

Technical Specifications

HP Series 3 Pro 21.45 inch FHD Monitor – 322pe



1 Power LED

Front
2 Power Button

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HP Series 3 Pro 21.45 inch FHD Monitor – 322pe



Back

- 1 HDMI 1.4 Port
- 2 VGA Port

- 3 AC Power In

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Model: AK2F1UT

Panel Specifications	Display Size (Diagonal)	21.45" (54.48 cm)
	Viewable Diagonal Size	21.45" (54.48 cm)
	Panel Technology	IPS
	Curvature	Flat
	Max Refresh Rate	100 Hz
	Native Resolution	FHD (1920 x 1080)
	Panel Bit Depth	8 bit (6 bit + FRC)
	Aspect Ratio	16:9
	Brightness (Typical)	250 nits
	Display Contrast Ratio (Static)	1000:1
	Display Contrast Ratio (Dynamic)	8000000:1 =8M:1
	Flicker Free	Yes
	Pixel Pitch	0.25 x 0.24 mm
	Pixels Per Inch (PPI)	101 PPI
	Display Colors	Up to 16.7 million colors supported*
		*Number of colors through A-FRC technology.
	Backlight Lamp Life Minimum (To Half Brightness - In Hours)	30,000 hours
	Backlight Type	Edge-lit
	Screen Treatment	Anti-glare
	Hardness	3H
	Haze	25%
	Response Time (Typical)	5ms GtG (with overdrive)
	Horizontal Viewing Angle (Typical Cr>10)	178°
	Vertical Viewing Angle (Typical Cr>10)	178°
Color	Panel Active Area Metric (W X H)	47.87 x 26.03 cm
	Panel Active Area Imperial (W X H)	18.85 x 10.25 in
NOTE: Performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.		
Color Management	NTSC	72%
	Factory Color Calibrated	Yes
	Color Space	RGB 4:4:4, YCBCR 4:4:4, YCBCR 4:2:2
	RGB Channel Adjust	Yes, Setup and Gain, downstream from color preset
Monitor Specifications	Default Color Temperature	Standard (6500K)
	Bezel Type	3-sided borderless
	Color Of Stand	Black
	Color Of Head	Black
	Tilt	-5 to +23°
	Vesa Mounting	100mm x 100mm
	Security Lock	Security lock-ready
Detachable Stand		Yes
		LA: 3-3-0
Warranty		APJ : 3-3-0 (excluding China, India & Korea)

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On Screen Display (OSD)	Low Blue Light Management Software	APJ: 3-3-3 (China, India & Korea only) Yes HP Display Manager, HP Display Center* and CMSL <i>*Host PC requires Windows 10 or higher. HP Display Center is available for download on the Microsoft store for Windows or support.hp.com for Windows and MacOS.</i>
	On Screen Display	Brightness +, Color, Image, Input, Power, Menu, Management, Information, Exit, Contrast, Language
	Native Resolution	FHD (1920 x 1080)* <i>*VGA 1920x1080@60Hz, HDMI 1.4 1920x1080@100Hz</i>
	Maximum Resolution	1920x1080@100Hz
	Preset Graphic Modes/Supported Resolutions	VGA :720x400 @ 70Hz 640x480 @ 60Hz 800x600 @ 60Hz 1024x768 @ 60Hz 1920x1080 @ 60Hz 1600x900 @ 60Hz 1280x720 @ 60Hz 1680x1050 @ 60Hz 1440x900 @ 60Hz 1280x800 @ 60Hz 1280x1024 @ 60Hz 1920x1080 @ 60Hz HDMI :720x400 @ 70Hz 640x480 @ 60Hz 640x480 @ 75Hz 800x600 @ 60Hz 800x600 @ 75Hz 1024x768 @ 60Hz 1024x768 @ 75Hz 1280x1024 @ 75Hz 1920x1080 @ 60Hz 1600x900 @ 60Hz 1280x720 @ 60Hz 1680x1050 @ 60Hz 1440x900 @ 60Hz 1280x800 @ 60Hz 1280x1024 @ 60Hz
	Minimum Vertical Scan Rate	48 Hz
	Maximum Vertical Scan Rate	100 Hz
	Minimum Horizontal Scan Rate	52.4 kHz
	Maximum Horizontal Scan Rate	110.0 kHz
	Maximum Pixel Clock	119.0 MHz
	User Programmable Modes	Yes, 20
	User-Assignable Function Buttons	Yes, 3 (6 options)
	Languages	10 (Bahasa Indonesia, Chinese-S, Chinese-T, English, Japanese, Korean, Portuguese (Brazilian), Spanish, Thai

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Connector Types	HDMI	1 HDMI 1.4
	HDCP	Yes, HDMI
	VGA	1 VGA
Special Features	Switch	Menu, Plus ("+)/Information/Auto-Adjustment, Minus ("-")/Viewing Modes, OK/Next Active Input, Power
	User Presets	22
Power & Operating Specs	Power Supply	Internal
	Power Source	90 – 264 VAC 50/60 Hz
	Power Consumption- Max	17.6 W
	Energy Saving/Stand By Mode	0.5 W
Energy Star Data	Power Consumption - Typical	14.5 W
	Operational Mode at 100 VAC	12 W
	Operational Mode at 115 VAC	11.87 W
	Operational Mode at 230 VAC	11.85 W
EU Energy Efficiency Class (ErP LOT-5)	On-mode Power Consumption for Standard Dynamic Range (SDR)	11.8 W
	ErP LOT5 Energy Efficiency Class for Standard Dynamic Range (SDR)	
Operating Conditions	Operating Temperature - Celsius	0 - 40°C
	Operating Temperature - Fahrenheit	32 - 104°F
	Non-Operating Temperature - Celsius	-20 - 60°C
	Non-Operating Temperature - Fahrenheit	-4 - 140°F
	Operating Humidity	0 – 85%
	Non-Operating Humidity	0 – 90%
	Operating Altitude Metric	0 – 5,000 m
	Non-operating Altitude Metric	0 – 12,000 m
	Operating Altitude Imperial	0 - 16,404 ft.
	Non-operating Altitude Imperial	0 - 39,370 ft.
Certifications and Compliances	Low Halogen	Yes*
	* External power supplies, WWAN modules, power cords, cables and peripherals excluded. Service parts obtained after purchase may not be Low Halogen.	
Agency Approvals and Certifications		CE/CB,KC/KCC/NOM/PSB/TUV-S/ISO 9241-307/EAC/cTUVus/ISC/CCC/CEL/CECP/SEPA/VCCI/BSMI/Vietnam MEPS/Australian-New Zealand MEPS/WEEE/ERP/NRCS LOA/NRCS EE/Mexico Energy/Energy Star/Bauart/Low Blue Light/BIS/UAE ECAS/UAE RoHS/KMEPS
Microsoft WHQL Certification		Windows 11 (x64 only), Windows 10
ENERGY STAR® Certified		Yes

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	EPEAT® Registered Regions need to verify by country	EPEAT® Silver*	
		*EPEAT® registered where applicable. EPEAT® registration varies by country. See http://www.epeat.net for registration status by country. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information.	
	China Energy Label TCO Certified	CEL Grade 2 Yes	
	Contains Recycled Plastics	85% post-consumer recycled plastic*	
	Contains Recycled Plastics	* Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.	
	Recyclable Packaging (Box, packing materials)	Outside Box and corrugated cushions are 100% sustainably sourced and recyclable* Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable**	
		*100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.	
		**Molded pulp cushions are made from 100% recycled wood fiber and organic materials.	
Unit Product/Package Specifications	Product Dimensions (Unpacked with stand) (W x D x H)	Metric 49.28 x 20.99 x 37.44 cm	Imperial 19.4 x 8.26 x 14.74 in
	Product Dimensions (Packed) (W x D x H)	55.6 x 13.8 x 35 cm	21.89 x 5.43 x 13.78 in
	Display Head Dimensions (Unpacked without stand) (W x D x H)	49.28 x 4.30 x 28.65 cm	19.40 x 1.69 x 11.28 in
	Base Area Footprint (w x d mm)	228.16 x 209.91 mm	8.98 x 8.26 inch
	Bezel Measurements	3 sides borderless, bottom bezel: 18.1 mm	3 sides borderless, bottom bezel: 0.713 inch
	Product Weight (Unpacked with stand)	2.60 kg	5.73 lb
	Product Weight (Packed)	4.10 kg	9.04 lb
	Product Weight (Head Only)	2.2 kg	4.85 lb
	Pallet Dimensions (L x W x H mm)	1200x1000x2234 mm (20' ft&40' ft)	47.24x39.37x 87.95 inch (20' ft&40' ft)
	Pallet Total Weight	357.4KG (20' ft&40' ft)	787.93 lb (20' ft&40' ft)
Pallet Information	Pallet Layers	6 layers per pallet	
	Pallet Product per Layer	14pcs per layer (pallet)	
	Total Products per Pallet	84 sets per pallet	
	Container Load, 20-Foot	840 sets (pallet)	
	Container Load, 40-Foot	1764 sets (pallet)	

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What's in the box?	AC power cord (1.83m) 5.9ft HDMI 1.4 cable (1.8m) 5.9 ft Quick Setup Poster	
User Guide and Warranty Languages	User Guide Languages	Arabic, Bahasa Indonesia, Bulgarian, Chinese-S, Chinese-T, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Kazakh, Korean, Latvian, Lithuanian, Norwegian, Polish, Portuguese (Brazilian), Portuguese (Iberian), Romanian, Russian, Serbian, Slovak, Slovenian, Spanish, Swedish, Thai, Turkey, Ukrainian
	Warranty Languages	English US (EN), English AP (EN-AP), English LA (EN-LA), English UK (EN-GB), Arabic (AR) -17x, Bahasa Indonesia (ID), Bosnian (BS), Bulgarian (BG), Chinese-S (CN), Chinese-T (TW), Croatian (HR), Czech (CS), Danish (DA), Dutch (NL), Estonian (ET), Finnish (FI), French Canadian (FC), French European (FR), German (DE), Greek (EL), Hebrew (HE), Hungarian (HU), Italian (IT), Japanese (JA), Kazakh (KK), Korean (KO), Latvian (LV), Lithuanian (LT), Norwegian (NO), Polish (PL), Portuguese, Brazilian (BR), Portuguese, Iberian (PT), Romanian (RO), Russian (RU), Serbian (SR), Slovak (SK), Slovenian (SL), Spanish, Castilian (ES-ES), Spanish, Latin America (ES-MX), Swedish (SV), Thai (TH), Turkish (TR), Ukrainian (UK), Vietnamese (VI)

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ENVIRONMENTAL DATA

Eco-Label Certifications & declarations	<p>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:</p> <ul style="list-style-type: none"> • IT ECO declaration • US ENERGY STAR® • US Federal Energy Management Program (FEMP) • EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country. • TCO Certified • China Energy Conservation Program (CECP) • China State Environmental Protection Administration (SEPA) • Taiwan Green Mark • Korea Eco-label • Japan PC Green label* 		
Sustainable Impact Specifications	<ul style="list-style-type: none"> • Product Carbon Footprint (hp.com) • 50% recycled metal • Low halogen • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable • Recycled plastic cushions 		
System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.		
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	11.87 W	11.85 W	12 W
Normal Operation (Long idle)	11.87 W	11.85 W	12 W
Sleep	0.46 W	0.15 W	0.12 W
Off	0.11 W	0.14 W	0.11 W
	<p>NOTE: Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.</p>		
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	40.59 BTU/hr	40.52 BTU/hr	41.04 BTU/hr
Normal Operation (Long idle)	40.59 BTU/hr	40.52 BTU/hr	41.04 BTU/hr
Sleep	1.57 BTU/hr	0.51 BTU/hr	0.41 BTU/hr
Off	0.37 BTU/hr	0.47 BTU/hr	0.37 BTU/hr
	<p>*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p>		
Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the		

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	Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.		
Additional Information	<ul style="list-style-type: none"> This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/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 Gold level, see www.epeat.net Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. This product is 97.7% recycle-able when properly disposed of at end of life. 		
Packaging Materials	External:	PAPER/Corrugated	810 g
		PAPER/Paperboard	521 g
	Internal:	PLASTIC/Polyethylene Expanded - EPE	25 g
	The plastic packaging material contains at least 0.0% recycled content.		
	The corrugated paper packaging materials contains at least 90.0% recycled content.		
RoHS Compliance	<p>HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam.</p> <p>We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products.</p> <p>We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve.</p> <p>To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.</p>		
Material Usage	<p>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):</p> <ul style="list-style-type: none"> Asbestos Certain Azo Colorants Certain Brominated Flame Retardants – may not be used as flame retardants in plastics Cadmium Chlorinated Hydrocarbons Chlorinated Paraffins Bis(2-Ethylhexyl) phthalate (DEHP) Benzyl butyl phthalate (BBP) Dibutyl phthalate (DBP) Diisobutyl phthalate (DIBP) Formaldehyde Halogenated Diphenyl Methanes 		

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	<ul style="list-style-type: none"> • 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 Usage	<p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> • 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	<p>HP 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.</p> <p>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.</p>

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HP, Inc. Corporate Environmental Information	<p>For more information about HP's commitment to the environment:</p> <p>Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html</p> <p>Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html</p> <p>ISO 14001 certificates: http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</p>
footnotes	<ul style="list-style-type: none">• Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.• Recycled metal is expressed as a percentage of the total weight of the metal according to ISO 14021 definitions for metal parts over 25 grams.• 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.

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Summary

Change Log			
December 19, 2024	V1 to V2	Added	Environmental Section
February 10, 2025	V2 to V3	Added	Screen Treatment
	V3 to V4		