# QuickSpecs

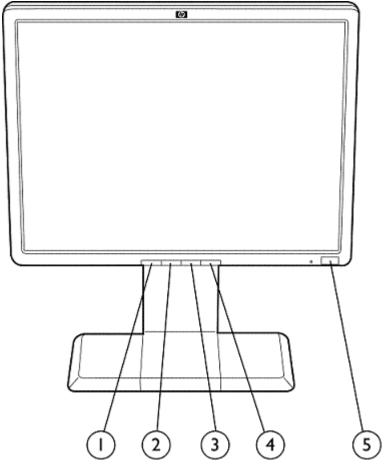*Overview*



1.  Opens, selects or exits the OSD menu.
2.  Navigates backward through the OSD menu and decreases adjustment levels. When the OSD menu is inactive, activates the auto-adjustment feature to optimize the screen image.
3.  Navigates forward through the OSD menu and increases adjustment levels.

4.  Selects video input, DVI-I#1 or DVI-I#2.
5.  Turns the monitor on or off.

## Models

Workstation Volume Channel                                                                 EF227A4-#ABA

# QuickSpecs

## Technical Specifications

| Panel | Type | 20-inch Active Matrix TFT (thin film transistor) |
|---|---|---|
| | Viewable Image Area (diagonal) | 20.1 in (51 cm) |
| | Screen Opening (WxH) | 16.2 x 12.17 in (40.8 x 30.6 cm) |
| | Panel Type | IPS |
| | Aspect Ratio | 4:3 |
| | Viewing Angle (typical)[1] | 178° horizontal/178° vertical (10:1 minimum contrast ratio) |
| | Brightness (typical)[1] | 300 nits (cd/m$^2$) |
| | Contrast Ratio (typical)[1] | 800:1 |
| | Response Time (typical)[1] | 8 ms[2] |
| | Pixel Pitch | 0.255 mm |
| | Color Gamut | 72% |
| | Backlight Lamp Life (to half brightness) | 45K hours |
| | Bezel Width | 16 mm |
| On Screen Display (OSD) Controls | Buttons or Switches | OSD menu select, auto adjust/OSD up, OSD down<br>Input select, power |
| | Languages | English, French, German, Spanish, Italian, Dutch, and Japanese |
| | User Controls | Brightness, contrast, positioning, color temperature, individual color control, serial number display, full screen resolutions, clock, clock phase, input selection, image control (including scaling), and factory reset |
| Signal Interface/ Performance | Horizontal Frequency | 30 to 94 kHz (VGA input); 30 to 92 KHz (DVI input for modes with pixel clock less than 162 MHz) |
| | Vertical Frequency | 48 to 85 Hz (VGA input); 48 to 85 Hz (DVI input for modes with pixel clock less than 162 MHz) |
| | Native Resolution | 1600 x 1200 @ 60 Hz (recommended) |
| | Preset VESA Graphic Modes (non-interlaced) | 1600 x 1200 @ 60 Hz, 75 Hz (analog input) |
| | | 1280 x 1024 @ 60 Hz, 75 Hz, and 85 Hz |
| | | 1280 x 960 @ 60 Hz |
| | | 1152 x 900 @ 66 Hz |
| | | 1024 x 768 @ 60 Hz, 75 Hz, and 85 Hz |
| | | 800 x 600 @ 60 Hz, 85 Hz |
| | | 640 x 480 @ 60 Hz, 75 Hz, and 85 Hz |
| | Text Mode | 720 x 400 @ 70 Hz |
| | Mac Mode | 1152 x 870 @ 75 Hz and 832 x 624 @ 75 Hz |

## Technical Specifications

|  | | |
|---|---|---|
| | Sun Mode | 1152 x 900 @ 66 Hz |
| | Maximum Pixel Clock Speed | 202 MHz (analog input); 162 MHz (DVI input) |
| | User Programmable Modes | Yes, 10 |
| | Anti-Glare | Yes |
| | Anti-Static | Yes |
| | Default Color Temperature | 6500 K |
| Video/Other Inputs | Plug and Play | Yes |
| | Self Powered USB 2.0 Hub | One upstream, four downstream ports (cable included) |
| | Input Signal | Two DVI-I connectors (dual VGA analog or dual digital input possible) |
| | Input Impedance | 75 ohms ± 10% |
| | Sync Input | Separate sync (HSYNC/VSYNC); composite sync, Sync on Green |
| | Video Cable | Two VGA to DVI-I; two DVI-D to DVI-I |
| | Video Cable Length | 6.5 ft (1.98 m) |
| Power | Input Power | Auto-Ranging, 90 ~ 265 VAC; internal power supply, 50 Hz/60 Hz |
| | Frequency | 47.5 to 63 Hz |
| | Typical Power Consumption | 55 watts (without USB ports); 70 watts (USB ports fully loaded) |
| | Maximum | < 75 watts |
| | Power Saving | < 2 watts |
| | Power Cable Length | 5.9 ft (1.8 m) |

| Mechanical | Dimensions (H x W x D) | Unpacked w/ stand | 16.7 to 21.8 x 17.4 x 8.67 in (42.5 to 55.5 x 44.3 x 22.0 cm) |
|---|---|---|---|
| | | Unpacked w/o stand (head only) | 13.58 x 17.4 x 3.42 in (34.5 x 44.3 x 8.7 cm) |
| | | Packaged | 11.77 x 22.2 x 16.77 in (29.9 x 56.4 x 42.6 cm) |
| | Weight | Unpacked | With stand: 20.28 lb (9.2 kg); Without stand: 12.65 lb (5.75 kg) |
| | | Packaged | 26.3 lb (11.95 kg) |
| | Tilt Range | -5° to + 25° vertical tilt | |
| | Swivel Range | -45° to + 45° | |
| | Height Adjustable | Yes, range 5.1 in (13.0 cm) | |
| | Pivot Rotation | Yes | |
| | Base | Detachable, ships detached | |
| Environmental | Temperature – Operating | 41° to 95° F (5° to 35° C) | |

## Technical Specifications

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|---|---|---|---|---|
| | Temperature – Non-operating | 6° to 140° F (-10° to 60° C) | | |
| | Humidity – Operating | 20% to 80% non-condensing | | |
| | Humidity – Non-operating | 20% to 80% | | |
| | Altitude – Operating | +12,000 ft (3657.6 m) | | |
| | Altitude – Non-operating | +40,000 ft (12,192 m) | | |

**Environmental Data**

**Eco-Label Certifications and Declarations**

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- ENERGY STAR®
- IT ECO declaration
- TCO 03
- EPEAT™ Silver

**Energy Consumption** (in accordance with ENERGY STAR test method)

| | AC Input Voltage at 100 VAC +/- 5 VAC, 50 Hz +/- 3 Hz | AC Input Voltage at 115 VAC +/- 5 VAC, 60 Hz +/- 3 Hz | AC Input Voltage at 230 VAC +/- 5 VAC, 50 Hz +/- 3 Hz |
|---|---|---|---|
| Normal Operation | 39.5 watts | 39.2 watts | 38.8 watts |
| Sleep | 0.9 watts | 0.9 watts | 1.1 watts |
| Off | 0.9 watts | 0.9 watts | 1.1 watts |

**Heat Dissipation***

| | 100 VAC, 50 Hz | 115 VAC, 60 Hz | 230 VAC, 50 Hz |
|---|---|---|---|
| Normal Operation | 135 BTU/hr | 134 BTU/hr | 132 BTU/hr |
| Sleep | 3.07 BTU/hr | 3.07 BTU/hr | 3.75 BTU/hr |
| Off | 1.70 BTU/hr | 1.70 BTU/hr | 2.38 BTU/hr |

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

**Longevity and Upgrading**

Upgradeability features contained in the product include:
One upstream and four downstream USB ports

**Ergonomics**

The monitor meets the ergonomic requirement of EN-ISO 13406-2 for flat panel displays.

**Additional Information**

This product is in compliance with the Restrictions of Hazardous Substances (RoHS) Directive, 2002/95/EC.

This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive, 2002/96/EC.

This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).

This product is in compliance with the IEEE 1680 (EPEAT) standard at the Silver level, see www.epeat.net.

## Technical Specifications

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

Display meets the requirement for low frequency electromagnetic fields per TCO and prEN50279 A/B/C.

This product contains 0% recycled materials (by wt.)

This product is 97.8% recyclable when properly disposed of at end of life (8020/7801).

Packaging Materials

| | |
|---|---|
| ● Corrugated Carton | 11 kg |
| ● HDPE Bag | 0.065 kg |
| ● Polystyrene | 0.535 kg |

**Material Usage**

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at www.hp.com/hpinfo/globalcitizenship/ environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

**Packaging**

HP follows these guidelines to decrease the environmental impact of product packaging:

*Technical Specifications*

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

| | |
|---|---|
| End-of-life Management and Recycling | Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: www.hp.com/recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. |
| Hewlett-Packard Corporate Environmental Information | For more information about HP's commitment to the environment: Global Citizenship Report www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications www.hp.com/hpinfo/globalcitizenship/ environment/productdesign/ecolabels.html ISO 14001 certificates: www.hp.com/hpinfo/globalcitizenship/ environment/operations/envmanagement.html |
| **Options** | |
| HP Silver LCD Speaker Bar—Part number: EE418AA | Powered directly by the monitor or the PC, the Speaker Bar seamlessly attaches to the monitor's lower bezel to bring full audio support to select HP flat panel monitors. Features include dual speakers with full sound range and external jack for headphones. Sold separately. For more information, refer to the HP Silver LCD Speaker Bar QuickSpec. |
| HP Security Lock—Part number PC766A | Combines aircraft-grade steel and Kevlar fiber to securely lock down your monitor and help prevent theft. |
| **Other** | |
| Accessories Included | VGA to DVI-I cable – connects the graphic card's VGA connector to the monitor's input #1 or 2 (DVI-I analog) connector. |
| | DVI-D to DVI-D cable – connects the graphic card's DVI-D digital connector to the monitor's input #1 or #2 (DVI-I digital) connector. |
| Software | HP Display Assistant Utility makes it possible to adjust displays settings through the PC using two-way communication via DDCI. |
| | HP Display Lite Saver allows ability to power up and down display at predetermined hours of the day to safe power and backlight life. |

## Technical Specifications

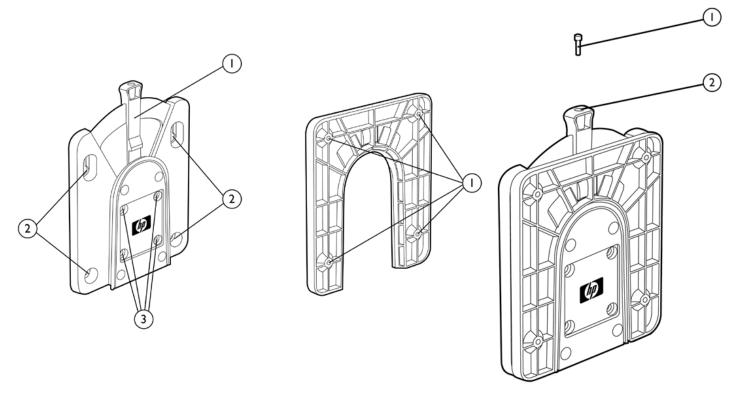|  |  |  |
|---|---|---|
|  |  | Pivot Pro software from Portrait Displays, Inc. interacts with your PC's native graphics driver to enable seamless portrait screen redraws with a simple mouse-click or keyboard command. Pivot Pro supports 90-degree portrait and landscape views. Language support is available in English, Japanese, French, German, Spanish, Italian, and Traditional and Simplified Chinese. |
|  | User Guide Languages | English, B. Portuguese, French, LA Spanish, Korean, S. Chinese, T. Chinese, Bahasa, Japanese, Danish, Finnish, German, Norwegian, Spanish, Swedish, Greek, Polish, Russian, Slovenian, Turkish |
|  | Warranty Languages | English, Canadian French, LA Spanish, Brazilian Portuguese, Danish, German, Castilian Spanish, French, Italian, Dutch, Norwegian, Finnish, Swedish, Bahasa Indonesian, Korean, T. Chinese, S. Chinese |
|  | Color | Carbonite/silver |
|  | VESA External Mounting | Yes (Standard 4 hole pattern, 100 mm) |
|  | Security Lock-Ready | Yes |
| Certification and Compliance |  | Australian ACA Approval, Canadian Requirements/CSA, CE Marking, China CCC Approval, CISPR Requirements, Eastern European Approvals, ENERGY STAR® qualified, FCC Approval, German Ergonomic (TUV and GS Mark), ISO 13406-2 Pixel Defect Guidelines, Mexican NOM Approval, MIC Requirements (New Zealand), PC99 Certified, S. Korean MIC Approval, Taiwan BSMI Approval, TCO 03 (emissions, ergonomics, environment), TUV-Ergo, UL Listed, VCCI Approvals, Microsoft® Windows® Certification (Microsoft® Windows® 98, Microsoft Windows 2000, Microsoft Windows XP, and Windows® Vista), EPEAT™ Silver™ |
| Compatibility |  | Compatible with platforms using the VESA standard video modes. Recommended for use with HP products. |
| Service and Warranty |  | Three years parts, labor, and on-site service. 24-hour, 90-day, toll-free technical support. Replacement options may include second business day on-site service, or next business day direct replacement, at HP's sole discretion.[3] With direct replacement, HP will ship a replacement display product directly to you. Using the prepaid shipping labels provided, return your failed display to HP in the same packaging as the replacement. Certain restrictions and exclusions apply. For details see your product warranty or contact HP Customer Support. |

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

[2] Response time: 8 ms (gray to gray); 16 ms (rise and fall).

[3] Service levels and response times for HP Care Pack Services may vary depending on your geographic location. Service starts from date of hardware purchase. Restrictions and limitations apply. HP Care Pack Services extend service contracts beyond the standard warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: www.hp.com/go/lookuptool. Additional HP Care Pack Services information by product is available at: www.hp.com/hps/carepack.

*Overview - HP LCD Monitor Quick Release*



1. Release/locking
2. Four 100 mm VESA mount screw holes
3. Mounting holes for attachment to back of HP LP1965, LP2065, and HP LP2465 monitor stands

1. Four 100 mm VESA mount screw holes

1. Locking pin screw
2. Locking pin hole on release/locking arm

## Introduction

The HP Quick Release, which ships standard with the HP LP2065 20-inch LCD Monitor, is an easy to use, 100 mm VESA-compliant, flat panel monitor mounting solution that allows you to quickly and securely attach a flat panel monitor to a variety of stands, brackets, arms or wall mounts. HP Quick Release can also be used for mounting any combination of devices that are compatible with the 100 mm VESA Flat Display Mounting Interface Standard. The failsafe "Sure-Lock" mechanism snaps the monitor (or mounted device) securely in place, and can be further secured with a theft-deterrent security screw.

## Uniquely flexible product configurations

HP Quick Release enables uniquely flexible product configuration alternatives in a variety of settings, such as:

- Storefronts/kiosks: Mount flat panel monitors for easy viewing and add touchscreens for interactivity.
- Trade shows: Securely mount LCD TVs or monitors in common areas and quickly remove them for safekeeping at the end of the day.
- Front office environments: Minimize desk space requirements with wall or swing-arm mounting of monitors in reception areas.
- Training labs: Mount a monitor directly on a 100 mm VESA-compatible PC or an HP Thin Client for all-in-one convenience.
- Medical/institutional settings: Securely mount monitors in nursing stations and public areas.

## Overview - HP LCD Monitor Quick Release

- Conference rooms: Mount projectors (with 100 mm VESA-compliant pre-drilled holes) on ceilings, and monitors on walls or tables.

## Technical Specifications - HP LCD Monitor Quick Release

| Mechanical | Dimensions (H x W x D) | Packaged | 7.8 x 6.25 x 1.5 in (19.8 x 15.9 x 3.8 cm) |
| --- | --- | --- | --- |
| | | Unpackaged | 6.3 x 5.2 x 0.65 in (16 x 13.2 x 1.65 cm) |
| | Weight | Packaged | 1.1 lb (0.49 kg) |
| | | Unpackaged | 0.82 lb (0.37 kg) |

| Additional components | ● Eight 10 mm mounting screws (for attachment to VESA compliant monitor mounts)<br>● Eight 15.5 mm mounting screws (for attachment to HP Compaq t5000 Thin Client products)<br>● Four 20 mm mounting screws (for attachment to back of select HP flat panel monitor stands)<br>● One Quick Release "locking" screw |
| --- | --- |

| Color | Carbonite |
| --- | --- |

| Notes | 1. No HP monitors allow positioning of a thin client product between a monitor screen and its stand.<br>2. The Quick Release device is not to be used between a monitor screen and its stand unless provided that way from the factory.<br>3. Under no circumstances is the Quick Release device intended to be used in an orientation where the Release/Lock lever is oriented downward. |
| --- | --- |

| Supported weight capacity | The HP Flat Panel Monitor Quick Release has been designed to support a maximum of up to 24 lbs (10.9 kg) depending upon the mounting configuration used. Please note this is a total weight limit for all devices mounted, i.e. the combined weight of the monitor and a second device such as an HP Thin Client cannot exceed 24 pounds. Because mounting surfaces vary widely and the final mounting method and configuration may vary, mounting fasteners are not supplied (other than the VESA-compliant screws). HP recommends that you consult with a qualified engineering, architectural or construction professional to determine the appropriate type and quantity of mounting fasteners required for your application and to ensure that your mounting solution is properly installed to support applied loads. |
| --- | --- |