

## HP Z220 Intel® Core™ i7 i7-3770 4 GB DDR3-SDRAM Windows 7 Professional Minitower Workstation

Brand: HP Product code: WM463EA

**Product name:** Z220

Intel Core i7-3770 3.4/3.9 GHz, 4096MB DDR3 RAM, 500GB SATA HDD, SuperMulti DVD, Intel HD Graphics 4000, Gigabit Ethernet, 400W, Windows 7 Professional 64 HP Z220. Processor frequency: 3,4 GHz, Processor family: Intel® Core™ i7, Processor model: i7-3770. Internal memory: 4 GB, Internal memory type: DDR3-SDRAM, Memory clock speed: 1600 MHz. Optical drive type: DVD Super Multi. On-board graphics card model: Intel® HD Graphics 4000. Operating system installed: Windows 7 Professional, Operating system architecture: 64-bit. Power supply: 400 W. Chassis type: Minitower. Product type: Workstation. Weight: 10,4 kg





| Processor                       |   | Performance   |                          |
|---------------------------------|---|---|--------------------------|
| Processor manufacturer *        | Intel   | Product type *                                      | Workstation              |
| Processor family *              | Intel® Core™ i7<br>3rd gen Intel® Core™ i7<br>i7-3770 | Software  |                          |
| Processor generation            |   | Operating system architecture                       | 64-bit                   |
| Processor model *               |   | Operating system installed *                        | Windows 7 Professional   |
| Processor cores                 | 4   | Drivers included                                    | ✓ Windows 7 Troicssional |
| Processor threads               | 8   | Drivers included                                    | •                        |
| Processor boost frequency       | 3,9 GHz   | Processor special features                          |                          |
| Processor frequency *           | 3,4 GHz   | Intel® Wireless Display (Intel®                     | /                        |
| Processor socket                | LGA 1155 (Socket H2)                                  | WiDi)   | •                        |
| Processor cache                 | 8 MB  | Intel 64  | ✓                        |
| Processor cache type            | Smart Cache   | Enhanced Intel SpeedStep                            | <b>√</b>                 |
| System bus rate                 | 5 GT/s  | Technology  | •                        |
| Bus type                        | DMI   | Embedded options available                          | ✓                        |
| FSB Parity                      | ×   | Intel® InTru™ 3D Technology                         | ✓                        |
| Processor lithography           | 22 nm   | Intel® Insider™                                     | ✓                        |
| Processor operating modes       | 64-bit  | Intel® Clear Video HD Technology<br>(Intel® CVT HD) | /                        |
| Processor series                | Intel Core i7-3700 Desktop series                     |   |                          |
| Processor codename              | Ivy Bridge  | Intel Clear Video Technology                        | ×                        |
| Thermal Design Power (TDP)      | 77 W  | Intel VT-x with Extended Page<br>Tables (EPT)       | <b>/</b>                 |
| Tcase                           | 67,4 °C   |   |                          |
| Tjunction                       | 105 °C  | Intel TSX-NI  | ×                        |
| PCI Express slots version       | 3.0   | Idle States   | ✓                        |
| PCI Express configurations      | 1x8, 1x16, 2x4, 2x8                                   | Thermal Monitoring Technologies                     | ✓                        |
| Number of processors installed  | 1   | Intel® AES New Instructions (Intel® AES-NI)         | /                        |
| Stepping                        | E1  |   | •                        |
| CPU multiplier (bus/core ratio) | 34  | Intel® Secure Key                                   | ✓                        |
|                                 |   | Intel Trusted Execution Technology                  | ✓                        |

| _  |  |  |  |
|--|--|--|--|
| Processor  |  | Processor special features   |  |
| Maximum internal memory supported by processor               | 32 GB                                      | Execute Disable Bit  | ✓  |
| Memory types supported by                                    | DDD2 CDDAM                                 | Intel FDI Technology   | <b>✓</b>                                 |
| processor  | DDR3-SDRAM                                 | Intel Flex Memory Access   | ✓  |
| Memory clock speeds supported by processor                   | 1333,1600 MHz                              | Intel Fast Memory Access   | ✓  |
| Memory bandwidth supported by                                | 25 C CD/-                                  | Intel Enhanced Halt State  | ✓  |
| processor (max)  | 25,6 GB/s                                  | Intel Demand Based Switching   | ×  |
| ECC supported by processor                                   | ×  | Intel® Clear Video Technology for Mobile Internet Devices (Intel CVT | x  |
| Memory   |  | for MID)   |  |
| Internal memory *  | 4 GB                                       | Processor package size   | 37.5 x 37.5 mm                           |
| Internal memory type   | DDR3-SDRAM                                 | Supported instruction sets CPU configuration (max)                   | AVX, SSE4.1, SSE4.2                      |
| Memory slots   | 4x DIMM                                    | Graphics & IMC lithography   | 1<br>22 nm                               |
| Memory clock speed<br>ECC                                    | 1600 MHz                                   | Thermal solution specification                                       | PCG 2011D                                |
| Memory channels  | X<br>Dual-channel                          | Intel Virtualization Technology for                                  | /  |
|  | Dual-chamie                                | Directed I/O (VT-d)  | •  |
| Storage  | DVD CM III                                 | Intel Identity Protection Technology version                         | 1,00                                     |
| Optical drive type * Total HDDs capacity                     | DVD Super Multi<br>500 GB                  | Intel Secure Key Technology version                                  | 1,00                                     |
| Number of HDDs installed                                     | 1  | Intel Virtualization Technology (VT-                                 | <b>✓</b>                                 |
| HDD capacity   | 500 GB                                     | x)<br>Intel TSX-NI version   | 0,00                                     |
| HDD interface  | SATA                                       | Intel Dual Display Capable   | •  |
| HDD speed  | 7200 RPM                                   | Technology   | X  |
| SSD interface  | SATA                                       | Intel Rapid Storage Technology                                       | X  |
| Card reader integrated                                       | X  | Processor ARK ID   | 65719                                    |
| RAID support   | 0.1  | Intel® Turbo Boost Technology Intel® Hyper Threading Technology      | 2.0                                      |
| RAID levels  | 0, 1                                       | (Intel® HT Technology)   | <b>✓</b>                                 |
| Graphics   |  | Intel® Quick Sync Video Technology                                   | ✓  |
| On-board graphics card *                                     | <b>/</b>                                   | Intel® My WiFi Technology (Intel®                                    | x  |
| On-board graphics card family On-board graphics card model * | Intel® HD Graphics Intel® HD Graphics 4000 | MWT) Intel® Identity Protection                                      |  |
| On-board graphics card base                                  | ·  | Technology (Intel® IPT)  | ✓  |
| frequency  | 650 MHz                                    | Intel® Anti-Theft Technology   | <b>✓</b>                                 |
| On-board graphics card dynamic frequency (max)               | 1150 MHz                                   | (Intel® AT) Conflict-Free processor                                  | <b>✓</b>                                 |
| Number of displays supported (on-                            | 3  | ·  | •  |
| board graphics)  | _  | Power  | 400.111                                  |
| On-board graphics card ID                                    | 0x162                                      | Power supply *   | 400 W                                    |
| Ports & interfaces   |  | Sustainability   |  |
| USB 2.0 ports quantity *                                     | 5  | Sustainability certificates  | ENERGY STAR                              |
| USB 3.2 Gen 1 (3.1 Gen 1) Type-A ports quantity *            | 4  | Weight & dimensions  |  |
| PS/2 ports quantity  | 2  | Width *  | 178 mm                                   |
| Ethernet LAN (RJ-45) ports                                   | 1  | Depth *  | 455 mm<br>447 mm                         |
| Microphone in  | <b>✓</b>                                   | Height * Weight *  | 10,4 kg                                  |
| Headphone outputs  | 1  |  | 10,4 kg                                  |
| Line-in  | <b>✓</b>                                   | Display  |  |
| Expansion slots  |  | Display included *   | ×  |
| PCI Express x4 slots   | 2  | Other features   |  |
| PCI Express x16 slots  | 1  | External drive bays  | 3 x 5.25"                                |
| PCI slots  | 2  | Internal drive bays  | 3 x 3.5"  Cigabit Ethornot (10/100/1000) |
| Design   |  | Networking features Graphics card family                             | Gigabit Ethernet (10/100/1000)<br>Intel  |
| Chassis type *   | Minitower                                  | Graphics card  | HD Graphics 4000                         |
| Country of origin  | China                                      | •  |  |
| Performance  |  |  |  |
| Motherboard chipset  | Intel® C216                                |  |  |
| Audio system   | HD   |  |  |





























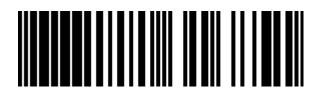
















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