HP EliteDisplay S231d LED Backlit IPS Monitor

User Guide

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About This Guide

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

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.

Table of contents

1 Product Features 1

HP LCD Monitor 1

2 Setting Up the Monitor 3

Unfolding the Monitor Pedestal Base 3

Rear Components 4

Connecting the Monitor Cables 5

Turning on the Monitor 8

Connecting an HP Notebook Computer and Installing Drivers 9

Charging Your HP Notebook Computer 11

Connecting Optional USB Devices 12

Front Panel Controls 12

Adjusting the Monitor 13

Removing the Monitor Pedestal Base 15

Mounting the Monitor 16

Installing a Cable Lock 17

Locating the Rating Labels 17

3 Using the Webcam 18

Installing YouCam from the media disc 18

Capturing Webcam Video and Snapshots 18

Having a Video Chat or Making Conference Calls 18

Webcam Troubleshooting 19

4 Using HP MyRoom 20

Installing HP MyRoom from the media disc 20

Downloading HP MyRoom from the Internet 20

Creating a HP MyRoom Account 20

5 Locating Additional Information 21

Product Support 21

6 Technical Specifications 22

EliteDisplay S231d 22

Recognizing Preset Display Resolutions 23

S231d 23
Entering User Modes 24
Sleep Timer Utility 24

1 Product Features

HP LCD Monitor

The LCD (liquid crystal display) monitor has an active matrix, thin-film transistor (TFT) panel with the following features:

- 58.4 cm (23-inch) diagonal viewable area display with 1920 x 1080 resolution, plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio
- Wide viewing angle to allow viewing from a sitting or standing position, or moving from side-to-side
- Integrated 1MPix Webcam and microphone
- Tilt, swivel, and height adjustment capabilities
- Pivot capability to rotate the display from the landscape to portrait orientation
- Removable stand for flexible monitor panel mounting solutions
- Graphics over USB, supporting 1080p video stream (with USB 3.0 cable provided)
- Video signal input to support VGA analog and DisplayPort digital as secondary graphics inputs (VGA and DisplayPort signal cables not provided)
- Integrated port replicator that includes a 4-port USB hub, Ethernet input, audio in jack, and audio out jack
- Internal flash drive memory with software and drivers
- USB 3.0 hub with one high speed USB 3.0 upstream port (connects to the computer) and four USB ports on the rear panel of the monitor
- USB cable provided to connect the monitor's USB hub to a USB connector on the computer
- 19V DC power cable provided for powering or charging your HP notebook (up to 90 watts)
- Supports an optional HP speaker bar
- Plug and play capability if supported by the system
- Privacy filter slots to insert filters (separately purchased) to block side screen viewing
- Security slot provision on rear of monitor for 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 for adjusting monitor settings and enabling theft deterrence feature
- Software and documentation media disc that includes monitor drivers and product documentation
- CyberLink YouCam software to enhance the use and security of the webcam
- HP MyRoom software for online face-to-face meeting with colleagues

- Energy saver feature to meet requirements for reduced power consumption
- Intelligent Management AssetControl
- Safety guidelines, certifications, and regulatory notices for this product are available in the *HP LCD Monitors Reference Guide* on the disc included with this model.

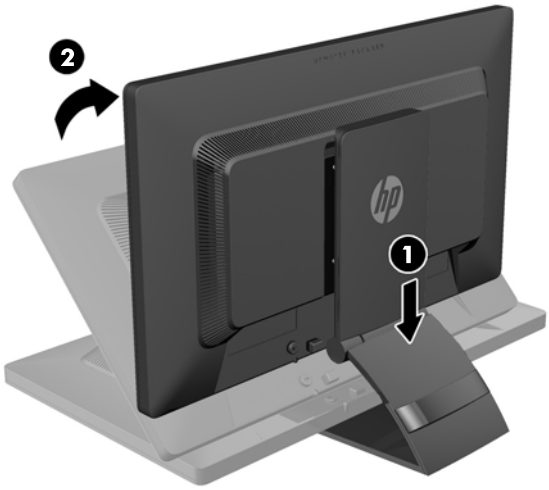
2 Setting Up the Monitor

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.

Unfolding the Monitor Pedestal Base

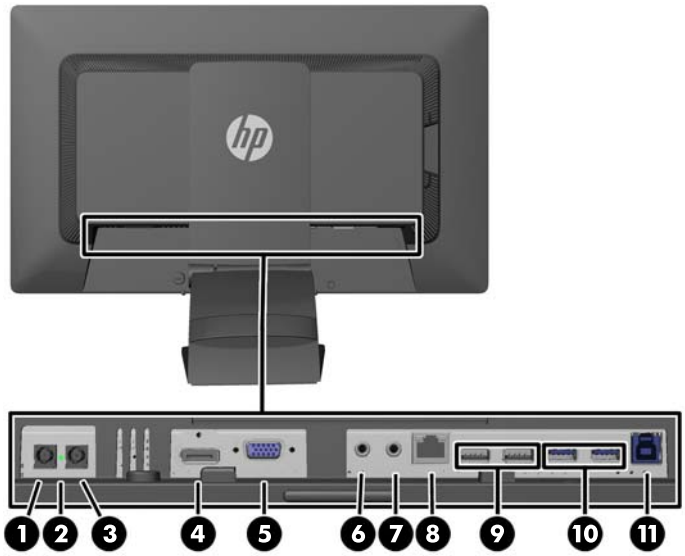
1. Lift the monitor from its box and place it face down on a flat surface.
2. Hold down the monitor base with one hand (1) then grasp the top of the stand with the other hand and unfold the display head 90 degrees (2).

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.



NOTE: When the monitor is unfolded for the first time, the display head is locked from adjusting to a full-height position. To adjust the display head to full height, press down on the display head to unlock it then pull up on the display head to raise it to the full-height position. Refer to step 3 in Adjusting the Monitor on page 13.

Rear Components

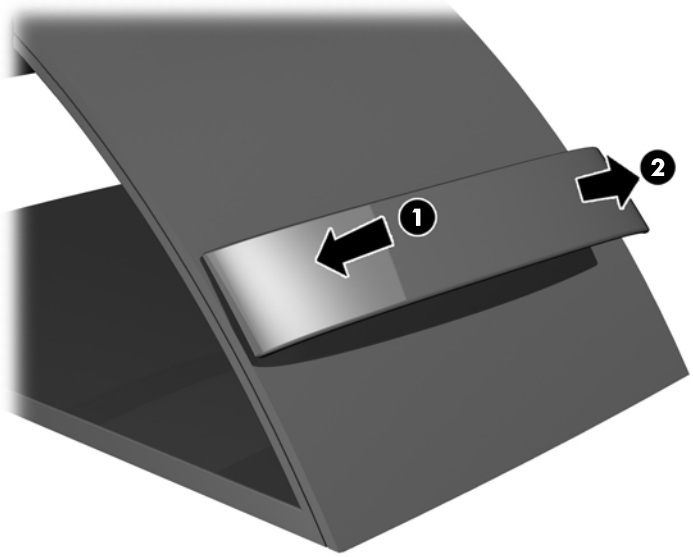


Component		Function
1	DC Power In Connector	Connects the Adapter DC power cord to the monitor.
2	Power Indicator Light	
3	DC Power Out Connector	Connects the DC power cord from the monitor to an HP notebook computer for charging or powering the notebook (up to 90 watts).
4	DisplayPort	Connects the DisplayPort cable to the monitor.
5	VGA	Connects a VGA cable to the monitor. This is a secondary graphics input and is only needed if connecting a desktop computer.
6	Headphones	Connects headphones or low wattage speakers to the monitor.
7	Audio in	Connects an audio out to the monitor.
8	Ethernet	Connects an RJ-45 Ethernet cable to the monitor.
9	USB 2.0 Downstream Connectors (2)	Connects optional USB devices to the monitor to be charged. Supports charging DCP (Dedicated for Charging Only) and CDP (for Charging and Data Transmission) modes (select mobile devices).
10	USB 3.0 Downstream Connectors (2)	Connects optional USB devices to the monitor.
11	USB Upstream Connector	Connects the USB hub cable to the monitor's USB hub connector and to a host USB port/hub. This is the primary graphics input when connecting a notebook computer.

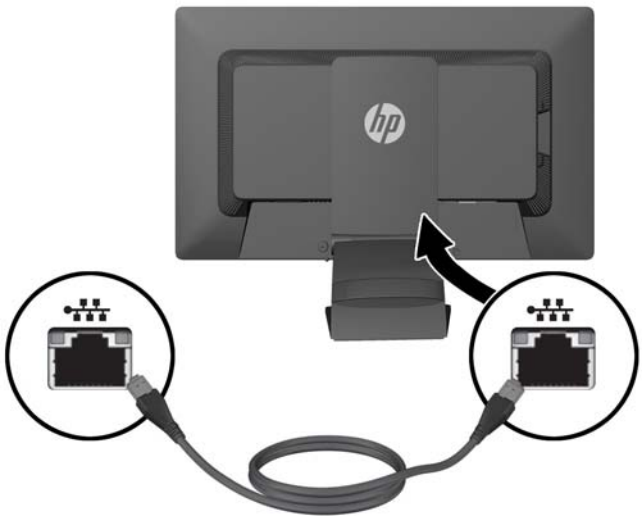
NOTE: Only select HP notebooks are compatible with the DC output and charging capability.

Connecting the Monitor Cables

1. Place the monitor in a convenient, well-ventilated location near the computer.
2. Remove the cable management clip from the pedestal by pulling outward on the two sides of the clip (1) then lifting the clip off the pedestal (2).

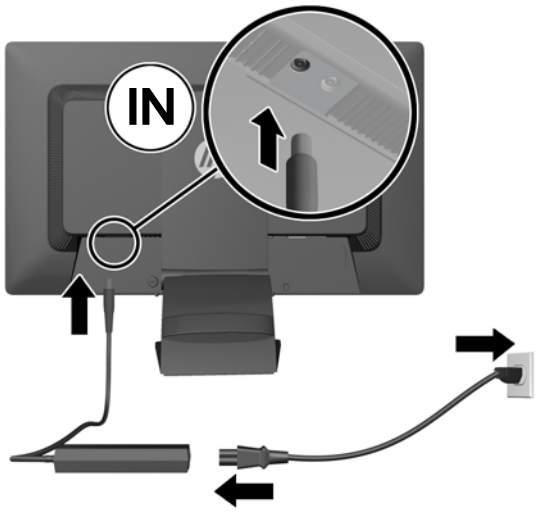


3. Connect one end of an Ethernet cable to the RJ-45 (network) jack on the monitor and the other end to an RJ-45 wall jack or router.



4. Connect peripheral USB devices to the USB ports on the monitor as needed. USB ports are located on the rear panel.

5. Connect the circular end of the power supply cord to the DC power IN connector on the back of the monitor. Connect the female end of the three-pronged power cord to the power supply and the male end to an electrical wall outlet.



NOTE: The outer case of DC Out 90 watt devices must meet IEC60950–1 requirements.

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

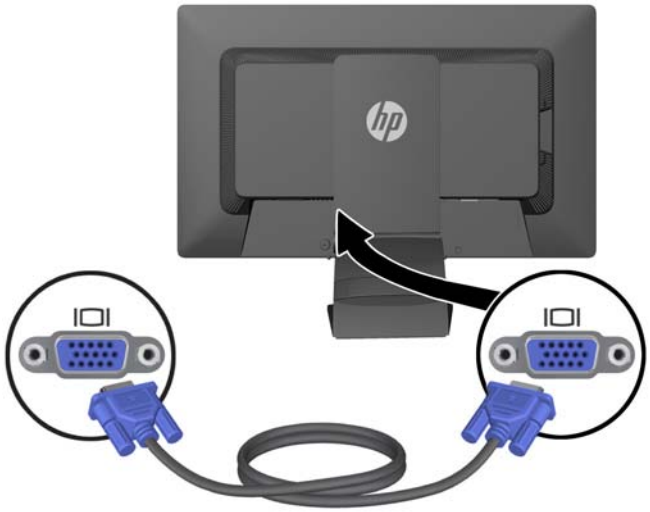
Plug the power cord into an AC outlet that is easily accessible at all times.

Disconnect power from the computer 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.

6. If you are using the monitor as a standard single monitor with a desktop computer, connect the VGA cable between the monitor and computer. The video signal is sent over the VGA cable. When using the VGA cable, the port replicator features will not function.

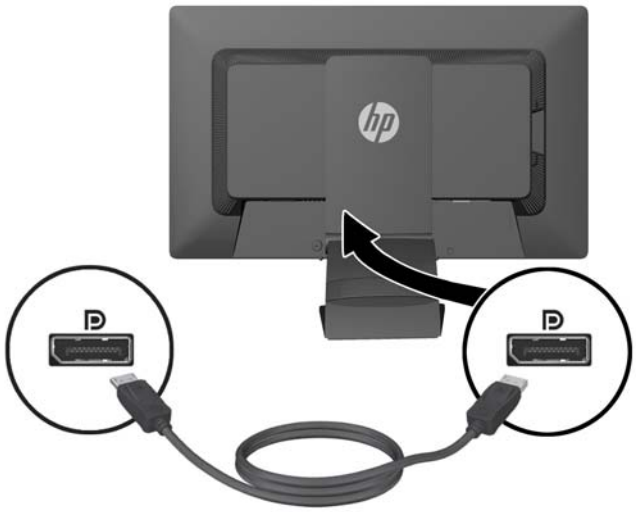


If you are connecting an HP notebook computer to the monitor, connect one end of the provided USB cable to a USB connector on the computer, and the other end to the upstream USB connector on the monitor. The video signal is sent over the USB cable and the port replicator features will be functional. For more information, refer to Connecting an HP Notebook Computer and Installing Drivers on page 9.

NOTE: If you are connecting an HP notebook computer to the monitor using a USB cable, you do not need to connect the VGA cable or DisplayPort cable.

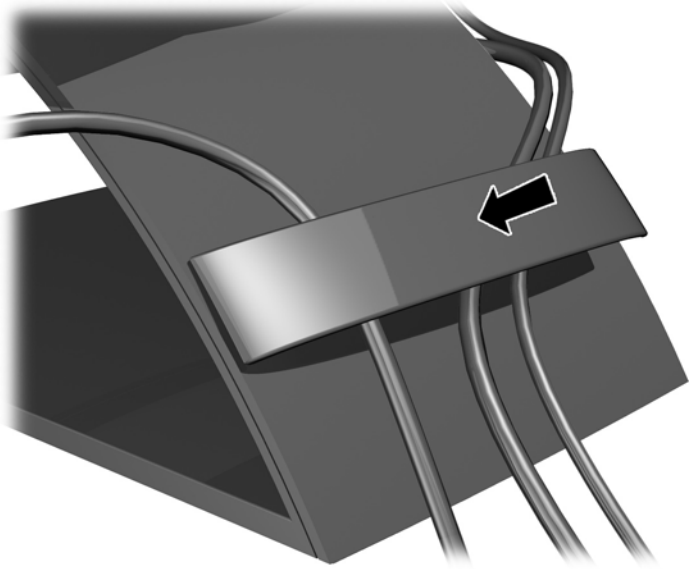
OR

Connect the DisplayPort cable between the monitor and computer.



7. Connect headphones and/or a audio out to the headphones and audio in jacks on the monitor as needed. As an alternative to headphones, you can connect low wattage speakers to the headphones jack.

8. Secure the cables in place with the cable management clip. Press the clip straight down on the curved neck of the pedestal ensuring that the tabs on the sides of the clip snap into the slots on the pedestal.



Turning on the Monitor

1. Press the power button on the computer to turn it on.
2. Press the power button on the front of the monitor to turn it on.

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 12 consecutive hours of non-use.

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, then select **Management** > **Bezel Power LED** > **Off**.

When the monitor is powered on, a Monitor Status window will show the following information:

- The current status (Active or No Signal) for all three video inputs (USB, DisplayPort and VGA),
- The current setting for the Auto-Switch Input option (On or Off),
- The current setting for the Default Input option (USB, DisplayPort, VGA with USB selected as the factory default),
- The current detected display resolution,
- The recommended native preset display resolution.

The monitor automatically scans the video input connections for an active signal at power on, and if using the monitor's default settings, will display video on the first input detected with an active signal. If two or more inputs are active, the default input and auto-switch input settings will determine the priority of the input signal being displayed. To switch between USB, DisplayPort and VGA inputs, press the Input Control button on the monitor's front panel.

Connecting an HP Notebook Computer and Installing Drivers

To use the monitor with an HP notebook computer, connect the USB cable between the notebook and monitor and install the USB and LAN drivers. The video signal is sent over the USB cable. The USB cable also enables all of the port replicator functions.

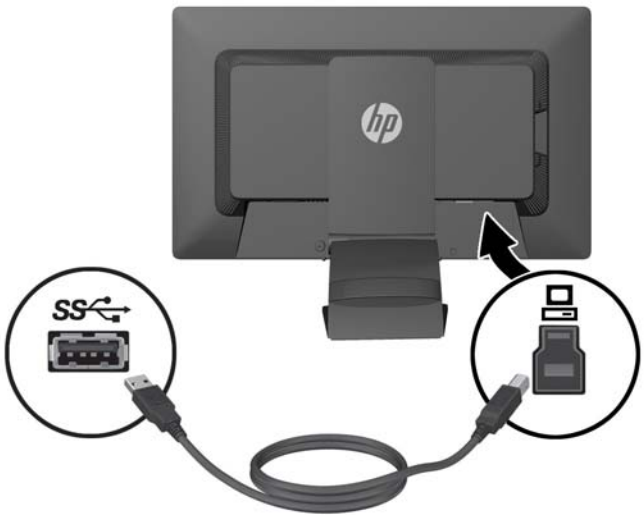
CAUTION: Do not install more than one set of USB graphics drivers. Doing so can cause software incompatibility issues between drivers and result in no picture on one of the displays.

You can install the drivers from the media disc included with the monitor before connecting the notebook to the monitor or you can install the drivers from the monitor's internal flash drive after connecting the notebook to the monitor.

To install the drivers from the monitor's internal flash drive:

1. Turn on power to the monitor and the HP notebook computer.
2. Connect one end of the provided USB cable to a USB connector on the notebook computer, and the other end to the upstream USB connector on the monitor.

NOTE: For optimal performance, connect the USB cable to a SuperSpeed USB or USB 3.0 port on the notebook. These ports are color-coded in blue or with an SS-USB icon. The monitor will also function when connected to a USB 2.0 port but will run at lower overall data rates.



3. After the USB cable is connected, an AutoPlay window will pop up on the notebook's screen. In the AutoPlay window, click on **Open folder to view files**.

NOTE: If the AutoPlay window does not pop up, open Microsoft Windows Explorer, navigate to and select the **HP S231d** drive, then proceed to the next step.

4. Double-click the **SETUP** file.

5. Select your language and click the arrow button.
6. Install the **DisplayLink** driver.

To install the drivers from the media disc included with the monitor:

1. Insert the media disc into the optical drive on the notebook computer.

NOTE: If the AutoPlay window does not pop up, use Microsoft Windows Explorer to select the media disc, then proceed to the next step.

2. Double-click the **START** file.
3. Select your language and click the arrow button.
4. Install the **HP S231d Driver Software**:
5. After the drivers are installed, connect one end of the provided USB cable to a USB connector on the notebook computer, and the other end to the upstream USB connector on the monitor as shown in the previous figure.

NOTE: For optimal performance, connect the USB cable to a SuperSpeed USB or USB 3.0 port on the notebook. These ports are color-coded in blue or with an SS-USB icon. The monitor will also function when connected to a USB 2.0 port but will run at lower overall data rates.

When connecting a notebook to the HP S231d monitor after the initial software installation has been completed, the AutoPlay window may re-appear. You do not need to re-install the driver software each time you connect to the HP S231d monitor. You can just close the AutoPlay window..

To disable the AutoPlay window in Microsoft Windows 7:

1. Open **Control Panel** and select **Hardware and Sound** > **AutoPlay**.
2. Uncheck **Use AutoPlay for all/some devices** and click **Save**.

To access the user documentation after initial setup, insert the media disc included with the monitor and use Microsoft Windows Explorer to navigate to the documentation on the media disc.

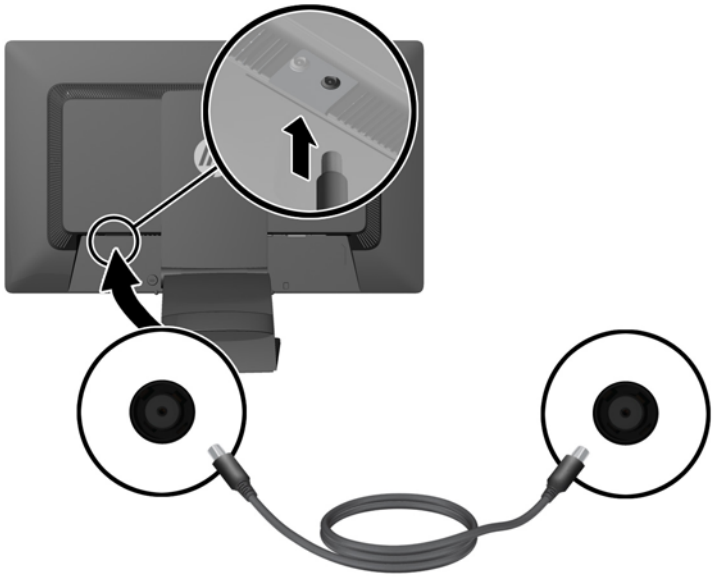
For updates to each of the driver software files for this monitor, go to http://www.hp.com and click **Support**, and then **Download drivers** from the drop down menu. Refer to **Support & Drivers** on http://www.hp.com for updates to each of the driver software files for this monitor.

Charging Your HP Notebook Computer

The monitor includes a 90W DC power out port that can be used to charge your HP notebook computer.

NOTE: The charging system supplies up to 90 watts of power. HP notebooks requiring more than 90 watts may not be charged by the system. Only HP notebooks are supported.

To charge your HP notebook, connect one end of the supplied DC power cable to the power OUT connector on the monitor and the other end to the power connector on the notebook.



Connecting Optional USB Devices

The monitor includes a USB 3.0 hub with four external USB 3.0 ports on the rear panel.

NOTE: You must connect the USB hub cable from the monitor to the computer to enable the USB ports on the monitor. Refer to Step 6 in Connecting the Monitor Cables on page 5.

Front Panel Controls

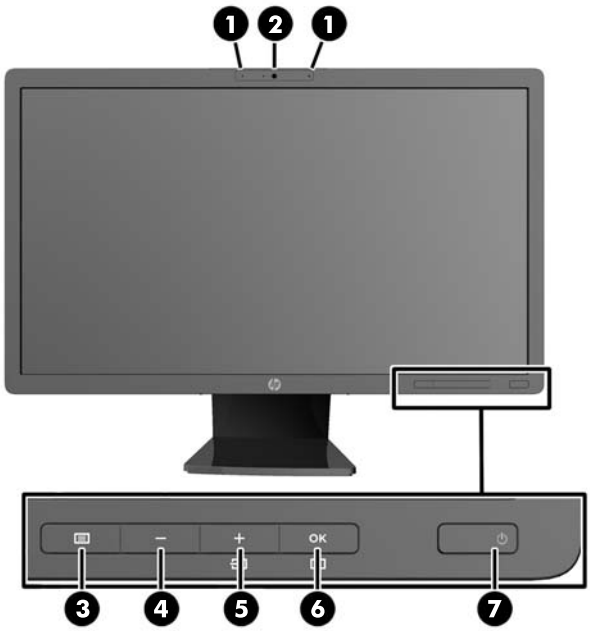


Table 2-1 Monitor Front Panel Controls

Control			Function
1		Microphone (2)	Records sound.
2		Webcam	Records video and captures still photographs.
3		Menu	Opens, selects or exits the OSD menu.
4		Minus	If the OSD menu is on, press to navigate backward through the OSD menu and decrease adjustment levels.
5		Plus/source	If the OSD menu is inactive, press to activate the source button that chooses the video signal input (DisplayPort or USB or VGA)
6	OK	OK/auto adjustment	If the OSD menu is on, press to select the highlighted menu item. If the OSD menu is inactive, press to activate the auto adjustment feature to optimize the screen image. The auto adjustment feature only functions if the active video signal is VGA.
7		Power	Turns the monitor on or off.

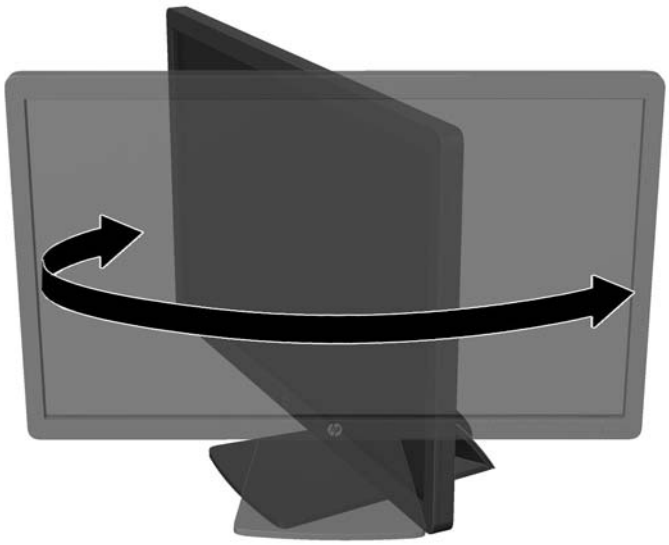
NOTE: To view an OSD menu simulator, visit the HP Customer Self Repair Services Media Library at http://www.hp.com/go/sml.

Adjusting the Monitor

Your monitor model may look different than the model in the following illustrations.

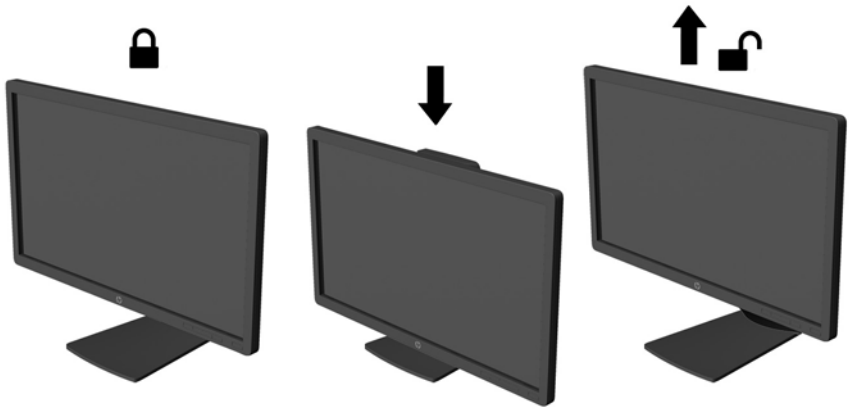
1. Tilt the monitor's panel forward or backward to set it to a comfortable eye level.

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.

NOTE: When the monitor is unfolded for the first time, the display head is locked from adjusting to a full-height position. To adjust the display head to full height, press down on the display head to unlock it then pull up on the display head to raise it to the full-height position.



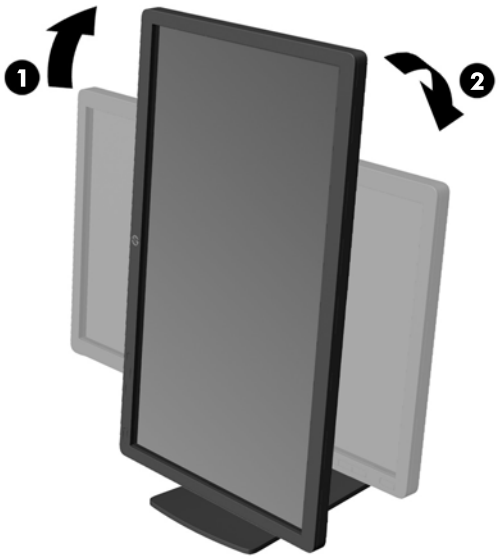
4. Pivot the monitor from landscape to portrait orientation viewing to adapt to your application.

   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).

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.



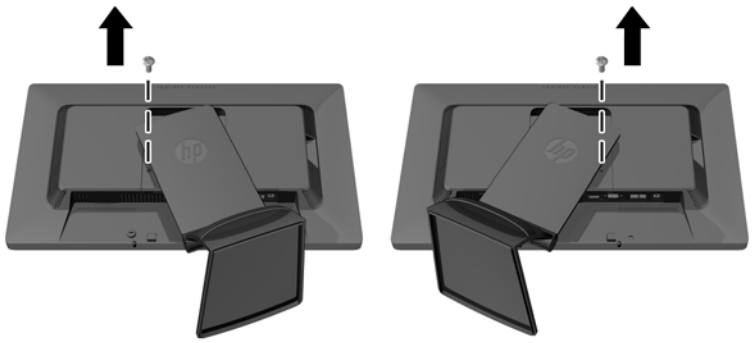
NOTE: To view information on the screen in portrait mode, you can install the HP Display Assistant software included on the software and documentation media disc. The position of the OSD menu can also be rotated to portrait mode. To rotate the OSD menu, access the OSD menu by pressing the Menu button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

Removing the Monitor Pedestal Base

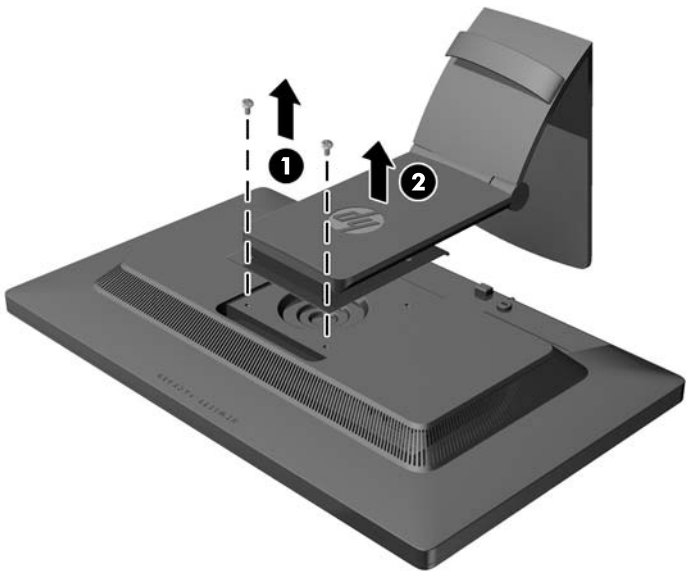
You can remove the monitor panel from the pedestal base to install the panel on a wall, a swing arm, or other mounting fixture.

CAUTION: Before beginning to disassemble the monitor, be sure the monitor is turned off and the power and signal cables are disconnected. Also disconnect all USB cables connected to the monitor.

1. Disconnect and remove all cords and cables from the monitor.
2. Lay the monitor face down on a flat surface covered by a clean, dry cloth.
3. Pivot the base 45 degrees clockwise and remove the screw from the back of the monitor, then pivot the base 45 degrees counter-clockwise and remove the other screw from the back of the monitor.



4. Rotate the base of the monitor up (1) then pull it back (2) to unhinge the tabs on the monitor stand from the slots in the monitor.



Mounting the Monitor

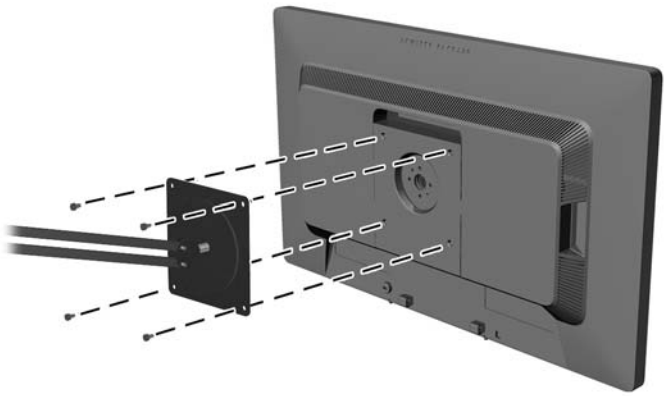
The monitor panel can be attached to a wall, swing arm, or other mounting fixture.

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

1. Remove the monitor panel from the pedestal base. Refer to Removing the Monitor Pedestal Base on page 15.

   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.

2. To attach the monitor to a swing arm, insert four 10mm screws through the holes on the swing arm plate and into the mounting holes on the monitor.

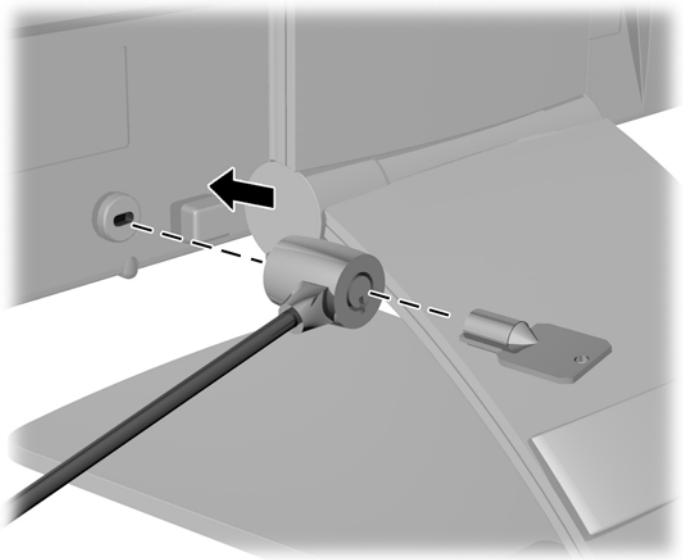


   To attach the monitor to other mounting fixtures, follow the instructions included with the mounting fixture to ensure that the monitor is safely attached.

3. Reconnect the cables to the monitor panel.

Installing a Cable Lock

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



Locating the Rating Labels

The rating labels on the monitor provide the spare part number, product number, and serial number. You may need these numbers when contacting HP about the monitor model. The rating labels are located on the rear panel of the monitor display head.

3 Using the Webcam

Install CyberLink YouCam software and driver from the media disc that came with your monitor.

NOTE: USB connectivity between the monitor and PC is required for the webcam to operate. The webcam will not operate if you are using the VGA cable for the graphics interface.

Use your webcam to:

- Create videos from files on your computer.
- Create snapshots to view, organize, edit, send, and print.
- Create video notes for an enhanced visual calendar and to share.
- Initiate live video chats with HP MyRoom or other compatible software program.
- Import live videos into a movie-making program to save, send, stream on the Web, or record to disc.

Installing YouCam from the media disc

To install YouCam:

1. Insert the media disc included with your monitor into the computer optical drive.
2. Select **Install CyberLink YouCam** and run the setup file.
3. Follow the instructions on the screen.

Capturing Webcam Video and Snapshots

To use CyberLink YouCam after you install it from the provided media disc:

1. Click the **Start** button.
2. Click **All Programs**, **CyberLink YouCam**, and then click **CyberLink YouCam** again.
3. Click **Tutorials** to view an instructional video.

Having a Video Chat or Making Conference Calls

To set up a video chat, you must have a connection to the Internet, and ISP, and software that enables you to make video calls over the Internet. As with chat or instant messenger software, you can use this kind of software to chat with one or more people at a time. This software may require a separate subscription.

The optimal distance for recording sound with the array microphone is about .5 meters (2 feet) away from the microphone.

Before you can set up a video chat:

1. Download an Internet messenger or video phone call program. Make sure the person you are calling has compatible video-calling software.
2. Enable your webcam as the default video input. This is usually done through the video setup in the **Tools** menu in the software program you are using.
3. Send your video call by following the instructions for the video-calling software program.

Webcam Troubleshooting

Problems with the webcam can come from different sources. The problem may come from webcam drivers or the software that's trying to use the webcam may have a problem. Before contacting HP:

- Download the latest drivers for your monitor model.
- Search the HP website for known webcam issues, program updates, and support articles.

4 Using HP MyRoom

HP MyRoom is your online meeting room. Connect with business colleagues “face to face” and collaborate with useful tools.

Installing HP MyRoom from the media disc

To install HP MyRoom:

1. Insert the media disc that came with your monitor into the computer optical drive.
2. Select **Install HP MyRoom** and run the setup file.
3. Follow the instructions on the screen.

Downloading HP MyRoom from the Internet

To download HP MyRoom:

1. Go to https://www.rooms.hp.com/myroom.
2. **Select language** of your choice in the upper right-hand corner of the screen. Click **Go** if changing language.
3. Click **Download Now**.
4. Click **Run** to run the file.
5. Follow the instructions on the screen to complete the software installation.

Creating a HP MyRoom Account

To begin using HP MyRoom after the software installation is complete:

1. Click **Create New Account**.
2. Enter your name, e-mail address, and set a password.
3. Follow the prompt to validate your e-mail address.
4. Sign in to HP MyRoom.
5. Begin using HP MyRoom by clicking on the Add Contact button.
6. Click the question mark button and select **Documentation** for detailed instructions.

5 Locating Additional Information

Refer to the *HP LCD Monitors Reference Guide* included on the media disc with your monitor for additional information on:

- Optimizing monitor performance
- Safety and maintenance guidelines
- Using the OSD menu
- Agency and regulatory notices
- Troubleshooting and recommended solutions to common problems

For information on theft deterrence, refer to the *HP Display Assistant User Guide* included on the media disc with your monitor.

For additional information on using and adjusting your monitor, go to http://www.hp.com/support. Select your country or region, select **Troubleshooting**, and then enter your monitor model in the **Find by product** search field. Click **Go**.

Product Support

The monitor user guide, reference guide, and drivers are available at http://www.hp.com/ support.

If the information provided in the guide or in the *HP LCD Monitors Reference Guide* do 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. 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

6 Technical Specifications

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

EliteDisplay S231d

Table 6-1 EliteDisplay S231d Specifications

Display Type	58.4 cm wide screen	23 inches wide screen
Viewable Image Size	58.4 cm diagonal	23–inch diagonal
Aspect Ratio	16:9	
Tilt	-5 to 30°	
Swivel	360°	
Maximum Weight (Unpacked)	6.12 kg	13.5 lbs
Dimensions (include base)		
Height (highest position)	47.00 cm	18.50 inches
Height (lowest position)	34.33 cm	13.51 inches
Depth	24.24 cm	9.54 inches
Width	54.40 cm	21.41 inches
Maximum Graphic Resolution	1920 x 1080 (60 Hz) analog input	
	1920 x 1080 (60 Hz) digital input	
Optimum Graphic Resolution	1920 x 1080 (60 Hz) analog input	
	1920 x 1080 (60 Hz) digital input	
Text Mode	720 x 400	
Horizontal Frequency	24 to 80 kHz	
Vertical Refresh Rate	50 to 60 Hz	
Environmental Requirements Temperature		
Operating Temperature	0 to 5000 m	0 to 16,400 feet
Storage Temperature	0 to 12192 m	0 to 40,000
Relative Humidity	20 to 80%	
Power Source: DC	19VDC, 7.7A	
Altitude:		
Operating	0 to 5000 m	
Storage	0 to 12192 m	

Table 6-1 EliteDisplay S231d Specifications (continued)

Measured Power Consumption:	
Full Power	60 watts
Typical Settings	38 watts
Sleep	2.2 watts
Switch Off	0.5 watts
Input Terminals	One USB upstream connector with cable included; one VGA connector (cable not included); one DisplayPort connector (cable not included); one audio in connector (cable not included); one Ethernet connector (cable not included)

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.

Table 6-2 Power adapter/model

Manufacturer	Model number	Power supply rating
Delta Electronics, Inc.	ADP150TB TA	150 W/19.5 V

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.

S231d

Table 6-3 Factory Preset Modes

Preset	Pixel Format	Horz Freq (kHz)	Vert Freq (Hz)
1	640 × 480	31.469	59.940
2	720 × 400	31.469	70.087
3	800 × 600	37.879	60.317
4	1024 × 768	48.363	60.004
5	1280 × 720	45.00	60.00
6	1280 × 1024	63.981	60.02
7	1440 × 900	55.935	59.887
8	1600 × 900	60.00	60.00
9	1680 x 1050	65.29	59.954
10	1920 × 1080	67.50	60.00

Table 6-4 High-definition video formats

Preset	Timing name	Pixel format	Horz freq (kHz)	Vert freq (Hz)
1	720p50	1280 x 720	37.5	50
2	720p60	1280 x 720	45	60
3	1080p60	1920 x 1080	67.5	60
4	1080p50	1920 x 1080	56.25	50

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.

It 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, 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.

Sleep Timer Utility

The monitor supports a reduced power state. The reduced power state will be entered into if the monitor detects the absence of either the horizontal sync signal and/or the vertical sync signal. Upon detecting the absence of these signals, the monitor screen is blanked, the backlight is turned off, and the power light is turned amber. When the monitor is in the reduced power state, the monitor will utilize 2 watts of power. There is a brief warm up period before the monitor will return to its normal operating mode.

Refer to the computer manual for instructions on setting energy saver features (sometimes called power management features).

NOTE: The above power saver feature only works when connected to computers that have energy saver features.

By selecting the settings in the monitor's Sleep Timer utility, you can also program the monitor to enter into the reduced power state at a predetermined time. When the monitor's Sleep Timer utility causes the monitor to enter the reduced power state, the power light blinks amber.