/1600 MHz

Latitude E6530
DDR3
2
16 GB
1333/1600 MHz

Latitude E5530
DDR3 SDRAM
2
8 GB
1600 MHz

Latitude E5430
DDR3 SDRAM
2
8 GB
1600 MHz

Latitude E6540
DDR3L
2
16 GB
1600 MHz

Latitude E7240
DDR3L
2
16 GB
1600 MHz

Latitude E7440
DDR3L
2
16 GB
1600 MHz

Latitude E7450
DDR3L
2
16 GB
1600 MHz

Latitude E7250
DDR3L
2
16 GB
1600 MHz

Latitude 7350

DDR3L-RS
0 (integrada)
8 GB
1600 MHz

Latitude E5250
DDR3L
1 (Haswell)
2 (Broadwell)
8 GB (Haswell) de
16 GB (Broadwell)
1600 MHz

Latitude E5450
DDR3L
1 (Haswell)
2 (Broadwell)
8 GB (Haswell) de
16 GB (Broadwell)
1600 MHz

Latitude E5550
DDR3L
1 (Haswell)
2 (Broadwell)
8 GB (Haswell) de
16 GB (Broadwell)
1600 MHz

Latitude 7204 (Rugged)
DDR3L
2
16 GB
1600 MHz

Latitude 7404 (Rugged)
DDR3L
2
16 GB
1600 MHz

Latitude E7270
DDR4
2
16 GB
2133 MHz

Latitude 13 (E7370)
DDR3L
0 (integrada)
16 GB
1600/1866 MHz

Latitude E7470
DDR4
2
16 GB
2133 MHz

Latitude 14 (E7470)
DDR4
2
16 GB
1600/2133 MHz

Latitude E5570 y E5270
DDR4
2 (Skylake-U int Graphics)
1 (Skylake-u repuesto Graphics)
2 (Skylake-H)
2 GB/s, 2x de 16 GB

2133 MHz

Latitude 3570 y 3470
DDR3L
2
16 GB
1600 MHz

Latitude 7280
DDR4
1
16 GB
2133 MHz

Latitude 7480
DDR4
2
32 Gb
2133 MHz

Latitude 5480 y 5580
DDR4
2
32 Gb
2133 MHz (Kaby Lake U)
2400MHz (Kaby Lake H)

Latitude 5280
DDR4
2
32 Gb
2133 MHz

Latitude 5414 (Rugged)
DDR4
2
32 Gb
2133 MHz

Latitude 3480 y 3580
DDR4
2
16 GB
2133 MHz

Latitude 3189
LPDDR3
0 (integrada)
DDR2
1600 MHz

Volver al principio

Resolución

¿Fuera de garantía? No hay problema. Visite el sitio web Dell.com/support, ingrese la etiqueta de servicio de Dell y revise las ofertas.

NOTA: Las ofertas solo están disponibles para los clientes de computadoras personales de EE. UU., Canadá, Reino Unido, Francia, Alemaniay China . No se aplica para equipos de servidor y almacenamiento.

Propiedades del artículo

Producto afectado
Laptops, Latitude, Latitude 7204 Rugged, Latitude 7404 Rugged, Latitude E5440, Latitude E5450/5450, Latitude E5530, Latitude E5540, Latitude E5550/5550, Latitude E6330, Latitude E6430, Latitude E6430 ATG, Latitude E6440, Latitude E6530 ... Ver másabout warranties

Fecha de la última publicación
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Review Dell Latitude E6230 Notebook

Martina Osztovits, ? Tanja Hinum (translated by Thomas Buchholz), 10/29/2012

Ivy Bridge Business

Fast and mobile? Thanks to its fast mass storage, a 256 GB SSD, and an Ivy Bridge generation Core i5-3320M processor, our review model can score in terms of system performance. Is the 12.5-inch sized subnotebook‘s robust and elegant design and good communication array sufficient to allow for unlimited mobility?

With their Latitude laptops, Dell wants to score points with business users in terms of performance, durability and scalability. Being 12.5-inches wide, the Dell Latitude E6320 is the smallest and lightest member of the Latitude E-family. Those who find this too small can go for one of the larger sister models. On offer are models from 13.3-inch (E6330 – review will follow shortly) to 14-inch (E6430) and up to 15.6-inch (E6530 – review will follow).

As usual with Dell, comprehensive configuration options are available to consumers. Our E6230 review device was equipped with a Core i5-3320MCPU, Intel HD Graphics 4000, 4 GB RAM and an SSD. Should some components of your choice not be available in the online configurator, ordering by telephone might help, as then the possible options are often more extensive.

In the course of the review, we will not only clarify what strengths and weaknesses our review candidate has, but we will also compare it to its direct competitors, the recently reviewed HP EliteBook 2570p, Fujitsu Lifebook P772, and Lenovo ThinkPad X230.

Case

Tri-metal case of the Latitude E6230

Dell talks about a tri-metal case. Various metals are used for its production: a magnesium alloy, anodized aluminum at the display lid, and a powder-coated magnesium base. Thanks to this choice of materials, a very good stability can be

achieved despite the light and slender design. Both the base unit and the display lid hardly get deformed when exposed to pressure and winding forces. Additionally, Dell had the case tested for resistance against dust, shaking and extreme temperatures, according to MIL-STD-810G.

The strong hinges are manufactured from metal. The hinges' tension is so great that opening the laptop with just one hand is not possible. They cannot, however, entirely prevent wobbling after adjusting the opening angle. Being bent upwards, the rear edge also limits the opening angle to c. 125 degrees.

Connectivity

Two USB 3.0 ports and one eSATA/USB 2.0 combo socket are available to ensure fast data exchange with peripheral devices. External displays can be connected either analogously via VGA or digitally via HDMI. Dell dispensed with the DisplayPort directly at the case which is common in the business segment. Should the E6230's functionality not suffice for the intended usage, it can be upgraded with ExpressCard/34-cards.

Fortunately, ports that are often permanently occupied are located at the rear part of the two side edges and on the rear side. Nonetheless, right-handed people may sometimes have an advantage, as the exhaust air is routed out of the case interior on the left edge.

As befits a business device, Dell has thought of a docking port on the bottom. A docking port makes integration into an existing work environment easier and it expands the range of interfaces.

Front: no ports

Left: VGA, eSATA/USB-2.0 combo, 3.5mm combo audio jack, SmartCard reader, card reader

Rear: RJ-45 (LAN), battery, Kensington lock, charging port

Right: ExpressCard/34, Wi-Fi main switch, 2x USB-3,0, HDMI

Simple maintenance

Communication
Regarding communication features, our Latitude E6230 has virtually everything that one may wish for. When a LAN cable is plugged in, the Intel 82579LM Gigabit Network Connection (10/100/1000MBit) enables Ethernet connections with Gigabit speed. The Intel Centrino Advanced-N 6205 (abgn) also supports WLAN connections in Standard-n. Additionally, with the Dell Wireless 5630 (EVD0-HSPA) Mobile Broadband Mini-Card (composite WWAN device) Network Adapter, a broadband modem is on board as well. Finally, via Bluetooth version 4.0, data can be exchanged with small mobile devices. Only people who often travel through areas with bad infrastructure would perhaps also wish for an analogous modem (RJ-11).

Security
As is right and proper for a business device, a few security features have been built into our review model. In addition to the Kensington Lock, we find aSmartCard reader in the case. Also, a Trusted Platform module enablesclear identification of the device from afar. As the built-in processor supports vPro, remote maintenance is possible as well.

Accessories
In addition to necessary accessories like the power supply and the battery, we find a Resource Media CD, a Windows 7 SP1 64-Bit DVD, a short manual and a lot of printed information. If the Latitude E6230 is ordered from the online shop, the user can order plenty of accessories with it right away. The offers range from external mice, keyboards and adapters to external displays, batteries, power supplies and docking stations. Compatible docking stationsoffered by Dell’s online shop are the E-Series Legacy Expansion Port for 58.99 Euros (~$77), the expanded E-Port II for 169.99 Euros (~$223) and the simple E-Port II for 149.99 Euros (~$197). The E-Port II solutions also upgrade the port range by a DisplayPort.

Maintenance
Maintenance is very simple. After removing a single screw, the bottom panel can be taken off surprisingly easily. Then the user gets access to the inner components. Even the fan can be reached with ease.

Warranty
By default, Dell grants three years of ProSupport for the Latitude E6230 top model reviewed here. According to Dell, this includes on-site service after remote diagnosis, technical support around the clock, premium support for hardware and software issues and a central contact partner for escalation management. With cheaper models, the warranty is limited to 3 years basic support including service on the next workday.

Input Devices

Keyboard
Our review device's internal anti-bacterial keyboard has a chocolate design (no chiclet design) and can be lit in four stages via backlight. The keyboard itself is of appropriate size; it offers a standard layout with slightly detached arrow keys and three additional buttons for volume control. The keys are sufficiently large; they have a slightly concave surface and a nice surface feel. Due to its mechanical characteristics - a rather short stroke distance, yet with a clear feedback - the keyboard is suitable for extensive writing. Apart from the enter and space keys which are a bit noisy, the keyboard remains quiet during typing.

Touchpad
The E6230’s touchpad is identical to the E6320’s. Measuring 80 mm x 40 mm (BxH), it is quite small on the vertical side. The touchpad’s size is also restricted by the independent mouse keys which are positioned directly in front of it. Other manufacturers have proceeded to integrate these keys below the touch pad (clickpad), especially with ultra-mobile devices. This design, however, is not used in any unit of the Latitude E-series.

The Dell touchpad was manufactured by Alps Electric and supports multi-touch gestures if it is configured accordingly. By default, only scrolling is activated. The surface also is matte and allows for precise control of the mouse cursor.

Both touchpad keys have a pleasant, almost velvety feel and respond well over their whole width. Their stroke distance is short, the pressure point distinct and they work relatively silently.

Keyboard

Touchpad

Display

In accord with current standards, the built-in 12.5-inch HD screen is lighted by LEDs and comes with an anti-glare finish. It offers a resolution of 1366x768 pixels and thus an aspect ratio of 16:9. Dell does not offer alternatives, but considering the screen diagonal, this is a balanced choice.Considering the 12.5-inch size, this resolution is not perceived as being too fine; it still offers a much better desktop overview than lower resolutions one would often find in cheaper and less efficient small devices (netbooks).

1) X-Rite i1 Pro 2 2) Gossen Mavo-Monitor

181
cd/m²
178
cd/m²
168
cd/m²

194
cd/m²
187
cd/m²
161
cd/m²

210
cd/m²
197
cd/m²
141
cd/m²

Distribution of brightness

X-Rite i1 Pro 2

Maximum: 210 cd/m² Average: 179.7 cd/m²
Brightness Distribution: 67 %
Center on Battery: 167 cd/m²
Contrast: 392:1 (Black: 0.477 cd/m²)
ICC File (Datacolor Spyder3Elite)

Having an average brightness of about 180 cd/m², the screen does not belong to the brightest in its class. On top of that, the illumination ratio of 70% is relatively uneven. Actually, when testing a plain, bright background, the lower right corner appears to be a bit darker than the rest of the screen. Lenovo‘s ThinkPad X230 (280 cd/m²) does a much better job with its bright IPS screen with wide viewing angles. Fujitsu's Lifebook P772 (200 cd/m²) is a bit brighter than our review model, while HP‘s EliteBook 2570p (166 cd/m²) is even a little darker.

Subjectively speaking, color representation is not stunningly crisp but sufficient for Office or mobile applications. A great color spectrum is important mostly for professional graphic editing, a task this subnotebook was not designed for. Thus, as expected, the internal display clearly misses sRGB as well.

E6230 vs. sRGB

E6230 vs. AdobeRGB

In outdoor use, our Latitude E6230’s matte display surface proves to be an advantage. Unfortunately, its brightness is

not sufficient for untroubled outdoor use, one should look for a shady place. In order to use the display under direct sunlight, a brightness level of at least 250 cd/m² would be desirable.

In the shade

Under direct sunlight

The Latitude E6230's viewing angles in no way stand out from the laptop competition. As usual, the stable viewing range is more generous horizontally than vertically. When viewing from above, the screen looks too bright; when viewing from below, quick contrast loss and color shifts occur.

Viewing angles Dell Latitude E6230

Performance

All the Latitude E6230 models are based on the QM77 (Panther Point) chip set by Intel. Depending on the base model, the subnotebook can be fitted with an Intel Core i3 (2350M), Core i5 (3360M, 3320M) or Core i7 (3520M) processor in Dell’s online shop. Regardless of this, for pixel calculations each processor’s integrated graphic chip is used respectively. There is no dedicated graphics card option for any Latitude E6230 model.

Depending on the model, the mass storage provided varies; conventional hard drives with up to 500 GB capacity and solid state drives with up to 256 GB are on offer. Concerning the main memory, up to 8 GB capacity can be chosen.

Hence, regardless of the model choice, the E6230 is not equipped for graphic- intensive applications like games or CAD,

but for typical Office and internet work. Our review model will score in system performance with its SSD, although neither its 4 GB main memory, nor its Core i5-3320M exhaust all options on offer.

System information Dell Latitude E6230

Processor

In our test candidate, a Core i5-3320M dual core processor with a base clock rate of 2.6 GHz is at work. Thanks to Turbo Boost technology it can - provided appropriate cooling – clock up to 3.1 GHz putting load on both cores, and 3.3 GHz in single core applications. Also, hyperthreading enables processing up to four threads simultaneously. Please take detailed information on the processor from our special page. Our benchmark list of mobile processors enables ratings according to performance.

We will see whether the device conforms to our expectations by running a series of CPU-demanding benchmarks. We compare the results with those of three direct competitors of which two, namely Lenovo’s ThinkPad X230and Fujitsu’s Lifebook P772, are equipped with the same processor and give almost the same results. HP‘s EliteBook 2570p is equipped with a slightly faster Core i7-3520M and yields slightly better results. Details can be taken out of the diagram

below.

Fortunately, the overall performance of both CPU and GPU stays the same when running on battery.

Cinebench R10

Rendering Single CPUs 64Bit (sort by value)

Dell Latitude E6230
HD Graphics 4000, 3320M, Samsung SSD PM830 FDE 2

5622 Points ?59%0%

Fujitsu Lifebook P772
HD Graphics 4000, 3320M, Toshiba MK3261GSYN

5612 Points ?59%0%

HP Elitebook 2570p-B6Q10EA
HD Graphics 4000, 3520M, Plextor PX-256M5M

6203 Points ?65%+11%

Lenovo ThinkPad X230
HD Graphics 4000, 3320M, Hitachi Travelstar Z7K500 HTS725032A7E630

5380 Points ?56%-4%

Rendering Multiple CPUs 64Bit (sort by value)

Dell Latitude E6230
HD Graphics 4000, 3320M, Samsung SSD PM830 FDE 2

11600 Points ?15%

Fujitsu Lifebook P772
HD Graphics 4000, 3320M, Toshiba MK3261GSYN

11744 Points ?15%+1%

HP Elitebook 2570p-B6Q10EA
HD Graphics 4000, 3520M, Plextor PX-256M5M

13151 Points ?17%+13%

Lenovo ThinkPad X230
HD Graphics 4000, 3320M, Hitachi Travelstar Z7K500 HTS725032A7E630

11505 Points ?15%-1%

Cinebench R11.5

CPU Single 64Bit (sort by value)

Dell Latitude E6230
HD Graphics 4000, 3320M, Samsung SSD PM830 FDE 2

1.35 Points ?58%

Fujitsu Lifebook P772
HD Graphics 4000, 3320M, Toshiba MK3261GSYN

1.32 Points ?56%-2%

HP Elitebook 2570p-B6Q10EA
HD Graphics 4000, 3520M, Plextor PX-256M5M

1.47 Points ?63%+9%

CPU Multi 64Bit (sort by value)

Dell Latitude E6230
HD Graphics 4000, 3320M, Samsung SSD PM830 FDE 2

3.09 Points ?11%+1%

Fujitsu Lifebook P772
HD Graphics 4000, 3320M, Toshiba MK3261GSYN

3.1 Points ?11%+1%

HP Elitebook 2570p-B6Q10EA
HD Graphics 4000, 3520M, Plextor PX-256M5M

3.38 Points ?12%+10%

Lenovo ThinkPad X230
HD Graphics 4000, 3320M, Hitachi Travelstar Z7K500 HTS725032A7E630

3.06 Points ?11%0%

Cinebench R10 Rendering Single CPUs 64Bit

5622 Points

Cinebench R10 Rendering Multiple CPUs 64Bit

11600 Points

Cinebench R10 Shading 64Bit

5251 Points

Cinebench R10 Rendering Single 32Bit

4465

Cinebench R10 Rendering Multiple CPUs 32Bit

9544

Cinebench R10 Shading 32Bit

5266

Cinebench R11.5 CPU Single 64Bit

1.35 Points

Cinebench R11.5 CPU Multi 64Bit

3.09 Points

Cinebench R11.5 OpenGL 64Bit

13.93 fps

Help

... in comparison

System Performance

Our review candidate owes its outstanding results in both PCMark testsmainly to its fast mass storage, an SSD. Again, detailed values can be taken from the diagram below. Unfortunately, we do not have any PCMark7 results for HP’s EliteBook 2570p in our database. In the PCMarkVantage, however, it is the only one of the three direct competitors that is even slightly fasterthan our Latitude E6230 model, as it is also equipped with an SSD. In contrast, Fujitsu‘s Lifebook P772 and Lenovo‘s X230 are much slower than our review model, with -36% in PCMarkVantage and -44% and -30% respectively in PCMark 7. However, if one chose a configuration with an SSD for these two, they would catch up.

PCMark 7 - Score (sort by value)

Dell Latitude E6230

HD Graphics 4000, 3320M, Samsung SSD PM830 FDE 2

4485 Points ?52%+56%

Fujitsu Lifebook P772
HD Graphics 4000, 3320M, Toshiba MK3261GSYN

2858 Points ?33%-1%

Fujitsu Lifebook P772
HD Graphics 4000, 3320M, Toshiba MK3261GSYN

2858 Points ?33%-1%

Lenovo ThinkPad X230
HD Graphics 4000, 3320M, Hitachi Travelstar Z7K500 HTS725032A7E630

2880 Points ?34%0%

PCMark Vantage - 1024x768 Result (sort by value)

Dell Latitude E6230
HD Graphics 4000, 3320M, Samsung SSD PM830 FDE 2

12111 Points ?39%

Fujitsu Lifebook P772
HD Graphics 4000, 3320M, Toshiba MK3261GSYN

6747 Points ?22%-44%

HP Elitebook 2570p-B6Q10EA
HD Graphics 4000, 3520M, Plextor PX-256M5M

13123 Points ?42%+8%

Lenovo ThinkPad X230
HD Graphics 4000, 3320M, Hitachi Travelstar Z7K500 HTS725032A7E630

8503 Points ?27%-30%

5.1

Windows 7 Experience Index

Processor

Calculations per second

7.2

Memory (RAM)

Memory operations per second

5.9

Graphics

Desktop performance for Windows Aero

5.1

Gaming graphics

3D business and gaming graphics

6.4

Primary hard disk

Disk data transfer rate

7.9

PCMark Vantage Result

12111 points

PCMark 7 Score

4485 points

Help

... in comparison

Storage Devices

When it comes to mass storage, the user is confronted with the agony of choice. At choice are currently conventional hard drives with 7200 rpmand 320 or 500 GB capacity or Solid State Drives with 128 GB or 256 GB. Those who appreciate fast access and loading times and can get by with less capacity will prefer an SSD over a hard drive with rotating parts. The former storage option also works silently. A close comparison of SSD and HDD can be found here.

Our review model is equipped with a 256 GB SSD named Samsung SSD PM830 FDE 2. With the results it achieved it is roughly on the same level as Intel's SSD 510 Series and OCZ's Vertex 3, whereas one or another achieves better results in CrystalDiskMark depending on the test. Most of the time, the Samsung SSD performs better than the Vertex 3 and the Intel 510 when it comes to writing, except in 4K-writing where the Vertex 3 is the leader. Intel’s SSD 520 Series, however, is faster across the board.

HD Tune

CrystalDiskMark 3.0

AS SSD

Samsung SSD PM830 FDE 2

Transfer Rate Minimum: 323.2 MB/s

Transfer Rate Maximum: 330.8 MB/s

Transfer Rate Average: 326.8 MB/s

Access Time: 0.1 ms

Burst Rate: 209 MB/s

Graphics card

As is frequent with subnotebooks, the user gets no discrete graphics card but has to get by with a graphics chip integrated into a processor. Here, the main focus is put not on graphics performance, but on mobility, and thus also on a longer battery life. Therefore, as expected, there is not even an optional configuration with a discrete graphics card.

In any case, for the intended application area, namely mobile office and internet applications, the Graphics 4000 is quite sufficient. One should give up on 3D-demanding applications, though. The E6230 is definitely no mobile work station nor a mobile gamer.

In order to compare graphics performance, we use 3DMark tests as usual. Fortunately, the particular results obtained there are fully equal to other laptops with the same graphics chip and processor. Only Fujitsu‘s Lifebook P772 stands out splendidly - with for instance +28% in 3DMarkVantage - from the other review devices with 3320M CPU and Graphics 4000. An analogue statement can be made about practical gaming usage. In the best case, latest games are smoothly playable in low resolution and with minimal details.

3DMark 06 Standard

5335 points

3DMark Vantage P Result

3053 points

3DMark 11 Performance

626 points

Help

... in comparison

low
med.
high
ultra

Anno 2070 (2011)

39
20
13

fps

Diablo III (2012)
43
26
22

fps

Emissions

Thanks to its silent SSD, our test candidate works silently when under little load. In this scenario we measured a consistent 28 dB(A). This is equal to the background noise of a silent environment. With increased load, the fan spins faster and gets clearly audible with maximally 43.4 dB(A). The noise characteristic is characterized by a rather high frequency, but it remains constant.

Noise Level

Idle

28 / 28 / 28 dB(A)

Load

38.6 / 43.4 dB(A)

30 dB
silent

40 dB(A)
audible

50 dB(A)
loud

min: , med: , max: Voltcraft SL-300 Plus (15 cm distance)

Temperature

Stress test

When under little load, our review model remains cool. When the inner components are stressed a lot, the device heats up to and above 40 °C. As the intended area of usage is office and internet applications, and at most light 3D tasks, this should be no practical problem.

In the stress test we see how the laptop copes with lasting maximum CPU and GPU load. Then, core temperatures of the CPU and graphics chips rise a lot and reach 100 °C and over. The CPU’s clock rate does not drop below the base rate of 2.6 GHz though, and the graphics chip also clocks at a stable 1.2 GHz. The 3DMark06 results obtained immediately after the stress test are equal to the cold run, except some insignificant deviation.

Max. Load

Idle

40.7 °C
105 F
37.2 °C
99 F
31.9 °C
89 F

37.9 °C
100 F
36.1 °C
97 F
31.6 °C
89 F

35.1 °C
95 F
32.4 °C
90 F
30.6 °C
87 F

Maximum: 40.7 °C = 105 F
Average: 34.8 °C = 95 F

32.6 °C
91 F
40.5 °C
105 F
42.5 °C
109 F

32.8 °C
91 F
43.4 °C
110 F
42.3 °C
108 F

27.6 °C
82 F
33.8 °C
93 F
37.2 °C
99 F

Maximum: 43.4 °C = 110 F
Average: 37 °C = 99 F

Power Supply (max.) 51.6 °C = 125 F | Room Temperature 23.5 °C = 74 F | Raytek Raynger ST

Speakers

The stereo speakers are located at the bottom side of the device’s chamfered front edge and their sound hits the table. This has a positive effect on the richness of the sound. The sound thus appears to be surprisingly balanced, as long as the device is located on the table; the maximum volume, which does not distort the sound, is also alright for interiors.

Energy Consumption

The energy consumption is okay for a configuration with Core i5-3320M CPU and Graphics 4000 graphics chip. The idle results here beat every other laptop with the same CPU. The 65 watt power adapter is sufficiently dimensioned for an energy consumption of 53 watt.

Power Consumption

Off / Standby
0.2 / 0.8 Watt

Idle
6 / 7.2 / 8.3 Watt

Load
42.4 / 53.4 Watt

Key: min: , med: , max: Voltcraft VC 940 Plus

Battery Life

Readers Test

Classic Test

Charging

Our review model was equipped with a 58 Wh Lithium ion battery which sticks out at the rear side. By contrast, a 65 Wh

battery is listed when configuring in Dell’s online shop.

The maximum battery life, calculated with the BatteryEater Readers test and minimal brightness, energy saving profile, and disabled wireless modules, is almost 10 hours. The minimum is only almost 2 hours. This result was also recorded with the BatteryEater Tool, however, in the Classic Test at maximum brightness, peak performance profile and enabled Wi-Fi modules. In our practice-oriented WLAN test, every 40 seconds a new page with different contents is accessed. This test was done with the energy saving profile and a brightness of 148 cd/m² (dimmed two levels). Under these circumstances, the user can surf the internet for about 5.75 hours via Wi-Fi hotspot.

Fujitsu‘s Lifebook P772 achieves slightly shorter battery run times with its 63 Wh battery, but it also is a bit brighter. Lenovo’s X230 reaches a slightly longer battery life with its well-lighted IPS screen. HP‘s EliteBook 2570p has the lowest screen brightness of all the devices in comparison. In return, it lasts a bit longer despite having the smallest battery with 55 Wh.

Battery Runtime

Idle (without WLAN, min brightness)

9h 57min

WiFi Surfing

5h 44min

Load (maximum brightness)

1h 49min

Verdict

Dell Latitude E6230

Small subnotebooks are designed for mobile use. Consequently, they should be robust and durable, have a long battery life and good system performance and enable outdoor use without restrictions.

Thanks to the tri-metal chassis, the Latitude E6230 Models fulfill our first criterion. The fast SSD inside provides short boot and loading times and contributes considerably to the laptop's excellent performance. Although one cannot spend a whole workday away from a power outlet due to the battery, the battery life proves to be good in comparison to the direct competition.

Also, one can be very content with the communication features and theinput devices. A major weak point remains though: the slightly too dark and dull screen. Its brightness is simply not enough for outside use.

In the course of the review we have compared the subnotebook to its direct competition. Of them, HP’s 2570p provides the best application performance but unfortunately also the lowest screen brightness. Though Fujitsu‘s Lifebook P772 is a little brighter than out review candidate, only the ThinkPad X230’s IPS screen is suitable for use in sunlight; it also features wide viewing angles. Depending on the intended usage scenario one should carefully balance the pros and cons of the individual models.

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