HP Z230 Tower and SFF Workstations

Affordable performance and flexibility, re-defined.

June 2014
Workstations that fit your workspace

Create a totally immersive work environment for those who demand reliability and performance on a budget. Designed for heavy 24x7x365 workloads, the HP Z230 delivers next-generation processor and graphics technologies in two redesigned models. Choose between an amazingly capable Small Form Factor (SFF) for constrained spaces, and a new compact Tower that is impressively expandable.

Rock solid reliability, affordably priced

With the HP Z230 SFF and Tower Workstations, you will gain peace of mind from our extreme test and validation processes designed for always-on environments. You can control your environmental impact better than ever while lowering your total cost of ownership with a 92% efficient power supply. Work smarter with software tools designed to deliver better, smarter performance—the HP Z230 Tower Workstation has earned a wide range of ISV certifications.

Totally immersive. Perfectly productive.

Engineered to impress, the redesigned HP Z230 Small Form Factor Workstation provides the capability and flexibility you demand in a 57% smaller form factor than the tower. You can realize impressive performance, unbelievable storage capacity, wide variety of I/O slots and ports and amazing flexibility while retaining the small form factor size.

The HP Z230 Tower Workstation features complete computing power in a new compact design. Don’t let its compact design fool you, it is remarkably expandable to ensure you’ll always have all the computing power you need. It is designed to grow along with your business so that you can scale and expand by adding more storage and connectivity when you need it. Enhance your storage capacity with six available drive bays including a 2.5-inch HD bay for high speed solid state drives. The optional ergonomic Handle in Top ODD Bay allows tool free installation of SSD Hard Drives for easy expandability.

Boost your storage performance with RAID, solid state drives, or get the best of both worlds by combining large hard drives with an optional solid state drive as a cache device. Optimize these workstations for peak performance with HP Performance Advisor that easily configures your system with the best settings designed for specific applications.

The HP Z230 has power to spare—and share.

Enjoy the latest in performance and energy efficiency from Intel’s next generation processor architecture. The latest Intel® Xeon® processor E3-1200 v3 family and rich graphics are designed to keep up with your workload. You can choose between cost-effective integrated graphics or powerful 2D or 3D discrete graphics. Keep your work front-and-center with support for up to six monitors and easily connect your peripherals and devices using the four PCIe slots, one PCI input/output slot, ten external USB ports and the fast charging USB port. With HP RGS you can take your graphics intensive workstation applications wherever you go and collaborate with colleagues around the office or around the world, in real time.
### HP Z230 Workstations

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>HP Z230 Tower10</th>
<th>HP Z230 SFF10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available Operating Systems</td>
<td>Windows 8.1 Pro 64 bit. Other editions available**</td>
<td>Windows 8 Professional 32 bit. Other editions available***</td>
</tr>
<tr>
<td>Processors</td>
<td>Intel® Pentium® G3220 processor</td>
<td>Intel® Pentium® G3240 processor</td>
</tr>
<tr>
<td>GHz</td>
<td>3.0</td>
<td>3.1</td>
</tr>
<tr>
<td>Max Turbo GHz</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Memory</td>
<td>3 MB</td>
<td>3 MB</td>
</tr>
<tr>
<td>Cores</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Hyper-Threading</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Intel® vPro™ Technology</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Intel® HD Graphics</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Remote Management</td>
<td>Intel® vPro™ with Intel® AMT 9.0</td>
<td>Intel® vPro™ with Intel® AMT 9.0</td>
</tr>
<tr>
<td>Audio</td>
<td>High Definition Integrated Realtek ALC221 Audio and integrated speaker; optional HP Thin USB Powered Speakers</td>
<td>High Definition Integrated Realtek ALC221 Audio and integrated speaker; optional HP Thin USB Powered Speakers</td>
</tr>
<tr>
<td>Network</td>
<td>Integrated Intel® I217LM PCIe GbE Controller; Optional Intel® Ethernet I210-T1 PCIe as 2nd NIC</td>
<td>Integrated Intel® I217LM PCIe GbE Controller; Optional Intel® Ethernet I210-T1 PCIe as 2nd NIC</td>
</tr>
<tr>
<td>Remote Management</td>
<td>Intel® vPro™ with Intel® AMT 9.0</td>
<td>Intel® vPro™ with Intel® AMT 9.0</td>
</tr>
</tbody>
</table>

### Ports
- Front: 2 USB 3.0, 1 USB 2.0, 1 Thunderbolt™ 2 (via optional add-in PCIe card)
- Rear: 2 PS/2, RJ-45 (for use with Intel® HD Graphics), 2 DisplayPorts, 1 audio in, 1 audio out, 1 serial (optional), 2 PCIe slots (PCIe Express 3.0 x16)
- Internal: 1 USB 3.0, 3 USB 2.0

### Optical Storage

### Drive Bays
- 2 internal 3.5-inch bays, 1 external Half-Height 5.25-inch bay
- 1 PCIe Gen3 x16, 1 PCIe Gen2 x4 slot/x16 connector, 1 PCIe Gen2 x1 slot/x4 connector, 1 PCIe Gen2 x1 slot, 1 PCI 32-bit

### Expansion Slots
- 1 PCIe Gen3 x16, 1 PCIe Gen2 x4 slot/x16 connector, 1 PCIe Gen2 x1 slot, 1 PCI 32-bit
- Integrated Graphics: Intel® HD Graphics available on select processors as above
- Integrated Graphics: Intel® HD Graphics available on select processors as above

### Storage
- Up to (3) 2.5-inch 7200 rpm SATA drives: 500 GB, 1, 2 or 3 TB (9 TB max)
- Up to (2) PCIe SSD: HP Z Turbo Drive 256 GB, HP Z Turbo Drive 512 GB****
- Optional (1) 64 GB SSD Disk Cache Module can be used in conjunction with up to (2) SATA HDDs in RAID 0/RAID 1 using Intel® Smart Response Technology.

### Chipset
- Intel® C226 chipset

### Memory
- 4 DIMM slots, up to 32 GB ECC/Non-ECC DDR3 1600 MHz (ECC/Non-ECC choice and actual memory speed dependent on processor capability)

### Drive Controllers
- Integrated SATA Controller, RAID 0/1 supported: 5 ports, 6 Gb/s

### Optical Storage

### Drive Bays
- 2 internal 3.5-inch bays, 1 internal 2.5-inch bay (for SSD only), 1 external slim ODD bay, 2 external Half-Height 5.25-inch bays
- 1 PCIe Gen3 x16, 1 PCIe Gen2 x4 slot/x16 connector, 1 PCIe Gen2 x1 slot/x4 connector, 1 PCIe Gen2 x1 slot, 1 PCI 32-bit
- Integrated Graphics: Intel® HD Graphics available on select processors as above
- Integrated Graphics: Intel® HD Graphics available on select processors as above

### Expansion Slots
- 1 PCIe Gen3 x16, 1 PCIe Gen2 x4 slot/x16 connector, 1 PCIe Gen2 x1 slot/x4 connector, 1 PCIe Gen2 x1 slot
- All slots are Low Profile.

### Available Graphics
- Professional 2D: NVIDIA NVS 310, NVIDIA NVS 315, NVIDIA NVS 510
- Entry 3D: AMD FirePro™ W3000, NVIDIA Quadro K4000, NVIDIA Quadro K4000
- Intel® HD Graphics: Intel® HD Graphics available on select processors as above
- Intel® HD Graphics: Intel® HD Graphics available on select processors as above

### Audio
- High Definition Integrated Realtek ALC221 Audio and integrated speaker; optional HP Thin USB Powered Speakers

### Network
- Integrated Intel® I217LM PCIe GbE Controller; Optional Intel® Ethernet I210-T1 PCIe as 2nd NIC

### Remote Management
- Intel® vPro™ with Intel® AMT 9.0
# HP Z230 Workstations

## Remote Technology
- **HP Z230 Tower**
  - HP Remote Graphics Software (RGS)
- **HP Z230 SFF**
  - HP Remote Graphics Software (RGS)

## Input Devices
- HP PS/2 keyboard, HP USB keyboard, HP USB C-to-D smart card keyboard, HP PS/2 mouse, HP USB optical mouse, HP USB 1000 dpi laser mouse, HP Optical 3-button optical mouse, USB SpaceMouse Pro, USB SpacePilot Pro

## Dimensions (H x W x D)
- **HP Z230 Tower**: 15.7 x 6.7 x 17.4 in (39.93 x 17.04 x 44.25 cm)
- **HP Z230 SFF**: Standard desktop orientation: 3.95 x 13.3 x 15.0 in (10.5 x 33.83 x 38.15 cm)

## Power Supply
- 400-watt 92% efficient power supply, 320 W, Standard Efficiency Power Supply available in some countries.
- 240-watt, 92% Efficiency power supply; 240-watt Standard Efficiency Power Supply available in some countries.

## Compatible Displays
- **HP Z230 Tower**: HP DreamColor LP2480x Professional Display; HP ZR24w 30-inch 5-IPS LCD Monitor; HP ZR2440w 24-inch LED Backlit IPS Monitor; HP Z Display Z23i 30-inch IPS LED Backlight Monitor; HP Z Display Z27i 27-inch IPS LED Backlight Monitor; HP Z Display Z24i 24-inch IPS LED Backlight Monitor; HP Z Display Z23i 23-inch IPS LED Backlight Monitor; HP Z Display Z22i 21.5-inch IPS LED Backlight Monitor
- **HP Z230 SFF**: Standard desktop orientation: 3.95 x 13.3 x 15.0 in (10.5 x 33.83 x 38.15 cm)

## Warranty
- Limited three-year Mon-Fri 8-5 next business day service, parts, labor and 24x7 phone support, terms and conditions may vary.
- One-year warranty option available in selected countries.

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**Learn more hp.com/go/z230**

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Get outstanding image accuracy, exceptional adjustability, and mission-critical reliability optimized for commercial environments. Built with IPS Gen 2 panels, the HP Z24i 24-inch IPS Display delivers power savings over first-generation IPS technology and extra-wide viewing angles that foster collaboration.

**Say hello to your new power-smart IPS Gen 2 team player**

Lower your power consumption and get 99% coverage of sRGB color spaces from IPS Gen 2 panels. Speed team reviews and collaborative decision-making with extra-wide viewing angles that give everyone the same great view.

See all the stunning details on a 24-inch diagonal display with narrow bezels and 1920 x 1200 resolution, which delivers 120 extra lines of data and 2.3M pixels.

Experience crisp, clear presentation from 300 cd/m² brightness, 1000:1 contrast ratio, 5M:1 dynamic contrast ratio, and 8 ms response time.

Enhance the dark regions of your onscreen images and see the smallest details even better with integrated Black Stretch technology.

**Design-in comfort**

Find your most comfortable position with a 4-way adjustable stand and an integrated HP QR2 Quick Release that enables VESA mounting.

**Easy-access connectivity within arm’s reach**

Enjoy future-ready and legacy connectivity from a range of inputs that include DisplayPort 1.2, DVI, VGA, and an integrated USB hub.

**Keep it together**

Get organized with the integrated cable management clip. Create a clean, compact all-in-one with the optional HP Thin Client Mount Kit. The HP QR2 Quick Release is integrated into the display to enable quick set up, and it's VESA mountable.

**Control your environmental impact**

Reduce power consumption and help lower your costs with an intelligent, energy-efficient design that goes beyond IPS Gen 2 technology with ENERGY STAR® and EPEAT® Gold qualifications.

The HP Z24i 24-inch IPS Display also includes a mercury-free LED backlight, a low halogen design, and arsenic-free display glass.

**Meet your monitor’s new best friend**

Customize your workspace with resizable screen partitions. Work in documents, spreadsheets, and email in separate regions of the screen—at the same time—with HP Display Assistant software.

View open applications on all of your connected displays with the expanded toolbar. Help deter theft with a user-designated PIN that deactivates the monitor if it’s disconnected from a PC without approval.

**Breathe easy**

Rest assured that your IT investment is supported by a standard, three-year limited warranty. Select optional HP Care Pack Services to extend your protection up to 5 years.
**HP Z24i 24-inch IPS Display**

<table>
<thead>
<tr>
<th>Part number</th>
<th>D7P53A4, D7P53AB, D7P53AS, D7P53AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel type</td>
<td>IPS Gen 2, LED Backlit</td>
</tr>
<tr>
<td>Viewable image area</td>
<td>60.96 cm (24 in) widescreen; diagonally measured</td>
</tr>
<tr>
<td>Viewing angle</td>
<td>Horizontal: 178 degrees; Vertical: 178 degrees</td>
</tr>
<tr>
<td>Brightness</td>
<td>300 cd/m²</td>
</tr>
<tr>
<td>Contrast ratio</td>
<td>Static: 1000:1; Dynamic: 5,000,000:1</td>
</tr>
<tr>
<td>Response rate</td>
<td>8 ms gray to gray</td>
</tr>
<tr>
<td>Frequency</td>
<td>Horizontal: 24 KHz-94 KHz; Vertical: 50 Hz-76 Hz</td>
</tr>
<tr>
<td>Aspect ratio</td>
<td>16:10</td>
</tr>
<tr>
<td>Native resolution</td>
<td>1920 x 1200 @ 60 Hz</td>
</tr>
<tr>
<td>Resolutions supported</td>
<td>640 x 480 @ 60Hz, 720 x 400 @ 70 Hz, 800 x 600 @ 60 Hz, 1024 x 768 @ 60 Hz, 1280 x 720 @ 60 Hz, 1280 x 800 @ 60 Hz, 1280 x 1024 @ 60 Hz, 1440 x 900 @ 60 Hz, 1600 x 1200 @ 60 Hz, 1680 x 1050 @ 60 Hz, 1920 x 1080 @ 60 Hz, 1920 x 1200 @ 60 Hz</td>
</tr>
<tr>
<td>Input signal</td>
<td>DisplayPort, DVI-D, VGA (analog) (HDCP support on DVI-D and DisplayPort)</td>
</tr>
<tr>
<td>USB</td>
<td>Integrated USB 2.0 hub with (1) Upstream and (4) Downstream ports</td>
</tr>
<tr>
<td>User controls</td>
<td>Menu, Minus (-), Plus (+), Input Control, OK/Auto, Power</td>
</tr>
<tr>
<td>Power consumption</td>
<td>ENERGY STAR®: 25.4 W; Default: 36 W; Maximum: 55 W; Sleep: 0.5W</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Unpacked: 55.94 x 23.79 x 52.5 cm (22.02 x 9.37 x 20.67 in)</td>
</tr>
<tr>
<td></td>
<td>Head only: 55.94 x 6.45 x 36.5 cm (22.02 x 2.54 x 14.37 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>Unpacked: 6.96 kg (15.35 lb); Head only: 4.73 kg (10.43 lb); Packaged: 9.14 kg (20.15 lb)</td>
</tr>
<tr>
<td>Base features</td>
<td>Tilt: -5° to +30°; Swivel: 360°; Height Adjustable: 60 mm; Pivot Rotation: 90°</td>
</tr>
<tr>
<td>Environmental</td>
<td>Operating: 5° to 35° C (41° to 95° F); Non-operating: -20° to 60° C (-4° to 140° F)</td>
</tr>
<tr>
<td>Accessories</td>
<td>HP Thin Client Mount Kit - Attach your HP Thin Client or USDT PC to the back of select HP Z Displays and maintain optimal ergonomic adjustability with the HP Thin Client Mount Kit. Simply mount an HP Thin Client to the Kit’s VESA plate, slide it into place on the back of an HP Z24i, Z27i, or Z30i IPS Display stand, and you're ready to go. Part number ESJZ5A.</td>
</tr>
<tr>
<td></td>
<td>HP Adjustable Dual Display Stand - Premium space-saving dual screen solution provides access to more monitor real estate and makes it possible to manage multiple applications simultaneously. Weight adjustable for dual monitors from 17-24&quot;. Rotate displays into portrait/landscape positions. Part Number AW664AA.</td>
</tr>
<tr>
<td></td>
<td>HP LCD Speaker Bar - Powered directly by the connected PC, seamlessly attaches to the monitor's bezel to bring full multimedia support to select HP LCD monitors; features dual speakers with full sound range and two external jacks for headphones. Part number NQ576AA.</td>
</tr>
<tr>
<td></td>
<td>HP Dual Output USB Graphics Adapter - Create a dual-monitor setup with the HP Dual Output USB Graphics Adapter featuring both DVI-I and DisplayPort inputs to drive displays at high resolutions through a single USB 3.0 connection to your PC. Part number C5U89AA.</td>
</tr>
<tr>
<td></td>
<td>HP Business PC Security Lock Kit - Attaches to the rear of the PC with a six-foot steel cable that can be used to secure a PC or peripherals such as mice, keyboards, monitors or USB security devices to protect them against unauthorized removal by physically connecting the system to an anchor point. Part number PV606AA.</td>
</tr>
<tr>
<td></td>
<td>HP Single Monitor Arm - Provides a seemingly endless range of display adjustments with an amazing 13 inches of lift, 50 degrees of tilt, and 360 degrees of pan and rotation. Part number BT861AA.</td>
</tr>
<tr>
<td></td>
<td>HP Integrated Work Center 2 - Small Form Factor (SFF) - Designed specifically for use with the HP Compaq Small Form Factor (SFF) Desktop PC and a 17 to 24-inch (43.18 to 60.96 cm) diagonal monitor, it provides a portable, compact workspace to help maximize space-constrained work environments. (17 to 24-inch diagonal monitors need to meet supported weight limits of 7.5 to 12.1 lbs. (3.38 to 5.5 kg). Part number QP897AA.</td>
</tr>
<tr>
<td>Certification and compliance</td>
<td>CE, CB, CEL Grade 1, KC, KCC, NOM, PSB, ICE, TUV-S, CCC, CECP, SEPA, TCO 6.0 Certification, EPA, ISC, VCCI, FCC, HSMI, Microsoft WHQL Certification (Windows 8 and Windows 7), ENERGY STAR® Qualified, EPEAT® Gold.</td>
</tr>
<tr>
<td>Limited warranty</td>
<td>Protected by HP, including a 3 year standard limited warranty. Optional HP Care Pack Services are extended service contracts that extend your protection beyond the standard warranties.</td>
</tr>
</tbody>
</table>

1. Comparison is to IPS Gen 1 panels.
2. All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.
4. EPEAT® Gold registered models of this product are available where HP registers commercial display products. See www.epeat.net for registration status in your country.
5. External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.
6. Service levels and response times for HP Care Pack Services may vary depending on your geographic location. Service starts from date of hardware purchase. Restrictions and limitations apply. See www.hp.com/go/cpc for details.
7. All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.
8. Each accessory and mounting hardware is sold separately.
9. The HP Quick Release has been designed to support a maximum of up to 24 lbs (10.9 kg) for all devices mounted. Because mounting surfaces vary wildly and the final mounting method and configuration may vary, mounting fasteners are not supplied (other than the VESA-compliant screws). HP recommends that you consult with a qualified engineer, architectural or construction professional to determine the appropriate type and quantity of mounting fasteners required for your application and to ensure that your mounting solution is properly installed to support applied loads.

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