



# User Guide

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## About This Guide

This guide provides information on monitor features, setting up the monitor, and technical specifications.

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 **WARNING!** Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

 **CAUTION:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

 **NOTE:** Text set off in this manner provides important supplemental information.

 **TIP:** Text set off in this manner provides helpful hints.

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This product incorporates HDMI technology.



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# 1 Product features

## HP Z displays

The monitor models and features include:

- 60.4 cm (23.8-inch) diagonal viewable area display with 3840 x 2160 UHD resolution, plus full-screen support for lower resolutions
- 80 cm (31.5-inch) diagonal viewable area display with 3840 x 2160 UHD resolution, plus full-screen support for lower resolutions
- Non-glare panel with an LED backlight
- Wide viewing angle to allow viewing from a sitting or standing position, or moving from side-to-side
- Tilt capability
- Pivot capability to rotate the display from landscape to portrait
- Swivel and height adjustment capabilities
- Removable stand for flexible monitor panel mounting solutions
- HP Quick Release 2 device to quickly install the monitor panel to the stand with a simple click, and then remove it with the convenient sliding tab release
- DisplayPort video input
- Mini-DisplayPort video input
- Two HDMI (High-Definition Multimedia Interface) video inputs with MHL (Mobile High-Definition Link) supported on the second HDMI input
- PIP functionality to enable the DisplayPort and HDMI inputs to be viewed in a small secondary window or side-by-side on the main window
- Audio-out (headphone) jack
- USB 3.0 hub with one upstream port (connects to the computer) and four downstream ports (connects to USB devices)
- USB cable provided to connect the monitor's USB hub to the USB connector on the computer
- Five front bezel menu buttons, four that are reconfigurable to quickly allow selection of the most commonly used operations
- Supports an optional HP speaker bar
- Plug and play capability if supported by your operating system
- Security slot provision on the rear of the monitor for an optional cable lock
- Cable management feature for placement of cables and cords
- On-Screen Display (OSD) adjustments in several languages for easy setup and screen optimization

- HP Display Assistant software for adjusting monitor settings and enabling theft deterrence features (refer to the *HP Display Assistant User Guide* included on the disc with your monitor)
- HDCP (High-Bandwidth Digital Content Protection) copy protection on all digital inputs
- Software and documentation disc that includes monitor drivers and product documentation
- Energy saver feature to meet requirements for reduced power consumption



**NOTE:** For safety and regulatory information, refer to the *Product Notices* provided on your media disc, if one is included, or in your documentation kit. To locate updates to the user guide for your product, go to <http://www.hp.com/support>, and select your country. Select **Drivers & Downloads**, and then follow the on-screen instructions.

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## 2 Safety and maintenance guidelines

### Important safety information

A power cord is included with the monitor. If another cord is used, use only a power source and connection appropriate for this monitor. For information on the correct power cord set to use with the monitor, refer to the *Product Notices* provided on your media disc, if one is included, or in your documentation kit.

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 **WARNING!** To reduce the risk of electric shock or damage to the equipment:

- Plug the power cord into an AC outlet that is easily accessible at all times.
- Disconnect power from the monitor by unplugging the power cord from the AC outlet.
- If provided with a 3-pin attachment plug on the power cord, plug the cord into a grounded (earthed) 3-pin outlet. Do not disable the power cord grounding pin, for example, by attaching a 2-pin adapter. The grounding pin is an important safety feature.

For your safety, do not place anything on power cords or cables. Arrange them so that no one may accidentally step on or trip over them. Do not pull on a cord or cable. When unplugging from the electrical outlet, grasp the cord by the plug.

To reduce the risk of serious injury, read the *Safety and Comfort Guide*. It describes proper workstation, setup, posture, and health and work habits for computer users, and provides important electrical and mechanical safety information. This guide is located on the Web at <http://www.hp.com/ergo>.

 **CAUTION:** For the protection of the monitor, as well as the computer, connect all power cords for the computer and its peripheral devices (such as a monitor, printer, scanner) to some form of surge protection device such as a power strip or Uninterruptible Power Supply (UPS). Not all power strips provide surge protection; the power strips must be specifically labeled as having this ability. Use a power strip whose manufacturer offers a Damage Replacement Policy so you can replace the equipment, if surge protection fails.

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Use the appropriate and correctly sized furniture designed to properly support your HP LCD monitor.

 **WARNING!** LCD monitors that are inappropriately situated on dressers, bookcases, shelves, desks, speakers, chests, or carts may fall over and cause personal injury.

Care should be taken to route all cords and cables connected to the LCD monitor so that they cannot be pulled, grabbed, or tripped over.

 **NOTE:** This product is suitable for entertainment purposes. Consider placing the display in a controlled luminous environment to avoid interference from surrounding light and bright surfaces that may cause disturbing reflections from the screen.

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## Maintenance guidelines

To enhance the performance and extend the life of the monitor:

- Do not open the monitor cabinet or attempt to service this product yourself. Adjust only those controls that are covered in the operating instructions. If the monitor is not operating properly or has been dropped or damaged, contact an authorized HP dealer, reseller, or service provider.
- Use only a power source and connection appropriate for this monitor, as indicated on the label/back plate of the monitor.
- Be sure the total ampere rating of the products connected to the outlet does not exceed the current rating of the electrical outlet, and the total ampere rating of the products connected to the cord does not exceed the rating of the cord. Look on the power label to determine the ampere rating (AMPS or A) for each device.
- Install the monitor near an outlet that you can easily reach. Disconnect the monitor by grasping the plug firmly and pulling it from the outlet. Never disconnect the monitor by pulling the cord.
- Turn the monitor off when not in use. You can substantially increase the life expectancy of the monitor by using a screen saver program and turning off the monitor when not in use.



**NOTE:** Monitors with a “burned-in image” are not covered under the HP warranty.

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- Slots and openings in the cabinet are provided for ventilation. These openings must not be blocked or covered. Never push objects of any kind into cabinet slots or other openings.
- Do not drop the monitor or place it on an unstable surface.
- Do not allow anything to rest on the power cord. Do not walk on the cord.
- Keep the monitor in a well-ventilated area, away from excessive light, heat or moisture.
- When removing the monitor stand, you must lay the monitor face down on a soft area to prevent it from getting scratched, defaced, or broken.

## Cleaning the monitor

1. Turn off the monitor and unplug the power cord from the back of the unit.
2. Dust the monitor by wiping the screen and the cabinet with a soft, clean antistatic cloth.
3. For more difficult cleaning situations, use a 50/50 mix of water and Isopropyl alcohol.



**CAUTION:** Spray the cleaner onto a cloth and use the damp cloth to gently wipe the screen surface. Never spray the cleaner directly on the screen surface. It may run behind the bezel and damage the electronics.

**CAUTION:** Do not use cleaners that contain any petroleum based materials such as benzene, thinner, or any volatile substance to clean the monitor screen or cabinet. These chemicals may damage the monitor.

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## Shipping the monitor

Keep the original packing box in a storage area. You may need it later if you move or ship the monitor.

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## 3 Setting up the monitor

To set up the monitor, ensure that the power is turned off to the monitor, computer system, and other attached devices, then follow the instructions below.

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 **NOTE:** Be sure the master power switch, located on the rear panel of the monitor, is in the off position. The master power switch turns off all power to the monitor.

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### Use caution when setting up the monitor

To prevent damage to the monitor, do not touch the surface of the LCD panel. Pressure on the panel may cause non-uniformity of color or disorientation of the liquid crystals. If this occurs the screen will not recover to its normal condition.

If installing a stand, lay the monitor face down on a flat surface covered with a protective sheet foam or non-abrasive cloth. This prevents the screen from getting scratched, defaced or broken as well as damage to the front panel buttons.



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 **NOTE:** Your monitor may look different from the monitor in this illustration.

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## Installing the stand

**⚠ CAUTION:** Do not touch the surface of the LCD panel. Pressure on the panel may cause non-uniformity of color or disorientation of the liquid crystals. If this occurs the screen will not recover to its normal condition.

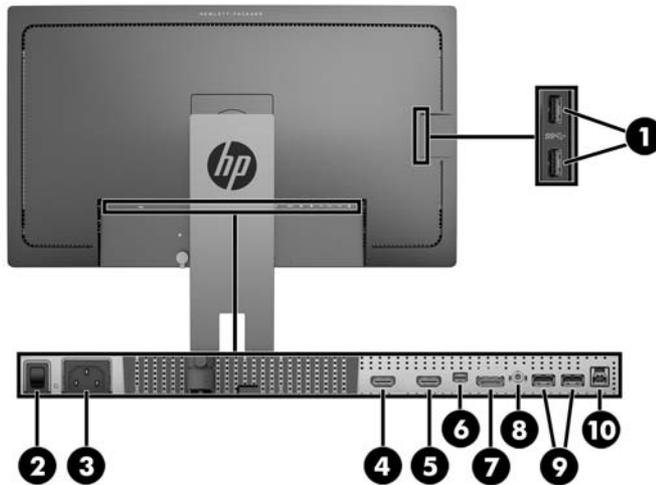
**💡 TIP:** Consider the placement of the display, because the bezel might cause interfering reflections from surrounding light and bright surfaces.

The display uses the HP Quick Release 2 for easy mounting of the monitor. To mount the panel onto the stand:

1. Lay the monitor panel face down on a flat surface covered by a clean, dry cloth.
2. Slide the top of the stand's mounting plate (1) under the upper lip of the recess in the back of the panel.
3. Lower the bottom of the stand's mounting plate (2) into the recess until it snaps into place.
4. The HP Quick Release 2 latch (3) pops up when the stand is locked in place.



## Identifying rear and side components

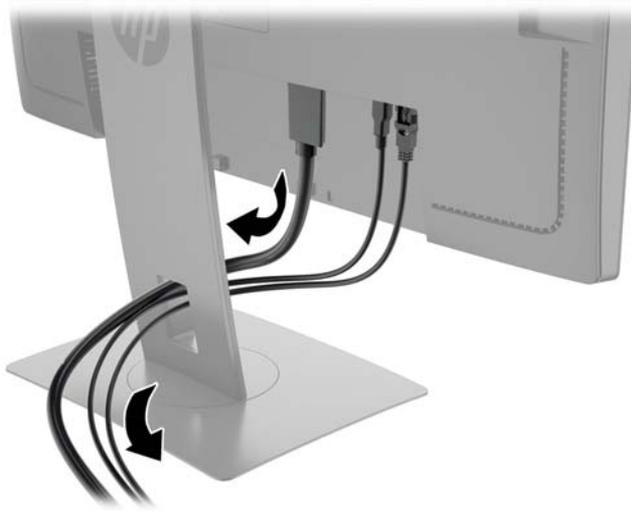


Component	Function
1	USB 3.0 Downstream (side panel) Connects optional USB devices to the monitor.
2	Master Power Switch Turns off all power to the monitor. <b>NOTE:</b> Putting the switch in the Off position will yield the lowest power state for the monitor when not in use.
3	Power Connector Connects the AC power cord to the monitor.
4	HDMI (MHL) Connects the HDMI or MHL cable from the source device to the monitor.
5	HDMI Connects an HDMI cable from the source device to the monitor.
6	Mini-DisplayPort Connects the Mini-DisplayPort cable from the source device to the monitor
7	DisplayPort Connects the DisplayPort cable from the source device to the monitor.
8	Audio-out Connects headphones or an optional HP Speaker Bar to the monitor.
9	USB 3.0 Downstream Connects optional USB devices to the monitor.
10	USB 3.0 Upstream Connects the USB hub cable from the source device to the monitor.

## Connecting the cables

 **NOTE:** The monitor ships with select cables. Not all cables shown in this section are included with the monitor.

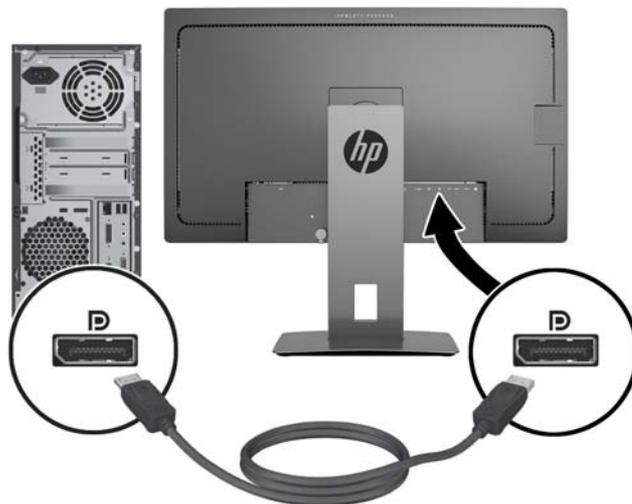
1. Place the monitor in a convenient, well-ventilated location near the computer or source device.
2. Before connecting the cables, route the cables through the cable routing hole in the center of the stand.



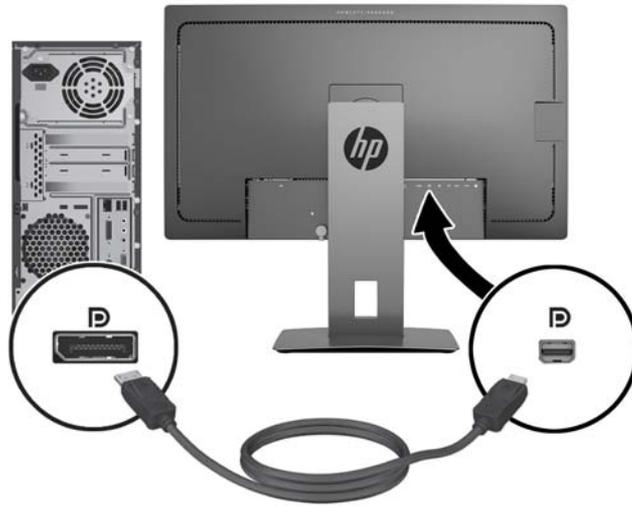
3. Connect a video cable.

 **NOTE:** The monitor will automatically determine which inputs have valid video signals. The inputs can be selected by pressing the **Next Input** button on the front panel or through the On-Screen Display (OSD) by pressing the **Menu** button and selecting **Input Control**.

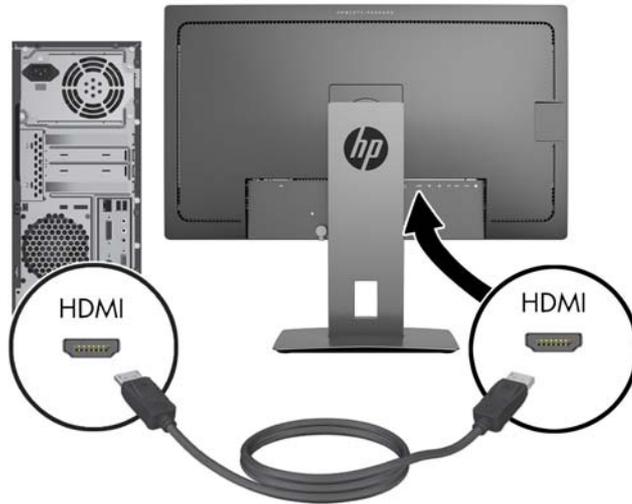
- Connect a DisplayPort cable to the DisplayPort connector on the rear of the monitor and the other end to the DisplayPort connector on the source device.



- Connect a Mini-DisplayPort cable to the Mini-DisplayPort connector on the rear of the monitor and the other end to the DisplayPort connector on the source device.



- Connect an HDMI cable to the HDMI port on the rear of the monitor and the other end to the source device.



- Connect an MHL cable to the HDMI (MHL) port on the rear of the monitor and to the micro USB port on an MHL-enabled source device, such as a smart phone or tablet, to stream content from the mobile device to your monitor screen.

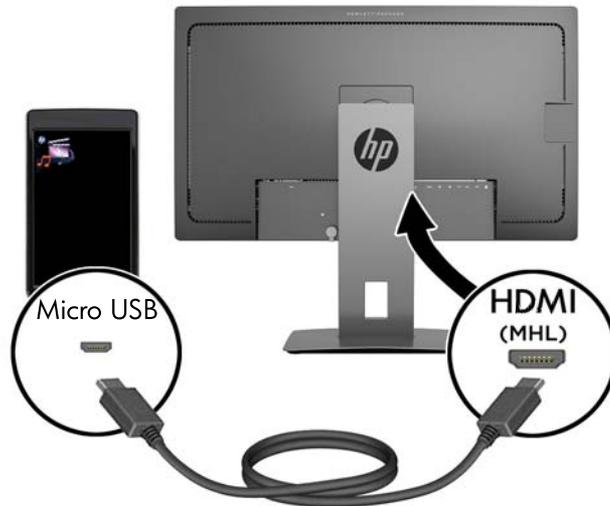
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 **NOTE:** The MHL video is limited to the mobile device output resolution.

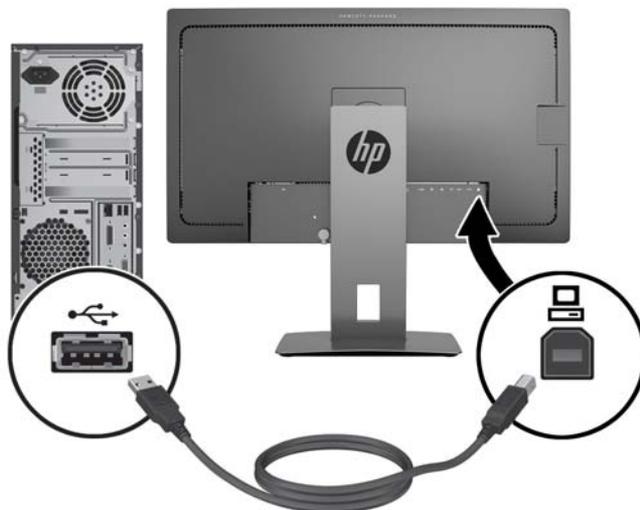
 **NOTE:** The MHL connector also charges your MHL mobile device while connected and streaming.

 **NOTE:** You can also connect an HDMI cable between the HDMI (MHL) port on the monitor and an HDMI source device.

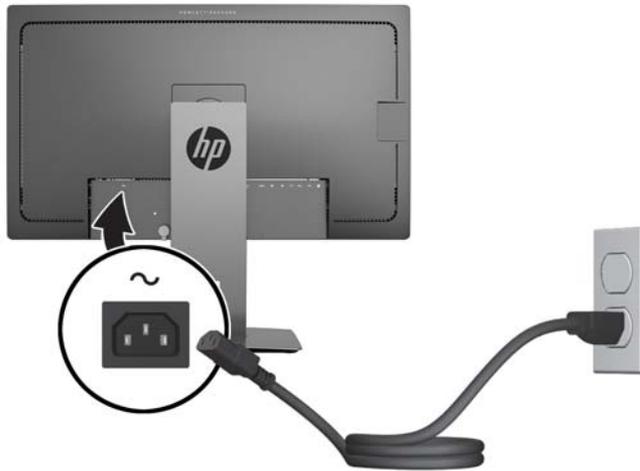
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4. Connect the USB upstream cable's Type B connector to the USB upstream port on the rear of the monitor and the cable's Type A connector to the USB downstream port on the source device.



5. Connect one end of the AC power cord to the power connector on the rear of the monitor, and the other end to an AC outlet.



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**⚠ WARNING!** To reduce the risk of electric shock or damage to the equipment:

Do not disable the power cord grounding plug. The grounding plug is an important safety feature.

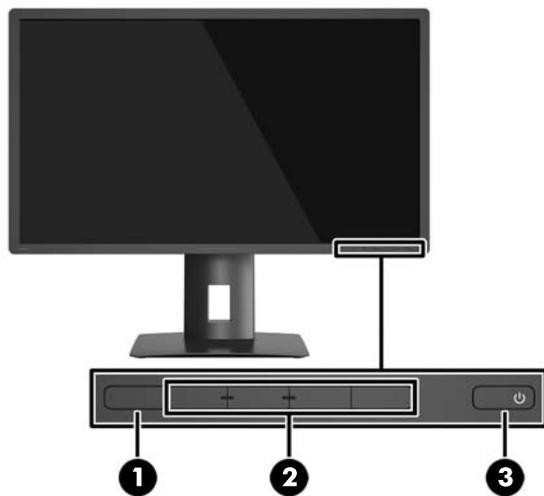
Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.

Disconnect power from the equipment by unplugging the power cord from the AC outlet.

For your safety, do not place anything on power cords or cables. Arrange them so that no one may accidentally step on or trip over them. Do not pull on a cord or cable. When unplugging from the electrical outlet, grasp the cord by the plug.

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## Identifying front panel controls

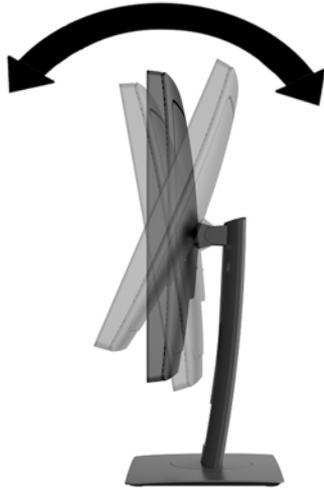


Control	Function
1	<p>Menu button</p> <p>Opens and closes the OSD menu.</p> <p><b>NOTE:</b> To activate the Menu button and the Function buttons, press any of the buttons so that the button labels appear on the screen.</p>
2	<p>Function buttons</p> <p>Use these buttons to navigate through the OSD based on the indicators next to the buttons that are activated while the OSD is open.</p> <p><b>NOTE:</b> You can reconfigure the Function buttons in the OSD to quickly select the most commonly used operations. See <a href="#">Reconfiguring the Function buttons on page 23</a> for more information.</p>
3	<p>Power button</p> <p>Turns the monitor on or off.</p> <p><b>NOTE:</b> Be sure the master power switch on the rear of the monitor is in the ON position to turn on the monitor.</p>

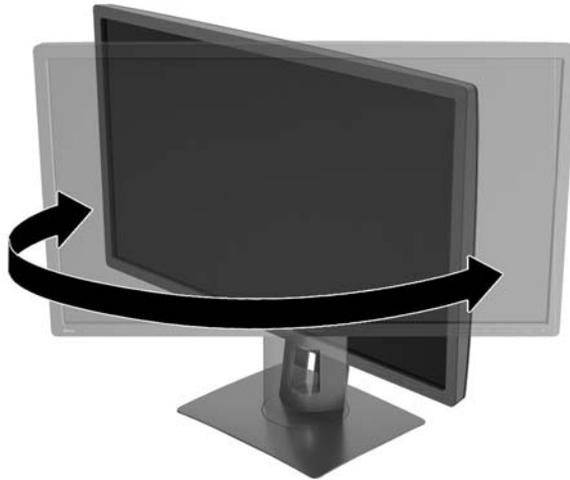
 **NOTE:** To view an OSD menu simulator, visit the HP Customer Self Repair Services Media Library at <http://www.hp.com/go/sml>.

## Adjusting the monitor

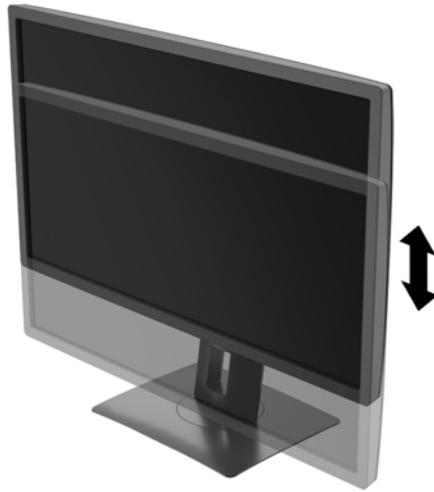
1. Tilt the monitor's panel forward or backward to set it to a comfortable eye level.



2. Swivel the monitor to the left or right for the best viewing angle.



3. Adjust the monitor's height to a comfortable position for your individual workstation. The monitor's top bezel edge should not exceed a height that is parallel to your eye height. A monitor that is positioned low and reclined may be more comfortable for users with corrective lenses. The monitor should be repositioned as you adjust your working posture throughout the work day.



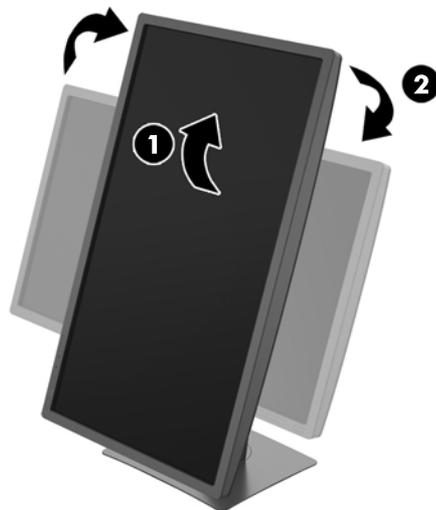
4. You can pivot the monitor from landscape to portrait orientation viewing to adapt to your application.
  - a. Adjust the monitor to full height position and tilt the monitor back to full tilt position (1).
  - b. Pivot the monitor clockwise 90° from landscape to portrait orientation (2).

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**⚠ CAUTION:** If the monitor is not in full height and full tilt position when pivoting, the bottom right corner of the monitor panel will come in contact with the base and potentially cause damage to the monitor.

If you are adding an optional speaker bar to the monitor, install it after pivoting the monitor. The speaker bar will come in contact with the base when pivoting and potentially cause damage to the monitor or speaker bar.

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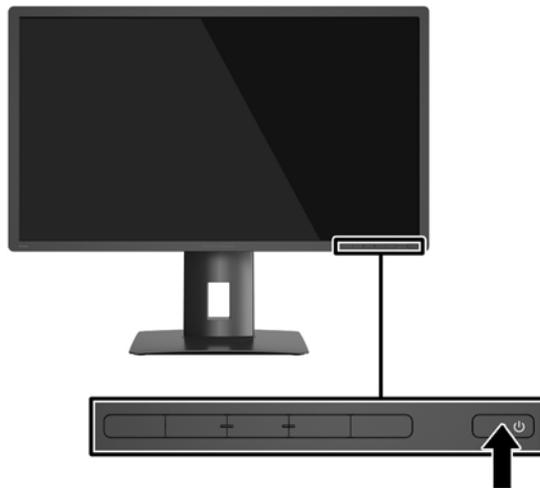
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 **NOTE:** To view information on the screen in portrait mode, you can install the HP Display Assistant software included on the software and documentation CD. The position of the OSD menu can also be rotated to portrait mode. To rotate the OSD menu, access the OSD menu by pressing the **Menu** button on the front panel, select **OSD Control** from the menu, and then select **OSD Rotation**.

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## Turning on the monitor

1. Set the master power switch on the rear of the monitor to the On position.
2. Press the power button on the computer to turn it on.
3. Press the power button on the front of the monitor to turn it on.



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 **CAUTION:** Burn-in image damage may occur on monitors that display the same static image on screen for a prolonged period of time.\* To avoid burn-in image damage on the monitor screen, you should always activate a screen saver application or turn off the monitor when it is not in use for a prolonged period of time. Image retention is a condition that may occur on all LCD screens. Monitors with a “burned-in image” are not covered under the HP warranty.

\* A prolonged period of time is 2 consecutive hours of a static image.

 **NOTE:** If pressing the power button has no effect, the Power Button Lockout feature may be enabled. To disable this feature, press and hold the monitor power button for 10 seconds.

 **NOTE:** You can disable the power LED in the OSD menu. Press the **Menu** button on the front of the monitor, and then select **Power Control > Power LED > Off**.

---

When the monitor is powered on, a Monitor Status message is displayed for five seconds. The message shows which input is the current active signal, the status of the auto-switch source setting (On or Off; factory default is On), the current preset display resolution, and the recommended preset display resolution.

The monitor automatically scans the signal inputs for an active input and uses that input for the display.

## Connecting USB devices

USB ports are used to connect devices such as a digital camera, USB keyboard, or USB mouse. There are four downstream USB ports on the monitor (two on the rear and two on the side).

 **NOTE:** You must connect the USB upstream cable from the computer to the monitor to enable the USB downstream ports on the monitor. See step 4 in [Connecting the cables on page 8](#).

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## Removing the monitor stand

You can remove the monitor panel from the stand to install the panel on a wall, a swing arm, or other mounting fixture.

**⚠ CAUTION:** Before beginning to disassemble the monitor, be sure the monitor is turned off and all cables are disconnected.

1. Disconnect and remove all cables from the monitor.
2. Lay the monitor face down on a flat surface covered by a clean, dry cloth.
3. Press down on the latch near the bottom center of the monitor to unlock the HP Quick Release 2 (1).
4. Swing the bottom of the stand up until the mounting plate clears the recess in the panel (2).
5. Slide the stand out of the recess (3).



## Mounting the monitor

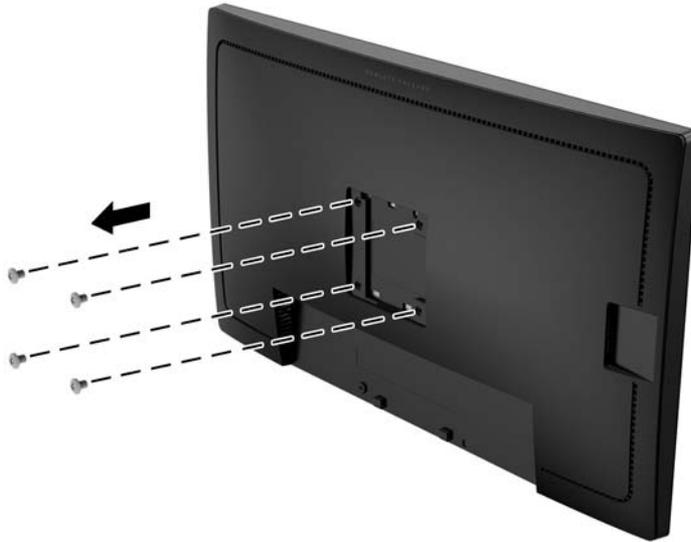
The monitor panel can be attached to a wall, swing arm, or other mounting fixture.

**📝 NOTE:** This apparatus is intended to be supported by UL or CSA Listed wall mount bracket.

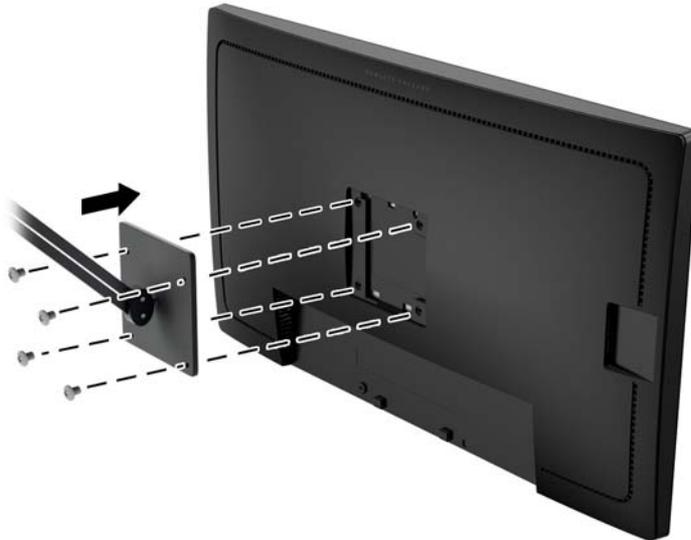
**⚠ CAUTION:** This monitor supports the VESA industry standard 100 mm mounting holes. To attach a third-party mounting solution to the monitor, four 4 mm, 0.7 pitch, and 10 mm long screws are required. Longer screws must not be used because they may damage the monitor. It is important to verify that the manufacturer's mounting solution is compliant with the VESA standard and is rated to support the weight of the monitor display panel. For best performance, it is important to use the power and video cables provided with the monitor.

1. Remove the monitor from the stand (see [Removing the monitor stand on page 17](#)).

2. Remove the four screws from the VESA holes located on the rear of the monitor panel.



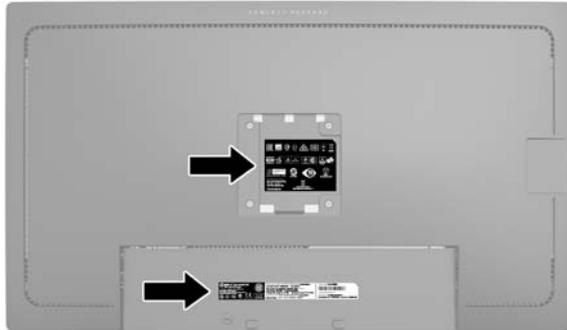
3. Use the four screws removed from the VESA holes on rear of the monitor panel to attach the mounting device to the monitor.



## Locating the serial number and product number

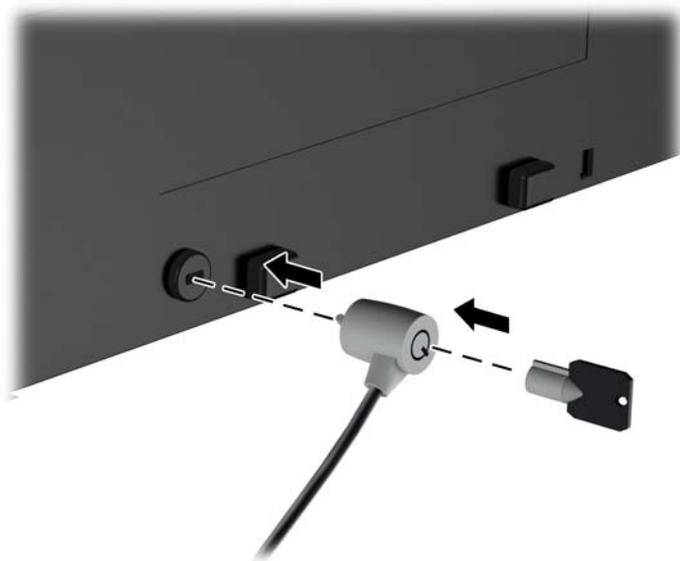
The serial number and product number are located on a label on the rear panel of the display head. You may need these numbers when contacting HP about the monitor model.

 **NOTE:** You may need to partially pivot the display head to read the label.



## Installing a cable lock

You can secure the monitor to a fixed object with an optional cable lock available from HP.



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# 4 Operating the monitor

## Software and utilities

The disc that comes with the monitor contains files you can install on the computer:

- an .INF (Information) file
- ICM (Image Color Matching) files (one for each calibrated color space)

### The Information file

The .INF file defines monitor resources used by Microsoft Windows operating systems to ensure monitor compatibility with the computer's graphics adapter.

This monitor is Microsoft Windows Plug and Play compatible and the monitor will work correctly without installing the .INF file. Monitor Plug and Play compatibility requires that the computer's graphic card is VESA DDC2-compliant and that the monitor connects directly to the graphics card. Plug and Play does not work through separate BNC type connectors or through distribution buffers/boxes.

### The Image Color Matching file

The .ICM files are data files that are used in conjunction with graphics programs to provide consistent color matching from monitor screen to printer, or from scanner to monitor screen. This file is activated from within graphics programs that support this feature.



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**NOTE:** The ICM color profile is written in accordance with the International Color Consortium (ICC) Profile Format specification.

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## Installing the .INF and .ICM files

After you determine that you need to update, you can install the .INF and .ICM files from the disc or download them.

### Installing from the disc

To install the .INF and .ICM files on the computer from the disc:

1. Insert the disc in the computer optical drive. The disc menu is displayed.
2. View the **HP Monitor Software Information** file.
3. Select **Install Monitor Driver Software**.
4. Follow the on-screen instructions.
5. Ensure that the proper resolution and refresh rates appear in the Windows Display control panel.



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**NOTE:** You may need to install the digitally signed monitor .INF and .ICM files manually from the disc in the event of an installation error. Refer to the HP Monitor Software Information file on the disc.

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## Downloading from the Web

If you do not have a computer or source device with an optical drive, you can download the latest version of .INF and .ICM files from the HP monitors support Web site:

1. Go to <http://www.hp.com/support> and select the appropriate country and language.
2. Select **Drivers & Downloads**, type your monitor model in the **Find my product** search field, and click **Go**.
3. If necessary, select your monitor from the list.
4. Select your operating system, and then click **Next**.
5. Click **Driver - Display/Monitor** to open the list of drivers.
6. Click on the driver.
7. Click the **System Requirements** tab, and then verify that your system meets the program minimum requirements.
8. Click **Download** and follow the on-screen instructions to download the software.

## Using the On-Screen Display (OSD) menu

Use the On-Screen Display (OSD) menu to adjust the monitor settings screen image based on your preferences. You can access and make adjustments in the OSD using the buttons on the monitor's front panel.

To access the OSD and make adjustments, do the following:

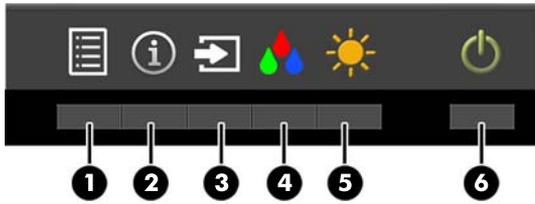
1. If the monitor is not already on, press the power button to turn on the monitor.
2. To access the OSD menu, press one of the five front bezel buttons to activate the buttons, and then press the **Menu** button to open the OSD.
3. Use the four Function buttons to navigate, select, and adjust the menu choices. The button labels are variable depending on the menu or sub-menu that is active.

The following table lists the menu selections in the main menu.

Main Menu	Description
Luminance	Adjusts the luminance level of the screen.
Color Control	Selects and adjusts the screen color.
Input Control	Selects the video input signal.
Image Control	Adjusts the screen image.
PIP Control	Selects and adjusts the PIP image.
Power Control	Adjusts the power settings.
OSD Control	Adjusts the on-screen display (OSD) and Function button controls.
Management	Enables/disables DDC/CI support and returns all OSD menu settings to the factory default settings.
Language	Selects the language in which the OSD menu is displayed. The factory default is English.
Information	Displays important information about the monitor.
Exit	Exits the OSD menu screen.

# Reconfiguring the Function buttons

Pressing one of the five front bezel buttons activates the buttons and displays the icons above the buttons. The factory default button icons and functions are shown below.



Button	Function
1 Menu	Opens the OSD (On-Screen Display) main menu.
2 Information (Function button 1)	Opens the Information menu.
3 Next Active Input (Function button 2)	Switches the monitor's input source to the next active input.
4 Color Control (Function button 3)	Opens the Color Control menu.
5 Luminance (Function button 4)	Opens the Luminance adjustment scale.
6 Power	Turns the monitor on or off.

You can change the Function buttons from their default values so that when the buttons are activated you can quickly access commonly used menu items.

To reconfigure the Function buttons:

1. Press one of the five front bezel buttons to activate the buttons, and then press the **Menu** button to open the OSD.
2. In the OSD, select **OSD Control > Configure Function Buttons** and then select one of the available options for the button you want to reconfigure.

 **NOTE:** You can only reconfigure the four Function buttons. You can not reconfigure the **Menu** button or the power button.

## Using Picture-in-Picture (PIP) and Picture-beside-Picture (PBP)

The monitor supports both PIP, where one source is overlaid over another, and PBP, where one source is positioned adjacent to another either horizontally (for landscape orientation) or vertically (for portrait orientation).

To use PIP or PBP:

1. Connect a secondary input source to the monitor.
2. Press one of the five front bezel buttons to activate the buttons, and then press the **Menu** button to open the OSD.
3. In the OSD, select **PIP Control > PIP On/Off** and then select either **Picture-in-Picture** or **Picture-beside-Picture**.
4. The monitor will scan the secondary inputs for a valid signal input and use that input for the PIP/PBP picture. If you want to change the PIP/PBP input, select **PIP Input** in the OSD and select the desired input.
5. If you want to change the size of the PIP, select **PIP Size** in the OSD then select the desired size.
6. If you want to adjust the position of the PIP, select **PIP Position** in the OSD, then select the desired position.

## Using Auto-Sleep Mode

The display supports an OSD (On-Screen Display) option called **Auto-Sleep Mode** that allows you to enable or disable a reduced power state for the display. When Auto-Sleep Mode is enabled (enabled by default), the monitor will enter a reduced power state when the host PC signals low power mode (absence of either horizontal or vertical sync signal).

Upon entering this reduced power state sleep mode, the monitor screen is blanked, the backlight is turned off and the power LED indicator turns amber. The monitor draws less than 0.5W of power when in this reduced power mode. The monitor will wake from the sleep mode when the host PC sends an active signal to the monitor (for example, if you activate the mouse or keyboard).

You can disable the Auto-Sleep Mode in the OSD. Press one of the five front bezel buttons to activate the buttons, and then press the **Menu** button to open the OSD. In the OSD press **Power Control > Auto-Sleep Mode > Disable**.

## Factory calibration

The following color spaces are pre-calibrated at the factory:

- sRGB – 31.5"/80 cm and 23.8"/60.4 cm models
- AdobeRGB – 31.5"/80 cm model only
- BT.709 – 31.5"/80 cm model only

The following color spaces are also available and are not pre-calibrated at the factory:

- Warm
- Neutral
- Cool
- Custom RGB

# A Technical specifications

 **NOTE:** All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

For the latest specifications or additional specifications on this product, go to <http://www.hp.com/go/quickspecs/> and search for your specific display model to find the model-specific QuickSpecs.

## 23.8"/60.4 cm model

Display	60.4 cm wide screen	23.8 inches wide screen
Type	LCD	
Viewable Image Size	60.4 cm diagonal	23.8-inch diagonal
Maximum Weight (Unpacked)	6.2 kg	13.66 lbs
Dimensions (include base)		
Height (highest position)	52.7 cm	20.7 inches
Height (lowest position)	39.7 cm	15.63 inches
Depth	21.0 cm	8.27 inches
Width	55.6 cm	21.9 inches
Tilt	-5°~25°	
Swivel	-45°~45°	
Maximum Graphic Resolution	DisplayPort: 3840 x 2160 (60 Hz) HDMI: 3840 x 2160 (30 Hz) MHL: 1920 x 1080 (60 Hz)	
Optimum Graphic Resolution	DisplayPort: 3840 x 2160 (60 Hz) HDMI: 3840 x 2160 (30 Hz) MHL: 1920 x 1080 (60 Hz)	
Environmental Requirements Temperature		
Operating Temperature	5 to 35° C	41 to 95° F
Storage Temperature	-20 to 60° C	-4 to 140° F
Power Source	100 – 240 VAC 50/60 Hz	
Input Terminal	One HDMI connector, one HDMI/MHL connector, one DisplayPort connector, one Mini-DisplayPort connector (cable inclusion varies by region)	

## 31.5"/80 cm model

Display	80 cm wide screen	31.5 inches wide screen
Type	LCD	
Viewable Image Size	80 cm diagonal	31.5-inch diagonal
Maximum Weight (Unpacked)	10.7 kg	23.54 lbs
Dimensions (include base)		
Height (highest position)	61.4 cm	24.2 inches
Height (lowest position)	48.4 cm	19.1 inches
Depth	24.5 cm	9.7 inches
Width	73.7 cm	29.0 inches
Tilt	-5°~25°	
Swivel	-45°~45°	
Maximum Graphic Resolution	DisplayPort: 3840 x 2160 (60 Hz) HDMI: 3840 x 2160 (30 Hz) MHL: 1920 x 1080 (60 Hz)	
Optimum Graphic Resolution	DisplayPort: 3840 x 2160 (60 Hz) HDMI: 3840 x 2160 (30 Hz) MHL: 1920 x 1080 (60 Hz)	
Environmental Requirements Temperature		
Operating Temperature	5 to 35° C	41 to 95° F
Storage Temperature	-20 to 60° C	-4 to 140° F
Power Source	100 – 240 VAC 50/60 Hz	
Input Terminal	One HDMI connector, one HDMI/MHL connector, one DisplayPort connector, one Mini-DisplayPort connector (cable inclusion varies by region)	

## Recognizing preset display resolutions

The display resolutions listed below are the most commonly used modes and are set as factory defaults. This monitor automatically recognizes these preset modes and they will appear properly sized and centered on the screen.

Preset	Pixel Format	Horz Freq (kHz)	Vert Freq (Hz)
1	640 × 480	31.469	59.940
2	720 × 400	31.469	70.087
3	720 × 480	31.469	59.940
4	800 × 600	37.879	60.317
5	1024 × 768	48.363	60.004
6	1280 × 720	45.000	59.940
7	1280 × 720	45.000	60.000
8	1280 × 768	47.396	59.995
9	1280 × 800	49.702	59.810
10	1280 × 960	60.000	60.000
11	1280 × 1024	63.981	60.020
12	1280 × 1200	49.306	59.910
13	1366 × 768	47.712	59.790
14	1440 × 900	55.935	59.887
15	1440 × 900	55.469	59.901
16	1600 × 900	60.000	60.000
17	1600 × 1200	75.000	60.000
18	1680 × 1050	65.290	59.954
19	1920 × 1080	67.500	60.000
20	1920 × 1200	74.038	59.950
21	1920 × 1200	74.556	59.885
22	2560 × 1440	88.786	59.900
23	2560 × 1600	98.713	59.972
24	3840 × 2160	54.000	24.000
25	3840 × 2160	67.500	30.000
26	3840 × 2160	135.000	60.000

**NOTE:** The video card must be capable of supporting 3840 × 2160 – 60Hz to drive the monitor at the Preferred Mode.

Preset	Timing name	Pixel format	Horz freq (kHz)	Vert freq (Hz)
1	480i	720 × 480	15.734	59.940
2	480p	720 × 480	31.469	59.940
3	576i	720 × 576	15.625	50.000
4	576p	720 × 576	31.250	50.000
5	720p50	1280 × 720	37.500	50.000
6	720p60	1280 × 720	45.000	60.000
7	1080i50	1920 × 1080	28.125	50.000
8	1080p50	1920 × 1080	56.250	50.000
9	1080i60	1920 × 1080	33.750	60.000
10	1080p60	1920 × 1080	67.500	60.000

## Entering user modes

The video controller signal may occasionally call for a mode that is not preset if:

- You are not using a standard graphics adapter.
- You are not using a preset mode.

If this occurs, you may need to readjust the parameters of the monitor screen by using the on-screen display. Your changes can be made to any or all of these modes and saved in memory. The monitor automatically stores the new setting, and then recognizes the new mode just as it does a preset mode. In addition to the factory preset modes, there are at least 10 user modes that can be entered and stored.

# B Support and troubleshooting

## Solving common problems

The following table lists possible problems, the possible cause of each problem, and the recommended solutions.

Problem	Possible Cause	Solution
Screen is blank.	Power cord is disconnected.	Connect the power cord.
	Power button is turned off.	Press the front panel power button. <b>NOTE:</b> If pressing the power button has no effect, press and hold the power button for 10 seconds to disable the power button lockout feature.
	Master power switch is turned off.	Set the master power switch on the rear of the monitor to the On position.
	Video cable is improperly connected.	Connect the video cable properly. See <a href="#">Connecting the cables on page 8</a> for more information.
	System is in sleep mode.	Press any key on the keyboard or move the mouse to inactivate the screen blanking utility.
Image appears blurred, indistinct, or too dark.	Video card compatibility.	Open the OSD menu and select the <b>Input Control</b> menu. <b>Set Auto-Switch Input</b> to <b>Disable</b> and manually select the input.
	Luminance is too low.	Open the OSD menu and select <b>Luminance</b> to adjust the luminance scale as needed.
<b>Check Video Cable</b> is displayed on screen.	Monitor video cable is disconnected.	Connect the appropriate video signal cable between the computer and monitor. Be sure that the computer power is off while connecting the video cable.
<b>Input Signal Out of Range</b> is displayed on screen.	Video resolution and/or refresh rate are set higher than what the monitor supports.	Change the settings to a supported setting (see <a href="#">Recognizing preset display resolutions on page 28</a> ).
The monitor is off but it did not seem to enter into a low-power sleep mode.	The monitor's power saving control is disabled.	Open the OSD menu and select <b>Power Control &gt; Auto-Sleep Mode</b> and set auto-sleep to <b>Enable</b> .
<b>OSD Lockout</b> is displayed.	The monitor's OSD Lockout function is enabled.	Press and hold the <b>Menu</b> button on the front panel for 10 seconds to disable the OSD Lockout function.
<b>Power Button Lockout</b> is displayed.	The monitor's Power Button Lockout function is enabled.	Press and hold the power button for 10 seconds to unlock the power button function.

## Button lockouts

Holding down the power button or **Menu** button for ten seconds will lock out the functionality of that button. You can restore the functionality by holding the button down again for ten seconds. This functionality is only available when the display is powered on, displaying an active signal, and the OSD is not active.

## Product support

For additional information on using your monitor, go to <http://www.hp.com/support>. Select your country or region, select **Troubleshooting**, and then enter your model in the search window and click the **Go** button.



**NOTE:** The monitor user guide, reference material, and drivers are available at <http://www.hp.com/support>.

If the information provided in the guide does not address your questions, you can contact support. For U.S. support, go to <http://www.hp.com/go/contactHP>. For worldwide support, go to [http://welcome.hp.com/country/us/en/wwcontact\\_us.html](http://welcome.hp.com/country/us/en/wwcontact_us.html).

Here you can:

- Chat online with an HP technician



**NOTE:** When support chat is not available in a particular language, it is available in English.

- Find support telephone numbers
- Locate an HP service center

## Preparing to call technical support

If you cannot solve a problem using the troubleshooting tips in this section, you may need to call technical support. Have the following information available when you call:

- Monitor model number
- Monitor serial number
- Purchase date on invoice
- Conditions under which the problem occurred
- Error messages received
- Hardware configuration
- Name and version of the hardware and software you are using

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## C LCD monitor quality and pixel policy

The TFT monitor uses high-precision technology, manufactured according to HP standards, to guarantee trouble-free performance. Nevertheless, the display may have cosmetic imperfections that appear as small bright or dark spots. This is common to all LCD displays used in products supplied by all vendors and is not specific to the HP LCD. These imperfections are caused by one or more defective pixels or sub-pixels.

- A pixel consists of one red, one green, and one blue sub-pixel.
- A defective whole pixel is always turned on (a bright spot on a dark background), or it is always off (a dark spot on a bright background). The first is the more visible of the two.
- A defective sub-pixel (dot defect) is less visible than a defective whole pixel and is small and only visible on a specific background.

To locate defective pixels, the monitor should be viewed under normal operating conditions, in normal operating mode at a supported resolution and refresh rate, from a distance of approximately 50 cm (20 in).

HP expects that, over time, the industry will continue to improve its ability to produce LCDs with fewer cosmetic imperfections and HP will adjust guidelines as improvements are made.

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# D Accessibility

HP designs, produces, and markets products and services that can be used by everyone, including people with disabilities, either on a stand-alone basis or with appropriate assistive devices.

## Supported assistive technologies

HP products support a wide variety of operating system assistive technologies and can be configured to work with additional assistive technologies. Use the Search feature on your device to locate more information about assistive features.

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 **NOTE:** For additional information about a particular assistive technology product, contact customer support for that product.

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## Contacting support

We are constantly refining the accessibility of our products and services and welcome feedback from users. If you have an issue with a product or would like to tell us about accessibility features that have helped you, please contact us at (888) 259-5707, Monday through Friday, 6 a.m. to 9 p.m. Mountain Time. If you are deaf or hard-of-hearing and use TRS/VRS/WebCapTel, contact us if you require technical support or have accessibility questions by calling (877) 656-7058, Monday through Friday, 6 a.m. to 9 p.m. Mountain Time.