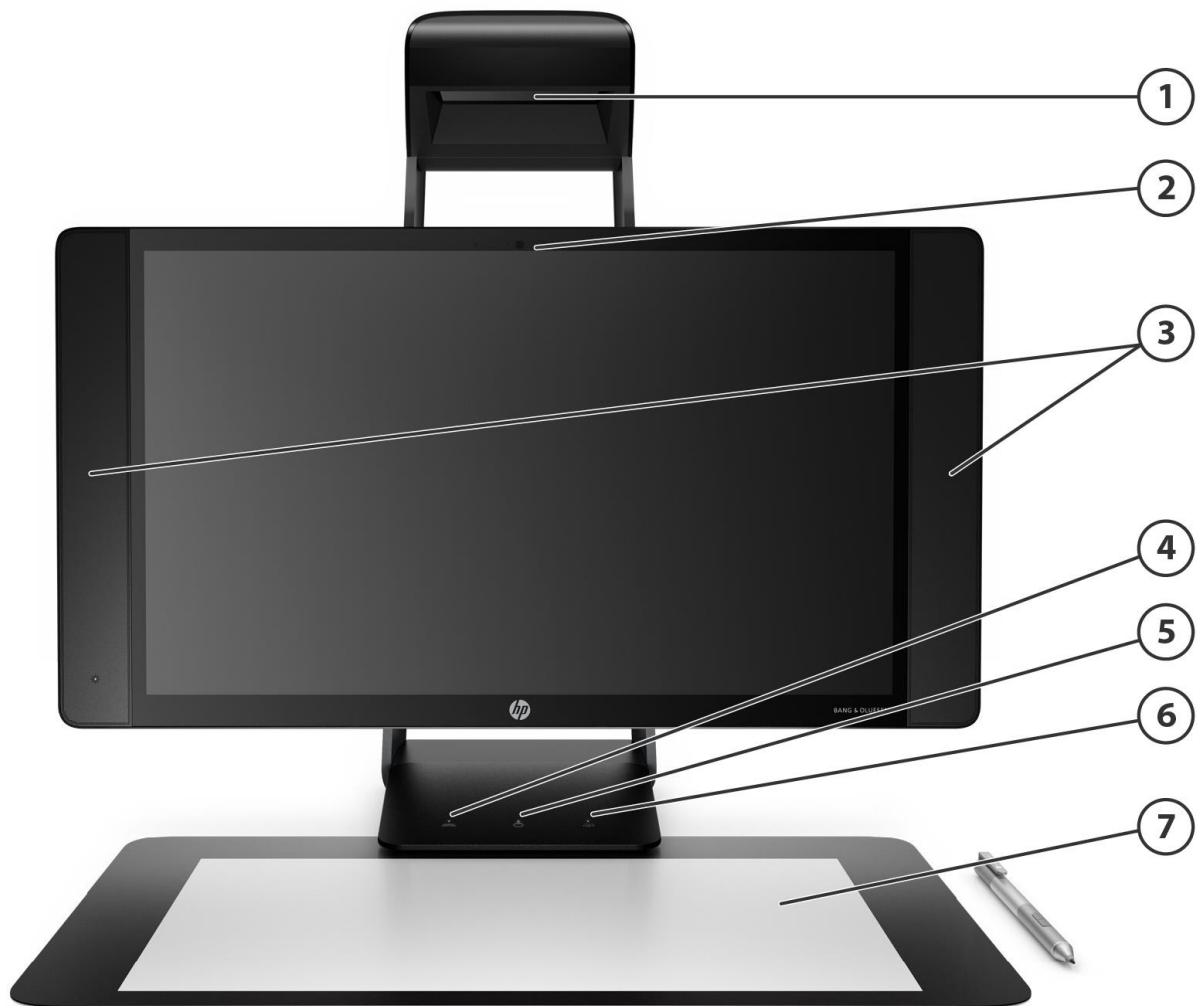


### Overview

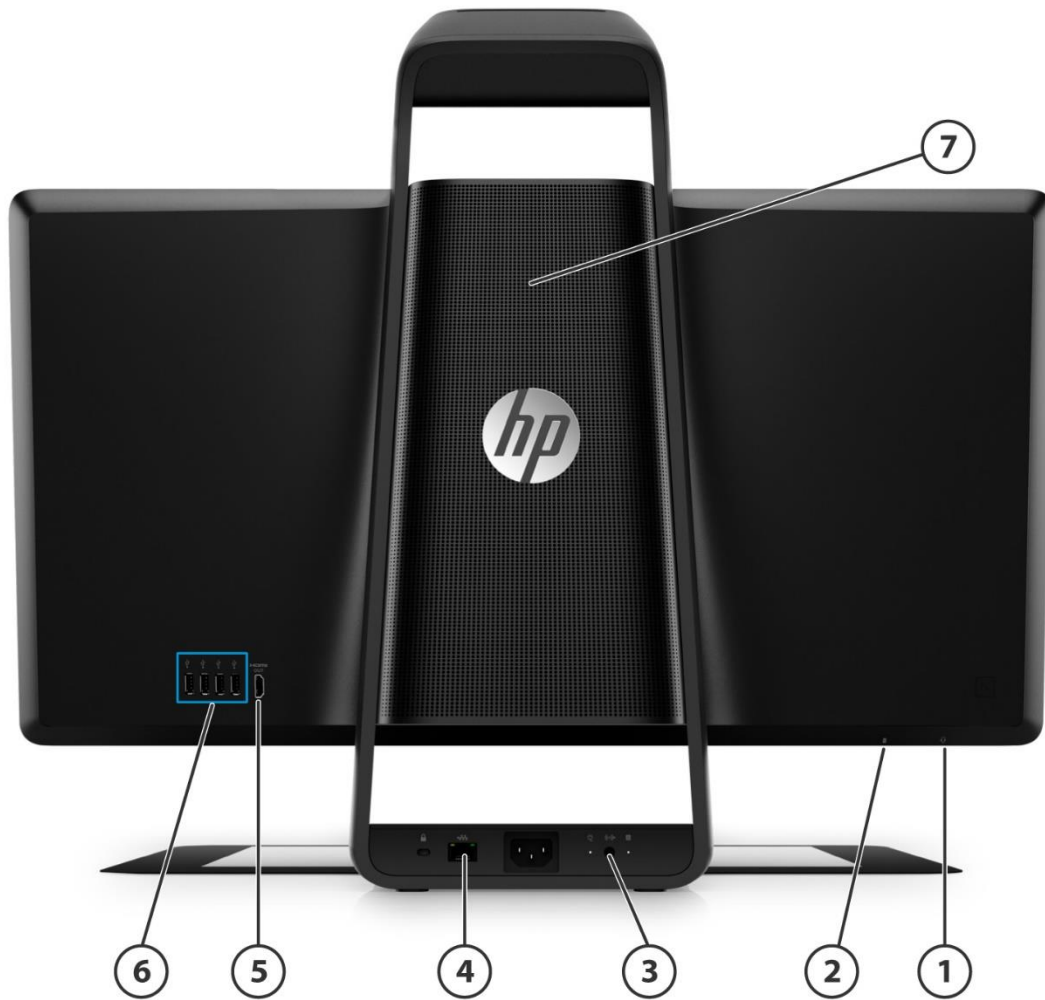
### Sprout Pro by HP G2



#### Front View

1. HP Illuminator: includes Sprout 3D Capture Module and 14 Megapixel hi-res camera
2. Web camera
3. Speakers
4. Sprout Connector control: Input WorkTool
5. Sprout Connector control: Home (launcher)
6. Sprout Connector control: Touch/projector enable/ disable
7. HP Touch Mat
8. HP Active Pen with App Launch

### Overview



#### Back View

1. Headphone/microphone combo jack (below display)
2. HP 3-in-1 Media reader (below display)
3. Audio line-out
4. RJ45 Gb Ethernet port
5. HDMI 2.0 out
6. USB Charging ports (4)
7. Hi-res DLP projector column

### Overview

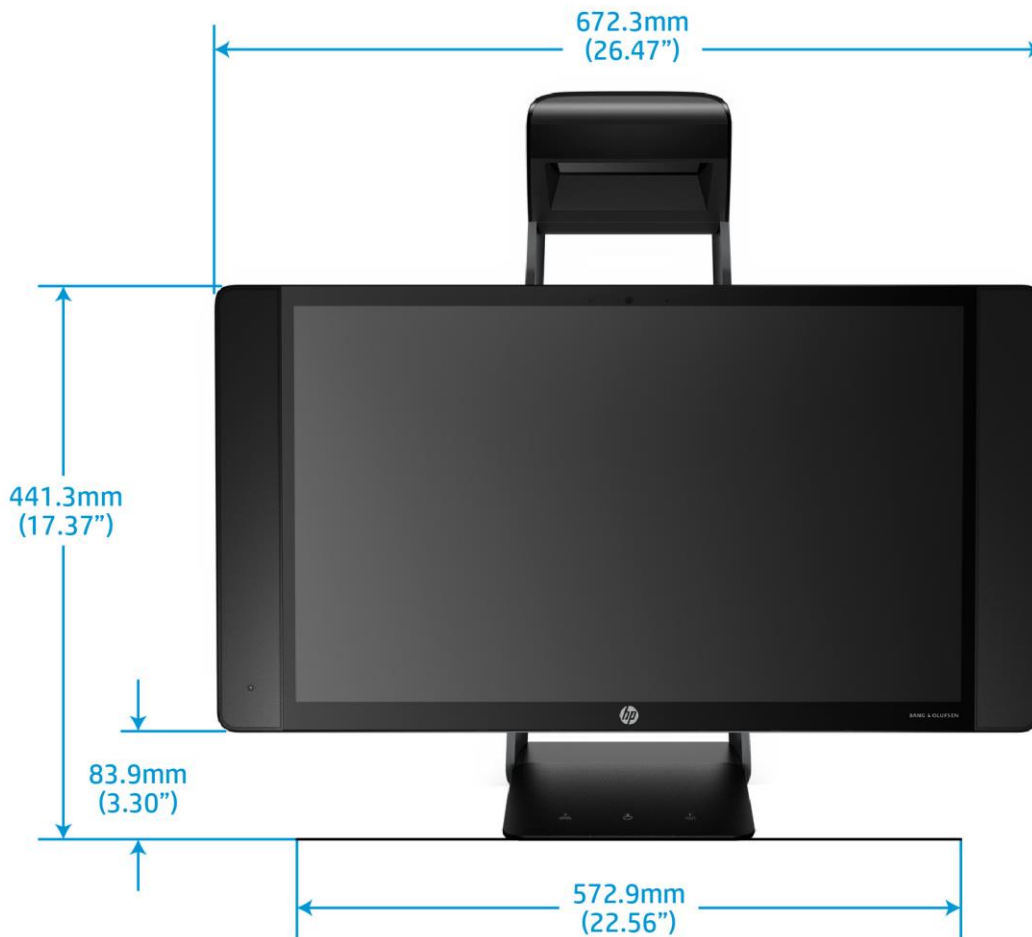
<b>Form Factor</b>	All in One
<b>Operating Systems</b>	Preinstalled: Windows 10 Pro 64-bit <b>Note:</b> Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for update. See <a href="http://www.windows.com">http://www.windows.com</a>
<b>Available Processors</b>	Intel® Core™ i7-7700T 2.9G 8M 35W CPU*  <b>Notes:</b> Processor numbers differentiate features within each processor family, not across different processor families. See: <a href="http://www.intel.com/products/processor_number/">http://www.intel.com/products/processor_number/</a> for details.  *Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering is not a measurement of higher performance.
<b>Color</b>	Black
<b>Bottom I/O</b>	1 Headphone/ Microphone combo jack 1 SD Media Slot
<b>Internal I/O</b>	N/A
<b>Rear I/O</b>	4 USB 3.0 ports (USB charging) 1 HDMI 2.0 output from Intel® HD graphics 1 GB Ethernet port 1 Audio Line-out
<b>Media Card Reader</b>	HP 3-in-1 Media Card Reader - Supports SD, SDHC, SDXC
<b>Chassis Dimensions</b>	<b>Unpackaged, with HP Touch Mat docked:</b> Height: 22.4" (56.8 cm) Width: 26.5" (67.2 cm) Depth: 23.1" (58.6 cm) Packaged: Height: 27.1" (68.8 cm) Width: 32.0"(81.3 cm) Depth: 15.6" (39.7 cm)
<b>Weight</b>	<b>Unpackaged: Main system + touch mat- 14.75 kg (32.5 lbs)</b> <b>Unpackaged: Main system + touch mat + keyboard + mouse + power cord – 15.60 kg (34.4 lbs)</b> Packaged: 20.85 kg (45.97 lbs)
<b>Power Supply</b>	350W Power Supply 85% Efficiency
<b>Chipset</b>	Intel® H170 Express chipset

### Overview

<b>Memory</b>	16GB DDR4-2400 SODIMM (2x8GB) RAM; Maximum 32GB (2x16GB)
<b>Memory disclaimers</b>	Note: Transfer rates up to 2400 MT/s
<b>HP Touch Mat</b>	21.3" diagonal, 20-point touch and stylus (HP Active Pen)-enabled mat with an ultra-resistant top coating
<b>HP High Resolution Camera</b>	14.6 Megapixel, downward facing camera
<b>Stylus</b>	HP Active Pen with App Launch
<b>Web Camera</b>	HP High Definition 2MP Webcam
<b>Integrated Display</b>	23.8" diagonal, 10-point touch-enabled, Full HD (1920x1080) Wide Viewing Angle, White LED backlit LCD Display
<b>Horizontal Display</b>	Projected display using DLP projector with 1920x1280 resolution adjusted for Keystone correction; max resolution 73 ppi;
<b>3D Camera</b>	HP Sprout 3D Capture Module
<b>Desktop Footprint</b>	Width: 26.5" (67.2 cm) Depth: 23.7" (58.6 cm)

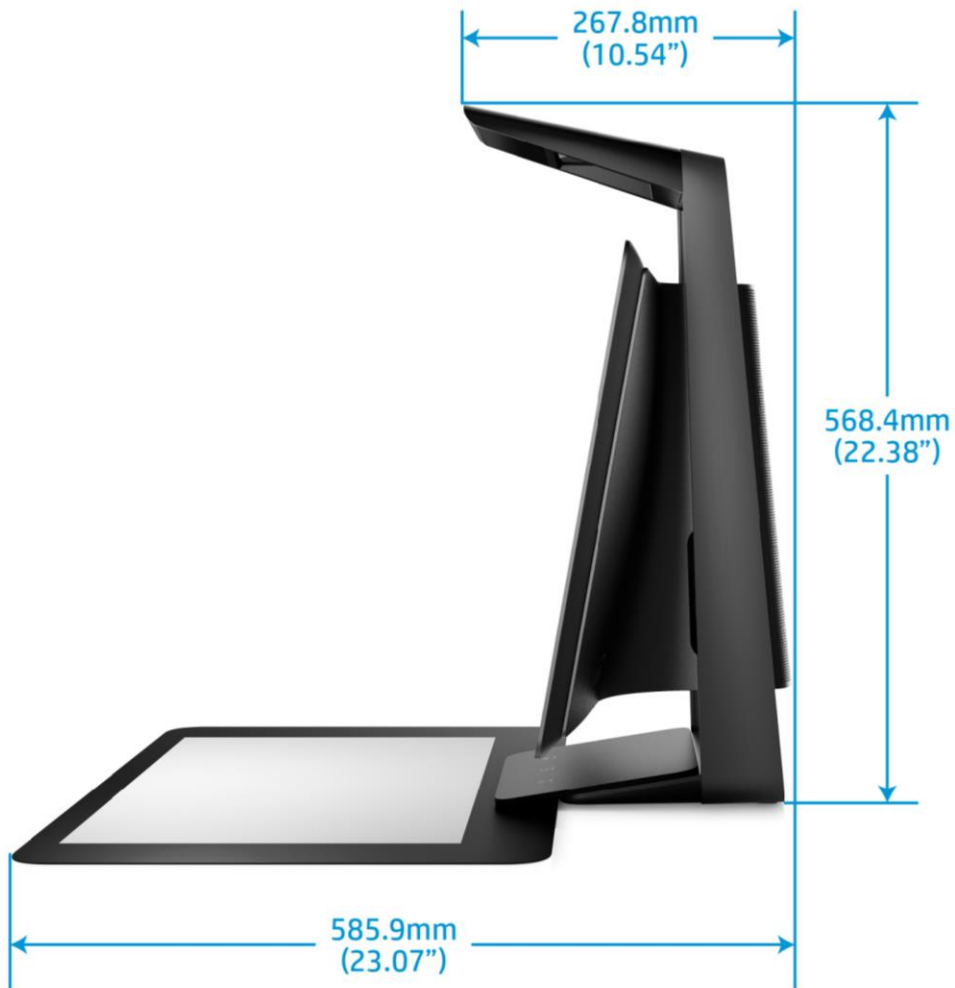
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### Overview



**Sprout Pro G2 front view dimensions**

### Overview



**Sprout Pro G2 side view dimensions**

### Supported Components

Processors	7th generation Intel® Core™ processor family	Factory Configured	Option Kit	Supported Multi
	Intel® Core™ i7-7700T 2.9 2400 4C CPU	Y	N	N
Monitors / Displays	23.8" diagonal, 10-point touch-enabled, Full HD (1920x1080) Wide Viewing Angle, White-LED backlit LCD Display			
	21.3" diagonal Touch Mat with 20-point touch-enabled display			
	<b>Note:</b> High-definition (HD) content is required to view high definition images.			
SATA SSDs		Factory Configured	Option Kit	Supported Multi
	512GB** 2.5" SATA 6Gbps SSD*	Y	N	N
	<b>Notes</b> **For storage drives, TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35GB of system disk is reserved for system recovery software.			
PCIe SSDs		Factory Configured	Option Kit	Option Kit Part Number
	<b>Sprout Pro Storage Devices</b>			
	256GB** M.2 2280 NVMe PCIe SSD	N	Y	N2N00AA
	512GB** M.2 2280 NVMe PCIe SSD	N	Y	N2N01AA
	<b>**For storage drives, TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35GB of system disk is reserved for system recovery software.</b>			
Hard Drive Controllers	Integrated SATA 6.0 Gb/s Controller		Y	N

### Supported Components

		Factory Configured	Option Kit	Supported Multi
<b>Graphics</b>	<b>Integrated Intel® HD Graphics</b>			
	Intel® HD 630 Graphics <sup>1</sup>	Y	N	1
	<b>Mid-range 3D</b>			
	NVIDIA® GeForce® GTX 960M	Y	N	1
<b>Note 1:</b> Part of the total system memory (RAM) is used for graphics/video performance. System memory dedicated to graphics/video performance is not available.				
<b>Memory</b>	<b>DDR4-2400 non-ECC Unbuffered SODIMMs - CTO</b>			
	HP 16GB (2x8GB) DDR4-2400 nECC RAM	Y		N
<b>AMO</b>	<b>DDR4-2400 ECC and non-ECC Unbuffered SODIMMs - AMO</b>			
	HP 16GB (1x16GB) DDR4-2400 SODIMM*	N	Y	Z9H53AA
<b>Note 1:</b> For use as a pair (2x16GB) to configure system memory of 32GB; this requires replacing the 16GB (2x8GB) memory DIMMs that are factory installed.				
<b>Multimedia and Audio Devices</b>	<b>Sprout Pro by HP Audio components</b>			
	Audio by Bang and Olufsen			
	Conexant CX9001 HD audio codec		Y	N
	High quality stereo speakers with 4W/channel		Y	N
	Dual digital MEMS microphones		Y	N
<b>Optical and Removable Storage</b>	HP 3-in-1 Media Card Reader			
<b>Networking and Communications</b>	Integrated Intel Ethernet Connection I219-V (Gigabit)		Y	N
	Intel® Dual Band Wireless-AC 8260 802.11ac/a/b/g/n dual-band NIC w/ Bluetooth® 4.2		Y	N
<b>Note 1:</b> "Gigabit" Ethernet indicates compliance with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.				
<b>Note 2:</b> Wireless access point and Internet service required and not included. Availability of public wireless access points limited. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the workstation to communicate with other 802.11ac WLAN devices. Actual speeds may vary.				

		Factory Configured	Option Kit	Option Kit Part Number
<b>Input Devices</b>	HP Active Pen with App Launch	Y	Y	T4Z24AA
	HP Comfort Grip Wireless Mouse	Y	Y	H2L63AA
	HP Wireless (Link-5) Keyboard	Y	Y	T6U20AA
<b>Other Hardware</b>	DLP Projector	Y	N	
	HP High-Resolution Camera (downward facing)	Y	N	



### Supported Components

HP Sprout 3D Capture Module	Y	N	
HP touch mat	Y	N	
Sprout by HP 3D Capture Stage	N	Y	Z4C03AA (localized)

### Software

Factory Configured	Option Kit	Factory Configured	Support Notes
WorkTools	Y	N	
HP PC Hardware Diagnostics UEFI	Y	N	
Discover HP TouchPoint Manager	Y	N	
HP ePrint Driver <sup>1</sup>	Y	N	Note 1

1. Requires an internet connection to HP web-enabled printer and HP ePrint account registration (for a list of eligible printers, supported documents and image types and other HP ePrintdetails, see <http://www.hp.com/go/eprint>)

### Operating Systems

Windows 10 Pro 64

### System Technical Specifications

#### SYSTEM BOARD

<b>System Board Form Factor</b>	Custom
<b>Processor Socket</b>	Single LGA 1151
<b>CPU Bus Speed</b>	Intel® DMI (Gen 3)
<b>Chipset</b>	Intel® H170 Express PCH
<b>Memory Expansion Slots</b>	2 DDR4 memory slots
<b>Memory Type Supported</b>	DDR4, SODIMM (Unbuffered), non-ECC
<b>Memory Modes</b>	Non-Interleaved for single channel. Interleaved when both channels are populated.
<b>Memory Speed Supported</b>	2400 MT/s DDR4
<b>Maximum Memory</b>	32GB
<b>Memory Configuration (Supported)</b>	8GB and 16GB non-ECC unbuffered SODIMMs are supported, as either 2x 8GB or 2x 16GB configurations.

<b>Supported Drive Interfaces</b>	<b>SATA</b>	Integrated (1) Serial ATA interfaces (6Gb/s SATA).
	<b>Serial Attached SCSI</b>	None
	<b>Integrated Graphics</b>	Intel® HD Graphics 630 Based on Unified Memory Architecture (UMA)- A region of system memory is reserved and dedicated to the graphics display. Support for Microsoft DirectX 12, OpenGL 5.0 and OpenCL 2.1 1 HDMI 2.0a graphics port; Max. resolution supported: • 4096x2304 @60Hz (HDMI 2.0a port only)
	<b>Network Controller</b>	Integrated Ethernet PHY Connection I219-V. Management capabilities: WOL, PXE 2.1 Intel® Dual Band Wireless-AC 8260 NIC. Supports the following radio technologies: • 802.11abgn+ac MIMO 2x2 • Bluetooth® 4.2
	<b>External SATA(eSATA)</b>	No
	<b>IDE connector</b>	No
	<b>Floppy connector</b>	No
	<b>Serial</b>	No
	<b>2nd Serial</b>	No
	<b>Parallel</b>	No
	<b>CD-ROM input (Audio)</b>	No
	<b>AUX input (Audio)</b>	No

#### IEEE 1394 Connector(s)

### System Technical Specifications

<b>USB Connector(s)</b>	<b>Rear</b>	4 USB 3.0 (USB charging)
	<b>Internal</b>	N/A
<b>HD Integrated Audio</b>	Yes	
<b>Flash ROM</b>	Yes	
<b>Chassis Fan Header</b>	Not applicable	
<b>CMOS Battery Holder - Lithium</b>	Yes	
<b>Integrated Trusted Platform Module</b>	Infineon SLB9670 discrete TPM Specification Version 2.0	
<b>Power Supply Headers</b>	Yes	
<b>Power Switch, Power LED &amp; Hard Drive LED Header</b>	Rear power switch Front power LED Rear hard drive activity LED	
<b>Clear Password Jumper</b>	Yes	
<b>Keyboard/Mouse</b>	Wireless	
	350W, 85% efficiency, wide-ranging, active PFC Power Supply	
<b>Operating Voltage Range</b>	90-264 VAC	
<b>Rated Voltage Range</b>	100–240 VAC	
<b>Rated Line Frequency</b>	50-60 Hz	
<b>Operating Line Frequency Range</b>	47–63 Hz	
<b>Rated Input Current</b>	4A @ 100-240V	
<b>Heat Dissipation</b>		
<b>ENERGY STAR® qualified (Config Dependent)</b>	Yes	
<b>FEMP Standby Power Compliant</b>	Yes, with Wake-on-LAN disabled: <1W in S5- Power Off	
<b>Built-in Self-Test (BIST) LED</b>	No	
<b>Surge Tolerant Full Ranging Power Supply (withstands power surges up to 2000V)</b>	Yes	
<b>ErP Lot 6- Tier 2 Compliance @ 230V (&lt;0.5W in S5- Power Off)</b>	Yes	
<b>Declared Noise Emissions (Entry-level and High-end configurations)</b>		

### System Technical Specifications

#### System Configuration (Entry level)

#### System Configuration (High-end)

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### Environmental Requirements

<b>Temperature</b>	Operating: 41° to 95° F (5° to 35° C) Non-operating: -22° to 140° F (-30° to 60° C)
<b>Humidity</b>	Operating: 10% to 80% RH, at 26° C, non-condensing
<b>Maximum Altitude</b>	Unpressurized: Operating: 6,561 ft (2,000 m) Storage: 15,000 ft (4,572 m)
<b>Cooling</b>	Above 5,000 ft (1524 m) altitude, maximum operating temperature is de-rated by 1.8° F (1° C) per 1,000 ft (305 m) elevation increase

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### Physical Security and Serviceability

<b>Access Panel</b>	Left and right rear cover removal and attach are tool-less. Access to the storage drives, memory and other components including system board requires tools.
<b>System Board</b>	Screw-In
<b>Configuration Record SW</b>	Yes
<b>Over-Temp Warning on Screen</b>	Yes
<b>Dual Function Rear Power Switch</b>	Yes, causes a fail-safe power off when held for 4 seconds
<b>Cable Lock Support</b>	Yes, Kensington Cable Lock (optional): Locks side cover and secures chassis from theft 3 mm x 7 mm slot at rear of system
<b>Serial, Parallel, USB, Audio, Network, Enable/Disable Port Control</b>	Yes, enables or disables USB, audio, and network ports
<b>Power-On Password</b>	Yes, prevents an unauthorized person from booting up the workstation
<b>Setup Password</b>	Yes, prevents an unauthorized person from changing the workstation configuration

### System Technical Specifications

<b>NIC LEDs (integrated) (Green &amp; Amber)</b>	Yes
<b>CPUs and Heatsinks</b>	A T-15 Torx or flat blade screwdriver and a Philips 0PH screwdriver is needed to remove the CPU/GPU thermal solution before the CPU can be removed. CPU removal is tool-less via LGA1151 socket.
<b>Power Supply Diagnostic LED</b>	Yes
<b>Rear Power Button</b>	Yes, ACPI multi-function
<b>Front Power LED</b>	Yes, white
<b>Rear Hard Drive Activity LED</b>	Yes, white
<b>Internal Speaker</b>	Yes, 4W/channel stereo speakers
<b>System/Emergency ROM Flash Recovery</b>	Recovers corrupted system BIOS.
<b>Cooling Solution</b>	Air cooled forced convection
<b>CPU Heatsink Fan</b>	Not applicable- Main blower is part of CPU/GPU thermal solution.
<b>Chassis Fan</b>	Not applicable. Main blower operates as the chassis fan.
<b>Memory Heatsink Fan</b>	No
<b>HP PC Hardware Diagnostics UEFI</b>	HP PC Hardware Diagnostics (UEFI) enables hardware level testing outside the operating system on many components. The diagnostics can be invoked by pressing F2 at POST, and is available as a download from HP Support.
<b>Access Panel Key Lock</b>	No
<b>ACPI-Ready Hardware</b>	Advanced Configuration and Power Management Interface (ACPI). <ul style="list-style-type: none"> <li>• Allows the system to wake from a low power mode.</li> <li>• Controls system power consumption, making it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system</li> </ul>
<b>Trusted Platform Module Chip</b>	Yes
<b>Integrated Chassis Handles</b>	No
<b>Power Supply</b>	Not user-serviceable or removable
<b>Flash ROM</b>	Yes
<b>Diagnostic Power Switch LED on board</b>	No

### System Technical Specifications

<b>Clear Password Jumper</b>	Yes
<b>Clear CMOS Jumper</b>	Yes, jumper
<b>CMOS Battery Holder</b>	Yes
<b>DIMM Connectors</b>	Yes

### BIOS

<b>PCI 3.0 Support</b>	Full BIOS support for PCI Express through industry standard interfaces.
<b>BIOS Power On</b>	Users can define a specific day-of-week and time for the system to power on.
<b>ROM Based Computer Setup Utility (F10)</b>	Review and customize system configuration settings controlled by the BIOS.
<b>System/Emergency ROM Flash Recovery with Video</b>	Recovers system BIOS in corrupted Flash ROM.
<b>SMBIOS</b>	System Management BIOS 2.7.1, for system management information.
<b>Boot Control</b>	Disables the ability to boot from removable media on supported devices.
<b>ACPI (Advanced Configuration and Power Management Interface)</b>	Allows the system to enter and resume from low power modes (sleep states). Enables an operating system to control system power consumption based on the dynamic workload. Makes it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system. Supports ACPI 4.0 for full compatibility with 64-bit operating systems.
<b>Remote Wakeup/Remote Shutdown</b>	Wake on LAN from S4/S5
<b>ASF 2.0 Compliant</b>	No.
<b>Instantly Available PC (Suspend to RAM - ACPI sleep state S3)</b>	Allows for very low power consumption with quick resume time.
<b>Remote System Installation via F12 (PXE 2.1) (Remote Boot from Server)</b>	Allows a new or existing system to boot over the network and download software, including the operating system.
<b>ROM revision levels</b>	Reports the system BIOS revision level in Computer Configuration Utility (F10 Setup). Version is available through an industry standard interface (SMBIOS) so that management SW applications can use and report this information.

### System Technical Specifications

<b>System board revision level</b>	Allows management SW to read revision level of the system board.
<b>Start-up Diagnostics (Power-on Self-Test)</b>	Assesses system health at boot time.
<b>Auto Setup when new hardware installed</b>	System automatically detects addition of new hardware.
<b>Keyboard-less Operation</b>	The system can be booted without a keyboard.
<b>Localized ROM Setup</b>	System Configuration Utility (F10 Setup) menus are mapped to the applicable local languages.
<b>Asset Tag</b>	The user or IT administrator to set a unique tag string in non-volatile memory.
<b>Per-slot Control</b>	Allows I/O slot parameters (option ROM enable/disable) to be configured individually.
<b>Adaptive Cooling</b>	Control parameters are set according to detected hardware configuration for optimal acoustics.
<b>Pre-boot Diagnostics</b>	(Pre-video) critical errors are reported via beeps.
<b>Digitally and Cryptographically Signed BIOS</b>	Helps to prevent the installation of unauthorized versions of a BIOS (a rogue BIOS) from a virus, malware, or other code that could lead to compromised system security, data access, physical service, or even system board replacement.
<b>Boot Block Emergency Recovery Mode (BIOS Recovery)</b>	The HP BIOS offers a write-protected boot block ROM that provides recovery from a failed flashing of the computer BIOS. This special recovery mode prevents the system from becoming unusable or “bricked” when a BIOS update is interrupted.
<b>Industry Standard Specification Support</b>	
<b>Industry Standard</b>	Revision Supported by the BIOS
<b>UEFI Specification Revision</b>	UEFI 2.3.1
<b>ACPI</b>	Advanced Configuration and Power Management Interface, Version 4.0
<b>CD Boot</b>	"El Torito" Bootable CD-ROM Format Specification Version 1.0
<b>EHCI</b>	No. The xHCI Extensible Host Controller, Revision 1.0 Interface is supported
<b>PCI</b>	No
<b>PCI Express</b>	PCI Express Base Specification, Revision 2.0; PCI Express Base Specification, Revision 3.0.
<b>SATA</b>	SATA-IO SATA Revision 3.0 Specification
<b>SPD</b>	PC SDRAM Serial Presence Detect (SPD) Specification, Revision 1.2B

### System Technical Specifications

<b>TPM</b>	Trusted Computing Group TPM Specification Version 2.0.
<b>USB</b>	Universal Serial Bus Revision 1.1 Specification Universal Serial Bus Revision 2.0 Specification Universal Serial Bus Revision 3.0 Specification
<b>SMBIOS</b>	System Management BIOS 2.7, for system management information.
<b>NVMe (NVM Express)</b>	Applicable to M.2 2280 M-key expansion slot for M.2 PCIe SSDs

### Social and Environmental Responsibility

**Eco-Label Certifications & 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® (energy-saving features available on selected configurations -Windows only)
- US Federal Energy Management Program (FEMP) IT ECO declaration

**Batteries** The battery in this product complies with EU Directive 2006/66/EC  
Battery size: CR2032 (coin cell)  
Battery type: Lithium Metal

Batteries used in the product do not contain:

- Mercury greater than 5ppm by weight
- Cadmium greater than 10ppm by weight
- Lead greater than 40 ppm by weight.

**Restricted Material Usage** This product meets the material restrictions specified in HP's General Specification for the the Environment: <http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf>

HP Inc. 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.

**Low Halogen Statement** This product is low halogen except for power cords, cables and peripherals, as well as the following internal components: Projector and 3D camera which are not Low Halogen.

**End-of-Life Management and Recycling** HP Inc. 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/recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. This product is greater than 90% recyclable by weight when properly disposed of at end of life.

**HP Inc. 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>

**Additional Information** • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.



### System Technical Specifications

- Plastic parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product is >90% recycle-able when properly disposed of at end of life.

EPEAT® Gold - ENERGY STAR® certified configurations of this product are in compliance with the IEEE 1680 (EPEAT) standard Registration varies by country. See <http://ww2.epeat.net/CompanyDetail.aspx?CompanyID=24> for registration status in your country.

#### Packaging

Product packaging meets the HP General Specification for the Environment at [http://www.hp.com/hpinfo/globalcitizenship/society/gen\\_specifications.html](http://www.hp.com/hpinfo/globalcitizenship/society/gen_specifications.html)

- Does not contain restricted substances listed in HP Standard 011-1 General Specification for the Environment
- Does not contain ozone-depleting substances (ODS)
- Does not contain heavy metals (lead, mercury, cadmium or hexavalent chromium) in excess of 100 ppm sum total for all heavy metals listed
- Maximizes the use of post-consumer recycled content materials in packaging materials
- All packaging material is recyclable
- All packaging material is designed for ease of disassembly
- Reduced size and weight of packages to improve transportation fuel efficiency
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards formatting

#### Packaging Materials

##### External

Carton made from corrugated fiberboard with at least 20% recycled content.

#### Manageability

##### System Software Manager

- Program to proactively communicate Product Change Notifications (PCNs) and Customer Advisories by email to customers, based on a user-defined profile.
- PCNs provide advance notification of hardware and software changes to be implemented in the factory providing time to plan for transition.
- Customer Advisories provide concise, effective problem resolution, greatly reducing the need to call technical support.

#### Global Series SKUs

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## System Technical Specifications - Processors

Intel® Core™ i7-7700T 2.9 2400 4C CPU

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### Technical Specifications – Storage / Hard Drives & SSDs

#### Sprout Pro Storage Devices

##### Sprout Pro Storage Devices (SATA SSDs)

<b>512GB 2.5" SATA 6Gbps SSD</b>	<b>Capacity</b>	512GB	
	<b>Protocol</b>	SATA	
	<b>Form Factor</b>	2.5"	
	<b>NAND Type</b>	MLC	
	<b>Physical Size (Height)</b>	0.27 in; 0.68 cm	
	<b>Physical Size (Width)</b>	3.94 in; 10.02 cm	
	<b>Interface</b>	SATA 6.0 Gbps	
	<b>Performance</b>	<b>Sequential Read</b>	Up to 530 MB/s
		<b>Sequential Write</b>	Up to 515 MB/s
		<b>Random Read</b>	Up to 97 K IOPS
	<b>Random Write</b>	Up to 88 K IOPS	

##### Sprout Pro Storage Devices (PCIe SSDs)

<b>256GB M.2 2280 NVMe PCIe SSD</b>	<b>Capacity</b>	256GB	
	<b>Protocol</b>	PCI Express	
	<b>Form Factor</b>	M.2 2280	
	<b>Controller</b>	NVM Express	
	<b>NAND Type</b>	MLC	
	<b>Physical Size (Height)</b>	0.09 in; 0.238 cm	
	<b>Physical Size (Width)</b>	0.87 in; 2.2 cm	
	<b>Media Diameter</b>	Not appl in; NaN cm	
	<b>Interface</b>	PCI Express Gen3 x4	
	<b>Cache</b>	NA	
	<b>Operating Temperature</b>	32° to 158° F (0° to 70° C)	
	<b>Performance</b>	<b>Sequential Read</b>	Up to 3100 MB/s
		<b>Sequential Write</b>	Up to 1400 MB/s
		<b>Random Read</b>	Up to 330K IOPS
		<b>Random Write</b>	Up to 280K IOPS
<b>PCI Express Specification</b>	Compliant with PCI Express Base Specification Rev. 3.0 Compliant with PCI Express CEM Specification Rev. 3.0		
<b>NVM Express Specification</b>	<ul style="list-style-type: none"> <li>Compliant with NVM Express Specification Rev. 1.2 (Partial)</li> </ul>		

<b>512GB M.2 2280 NVMe PCIe SSD</b>	<b>Capacity</b>	512GB
	<b>Protocol</b>	PCI Express
	<b>Form Factor</b>	M.2 2280
	<b>Controller</b>	NVM Express
	<b>NAND Type</b>	MLC
	<b>Physical Size (Height)</b>	0.09 in; 0.238 cm

### Technical Specifications – Storage / Hard Drives & SSDs

<b>Physical Size (Width)</b>	0.87 in; 2.2 cm
<b>Media Diameter</b>	Not appl in; NaN cm
<b>Interface</b>	PCI Express Gen3 x4
<b>Cache</b>	NA
<b>Operating Temperature</b>	32° to 158° F (0° to 70° C)
<b>Performance</b>	<b>Sequential Read</b> Up to 3200 MB/s <b>Sequential Write</b> Up to 1700 MB/s <b>Random Read</b> Up to 330K IOPS <b>Random Write</b> Up to 300K IOPS
<b>PCI Express Specification</b>	Compliant with PCI Express Base Specification Rev. 3.0 Compliant with PCI Express CEM Specification Rev. 3.0
<b>NVM Express Specification</b>	<ul style="list-style-type: none"><li>Compliant with NVM Express Specification Rev. 1.2 (Partial)</li></ul>

### Technical Specifications – Graphics

#### Sprout Pro Discrete Graphics

<b>NVIDIA® GeForce® GTX 960M</b>	<b>Form Factor</b>	GPU installed on motherboard
	<b>Graphics Controller</b>	NVIDIA N16P-GX
	<b>Bus Type</b>	PCIe Gen3 x16
	<b>Memory</b>	2GB GDDR5 memory
	<b>Connectors</b>	NA
	<b>Shading Architecture</b>	Shader Model 5.0
	<b>Supported Graphics APIs</b>	DirectX 12 Support, along with previous versions; OpenGL 4.5 OpenCL 1.2

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## Technical Specifications – Multimedia and Audio Devices

**Sprout Pro by HP Audio components**   **Speakers**

High quality stereo speakers with 4W/channel

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### Technical Specification – Other Hardware

#### DLP Projector (Sprout Pro G2)

The Sprout Pro horizontal display is based on a DLP projector which is designed using LED illumination, and operates at a fixed throw distance and screen tilt angle. It produces sufficient light to render a high quality display under a broad range of ambient illumination conditions.

<b>DLP Projector</b>	<b>Native display resolution</b>	1920x 1280
	<b>Resolution as displayed on the mat (adjusted for Keystone correction)</b>	
	<b>Maximum Resolution</b>	100 PPI
	<b>Median Resolution</b>	95 PPI
	<b>Display refresh rate</b>	60 Hz
	<b>Minimum Brightness</b>	220 lumens
	<b>Contrast Ratio</b>	>800:1
	<b>Peak/Typical power consumption</b>	<150W/ <80W
	<b>Environmental Compliance</b>	Yes <sup>1</sup>

**NOTE 1:** Assembly and all components will comply with HP's GSE, HF/LH and other applicable environmental specifications.

#### HP Touch Mat (Sprout Pro G2)

The HP Touch Mat is a touch and active stylus-enabled human interface device which also provides a projector screen surface.

<b>Active Area Aspect Ratio</b>	3:2
<b>Overall Dimensions</b>	22.6" x 15.5" (573 x 394 mm)
<b>Interface</b>	USB 2.0
<b>Touch Technology</b>	PCT (Projected Capacitance)
<b>Touch Points</b>	True Multi-Touch, 20 points recognized by Windows 10
<b>Touch Detection</b>	Fingers, HP Active Pen
<b>Accuracy</b>	± 1 mm
<b>Hover Sensing</b>	~8mm with HP Active Pen
<b>Buttons</b>	3 buttons on Sprout Connector: Input WorkTool, Home (WorkTool launcher), Touch/ Projector enable/disable.
<b>Mechanical properties</b>	Flexible
<b>Stylus Support</b>	Capacitance, HP Active Pen
<b>OS Requirements</b>	Microsoft Windows 10 WHQL
<b>Active Area IR Reflectivity</b>	58% ± 3
<b>Total Mat Thickness</b>	2.2 mm
<b>Refresh Rate</b>	> 100 Hz
<b>Latency</b>	< 18 msec
<b>Surface Finish</b>	Matte, Non-glare ~ 10 GU
<b>ASTM D 1308-02<sup>ε1</sup> (24 hour duration spot test)</b>	Scratch, Abrasion Resistant Water Proof, Spill Proof
<b>ASTM F 1598-95 (Re-approved 2002) - (Spot)</b>	Dry Erase Marker Wipe Off Permanent Marker Cleanable

### Technical Specification – Other Hardware

<b>Test Method) - (24 hour duration)</b>	Cleanable with Household Cleaners (alcohol free cleaners that have no strong chemicals; see Sprout User Guide for detailed instructions) Mar/Blemish resistant to pressure from ball point pen (Diameter 0.03in at 250 grams).
<b>Scratch Resistance*</b>	Consistent with Cosmetic Inspection 45°viewing angle: No scratch detected below 100 grams applied force with Balance Beam loop stylus.
<b>Wear Resistance*</b>	Cosmetically unaffected when subjected to 1000 rubs with “0000” grade 500 gram load.
<b>*Note:</b>	<a href="#">Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.</a>

### HP High-Resolution camera (downward facing)

The Sprout Illuminator includes the HP High Resolution Camera which is a mounted in a fixed location and orientation. It is a downward facing camera that functions as a high resolution, visible wavelength image capture device for objects placed on the above the Sprout Touch Mat. It includes an extended command interface implemented via a UVC extension DLL. It is Windows Logo certified.

<b>Sensor native resolution</b>	4416 x 3312 (14.6 Megapixel)
<b>Interface: command + data</b>	USB 3.0
<b>Frame Rates:</b>	
<b>4416 x 3312</b>	7fps max
<b>2208 x 1656</b>	30fps max
<b>1104 x 828</b>	60fps max
<b>Output format</b>	YUV422
<b>Motorized adjustable focus/ zoom</b>	No
<b>Front focal distance range</b>	570mm nominal
<b>Field of View</b>	49.3° horizontal, 38.0° vertical, 60.0° diagonal
<b>Relative Illumination</b>	>60% at max FOV
<b>Typical power consumption</b>	4.5W
<b>Environmental Compliance</b>	Yes <sup>1</sup>

**NOTE 1:** Assembly and all components will comply with HP’s GSE, low halogen and other applicable environmental specifications.

### HP Sprout 3D Capture Module (downward facing)

Customized from Orbbec Astra S Mini; works with HP Camera 3D software.

<b>Scanning technology</b>	3D depth camera
<b>3D resolution</b>	~1-10mm depending on object and material
<b>3D point accuracy</b>	Variable across object surface depending on features
<b>Color texture</b>	Photo realistic color texture =>200 ppi (Note: seams between images stitched together may have distortions)
<b>Scanned object size</b>	200x200x200 mm
<b>Export formats</b>	OBJ
<b>Use cases (sample list)</b>	“3D Photo” for communicating and 3D content creation; Social sharing (e.g. Sketchfab);



### Technical Specification – Other Hardware

<b>Caveats</b>	Content creation for gaming/AR/VR Not intended for detailed 3D reproduction; Only rigid parts can be scanned; Black, shiny, transparent, glossy, highly reflective surfaces cannot scan; Thin, highly symmetric, featureless objects cannot scan
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### Sprout by HP 3D Capture Stage (for use with HP 3D Scan Software Pro v5 software)

AMO part # Z4C03AA (localized)

<b>Product Specifications:</b>	<ul style="list-style-type: none"><li>• 360-degree rotation with a 15-degree tilt for maximum scan coverage.</li><li>• Scan objects up to 4.4 lb (2 kg) and up to 7.5 in (190 mm) tall</li></ul>
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<b>Product Limitations:</b>	The object being scanned must fit on the mat in the volume of light emitted by the projector - approximately 12 inches by 16 inches on the mat and decreasing toward the projector.
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Objects that are reflective, transparent, have very uneven textures such as fur, are very dark in color, or are highly symmetrical do not scan well.

Sprout 3D Capture is not intended for users needing precision scans such as for product design or creating museum-quality scans.

<b>What's in the box:</b>	<ul style="list-style-type: none"><li>• 3D Capture Stage</li><li>• USB cable</li><li>• Quick Start Guide</li><li>• Warranty card</li></ul>
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<b>Packaged Product Dimensions</b>	10.0 in (H) x 9.3 in (W) x 2.8 in (D) 255.0 mm x 237.0 mm x 72.0 mm
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<b>Unpackaged Product Dimensions</b>	1.59 in (H) x 8.08 in (W) x 8.22 in (D) 40.5 mm x 205.2 mm x 208.9 mm
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<b>Packaged Product Weight</b>	4.27 lb 1.94 kg
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<b>Unpackaged Product Weight</b>	2.0 lb 0.914 kg
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<b>Warranty and support</b>	<ul style="list-style-type: none"><li>• One-year, worldwide parts-and-labor limited warranty</li><li>• 24x7 technical support</li></ul>
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### WorkTools descriptions

<b>Capture</b>	Universal camera control for 2D and videos, with live preview and zooming.
<b>Camera 3D</b>	Scan your physical objects in a matter of seconds by simply holding and rotating the object under the illuminator to create high-quality 3D models
<b>Stage</b>	Drag and drop, view, sort, edit and transfer 2D content in a visual, intuitive way.
<b>Control</b>	Control allows you to adjust Sprout Pro G2 hardware settings. Adjust monitor brightness and touch mat settings, such as turning the touch sensors on or off, and aligning the projector
<b>Input</b>	The virtual keyboard is displayed on the touch mat, which features automatic palm rejection
<b>Launcher</b>	Quickly launch your Sprout WorkTools using Sprout's Home buckle button at the top of the touch mat
<b>Welcome</b>	This initial setup and guidance will enable you to start using your Sprout Pro G2 quickly

### Technical Specification – Software

**Discover** Explore and expand your Sprout experience using this app. This is also where you can get updates to all of your Sprout Pro G2 software (requires internet connection for software updates).

#### HP 3D Scan Software Pro v5

<b>Scanning technology</b>	Structured light
<b>3D resolution</b>	250-500 microns (0.25 – 0.50 mm)
<b>3D point accuracy</b>	Spec under development
<b>Color texture</b>	Photo realistic color texture =>200 ppi
<b>Scanned object size</b>	200x200x200 mm w/o optional 3D Capture Stage 160 (H) x200 (W)x200 (D) mm with optional 3D Capture Stage
<b>Export formats</b>	OBJ, STL, PLY
<b>Use cases (sample list)</b>	Reverse engineering, archiving, reference geometry for CAD design workflows, parts inspection, metrology
<b>Caveats</b>	Black, shiny, transparent, glossy, highly reflective surfaces cannot scan.

#### 3D scanning solutions: Feature Comparison Table

Feature	Camera 3D	HP 3D Scan Software Pro v5
<b>Scanning technology</b>	3D depth camera	Structured light
<b>3D resolution</b>	~1-10mm depending on object and material	250-500 microns (0.25 – 0.50 mm)
<b>3D point accuracy</b>	Variable across object surface depending on features	Spec under development
<b>Color texture</b>	Photo realistic color texture =>200 ppi (Note: seams between images stitched together may have distortions)	Photo realistic color texture =>200 ppi
<b>Scanned object size</b>	200x200x200 mm	200x200x200 mm w/o Capture Stage 160 (H) x200 (W)x200 (D) mm w/ Capture Stage
<b>Export formats</b>	OBJ	OBJ, STL, PLY
<b>Use cases (sample list)</b>	“3D Photo” for communicating and 3D content creation; Social sharing (e.g. Sketchfab); Content creation for gaming/AR/VR	Reverse engineering, archiving, reference geometry for CAD design workflows, parts inspection, metrology
<b>Caveats</b>	Not intended for detailed 3D reproduction; Only rigid parts can be scanned; Black, shiny, transparent, glossy, highly reflective surfaces and thin, highly symmetric, featureless objects cannot scan	Black, shiny, transparent, glossy, highly reflective surfaces cannot scan.

### Summary of Changes

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
March 1, 2017	From v1 to v2	<b>Changed</b>	Callouts, Memory, Storage and part numbers, Audio, HP Sprout 3D Capture Module and HP 3D Scan Software Pro v5 specs
April 3, 2017	From v2 to v3	Added	p26 (Sprout by HP 3D Capture Stage specs), added Worktools descriptions and 3D Scanning Feature comparison table.
		Changed	p8 (memory footnote), p9 corrected part number field for 3D Capture Stage.
		Removed	Putty strips from What's in the box section.
April 12, 2017	From v3 to v4	Changed	Front view picture callout, Front view picture dimensions
May 1, 2017	From v4 to v5	Changed	Back view picture callout
May 16, 2017	From v5 to v6	Changed	WorkTools descriptions section
June 1, 2017	From v6 to v7	Changed	The Weight section

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