



HP Z230 Tower i7-4770 Mini Tower Intel® Core™ i7 8 GB DDR3-SDRAM 500 GB HDD Windows 7 Professional Workstation Black

Brand : HP

Product code: WM610ET

Product name : Z230 Tower

HP Z230 Tower Workstation

HP Z230 Tower. Processor frequency: 3.4 GHz, Processor family: Intel® Core™ i7, Processor model: i7-4770. Internal memory: 8 GB, Internal memory type: DDR3-SDRAM, Memory clock speed: 1600 MHz. Total storage capacity: 500 GB, Storage media: HDD, Optical drive type: DVD Super Multi. On-board graphics card model: Intel® HD Graphics 4600, Discrete graphics card model: NVIDIA® Quadro® K600. Operating system installed: Windows 7 Professional, Operating system architecture: 64-bit. Power supply: 400 W. Product type: Workstation



Processor		Design	
Processor manufacturer *	Intel	Number of 2.5" bays	1
Processor generation	4th gen Intel® Core™ i7	Product colour *	Black
Processor model *	i7-4770	Country of origin	China
Processor family *	Intel® Core™ i7	Performance	
Processor cores	4	Motherboard chipset	Intel® C226
Processor frequency *	3.4 GHz	Product type *	Workstation
Processor boost frequency	3.9 GHz	Software	
Processor socket	LGA 1150 (Socket H3)	Operating system installed *	Windows 7 Professional
Processor cache	8 MB	Operating system architecture	64-bit
Processor cache type	Smart Cache	Recovery operating system	Windows 8 Pro
Processor threads	8	Processor special features	
System bus rate	5 GT/s	Intel® Small Business Advantage (Intel® SBA)	✗
Bus type	DMI2	Intel® Wireless Display (Intel® WiDi)	✓
FSB Parity	✗	Intel 64	✓
Processor lithography	22 nm	Enhanced Intel SpeedStep Technology	✓
Processor operating modes	64-bit	Embedded options available	✗
Processor series	Intel Core i7-4700 Desktop series	Intel® InTru™ 3D Technology	✓
Processor codename	Haswell	Intel® Insider™	✓
Thermal Design Power (TDP)	84 W	Intel® Clear Video HD Technology (Intel® CVT HD)	✓
Tcase	72.72 °C	Intel Clear Video Technology	✗
PCI Express slots version	3.0	Intel VT-x with Extended Page Tables (EPT)	✓
Maximum number of PCI Express lanes	16		
PCI Express configurations	1x16, 2x8, 1x8+2x4		
Number of processors installed	1		
Number of QPI links	1		

Processor		Processor special features	
Stepping	C0	Intel TSX-NI	✗
Maximum internal memory supported by processor	32 GB	Idle States	✓
Memory types supported by processor	DDR3-SDRAM	Thermal Monitoring Technologies	✓
Memory clock speeds supported by processor	1333,1600 MHz	Intel Stable Image Platform Program (SIPP)	✓
Memory bandwidth supported by processor (max)	25.6 GB/s	Intel® AES New Instructions (Intel® AES-NI)	✓
ECC supported by processor	✗	Intel® Secure Key	✓
Memory voltage supported by processor	1.5 V	Intel® OS Guard	✓
Memory		Intel Trusted Execution Technology	✓
		Execute Disable Bit	✓
Internal memory *	8 GB	Intel FDI Technology	✓
Internal memory type	DDR3-SDRAM	Intel Flex Memory Access	✗
Memory layout (slots x size)	2 x 4 GB	Intel Fast Memory Access	✗
Memory slots	4x DIMM	Intel® Smart Cache	✓
Memory clock speed	1600 MHz	Intel Enhanced Halt State	✓
Memory channels	Dual-channel	Intel Demand Based Switching	✗
Storage		Intel® Clear Video Technology for Mobile Internet Devices (Intel CVT for MID)	✗
		Processor package size	37.5 x 37.5 mm
Total storage capacity *	500 GB	Supported instruction sets	AVX 2.0, SSE4.1, SSE4.2
Storage media *	HDD	Processor code	SR149
Optical drive type *	DVD Super Multi	Scalability	15
Total HDDs capacity	500 GB	CPU configuration (max)	1
Number of HDDs installed	1	Graphics & IMC lithography	22 nm
HDD capacity	500 GB	Thermal solution specification	PCG 2013D
HDD interface	SATA	Intel Virtualization Technology for Directed I/O (VT-d)	✓
HDD speed	7200 RPM	Intel Identity Protection Technology version	1.00
Graphics		Intel Stable Image Platform Program (SIPP) version	1.00
		Intel Secure Key Technology version	1.00
Discrete graphics card *	✗	Intel Virtualization Technology (VT-x)	✓
Discrete graphics card model *	NVIDIA® Quadro® K600	Intel Small Business Advantage (SBA) version	1.00
On-board graphics card *	✓	Intel TSX-NI version	0.00
On-board graphics card family	Intel® HD Graphics	Intel Dual Display Capable Technology	✗
On-board graphics card model *	Intel® HD Graphics 4600	Intel Rapid Storage Technology	✗
On-board graphics card base frequency	350 MHz	Processor ARK ID	75122
On-board graphics card dynamic frequency (max)	1200 MHz	Intel® Smart Response Technology	✗
Maximum on-board graphics card memory	2 GB	Intel® Rapid Start Technology	✗
Number of displays supported (on-board graphics)	3	Intel® Turbo Boost Technology	2.0
On-board graphics card DirectX version	11.2/12	Intel Smart Connect Technology	✗
On-board graphics card OpenGL version	4.3	Intel® Hyper Threading Technology (Intel® HT Technology)	✓
On-board graphics card ID	0x412	Intel® Quick Sync Video Technology	✓
Network		Intel® My WiFi Technology (Intel® MWT)	✓
		Intel® Identity Protection Technology (Intel® IPT)	✓
Ethernet LAN *	✓	Intel® Anti-Theft Technology (Intel® AT)	✓
Ethernet LAN data rates	10,100,1000 Mbit/s	Conflict-Free processor	✓
Cabling technology	10/100/1000Base-T(X)	Power	
Wi-Fi *	✗	Power supply *	400 W
Ports & interfaces		Weight & dimensions	
		Width *	170 mm
USB 2.0 ports quantity *	6	Depth *	442 mm
USB 3.2 Gen 1 (3.1 Gen 1) Type-A ports quantity *	4	Height *	399 mm
DVI port	✗		
PS/2 ports quantity	2		
Ethernet LAN (RJ-45) ports	1		
Microphone in	✓		
Headphone outputs	1		

Ports & interfaces		Weight & dimensions	
Line-out	✓	Weight *	8.8 kg
Line-in	✓	Packaging content	
Expansion slots		Display included *	✗
PCI Express x1 (Gen 2.x) slots	1	Mouse included	✗
PCI Express x4 (Gen 2.x) slots	1	Keyboard included	✓
PCI Express x16 (Gen 2.x) slots	1	Other features	
PCI Express x16 (Gen 3.x) slots	1	Optical drives quantity	1
Design			
Chassis type *	Mini Tower		
Water cooling system	✗		
Number of 3.5" bays	2		
Number of 5.25" bays	2		



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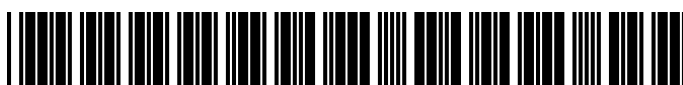
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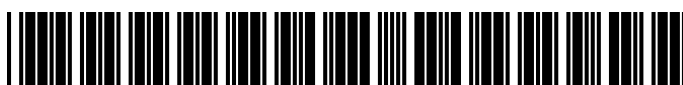
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Publication date: 11-DEC-2022. Prints or copies of Information are only valid on the printed Publication date