# User Guide

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#### **Product notice**

This guide describes features that are common to most models. Some features may not be available on your product. To access the latest user guide, go to <a href="http://www.hp.com/support">http://www.hp.com/support</a>, and follow the instructions to find your product. Then select **User Guides**.

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### **About This Guide**

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

- **WARNING!** Indicates a hazardous situation that, if not avoided, **could** result in bodily harm or loss of life.
- CAUTION: Indicates a hazardous situation that, if not avoided, could result in damage to equipment or loss of information.
- **IMPORTANT:** Indicates information considered important but not hazard-related (for example, messages related to property damage). An Important alert warns the user that failure to follow a procedure exactly as described could result in loss of data or in damage to hardware or software. Also contains essential information to explain a concept or to complete a task.
- NOTE: Contains additional information to emphasize or supplement important points of the main text.
- ☆ TIP: Provides helpful hints for completing a task.



This product incorporates HDMI technology.

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# **Getting started**

# **Important safety information**

An AC adapter and power cord may be included with the monitor. If another cord is used, use only a power source and connection appropriate for this monitor. For information about the correct AC power cord set to use with the monitor, refer to the *Product Notices* provided in your documentation kit.



**MARNING!** 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 AC outlet, grasp the cord by the plug.

To reduce the risk of serious injury, read the Safety & Comfort Guide (provided with your user guides). It describes proper workstation setup and proper posture, health, and work habits for computer users. The Safety & Comfort Guide also provides important electrical and mechanical safety information. The Safety & Comfort Guide is also available on the Web at http://www.hp.com/ergo.

IMPORTANT: 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 capability. Use a power strip whose manufacturer offers a damage replacement policy so you can replace the equipment if surge protection fails.

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



Marning! 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 monitor in a controlled luminous environment to avoid interference from surrounding light and bright surfaces that may cause disturbing reflections from the screen.

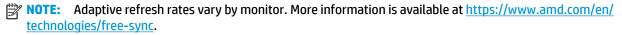
# **Product features and components**

#### **Features**

This product is an AMD® FreeSync-qualified monitor, which allows you to enjoy PC gaming with smooth, responsive, tear-free performance whenever a picture changes on the screen. The external source connected to your monitor must have the FreeSync driver installed.

AMD FreeSync technology is designed to eliminate stuttering and tearing in games and videos by locking a monitor's refresh rate to the frame rate of the graphics card. Check with the manufacturer of your component or system for specific capabilities.

IMPORTANT: AMD Radeon Graphics and/or AMD A-Series APU-compliant monitors with DisplayPort/HDMI Adaptive-Sync required. AMD 15.11 Crimson driver (or newer) required to support FreeSync over HDMI.



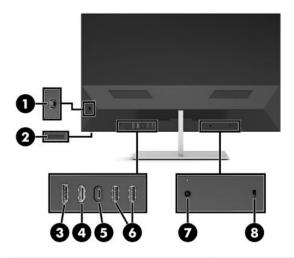
To enable FreeSync on the monitor, press the center of the on-screen display (OSD) joystick to open the on-screen display menu. Select **Color**, select **Viewing Modes**, and then select **HDR Gaming - FreeSync**.

The monitor features include the following:

- Quantum Dot QHD panel with Ultra Slim ID borderless features
- 68.6 cm (27 in) diagonal viewable area with 2560 × 1440 resolution, plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio
- Wide color gamut to provide coverage of DCI-P3 and sRGB color spaces
- Anti-glare panel with an LED backlight
- Tilt capability and wide viewing angle to allow viewing from a sitting or standing position, or moving from side to side
- Removable stand for flexible monitor head mounting solutions
- One DisplayPort 1.4 video input
- One HDMI (High-Definition Multimedia Interface) 2.0a video input
- One USB Type-C port for data, video, and USB upstream
- Two USB SuperSpeed (downstream) ports
- AMD FreeSync-qualified, providing PC gaming enjoyment with smooth, responsive, tear-free performance whenever a picture changes on the screen
- Plug and Play capability if supported by your operating system
- VESA mounting bracket for attaching the display to a wall mount device or swing arm
- HDCP (High-bandwidth Digital Content Protection) used on digital inputs
- Security cable slot on the rear of the monitor for an optional security cable
- On-screen display (OSD) adjustments in several languages for easy setup and screen optimization
- Energy saver feature to meet requirements for reduced power consumption

NOTE: For safety and regulatory information, refer to the *Product Notices* provided in your documentation kit. To access the latest user guide, go to <a href="http://www.hp.com/support">http://www.hp.com/support</a> and follow the instructions to find your product. Then select **User Guides**.

# **Rear components**



| Component |  | Function   |  |
|-----------|--|--|--|
| 1         | OSD joystick                             | Opens the OSD menu, selects an item from the menu, or closes the OSD menu.   |  |
| 2         | Power button                             | Turns the monitor on or off.   |  |
| 3         | DisplayPort connector                    | Connects the DisplayPort cable to the source device.   |  |
| 4         | HDMI port                                | Connects the HDMI cable to the source device.  |  |
| 5         | USB Type-C port and<br>DisplayPort       | Connects a USB Type-C cable to the source device.  NOTE: The USB Type-C port can function as a single cable connection between the source device and monitor for DisplayPort video input and as a USB upstream connection. |  |
| 6         | USB SuperSpeed ports<br>(downstream) (2) | Connects a USB cable to a peripheral device, such as a keyboard, mouse, or USB hard drive.   |  |
| 7         | Power connector                          | Connects an AC adapter.  |  |
| 8         | Security cable slot                      | Connects an optional security cable.   |  |

# Setting up the monitor

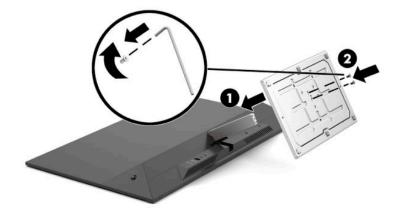
### Use caution when setting up the monitor

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

If installing a stand, position the monitor facedown on a flat surface covered by a clean, dry cloth. This prevents the screen from getting scratched, defaced, or broken and prevents damage to the control buttons.

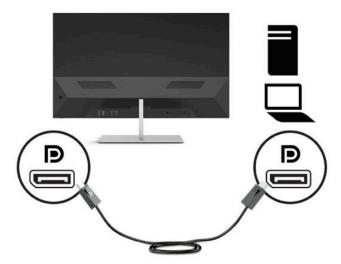
### Attaching the monitor stand

- **CAUTION:** The screen is fragile. Avoid touching or applying pressure to the screen; doing so can cause damage.
- TIP: Consider the placement of the monitor, because the bezel might cause interfering reflections from surrounding light and bright surfaces.
  - 1. Position the monitor head facedown on a flat surface covered by a clean, dry cloth.
  - 2. Press the base onto the neck of the stand (1) on the back of the monitor. Then install two screws (included) (2) using the hexagonal wrench (included).

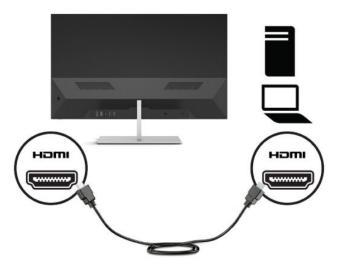


### **Connecting the cables**

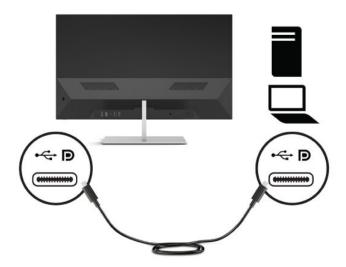
- NOTE: The monitor is capable of supporting HDMI, DisplayPort, or USB Type-C input. The monitor ships with select cables. Not all cables shown in this section are included with the monitor.
  - 1. Place the monitor in a convenient, well-ventilated location near the computer.
  - Connect a video cable.
  - NOTE: The monitor will automatically determine which inputs have valid video signals. The inputs can also be selected by pressing the center of the OSD joystick and selecting **Input**.
    - Connect one end of 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.



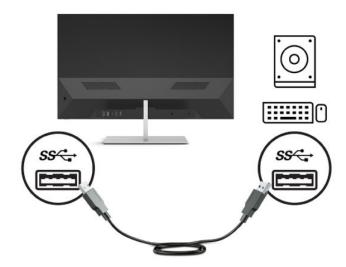
 Connect one end of an HDMI cable to the HDMI port on the rear of the monitor and the other end to the HDMI port on the source device.



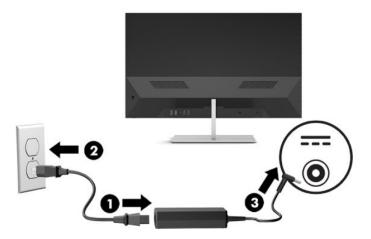
• Connect one end of a USB Type-C cable to the USB Type-C port on rear of the monitor and the other end to the USB Type-C port on the source device.



- Connect one end of a USB cable to a USB SuperSpeed port on the rear of the monitor and the other end to the USB SuperSpeed port on a peripheral device such as a keyboard, mouse, or USB hard drive.
- NOTE: A USB Type-C cable must be connected between the monitor and computer for the USB downstream ports on the monitor to function.



4. Connect one end of the power cord to the AC adapter (1) and the other end to the AC outlet (2). Then connect the AC adapter to the monitor (3).



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

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

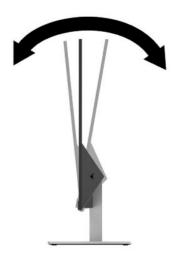
Plug the AC power cord into a grounded (earthed) AC outlet that is easily accessible at all times.

Disconnect power from the equipment by unplugging the AC 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 the AC power cord from the AC outlet, grasp the cord by the plug.

### **Adjusting the monitor**

Tilt the monitor head forward or backward to set it to a comfortable eye level.



### **Turning on the monitor**

Press the power button to turn on the monitor.



IMPORTANT: Burn-in image damage may occur on monitors that display the same static image on the screen for 12 or more consecutive hours of nonuse. 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 will not be in use for a prolonged period of time. Image retention is a condition that may occur on all LCD screens. A burned-in image on the monitor is not covered under the HP warranty.

NOTE: You can disable the power light in the OSD menu. Press the center of the OSD joystick, and then select **Power**. Select **Power LED**, and then select **Off**.

When the monitor is first turned on, a monitor status message is displayed for five seconds. The message shows which input is the current active signal, 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 monitor.

### Installing a security cable

You can secure the monitor to a fixed object with an optional security cable available from HP. Use the key provided to attach and remove the lock.



### Mounting the monitor

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

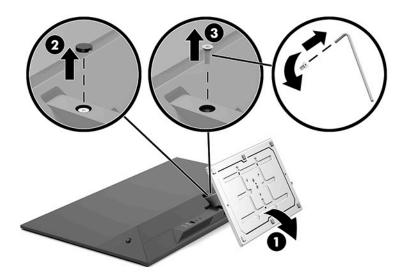
**NOTE:** This apparatus is intended to be supported by UL— or CSA—Listed wall-mount bracket.

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 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 head. For best performance, use the power and video cables provided with the monitor.

### Removing the monitor stand

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

- Disconnect and remove all cables from the monitor.
- Position the monitor head facedown on a flat surface covered by a clean, dry cloth.
- 3. Push the base down toward the flat surface (1).
- 4. Remove the plastic cap from the neck of the stand (2).
- 5. Remove the screw from the neck of the stand (3) using the hexagonal wrench (included).

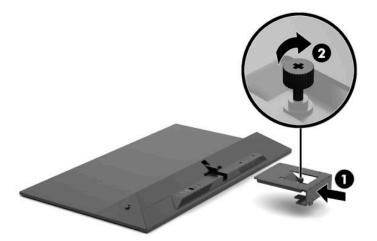


6. Remove the stand from the monitor head.

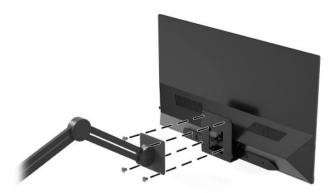


### Attaching the monitor to a mounting device

- 1. Remove the monitor head from the stand. For detailed instructions, see Removing the monitor stand on page 9.
- 2. Insert the tab at the bottom of the VESA bracket into the slot on the back of the monitor head (1), and then tighten the screw (2).



3. Attach the monitor to the wall or swing arm of your choice by inserting four mounting screws through the holes on the mounting device and into the screw holes on the VESA bracket that was installed on the back of the monitor.



**IMPORTANT:** Follow the mounting device manufacturer's instructions when mounting the monitor to a wall or swing arm.

# 2 Using the monitor

### Software and utilities

You can download and install the following files from <a href="http://www.hp.com/support.">http://www.hp.com/support.</a>

- INF (Information) file
- ICM (Image Color Matching) files

To download the files:

- 1. Go to http://www.hp.com/support.
- 2. Select Software and Drivers.
- 3. Select your product type.
- 4. Enter your HP monitor model in the search field.

### The Information file

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

This monitor is 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.



# Using the on-screen display (OSD) menu

Use the OSD menu to adjust the monitor screen image based on your preferences. You can access and make adjustments in the OSD menu using the OSD joystick on the monitor's rear panel.

To access the OSD menu 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 the center of the OSD joystick.
- Move the joystick up, down, left, or right to navigate menu choices. Press the center of the joystick to make a selection.

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

| Main menu   | Description  |
|-------------|--|
| Brightness  | Adjusts the brightness or contrast level of the screen.  |
| Color       | Selects and adjusts the screen color.  |
| lmage       | Adjusts the screen image.  |
| Input       | Selects the video input signal.  |
| Power       | Adjusts the power settings.  |
| Menu        | Adjusts the OSD controls.  |
| Management  | Adjusts the DDC/CI settings and returns all OSD menu settings to the factory default settings. |
| Information | Displays important information about the monitor.  |
| Exit        | Exits the OSD menu screen.   |

# **Adjusting Low Blue Light Mode**

Decreasing the blue light emitted by the monitor reduces the blue light exposure to your eyes. This monitor allows you to select a setting to reduce blue light output and create a more relaxing and less stimulating image while reading content on the screen.

To adjust the blue light output from the monitor:

- 1. Press the center of the OSD joystick to open the OSD.
- Select the Viewing Modes icon to open the Viewing Modes menu. Or, select the Menu icon, select Color, and then select Viewing Modes.
- 3. Select your desired setting:
  - **Low Blue Light** (TUV certified) reduces blue light for improved eye comfort.
  - **Reading** optimizes blue light and brightness for indoor viewing.
  - Night adjusts to the lowest blue light and reduces the impact on sleep.

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

### **Using Auto-Sleep Mode**

The monitor supports an OSD menu option called Auto-Sleep Mode that allows you to enable or disable a reduced power state for the monitor. When Auto-Sleep Mode is enabled (enabled by default), the monitor will enter a reduced power state when the computer 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 light turns amber. The monitor draws less than 0.5 W of power when in this reduced power state. The monitor will wake from sleep mode when the computer sends an active signal to the monitor (for example, if you activate the mouse or keyboard).

You can disable Auto-Sleep Mode in the OSD menu. Press the center of the OSD joystick to open the OSD menu. Select **Power**, select **Auto-Sleep Mode**, and then select **Off**.

# **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 or video is flashing.                      | Power cord is disconnected.  | Connect the power cord.   |
|  | Monitor is off.  | Press the monitor power button.   |
|  | Video cable is not connected.  | Connect a video cable between the source device and monitor. Be sure that the computer power is off while connecting the video cable. See Connecting the cables on page 5 for more information. |
|  | System is in sleep mode.   | Press any key on the keyboard or move the mouse to exit sleep mode.   |
|  | Video card is incompatible.  | Replace the video card or connect the video cable to one of the computer's onboard video sources.   |
| Image appears blurred, indistinct, or too dark.            | Brightness setting is too low.   | Open the OSD menu and select <b>Brightness</b> to adjust the brightness scale as needed.  |
| "Input Signal Not Found" is displayed on the screen.       | Video cable is disconnected.   | Connect a video cable between the source device and monitor. Be sure that the computer power is off while connecting the video cable. See Connecting the cables on page 5 for more information. |
| "Input Signal Out of Range" is<br>displayed on the screen. | Video resolution and/or refresh rate are set higher than the monitor supports. | Change the settings to a supported setting (see <u>Preset display</u> resolutions on page 17).  |
| The monitor did not enter into a low-power sleep mode.     | The monitor's power saving control is disabled.                                | Open the OSD menu and select <b>Power</b> , select <b>Auto-Sleep Mode</b> , and then set auto-sleep to <b>On</b> .  |

# **Contacting support**

To resolve a hardware or software problem, go to http://www.hp.com/support. Use this site to get more information about your product, including links to discussion forums and instructions on troubleshooting. You can also find information about how to contact HP and open a support case.

# Preparing to call technical support

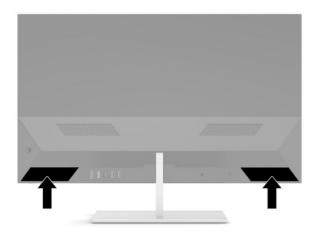
If you cannot solve a problem using the troubleshooting tips in this section, you may need to call technical support. Have the following information available when you call:

- 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

# Locating the serial number and product number

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



# 4 Maintaining the monitor

### **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 that the total ampere rating of the products connected to the outlet does not exceed the current rating of the AC outlet and that 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 it is not in use and use a screen saver program. Doing this can substantially increase the life expectancy of the monitor.
- NOTE: A burned-in image on the monitor is not covered under the HP warranty.
- Never block the slots and openings of the cabinet or push objects into them. These openings provide ventilation.
- Do not drop the monitor or place it on an unstable surface.
- Do not allow anything to rest on the AC power cord. Do not walk on the cord.
- Keep the monitor in a well-ventilated area, away from excessive light, heat, or moisture.

### Cleaning the monitor

- 1. Turn off the monitor and unplug the AC power cord from the AC outlet.
- 2. Disconnect any external devices.
- 3. Dust the monitor by wiping the screen and the cabinet with a soft, clean antistatic cloth.
- 4. For more difficult cleaning situations, use a 50/50 mix of water and Isopropyl alcohol.
- 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.
- 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.
- The cloth should be moist, but not wet. Water dripping into the ventilation openings or other points of entry can cause damage to the monitor. Allow the monitor to air-dry before use.

### **Shipping the monitor**

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

# **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 <a href="http://www.hp.com/go/">http://www.hp.com/go/</a> <u>quickspecs/</u> and search for your specific monitor model to find the model-specific QuickSpecs.

| Display                                | <b>68.6 cm</b> wide screen    | 27.0 in wide screer |
|--|-------------------------------|---------------------|
| Туре                                   | QHD                           |                     |
| Viewable image size                    | <b>68.6 cm</b> diagonal       | 27.0 in diagonal    |
| Tilt                                   | -5° to 25°                    |                     |
| Weight                                 |                               |                     |
| Without stand                          | 3.45 kg                       | 7.60 lbs            |
| With stand                             | 4.60 kg                       | 10.15 lbs           |
| Dimensions (including stand)           |                               |                     |
| Height                                 | 43.96 cm                      | 17.31 in            |
| Depth                                  | 17.80 cm                      | 7.00 in             |
| Width                                  | 61.33 cm                      | 24.15 in            |
| Maximum graphic resolution             | 2560 × 1440 (60 Hz)           |                     |
| Optimum graphic resolution             | 2560 × 1440 (60 Hz)           |                     |
| Text mode                              | 720 × 400                     |                     |
| Dot pitch                              | 0.2331 (H) mm × 0.2331 (V) mm |                     |
| Pixels per inch                        | 109 PPI                       |                     |
| Horizontal frequency                   | 30 kHz to 100 kHz             |                     |
| Vertical refresh rate                  | 46 Hz to 75 Hz                |                     |
| Environmental requirements temperature |                               |                     |
| Operating temperature                  | 5°C to 35°C                   | 41°F to 95°F        |
| Storage temperature                    | -20°C to 60°C                 | -4°F to 140°F       |
| Relative humidity                      | 20% to 80%                    |                     |
| Power source                           | 100 V ac to 240 V ac 50/60 Hz |                     |
| Altitude:                              |                               |                     |
| Operating                              | 0 m to 5,000 m                | 0 to 16,400 ft      |
|  |                               |                     |

| Specifications   |   |
|------------------|---|
| Full power       | 90 W  |
| Typical settings | 55 W  |
| Sleep            | <0.5 W  |
| Off              | <0.3 W  |
| Input terminal   | One DisplayPort connector, one HDMI port, one USB Type-C port |

| Power supply specification |                     |                |           |                           |
|----------------------------|---------------------|----------------|-----------|---------------------------|
| Manufacturer               | Chicony part number | HP part number | RMN       | Power supply rating       |
| Chicony                    | A090A109P           | L31819-002     | TPN-CA18  | 19.5 V dc / 4.62 A – 90 W |
| Chicony                    | A090A091L           | 854056-002     | PPP012C-S | 19.5 V dc / 4.62 A – 90 W |

# **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 display resolutions |              |                 |                |  |
|----------------------------|--------------|-----------------|----------------|--|
| 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   | 45.000          | 60.000         |  |
| 6                          | 1280 × 800   | 49.702          | 59.810         |  |
| 7                          | 1280 × 1024  | 63.981          | 60.020         |  |
| 8                          | 1440 × 900   | 55.935          | 59.887         |  |
| 9                          | 1600 × 900   | 60.000          | 60.000         |  |
| 10                         | 1600 × 1200  | 75.000          | 60.000         |  |
| 11                         | 1680 × 1050  | 65.290          | 59.954         |  |
| 12                         | 1920 × 1080  | 67.500          | 60.000         |  |
| 13                         | 1920 × 1200  | 74.038          | 59.950         |  |
| 14                         | 1920 × 1200  | 74.556          | 59.885         |  |
| 15                         | 2560 × 1440  | 88.787          | 59.951         |  |

| High-defini | High-definition video formats |              |                 |                |  |  |
|-------------|-------------------------------|--------------|-----------------|----------------|--|--|
| Preset      | Timing name                   | Pixel format | Horz freq (kHz) | Vert freq (Hz) |  |  |
| 1           | 480p                          | 720 × 480    | 31.469          | 59.94          |  |  |
| 2           | 576p                          | 720 × 576    | 31.250          | 50.00          |  |  |
| 3           | 720p50                        | 1280 × 720   | 37.500          | 50.00          |  |  |
| 4           | 720p60                        | 1280 × 720   | 45.000          | 60.00          |  |  |
| 5           | 1080p50                       | 1920 × 1080  | 56.250          | 50.00          |  |  |
| 6           | 1080p60                       | 1920 × 1080  | 67.500          | 60.00          |  |  |

# **Energy saver feature**

The monitor supports a reduced power state. The reduced power state will be initiated if the monitor detects the absence of either the horizontal sync signal 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 turns amber. When the monitor is in the reduced power state, the monitor will utilize < 0.5 watts of power. There is a brief warm-up period before the monitor returns to its normal operating state.

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



NOTE: The above power saver feature works only when the monitor is connected to a computer that has 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.

# **B** Accessibility

# **Accessibility**

HP is working to weave diversity, inclusion and work/life into the fabric of our company, so it is reflected in everything we do. Here are some examples of how we are putting differences to work to create an inclusive environment focused on connecting people to the power of technology throughout the world.

### Finding the technology tools you need

Technology can unleash your human potential. Assistive technology removes barriers and helps you create independence at home, at work, and in the community. Assistive technology helps increase, maintain, and improve the functional capabilities of electronic and information technology. For more information, see Finding the best assistive technology on page 20.

### **Our commitment**

HP is committed to providing products and services that are accessible for people with disabilities. This commitment supports our company's diversity objectives and helps us ensure that the benefits of technology are available to all.

Our accessibility goal is to design, produce, and market products and services that can be effectively used by everyone, including people with disabilities, either on a stand-alone basis or with appropriate assistive devices.

To achieve our goal, this Accessibility Policy establishes seven key objectives to guide our actions as a company. All HP managers and employees are expected to support these objectives and their implementation in accordance with their roles and responsibilities:

- Raise the level of awareness of accessibility issues within our company, and provide our employees with the training they need to design, produce, market, and deliver accessible products and services.
- Develop accessibility guidelines for products and services, and hold product development groups accountable for implementing these guidelines where competitively, technically, and economically feasible.
- Involve people with disabilities in the development of accessibility guidelines, and in the design and testing of products and services.
- Document accessibility features and make information about our products and services publicly available in an accessible form.
- Establish relationships with leading assistive technology and solution providers.
- Support internal and external research and development that will improve assistive technology relevant to our products and services.
- Support and contribute to industry standards and guidelines for accessibility.

### **International Association of Accessibility Professionals (IAAP)**

IAAP is a not-for-profit association focused on advancing the accessibility profession through networking, education, and certification. The objective is to help accessibility professionals develop and advance their careers and to better enable organizations to integrate accessibility into their products and infrastructure.

HP is a founding member, and we joined to participate with other organizations to advance the field of accessibility. This commitment supports our company's accessibility goal of designing, producing, and marketing products and services that can be effectively used by people with disabilities.

IAAP will make our profession strong by globally connecting individuals, students, and organizations to learn from one another. If you are interested in learning more, go to <a href="http://www.accessibilityassociation.org">http://www.accessibilityassociation.org</a> to join the online community, sign up for newsletters, and learn about membership options.

### Finding the best assistive technology

Everyone, including people with disabilities or age-related limitations, should be able to communicate, express themselves, and connect with the world using technology. HP is committed to increasing accessibility awareness within HP and with our customers and partners. Whether it's large fonts that are easy on the eyes, voice recognition that lets you give your hands a rest, or any other assistive technology to help with your specific situation—a variety of assistive technologies make HP products easier to use. How do you choose?

### **Assessing your needs**

Technology can unleash your potential. Assistive technology removes barriers and helps you create independence at home, at work, and in the community. Assistive technology (AT) helps increase, maintain, and improve the functional capabilities of electronic and information technology.

You may choose from many AT products. Your AT assessment should allow you to evaluate several products, answer your questions, and facilitate your selection of the best solution for your situation. You will find that professionals qualified to do AT assessments come from many fields, including those licensed or certified in physical therapy, occupational therapy, speech/language pathology, and other areas of expertise. Others, while not certified or licensed, may also provide evaluation information. You will want to ask about the individual's experience, expertise, and fees to determine if they are appropriate for your needs.

### **Accessibility for HP products**

The following links provide information on accessibility features and assistive technology, if applicable, included in various HP products. These resources will help you select the specific assistive technology features and product(s) most appropriate for your situation.

- HP Elite x3–Accessibility Options (Windows 10 Mobile)
- HP PCs-Windows 7 Accessibility Options
- HP PCs-Windows 8 Accessibility Options
- HP PC's-Windows 10 Accessibility Options
- HP Slate 7 Tablets—Enabling Accessibility Features on Your HP Tablet (Android 4.1/Jelly Bean)
- HP SlateBook PCs-Enabling Accessibility Features (Android 4.3, 4.2/Jelly Bean)
- HP Chromebook PCs-Enabling Accessibility Features on Your HP Chromebook or Chromebox (Chrome OS)
- HP Shopping—peripherals for HP products

If you need additional support with the accessibility features on your HP product, see <u>Contacting support</u> on page 25.

Additional links to external partners and suppliers that may provide additional assistance:

- Microsoft Accessibility information (Windows 7, Windows 8, Windows 10, Microsoft Office)
- Google Products accessibility information (Android, Chrome, Google Apps)

- Assistive Technologies sorted by impairment type
- Assistive Technologies sorted by product type
- Assistive Technology vendors with product descriptions
- Assistive Technology Industry Association (ATIA)

### **Standards and legislation**

### **Standards**

Section 508 of the Federal Acquisition Regulation (FAR) standards was created by the US Access Board to address access to information and communication technology (ICT) for people with physical, sensory, or cognitive disabilities. The standards contain technical criteria specific to various types of technologies, as well as performance-based requirements which focus on functional capabilities of covered products. Specific criteria cover software applications and operating systems, web-based information and applications, computers, telecommunications products, video and multi-media, and self-contained closed products.

#### Mandate 376 - EN 301 549

The EN 301 549 standard was created by the European Union within Mandate 376 as the basis for an online toolkit for public procurement of ICT products. The standard specifies the functional accessibility requirements applicable to ICT products and services, together with a description of the test procedures and evaluation methodology for each accessibility requirement.

### **Web Content Accessibility Guidelines (WCAG)**

WCAG specifically addresses barriers to accessing the web experienced by people with visual, auditory, physical, cognitive, and neurological disabilities, and by older web users with accessibility needs. WCAG 2.0 provides characteristics of accessible content:

- Perceivable (for instance, by addressing text alternatives for images, captions for audio, adaptability of presentation, and color contrast)
- Operable (by addressing keyboard access, color contrast, timing of input, seizure avoidance, and navigability)
- Understandable (by addressing readability, predictability, and input assistance)
- Robust (for instance, by addressing compatibility with assistive technologies)

### **Legislation and regulations**

Accessibility of IT and information has become an area of increasing legislative importance. This section provides links to information on key legislation, regulations, and standards.

- United States
- Canada
- Europe

- United Kingdom
- Australia
- Worldwide

#### **United States**

Section 508 of the Rehabilitation Act specifies that agencies must identify which standards apply to the procurement of ICT, perform market research to determine the availability of accessible products and services, and document the results of their market research. The following resources provide assistance in meeting Section 508 requirements:

- www.section508.gov
- Buy Accessible

The U.S. Access Board is currently updating the Section 508 standards. This effort will address new technologies and other areas where the standards need to be modified. For more information, go to <a href="Section-508 Refresh">Section 508 Refresh</a>.

Section 255 of the Telecommunications Act requires telecommunications products and services to be accessible to people with disabilities. FCC rules cover all hardware and software telephone network equipment and telecommunications equipment used in the home or office. Such equipment includes telephones, wireless handsets, fax machines, answering machines, and pagers. FCC rules also cover basic and special telecommunications services, including regular telephone calls, call waiting, speed dialing, call forwarding, computer-provided directory assistance, call monitoring, caller identification, call tracing, and repeat dialing, as well as voice mail and interactive voice response systems that provide callers with menus of choices. For more information, go to Federal Communication Commission Section 255 information.

### 21st Century Communications and Video Accessibility Act (CVAA)

The CVAA updates federal communications law to increase the access of persons with disabilities to modern communications, updating accessibility laws enacted in the 1980s and 1990s to include new digital, broadband, and mobile innovations. Regulations are enforced by the FCC and documented as 47 CFR Part 14 and Part 79.

FCC Guide on the CVAA

Other U.S. legislation and initiatives

Americans with Disabilities Act (ADA), Telecommunications Act, the Rehabilitation Act and others

#### Canada

The Accessibility for Ontarians with Disabilities Act was established to develop and implement accessibility standards to make goods, services, and facilities accessible to Ontarians with disabilities and to provide for the involvement of persons with disabilities in the development of the accessibility standards. The first standard of the AODA is the customer service standard; however, standards for transportation, employment, and information and communication are also being developed. The AODA applies to the Government of Ontario, the Legislative Assembly, every designated public sector organization, and to every other person or organization that provides goods, services, or facilities to the public or other third parties and that has at least one employee in Ontario; and accessibility measures must be implemented on or before January 1, 2025. For more information, go to Accessibility for Ontarians with Disability Act (AODA).

### **Europe**

EU Mandate 376 ETSI Technical Report ETSI DTR 102 612: "Human Factors (HF); European accessibility requirements for public procurement of products and services in the ICT domain (European Commission Mandate M 376, Phase 1)" has been released.

Background: The three European Standardization Organizations have set up two parallel project teams to carry out the work specified in the European Commission "Mandate 376 to CEN, CENELEC and ETSI, in Support of Accessibility Requirements for Public Procurement of Products and Services in the ICT Domain."

ETSI TC Human Factors Specialist Task Force 333 has developed ETSI DTR 102 612. Further details about the work performed by STF333 (e.g., Terms of Reference, specification of the detailed work tasks, time plan for the work, previous drafts, listing of comments received and means to contact the task force) can be found at the Special Task Force 333.

The parts relating to the assessment of suitable testing and conformity schemes were carried out by a parallel project, detailed in CEN BT/WG185/PT. For further information, go to the CEN project team website. The two projects are closely coordinated.

- CEN project team
- European Commission mandate for e-accessibility (PDF 46KB)
- Commission takes low profile on e-accessibility

### **United Kingdom**

The Disability Discrimination Act of 1995 (DDA) was enacted to ensure that websites are accessible to blind and disabled users in the United Kingdom.

W3C UK Policies

#### **Australia**

The Australian government has announced their plan to implement Web Content Accessibility Guidelines 2.0.

All Australian government websites will require Level A compliance by 2012, and Double A by 2015. The new standard replaces WCAG 1.0, which was introduced as a mandated requirement for agencies in 2000.

#### **Worldwide**

- JTC1 Special Working Group on Accessibility (SWG-A)
- G3ict: The Global Initiative for Inclusive ICT
- Italian accessibility legislation
- W3C Web Accessibility Initiative (WAI)

# **Useful accessibility resources and links**

The following organizations may be good resources for information about disabilities and age-related limitations.



NOTE: This is not an exhaustive list. These organizations are provided for informational purposes only. HP assumes no responsibility for information or contacts you may encounter on the Internet. Listing on this page does not imply endorsement by HP.

### **Organizations**

- American Association of People with Disabilities (AAPD)
- The Association of Assistive Technology Act Programs (ATAP)
- Hearing Loss Association of America (HLAA)
- Information Technology Technical Assistance and Training Center (ITTATC)
- Lighthouse International
- National Association of the Deaf
- National Federation of the Blind
- Rehabilitation Engineering & Assistive Technology Society of North America (RESNA)
- Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI)
- W3C Web Accessibility Initiative (WAI)

### **Educational institutions**

- California State University, Northridge, Center on Disabilities (CSUN)
- University of Wisconsin Madison, Trace Center
- University of Minnesota computer accommodations program

### Other disability resources

- ADA (Americans with Disabilities Act) Technical Assistance Program
- **Business & Disability network**
- EnableMart
- **European Disability Forum**
- Job Accommodation Network
- Microsoft Enable
- U.S. Department of Justice A Guide to disability rights Laws

#### **HP links**

Our contact webform

HP comfort and safety guide

HP public sector sales

# **Contacting support**

### NOTE: Support is in English only.

- Customers who are deaf or hard of hearing that have questions about technical support or accessibility of HP products:
  - Use TRS/VRS/WebCapTel to call (877) 656-7058 Monday through Friday, 6 a.m. to 9 p.m. Mountain
- Customers with other disabilities or age-related limitations who have questions about technical support or accessibility of HP products, choose one of the following options:
  - Call (888) 259-5707 Monday through Friday, 6 a.m. to 9 p.m. Mountain Time.
  - Complete the Contact form for people with disabilities or age-related limitations.