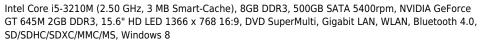**msi**

MSI Classic CX61 Intel® Core™ i5 i5-3210M Laptop 39,6 cm (15.6") HD 8 GB DDR3-SDRAM 500 GB HDD NVIDIA® GeForce® GT 645M Wi-Fi 4 (802.11n) Windows 8 Black

Brand : MSI

Product family: Classic

Product code: CX61 0NF-299NL

Product name : CX61

Intel Core i5-3210M (2.50 GHz, 3 MB Smart-Cache), 8GB DDR3, 500GB SATA 5400rpm, NVIDIA GeForce GT 645M 2GB DDR3, 15.6" HD LED 1366 x 768 16:9, DVD SuperMulti, Gigabit LAN, WLAN, Bluetooth 4.0, SD/SDHC/SDXC/MMC/MS, Windows 8
MSI Classic CX61. Product type: Laptop, Form factor: Clamshell. Processor family: Intel® Core™ i5, Processor model: i5-3210M, Processor frequency: 2,5 GHz. Display diagonal: 39,6 cm (15.6"), HD type: HD, Display resolution: 1366 x 768 pixels. Internal memory: 8 GB, Internal memory type: DDR3-SDRAM. Total storage capacity: 500 GB, Storage media: HDD, Optical drive type: DVD Super Multi. Operating system installed: Windows 8. Product colour: Black

Design

Product type *	Laptop
Product colour *	Black
Form factor *	Clamshell

Display

Display diagonal *	39,6 cm (15.6")
Display resolution *	1366 x 768 pixels
Touchscreen *	✘
HD type	HD
LED backlight	✔
Native aspect ratio	16:9
Display surface	Gloss

Processor

Processor manufacturer *	Intel
Processor family *	Intel® Core™ i5
Processor generation	3rd gen Intel® Core™ i5
Processor model *	i5-3210M
Processor cores	2
Processor threads	4
Processor boost frequency	3,1 GHz
Processor frequency *	2,5 GHz
System bus rate	5 GT/s
Processor cache	3 MB
Processor cache type	Smart Cache
Processor socket	BGA 1023
Processor lithography	22 nm
Processor operating modes	64-bit
Processor series	Intel Core i5-3200 Mobile series
Processor codename	Ivy Bridge
Bus type	DMI
FSB Parity	✘
Stepping	L1
Thermal Design Power (TDP)	35 W

Ports & interfaces

Microphone in	✔
ExpressCard slot	✘
CardBus PCMCIA slot type	✘
SmartCard slot	✘

Performance

Motherboard chipset	Intel HM76 Express

Keyboard

Pointing device	Touchpad
Numeric keypad *	✔
Keyboard number of keys	102

Software

Operating system architecture	64-bit
Operating system installed *	Windows 8

Processor special features

Intel® Wireless Display (Intel® WiDi)	✔
Intel® My WiFi Technology (Intel® MWT)	✔
Intel® Anti-Theft Technology (Intel® AT)	✔
Intel® Identity Protection Technology (Intel® IPT)	✔
Intel® Hyper Threading Technology (Intel® HT Technology)	✔
Intel® Turbo Boost Technology	2.0
Intel® Small Business Advantage (Intel® SBA)	✘
Enhanced Intel SpeedStep Technology	✔
Intel® Clear Video HD Technology (Intel® CVT HD)	✔
Intel Clear Video Technology	✘

Processor

Tjunction	105 °C
Maximum number of PCI Express lanes	16
PCI Express slots version	3.0
PCI Express configurations	1x16, 2x8, 1x8+2x4
CPU multiplier (bus/core ratio)	25
ECC supported by processor	✗

Memory

Internal memory *	8 GB
Internal memory type	DDR3-SDRAM

Storage

Total storage capacity *	500 GB
Storage media *	HDD
Number of hard drives installed	1
Hard drive capacity	500 GB
Hard drive interface	SATA
Hard drive speed	5400 RPM
Optical drive type *	DVD Super Multi
Card reader integrated	✔
Compatible memory cards	Memory Stick (MS), MMC, SD, SDHC, SDXC

Graphics

Discrete graphics card model *	NVIDIA® GeForce® GT 645M
Discrete graphics card memory	2 GB
Discrete graphics memory type	GDDR3
On-board graphics card *	✔
Discrete graphics card *	✔
On-board graphics card family	Intel® HD Graphics
On-board graphics card model *	Intel® HD Graphics 4000
On-board graphics card base frequency	650 MHz
On-board graphics card dynamic frequency (max)	1100 MHz
On-board graphics card ID	0x166

Audio

Audio system	SRS
Built-in speaker(s)	✔
Number of built-in speakers	2
Built-in microphone	✔

Camera

Video capturing speed	30 fps

Network

Wi-Fi	✔
Networking features	Gigabit LAN, WLAN
Top Wi-Fi standard *	Wi-Fi 4 (802.11n)
Wi-Fi standards	802.11b, 802.11g, Wi-Fi 4 (802.11n)
Ethernet LAN	✔
Ethernet LAN data rates	10,100,1000 Mbit/s
Bluetooth	✔
Bluetooth version	4.0
Cabling technology	10/100/1000Base-T(X)

Ports & interfaces

USB 2.0 ports quantity *	1
USB 3.2 Gen 1 (3.1 Gen 1) Type-A ports quantity *	2
Ethernet LAN (RJ-45) ports	1
HDMI ports quantity *	1

Processor special features

Intel® InTru™ 3D Technology	✔
Intel® Insider™	✔
Intel® Quick Sync Video Technology	✔
Intel Flex Memory Access	✔
Intel® Smart Cache	✔
Intel® AES New Instructions (Intel® AES-NI)	✔
Intel Trusted Execution Technology	✗
Intel Enhanced Halt State	✔
Intel VT-x with Extended Page Tables (EPT)	✔
Intel Demand Based Switching	✗
Intel® Secure Key	✔
Intel® Clear Video Technology for Mobile Internet Devices (Intel CVT for MID)	✗
Intel 64	✔
Execute Disable Bit	✔
Idle States	✔
Thermal Monitoring Technologies	✔
Processor package size	31.0 x 24.0 (BGA1023)
Supported instruction sets	AVX
Processor code	SR0N0
CPU configuration (max)	1
Embedded options available	✗
Graphics & IMC lithography	22 nm
Intel Virtualization Technology for Directed I/O (VT-d)	✔
Intel Identity Protection Technology version	1,00
Intel Secure Key Technology version	1,00
Intel Virtualization Technology (VT-x)	✔
Intel Dual Display Capable Technology	✔
Intel FDI Technology	✔
Intel Rapid Storage Technology	✗
Intel Fast Memory Access	✔
Processor ARK ID	65708
Conflict-Free processor	✔
Integrated 4G WiMAX	✔

Battery

Battery technology	Lithium-Ion (Li-Ion)
Number of battery cells	6

Power

DC-in jack	✔

Security

Cable lock slot	✗

Weight & dimensions

Width	383 mm
Depth	250 mm
Height	37,6 mm
Weight *	2,4 kg

Packaging content

AC adapter included *	✔
Manual	✔

Ports & interfaces		Other features	
HDMI version	1.4	LightScribe	✘
DVI port	✘	Graphics card family	Intel, NVIDIA
VGA (D-Sub) ports quantity	1	Ethernet interface type	Gigabit Ethernet
Headphone outputs	1	Indication light	✔
S/PDIF out port	✘		

Ports & interfaces		Other features	
HDMI version	1.4	LightScribe	✘
DVI port	✘	Graphics card family	Intel, NVIDIA
VGA (D-Sub) ports quantity	1	Ethernet interface type	Gigabit Ethernet
Headphone outputs	1		

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