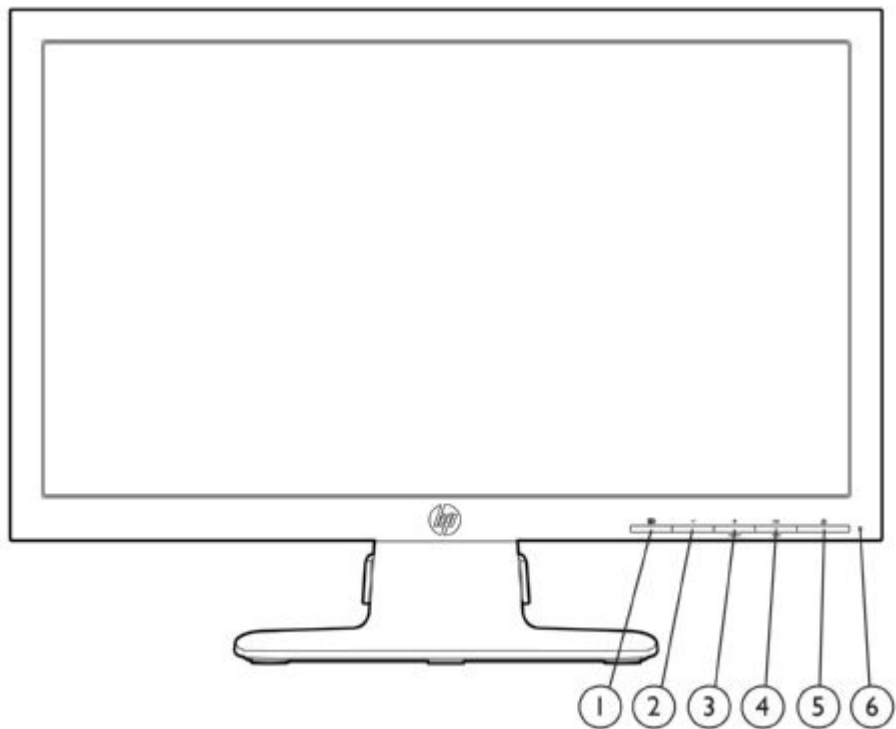


Overview



- | | | | |
|-----------------------|---|---------------------|---|
| 1. Menu | Opens, selects or exits the OSD menu. | 4. OK/auto | 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. |
| 2. Minus | If the OSD menu is on, press to navigate backward through the OSD menu and decrease adjustment levels. | 5. Power | Turns the monitor on or off. |
| 3. Plus/source | If the OSD menu is on, press to navigate forward through the OSD menu and increase adjustment levels.
If the OSD menu is inactive, press to activate the source button that chooses the video signal input (VGA or DVI). | 6. Power LED | Blue = Fully powered.
Amber = Sleep mode.
Flashing Amber = Sleep Timer mode. |

Model
LL649AA

Technical Specifications

Panel	Type	TN (Twisted Nematic) LED Backlit LCD
	Viewable Image Area (diagonal)	54,61 cm (21.5 in.) widescreen; diagonally measured
	Screen Opening (W x H)	47,8 x 26,9 cm, (18.74 x 10.55 in.)
	Aspect Ratio	16:9
	Viewing Angle (typical)	Up to 170° horizontal/160° vertical (10:1 minimum contrast ratio)
	Brightness (typical)*	250 nits (cd/m²)
	Contrast Ratio (typical)*	1000:1
	Dynamic Contrast Ratio (typical)*	3,000,000:1
	Response Time (typical)*	5 ms (on/off)
	Pixel Pitch	0.24825 mm
	Backlight Lamp Life (to half brightness)	30,000 hours
	Color Gamut (typical)	72%
	Color Support**	Can display up to 16.7 million colors
	*All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.	
	** With the use of FRC technology.	
On Screen Display (OSD) Controls	Buttons or Switches	Menu, Minus ("-"), Plus/Source ("+"), "OK/Auto" and Power
	Languages	German, Simplified Chinese, Traditional Chinese, Japanese, English, Spanish, French, Italian, Netherlands, Brazilian Portuguese
	User Controls	Brightness, contrast, positioning, color temperature (warm, standard, cool, custom), image control (clock, clock phase, scaling, sharpness, DCR), monitor management, source control, information and factory reset
Signal Interface/ Performance	Horizontal Frequency	24 to 94 kHz
	Vertical Frequency	50 to 76 Hz
	Native Resolution	1920 x 1080 @ 60 Hz
	Preset VESA Graphic Modes (non-interlaced)	1920 x 1080 @ 60 Hz
		1680 x 1050 @ 60 Hz
		1440 x 900 @ 60 Hz
		1280 x 1024 @ 60 Hz
		1280 x 720 @ 60 Hz
		1024 x 768 @ 60 Hz
		800 x 600 @ 60 Hz
		720 x 400 @ 70 Hz
		640 x 480 @ 60 Hz
		720 x 400 @ 70 Hz
	Text Mode	720 x 400 @ 70 Hz
	Maximum Pixel Clock Speed	200 MHz (VGA); 165MHz (DVI)
	User Programmable Modes	Yes (20)
	Anti-Glare	Yes
	Default Color Temperature	6500 K

Technical Specifications

Video/Other Inputs	Plug and Play	Yes		
	Input Connectors	VGA (analog), DVI-D w/ HDCP		
	Input Impedance	75 Ohms (VGA)		
	Sync Input	TTL separate synch		
	Video Cable	One 15-pin D-sub (VGA), One DVI-D		
	Video Cable Lengths	1,8 m (5.9 ft.)		
	Audio	No		
	Audio Cable Length	N/A		
	Power	Power Supply	Internal power adapter	
Input Power		100 - 240 VAC, 50 or 60 Hz		
Typical Power Consumption		26 W		
Maximum		28 W		
Power Saving		< 0.5 W		
Mechanical	Power Cable Length	1,9 m (6.2 ft.)		
	Dimensions (W x D x H)	Unpacked w/stand	51,8 x 16 x 37,97 cm, (20.4 x 6.3 x 14.9 in.)	
		Unpacked w/o stand (head only)	51,8 x 4,75 x 31,52 cm, (20.4 x 1.9 x 12.4 in.)	
		Packaged	57,1 x 42,9 x 12,6 cm, (22.5 x 16.9 x 5.0 in.)	
		Base area (footprint)	23,85 x 16 cm, (9.4 x 14.9 in.)	
	Weight	Head Only	3,25 kg (7.17 lb.)	
		Unpacked	3,9 kg (8.6 lb.)	
		Packaged	5,1 kg (11.24 lb.)	
	Tilt Range	-5° to +25°		
	Swivel Range	No		
	Height Adjustable	No		
	Pivot Rotation	No		
	Environmental	Base	Attachable, ships detached	
Temperature – Operating		0° to 35° C (32° to 95° F)		
Temperature – Non-operating		-20° to 60° C (-4° to 140° F)		
Humidity – Operating		20% to 80% non-condensing		
Humidity – Non-operating		5% to 95%, 38.7° C max wet-bulb		
Altitude – Operating		+0 to 5,000 m (16,404 ft)		
Altitude – Non-operating		0 to 12,192 m (0 to 40,000 ft)		
White LED Backlights		Yes		
CCFL Panel		No		
Arsenic-Free Glass*		Yes		
* Arsenic and its compounds were not detected using US EPA Test Methods 3052 & 3052/6010b by ICP or ICP-AES.				
Environmental Data		BFR/PVC Free	Yes (everything except external cables)	
		Mercury Free	Yes	
	Eco-Label	This product has received or is in the process of being certified to the		

Technical Specifications

Certifications & declarations	following approvals and may be labeled with one or more of these marks:		
	<ul style="list-style-type: none">US ENERGY STAR®IT ECO declarationEPEAT Silver where HP registers commercial desktop products. See http://www.epeat.net for registration status in your country.		
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation	17.77 W	17.72 W	18.7 W
Sleep	0.2 W	0.3 W	0.2 W
Off	0.3 W	0.2 W	0.2 W
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation	61 BTU/hr	61 BTU/hr	64 BTU/hr
Sleep	1 BTU/hr	1 BTU/hr	1 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr
* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.			
Additional Information	<ul style="list-style-type: none">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.netPlastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.This product contains 0% post-consumer recycled plastic (by wt.)This product is 98.5% recycle-able when properly disposed of at end of life.		
Packaging Materials	External:	Corrugated carton	485 g
	Internal:	EPS (Expanded Polystyrene)	165 g
		Polyurethane rigid foam with PE film	49.8 g
RoHS Compliance	Hewlett-Packard is committed to compliance with all applicable environmental laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (virtually = to levels below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).		
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: http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):		
	<ul style="list-style-type: none">Asbestos		



Technical Specifications

- 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:

- 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: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Hewlett-Packard Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report
<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>
 Eco-label certifications

Technical Specifications

Options (sold separately)

HP LCD Monitor Quick Release-Part number EM870AA*	<p>http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html</p> <p>An easy-to-use, VESA-compliant, LCD monitor mounting solution that allows you to quickly and securely attach an LCD monitor to a variety of stands, brackets, arms or wall mounts. For more information, refer to this product's QuickSpecs document.</p> <p>* The HP Quick Release has been designed to support a maximum of up to 24 lbs (10.9 kg) for all devices mounted. Because mounting surfaces vary 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.</p>
HP USB Graphics Adapter-Part number NL571AA	<p>Enables connection of up to six simultaneous displays to help you boost productivity and multi-task across several open applications. Use one Adapter to bridge between a notebook or desktop PC and second monitor or use multiple Adapters to connect several displays to each other.</p>
HP Business PC Security Lock Kit-Part number PV606AA	<p>Attaches to the rear of the PC with a six-foot steel cable that can be used to secure a PC or peripherals such as mice, keyboards, monitors or USB security devices to protect them against unauthorized removal by physically connecting the system to an anchor point.</p>
HP LCD Speaker Bar-Part number NQ576AA	<p>Powered directly by the connected 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 dual external headphone jacks. Sold separately. For more information, refer to the product's QuickSpecs.</p>
HP Integrated Work Center Stand-Part number LH526AA	<p>Allows mounting of a 17 - 24 inch diagonal HP LCD monitor and an HP Compaq 8000 series Ultra-slim Desktop PC as well as select HP Thin Clients on a single stand for the convenience of an "all-in-one" form factor. For more information, refer to this product's QuickSpecs document.</p>
HP Single Monitor Arm Part number BT861AA	<p>The flexible design of the HP Single Monitor Arm provides a seemingly endless range of display adjustments with an amazing 13 inches of lift, 50 degrees of tilt, and 360 degrees of pan and rotation - all at your fingertips -- helping you stay comfortable and productive throughout the day.</p>
HP Adjustable Dual Display Stand Part Number AW664AA	<p>Premium space-saving dual screen solution provides access to more monitor real estate and makes it possible to manage multiple applications simultaneously. Weight adjustable for dual monitors from 17-24". Rotate displays into portrait/landscape positions.</p>
Accessories Included	<p>VGA cable, DVI-D cable, and AC Power cable</p>
Software	<p>Yes - HP Display Assistant</p>
User Guide Languages	<p>English, French, Spanish (Int'l), Brazilian Portuguese, Danish, Dutch, Finnish, French, German, Italian, Norwegian, Spanish, Swedish, Czech, Hungarian, Polish, Russian, Greek, Slovenian, Turkish, Arabic, Bahasa Indonesian, S. Chinese, T. Chinese, Korean and Japanese.</p>
Warranty Languages	<p>English, LA Spanish, Brazilian Portuguese, German, French, Italian, Turkish, Greek, Arabic, Russian, Hungarian, Czech, Polish, Japanese, Dutch, Danish, Finnish, Norwegian, Swedish, S. Chinese, T. Chinese, Korean, Slovenian, Bahasa Indonesia, Serbian.</p>
Color	<p>Black</p>

Other



Technical Specifications

	VESA External Mounting	Yes (one set of standard 4-hole pattern, 100 mm).
	Security Lock-Ready	Yes
Certification and Compliance	TCO 5.0, VCCI, KC, CECP, FCC, CE, BSMI, ISC, C-Tick, Gost, E-Standy, RoHS, WEEE, ETL, CCC, Energy Star®, NOM, KCC, BSMI, TUV, Microsoft WHQL, China Energy Label Grade 1, EPEAT® Silver*	
	* EPEAT® Silver where HP registers commercial display products. See www.epeat.net for registration status in your country.	
Compatibility	Compatible with platforms using the VESA standard video modes. Recommended for use with HP products.	
Service and Warranty	Protected by HP, including a 3 years parts, 3 years labor, and 3 years onsite service (3/3/3) standard limited warranty. Certain restrictions and exclusions apply.** ** HP Care Pack Services extend service contracts beyond the standard warranties. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts from date of hardware purchase. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: http://www.hp.com/go/lookuptool . Additional HP Care Pack Services information by product is available at: http://www.hp.com/hps/carepack .	

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