OptiPlex 5000 Small Form Factor

Technical Guidebook

Regulatory Model: D17S
Regulatory Type: D17S002
March 2022
Rev. A00

Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

Contents

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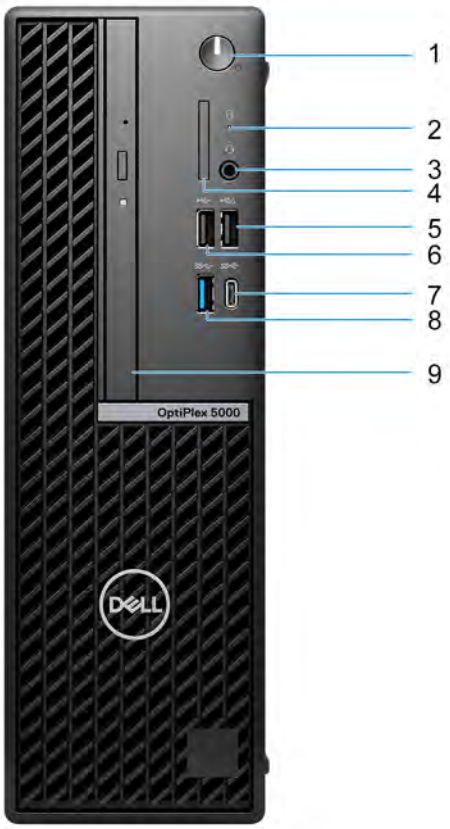
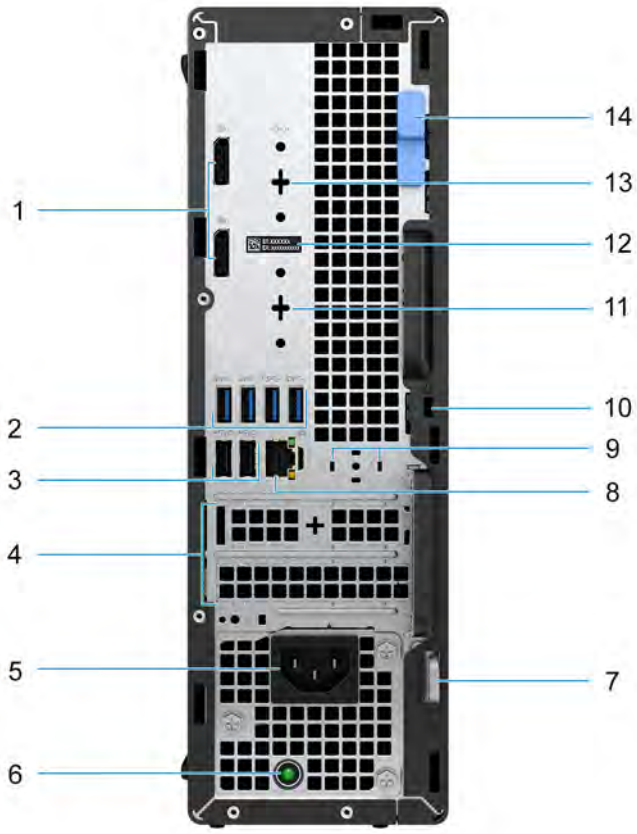
Views of OptiPlex 5000 Small Form Factor

Front



1. Power button
2. Hard-drive activity light
3. Universal audio port
4. SD-card reader (optional)
5. USB 2.0 port with PowerShare
6. USB 2.0 port
7. USB 3.2 Gen 2 Type-C port
8. USB 3.2 Gen 1 port
9. Slim optical drive (optional)

Back



1. Two DisplayPort 1.4 ports
2. Four USB 3.2 Gen 1 ports
3. Two USB 2.0 ports with Smart Power On
4. Two expansion card slots
5. Power port
6. Power-supply diagnostics light
7. Padlock ring
8. RJ45 Ethernet port
9. External antenna slot
10. Kensington security-cable slot
11. HDMI 2.0b/DisplayPort 1.4/VGA/USB 3.2 Gen 2 type-C port with DisplayPort Alt Mode (optional)
12. Service Tag label
13. Serial/PS2 port (optional)
14. Release latch

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Specifications of OptiPlex 5000 Small Form Factor

Dimensions and weight

The following table lists the height, width, depth, and weight of your OptiPlex 5000 Small Form Factor.

Table 1. Dimensions and weight

Description	Values
Height:	
Front height	290.00 mm (11.42 in.)
Rear height	290.00 mm (11.42 in.)
Width	92.60 mm (3.65 in.)
Depth	292.80 mm (11.53 in.)
Weight (maximum)	• Minimum: 3.84 kg (8.47 lb) • Maximum: 5.16 kg (11.39 lb) **NOTE:** The weight of your computer depends on the configuration ordered and manufacturing variability.

Processor

The following table lists the details of the processors that are supported by your OptiPlex 5000 Small Form Factor .

Table 2. Processor

Description	Option one	Option two	Option three	Option four	Option five	Option six	Option seven
Processor type	12th Generation Intel Core i3-12100	12th Generation Intel Core i3-12300	12th Generation Intel Core i5-12400	12th Generation Intel Core i5-12500, vPro	12th Generation Intel Core i5-12600, vPro	12th Generation Intel Core i7-12700, vPro	Intel Pentium Gold G7400
Processor wattage	60 W	60 W	65 W	65 W	65 W	65 W	46 W
Processor core count	4	4	6	6	6	12	2
Processor thread count	8	8	12	12	12	20	4
Processor speed	3.30 GHz to 4.30 GHz	3.50 GHz to 4.40 GHz	2.50 GHz to 4.40 GHz	3.00 GHz to 4.60 GHz	3.30 GHz to 4.80 GHz	2.10 GHz to 4.90 GHz	Up to 3.70 GHz

Table 2. Processor (continued)

Description	Option one	Option two	Option three	Option four	Option five	Option six	Option seven
Processor cache	12 MB	12 MB	18 MB	18 MB	18 MB	25 MB	6 MB
Integrated graphics	Intel UHD Graphics 730	Intel UHD Graphics 730	Intel UHD Graphics 730	Intel UHD Graphics 770	Intel UHD Graphics 770	Intel UHD Graphics 770	Intel UHD Graphics 710

Chipset

The following table lists the details of the chipset supported by your OptiPlex 5000 Small Form Factor.

Table 3. Chipset

Description	Values
Chipset	Intel Q670
Processor	12th Generation Intel Core i3/i5/i7 and Intel Pentium Gold
DRAM bus width	64-bit, dual-channel
Flash EPROM	32 MB + 16 MB
PCIe bus	Up to Gen 4.0

Operating system

Your OptiPlex 5000 Small Form Factor supports the following operating systems:

- Windows 11 Home, 64-bit
- Windows 11 Pro, 64-bit
- Windows 11 Downgrade (Windows 10 image)
- Windows 11 Pro National Education, 64-bit
- Windows 11 CMIT Government Edition, 64-bit (China only)
- Kylin Linux Desktop version 10.1 (China only)
- Ubuntu Linux 20.04 LTS, 64-bit

Memory

The following table lists the memory specifications of your OptiPlex 5000 Small Form Factor.

Table 4. Memory specifications

Description	Values
Memory slots	Four UDIMM slots
Memory type	Dual-channel DDR4
Memory speed	3200 MHz
Maximum memory configuration	128 GB

Table 4. Memory specifications (continued)

Description	Values
Minimum memory configuration	4 GB
Memory size per slot	4 GB, 8 GB, 16 GB, and 32 GB
Memory configurations supported	• 4 GB, 1 x 4 GB, DDR4, 3200 MHz, single-channel • 8 GB, 1 x 8 GB, DDR4, 3200 MHz, single-channel • 8 GB, 2 x 4 GB, DDR4, 3200 MHz, dual-channel • 16 GB, 1 x 16 GB, DDR4, 3200 MHz, single-channel • 16 GB, 2 x 8 GB, DDR4, 3200 MHz, dual-channel • 16 GB, 4 x 4 GB, DDR4, 3200 MHz, dual-channel • 32 GB, 1 x 32 GB, DDR4, 3200 MHz, single-channel • 32 GB, 2 x 16 GB, DDR4, 3200 MHz, dual-channel • 32 GB, 4 x 8 GB, DDR4, 3200 MHz, dual-channel • 64 GB, 2 x 32 GB, DDR4, 3200 MHz, dual-channel • 64 GB, 4 x 16 GB, DDR4, 3200 MHz, dual-channel • 128 GB, 4 x 32 GB, DDR4, 3200 MHz, dual-channel

Memory matrix

The following table lists the memory configurations supported for your OptiPlex 5000 Small Form Factor.

Table 5. Memory matrix

Configuration	Slot			
	UDIMM1	UDIMM2	UDIMM3	UDIMM4
4 GB DDR4	4G			
8 GB DDR4	4G	4G		
8 GB DDR4	8G			
16 GB DDR4	8G	8G		
16 GB DDR4	16G			
32 GB DDR4	8G	8G	8G	8G
32 GB DDR4	16G	16G		
32 GB DDR4	32G			
64 GB DDR4	16G	16G	16G	16G
64 GB DDR4	32G	32G		
128 GB DDR4	32G	32G	32G	32G

External ports

The following table lists the external ports of your OptiPlex 5000 Small Form Factor.

Table 6. External ports

Description	Values
Network port	One RJ45 Ethernet port (rear)
USB ports	• One USB 2.0 port with PowerShare (front) • One USB 2.0 port (front) • One USB 3.2 Gen 1 port (front) • One USB 3.2 Gen 2 Type-C port (front) • Four USB 3.2 Gen 1 ports (rear) • Two USB 2.0 ports with Smart Power On (rear)
Audio port	• One Universal audio port (front)
Video port	• Two DisplayPort 1.4 ports • One HDMI 2.0b/DisplayPort 1.4/VGA/USB 3.2 Gen 2 type-C port with DisplayPort Alt Mode (optional) **NOTE:** Download and install the latest Intel Graphics driver from www.dell.com/support to enable multiple displays.
Media-card reader	One SD-card 4.0 slot (front, optional)
Power-adapter port	Not supported
Security-cable slot	• One Kensington lock slot • One Padlock ring

Internal slots

The following table lists the internal slots of your OptiPlex 5000 Small Form Factor.

Table 7. Internal slots

Description	Values
PCIe Expansion	• One Half-height Gen4 PCIe x16 slot • One Half-height Gen4 PCIe x4 slot
SATA	• Three SATA 3.0 slots for 3.5-inch/2.5-inch hard drive and slim optical drive
M.2	• One M.2 2230 slot for WiFi and Bluetooth card • One M.2 2230/2280 slot for SSD **NOTE:** To learn more about the features of different types of M.2 cards, see the knowledge base article 000144170 at www.dell.com/support.

Ethernet

The following table lists the wired Ethernet Local Area Network (LAN) specifications of your OptiPlex 5000 Small Form Factor.

Table 8. Ethernet specifications

Description	Values
Model number	Intel I219
Transfer rate	10/100/1000 Mbps

Wireless module

The following table lists the Wireless Local Area Network (WLAN) module specifications of your OptiPlex 5000 Small Form Factor.

Table 9. Wireless module specifications

Description	Option one	Option two	Option three
Model number	Intel AX211	Realtek RTL8821CE	Realtek RTL8822CE
Transfer rate	Up to 2400 Mbps	Up to 433 Mbps	Up to 867 Mbps
Frequency bands supported	2.4 GHz/5 GHz/6 GHz **NOTE:** The 6 GHz frequency is supported on computers installed with Windows 11 operating system only.	2.4 GHz/5 GHz	2.4 GHz/5 GHz
Wireless standards	• WiFi 802.11a/b/g • Wi-Fi 4 (WiFi 802.11n) • Wi-Fi 5 (WiFi 802.11ac) • Wi-Fi 6E (WiFi 802.11ax)	• WiFi 802.11a/b/g • Wi-Fi 4 (WiFi 802.11n) • Wi-Fi 5 (WiFi 802.11ac)	• WiFi 802.11a/b/g • Wi-Fi 4 (WiFi 802.11n) • Wi-Fi 5 (WiFi 802.11ac)
Encryption	• 64-bit and 128-bit WEP • 128-bit AES-CCMP • TKIP • 256-bit AES-GCMP	• 64-bit and 128-bit WEP • 128-bit AES-CCMP • TKIP	• 64-bit and 128-bit WEP • 128-bit AES-CCMP • TKIP
Bluetooth	5.2	5.0 **NOTE:** BIOSCOnnect via WLAN not supported.	5.0

Audio

The following table lists the audio specifications of your OptiPlex 5000 Small Form Factor.

Table 10. Audio specifications

Description	Values
Audio controller	Realtek Audio Controller, ALC3246-CG
Stereo conversion	24-bit DAC (Digital-to-Analog) and ADC (Analog-to-Digital)

Table 10. Audio specifications (continued)

Description		Values
Internal audio interface		Intel HDA (high-definition audio)
External audio interface		• One Universal audio port (front)
Number of speakers		One internal speaker (optional)
Internal-speaker amplifier		Supported (audio codec integrated)
External volume controls		Keyboard shortcut controls
Speaker output:		
	Average speaker output	2 W
	Peak speaker output	2.5 W
Subwoofer output		Not supported
Microphone		Dual-array microphones

Storage

This section lists the storage options on your OptiPlex 5000 Small Form Factor.

Table 11. Storage matrix

Storage		1st 2.5-inch hard drive	2nd 2.5-inch hard drive	3.5-inch hard drive	Single M.2 socket (2230/2280)	Single M.2 via Zoom 2 PCIe card	1st Bootable Device
2.5-inch hard drive		Yes	No	No	No	No	1st 2.5-inch hard drive
Dual 2.5-inch hard drive		Yes	Yes	No	No	No	1st 2.5-inch hard drive
3.5-inch hard drive		No	No	Yes	No	No	3.5-inch hard drive
M.2 solid-state drive		No	No	No	Yes	No	1st M.2 solid-state drive
M.2 solid-state drive	3.5-inch hard drive	No	No	Yes	Yes	No	1st M.2 solid-state drive
M.2 solid-state drive	2.5-inch hard drive/ solid-state drive	Yes	No	No	Yes	No	1st M.2 solid-state drive
M.2 solid-state drive	Dual 2.5-inch hard drive	Yes	Yes	No	Yes	No	1st M.2 solid-state drive
Dual M.2 solid-state drive		No	No	No	Yes	Yes	1st M.2 solid-state drive

Table 11. Storage matrix (continued)

Storage		1st 2.5-inch hard drive	2nd 2.5-inch hard drive	3.5-inch hard drive	Single M.2 socket (2230/2280)	Single M.2 via Zoom 2 PCIe card	1st Bootable Device
Dual M.2 solid-state drive	3.5-inch hard drive	No	No	Yes	Yes	Yes	1st M.2 solid-state drive
Dual M.2 solid-state drive	2.5-inch hard drive/ solid-state drive	Yes	No	No	Yes	Yes	1st M.2 solid-state drive

Table 12. Storage specifications

Storage type	Interface type	Capacity
2.5-inch, 5400 RPM, hard-disk drive	SATA 3.0	Up to 2 TB
2.5-inch, 7200 RPM, hard-disk drive	SATA 3.0	Up to 1 TB
2.5-inch, 7200 RPM, Self-Encrypting, Opal 2.0, FIPS	SATA 3.0	500 GB
3.5-inch, 5400 RPM, hard-disk drive	SATA 3.0	4 TB
3.5-inch, 7200 RPM, hard-disk drive	SATA 3.0	Up to 2 TB
M.2 2230, SSD, Class 35	PCIe NVMe Gen3 x4	Up to 1 TB
M.2 2230, SSD, Class 35, Self-Encrypting, Opal 2.0, FIPS	PCIe NVMe Gen3 x4	256 GB
M.2 2280, SSD, Class 40	PCIe NVMe Gen4 x4	Up to 2 TB
M.2 2280, SSDClass 40, Self-Encrypting, Opal 2.0, FIPS	PCIe NVMe Gen3 x4	Up to 1 TB

Media-card reader

The following table lists the media cards supported by your OptiPlex 5000 Small Form Factor.

Table 13. Media-card reader specifications

Description	Values
Media-card type	One SD-card 4.0 slot
Media-cards supported	• Secure Digital (mSD) • Secure Digital High Capacity(mSDHC) • Secure Digital Extended Capacity(mSDXC)
NOTE: The maximum capacity supported by the media-card reader varies depending on the standard of the media card installed in your computer.	

Power ratings

The following table lists the power rating specifications of OptiPlex 5000 Small Form Factor.

Table 14. Power ratings

Description	Option one	Option two	Option three
Type	240 W (85% Efficient, 80 PLUS Bronze)	260 W (85% Efficient, 80 PLUS Bronze)	300 W (92% Efficient, 80 Plus Platinum)
Input voltage	90 VAC-264 VAC	90 VAC-264 VAC	90 VAC-264 VAC
Input frequency	47 Hz-63 Hz	47 Hz-63 Hz	47 Hz-63 Hz
Input current (maximum)	4 A	4.2 A	4.2 A
Output current (continuous)	• 12 VA/18 A • 12 VB/15 A Standby mode: • 12 VA/1.5 A • 12 VB/2.5 A	• 12 VA/18 A • 12 VB/16 A Standby mode: • 12 VA/1.5 A • 12 VB/3.3 A	• 12 VA/18 A • 12 VB/18 A Standby mode: • 12 VA/1.5 A • 12 VB/3.3 A
Rated output voltage	• +12 VA • +12 VB	• +12 VA • +12 VB	• +12 VA • +12 VB
Temperature range:			
Operating	5°C to 45°C (41°F to 113°F)	5°C to 45°C (41°F to 113°F)	5°C to 45°C (41°F to 113°F)
Storage	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)

Power supply connector

The following table lists the Power supply connector specifications of your OptiPlex 5000 Small Form Factor.

Table 15. Power supply connector

240 W (80 PLUS Bronze)	• Two 4 pin connectors for processor • One 8 pin connector for system board
260 W (80 PLUS Bronze)	• Two 4 pin connectors for processor • One 8 pin connector for system board
300 W (80 PLUS Platinum)	• Two 4 pin connectors for processor • One 8 pin connector for system board

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your OptiPlex 5000 Small Form Factor.

Table 16. GPU—Integrated

Controller	External display support	Memory size	Processor
Intel UHD Graphics 710	• Two DisplayPort 1.4 ports	Shared-system memory	Intel Pentium Gold G7400 processor

Table 16. GPU—Integrated (continued)

Controller	External display support	Memory size	Processor
	• One DisplayPort 1.4 port (optional) • One VGA (optional) • One HDMI 2.0 (optional) • One USB Type-C Alt mode (optional)		
Intel UHD Graphics 730	• Two DisplayPort 1.4 ports • One DisplayPort 1.4 port (optional) • One VGA (optional) • One HDMI 2.0 (optional) • One USB Type-C Alt mode (optional)	Shared-system memory	12^{th} Generation Intel Core i3-12100, i3-12300, and i5-12400 processors
Intel UHD Graphics 770	• Two DisplayPort 1.4 ports • One DisplayPort 1.4 port (optional) • One VGA (optional) • One HDMI 2.0 (optional) • One USB Type-C Alt mode (optional)	Shared-system memory	12^{th} Generation Intel Core i5-12500, i5-12600 and i7-12700 processors

Multiple display support matrix

The following table lists the multiple display support matrix for integrated graphics options on your OptiPlex 5000 Small Form Factor.

Table 17. Multiple display support matrix

Description	Option 1	Option 2	Option 3
Integrated Graphics Card	Intel UHD Graphics 710	Intel UHD Graphics 730	Intel UHD Graphics 770
Optional Module	Option card with VGA (1920x1200 @ 60 Hz) Option card with DP1.4 (5120x3200 @60 Hz) Option card with HDMI 2.0 (4096x2160 @ 60 Hz) Option card with Type-C (5120x3200 @ 60 Hz)	Option card with VGA (1920x1200 @ 60 Hz) Option card with DP1.4 (5120x3200 @60 Hz) Option card with HDMI 2.0 (4096x2160 @ 60 Hz) Option card with Type-C (5120x3200 @ 60 Hz)	Option card with VGA (1920x1200 @ 60 Hz) Option card with DP1.4 (5120x3200 @60 Hz) Option card with HDMI 2.0 (4096x2160 @ 60 Hz) Option card with Type-C (5120x3200 @ 60 Hz)
Supported 4K Displays	DP1.4 HBR2, 4096 x 2304 @ 60 Hz	DP1.4 HBR2, 4096 x 2304 @ 60 Hz	DP1.4 HBR2, 4096 x 2304 @ 60 Hz
Supported 5K Displays	5K tiled resolution (5120x2880) support on DP panels. NOTE: Needs two DP cables driven through two separate DDIs from the source, and using DP-SST (Single Stream Transport) mechanism.	5K tiled resolution (5120x2880) support on DP panels. NOTE: Needs two DP cables driven through two separate DDIs from the source, and using DP-SST (Single Stream Transport) mechanism.	5K tiled resolution (5120x2880) support on DP panels. NOTE: Needs two DP cables driven through two separate DDIs from the source, and using DP-SST (Single Stream Transport) mechanism.

GPU—Discrete

The following table lists the specifications of the discrete Graphics Processing Unit (GPU) supported by your OptiPlex 5000 Small Form Factor.

Table 18. GPU—Discrete

Controller	Memory size	Memory type
AMD Radeon RX640	4 GB	GDDR5
AMD Radeon 550	2 GB	GDDR5
AMD Radeon 540	1 GB	GDDR5

Multiple display support matrix

The following table lists the multiple display support matrix for your OptiPlex 5000 Small Form Factor.

Table 19. Multiple display support matrix

Graphics Card	Radeon RX 640	Radeon 550	Radeon 540
Memory	4 GB	2 GB	1 GB
Ports	• 2 x Mini-DP 1.4 ports • 1 x DP 1.4 port	• 2 x DP 1.4 port	• 2 x DP 1.4 port
Supported external displays with Direct Connect	3	2	2
Supported external displays with DP Multi-Stream	4	4	4
Supported 4K Displays	DP1.4 HBR2, 4096 x 2304 @ 60 Hz	DP1.4 HBR2, 4096 x 2304 @ 60 Hz	DP1.4 HBR2, 4096 x 2304 @ 60 Hz
Supported 5K Displays	5K tiled resolution (5120x2880) support on DP panels. NOTE: Needs two DP cables driven through two separate DDIs from the source, and using DP-SST (Single Stream Transport) mechanism.	5K tiled resolution (5120x2880) support on DP panels. NOTE: Needs two DP cables driven through two separate DDIs from the source, and using DP-SST (Single Stream Transport) mechanism.	5K tiled resolution (5120x2880) support on DP panels. NOTE: Needs two DP cables driven through two separate DDIs from the source, and using DP-SST (Single Stream Transport) mechanism.
Resolution	5120 x 2880 @60 Hz	5120 x 2880 @60 Hz	5120 x 2880 @60 Hz
Total Power	50 W	50 W	50 W

Hardware security

The following table lists the hardware security of your OptiPlex 5000 Small Form Factor.

Table 20. Hardware security

Hardware security
Kensington security-cable slot
Padlock ring

Table 20. Hardware security (continued)

Hardware security
Chasis lock slot support
Chassis intrusion switch
Lockable cable covers
Supply chain tamper alerts
SafeID including Trusted Platform Module (TPM) 2.0
Smart card keyboard (FIPS)
Microsoft 10 Device Guard and Credential Guard (Enterprise SKU)
Microsoft Windows Bitlocker
Local hard drive data wipe through BIOS (Secure Erase)
Self-encrypting storage drives (Opal, FIPS)
Trusted Platform Module TPM 2.0
China TPM

Environmental

The following table lists the environmental specifications of your OptiPlex 5000 Small Form Factor.

Table 21. Environmental

Feature	Values
Recyclable packaging	Yes
BFR/PVC—free chassis	No
Vertical orientation packaging support	Yes
Multi-Pack packaging	Yes
Energy-Efficient Power Supply	Standard
ENV0424 compliant	Yes

NOTE: Wood-based fiber packaging contains a minimum of 35% recycled content by total weight of wood-based fiber. Packaging that contains without wood-based fiber can be claimed as Not Applicable. The anticipated required criteria for EPEAT 2018.

Regulatory compliance

The following table lists the regulatory compliance of your OptiPlex 5000 Small Form Factor.

Table 22. Regulatory compliance

Regulatory compliance
EPEAT registered configurations available
ENERGY STAR compliant configurations available

Table 22. Regulatory compliance (continued)

Regulatory compliance
TCO 8.0 certified configurations available
US CEC MEPS compliant configurations available
Australia and New Zealand MEPS compliant configurations available
CEL
WEEE
Japan Energy Law
South Korea E-standby
EU RoHS
China RoHS

Operating and storage environment

This table lists the operating and storage specifications of your OptiPlex 5000 Small Form Factor.

Airborne contaminant level: G1 as defined by ISA-S71.04-1985

Table 23. Computer environment

Description	Operating	Storage
Temperature range	10°C–35°C (50°F–95°F)	-40°C-65°C (-40°F-149°F)
Relative humidity (maximum)	20% to 80% (non-condensing, Max dew point temperature = 26°C)	5% to 95% (non-condensing, Max dew point temperature = 33°C)
Vibration (maximum)*	0.26 GRMS random at 5 Hz to 350 Hz	1.37 GRMS random at 5 Hz to 350 Hz
Shock (maximum)	Bottom half-sine pulse with a change in velocity of 40.20 cm/sec (20 in./sec)	105G half-sine pulse with a change in velocity of 105.20 cm/sec (52.5 in./sec)
Altitude range	-15.2 m to 3048 m (4.64 ft to 10,000 ft)	-15.2 m to 10,668 m (4.64 ft to 35,000 ft)
CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.		

* Measured using a random vibration spectrum that simulates user environment.

† Measured using a 2 ms half-sine pulse.

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Engineering specifications

Physical system dimensions

The following table provides the physical dimensions of your OptiPlex 5000 Small Form Factor.

NOTE: System weight and shipping weight are based on a typical configuration and may vary based on your system configuration. A typical configuration includes integrated graphics, one hard drive, and one optical drive.

Table 24. Physical system dimensions

Feature	Values
Chassis volume	7.86 Liters
Chassis Weight	Maximum: 5.16 kg (11.39 lb) Minimum: 3.84 kg (8.47 lb)
Chassis dimensions	
Height	290 mm (11.42 in.)
Width	92.60 mm (3.65 in.)
Depth	292.80 mm (11.53 in.)
Shipping Weight (includes packaging materials)	6.46 kg (14.23 lb)
Packaging dimensions	
Height	487 mm (19.17 in)
Width	264 mm (10.39 in)
Depth	394 mm (15.51 in)

Add-in card dimensions

Slot limitations

The following table lists the system board connector maximum add-in card allowable dimensions of your OptiPlex 5000 Small Form Factor.

Table 25. Slot limitations of add-in cards

Feature	Values
PCIe x16 connector	1
Voltage	3.3 V/12 V
Height	2.71 in. (68.90 mm)
Length	6.60 in. (167.64 mm)
Maximum wattage	50 W

Table 25. Slot limitations of add-in cards (continued)

Feature	Values
PCIe x4 connector	1
Voltage	3.3 V/12 V
Height	2.71 in. (68.90 mm)
Length	6.60 in. (167.64 mm)
Maximum wattage	25 W

Table 26. M.2 2230 slot for Wi-Fi card

Voltage	3.3 V
Width	0.86 in. (22.00 mm)
Length	1.18 in. (30.00 mm)
Thickness	0.14 in. (3.65 mm)
Maximum wattage	6.6 W

Table 27. M.2 2230 slot for solid-state drive

Voltage	3.3 V
Width	0.86 in. (22.00 mm)
Length	1.18 in. (30.00 mm)
Thickness	0.14 in. (3.65 mm)
Maximum wattage	6.6 W

Table 28. M.2 2280 slot for solid-state drive

Voltage	3.3 V
Width	0.86 in. (22.00 mm)
Length	3.14 in. (80.00 mm)
Thickness	0.15 in. (3.80 mm)
Maximum Wattage	8.25 W

Dust filter

The following table lists the dust filter specifications of your OptiPlex 5000 Small Form Factor.

Table 29. Dust filter

Feature	Values
Type	0.008 in. (0.0196 cm)
Mesh count	100.00 in. (39.37 cm)
Weave	Plain
Silk diameter	0.002 in. (0.005 cm)
Open area	61 %

Table 29. Dust filter (continued)

Feature	Values
Thickness	0.004 in. (0.01 cm)
Remark	PET

PCIe add-in cards

SD-card 4.0 reader

The following table lists the SD-card 4.0 reader specifications.

Table 30. SD-card 4.0 reader specifications

Feature	Values
Interface	Input: PCI Express, Output: SD 4.0 card
Data rates	SD 4.0 UHS-II Up to 312 MB/sec
Controller details	
Controller	GL9755
Controller bus architecture	PCIe 2.1
Driver support	Yes
Environment	
Operating temperature	0°C to 70°C (32°F to 158°F)

Serial port PCIe add-in card

Table 31. Serial port PCIe add-in card

Feature	Values
Interface	• RS-232 • IEEE1284
Data rates	• 50 bps ~115.2 Kbps (serial) • maximum 1.8 Mbps (parallel)
Controller details	
Controller	SUNIX SUN2212 (16C950 UART compatible)
Controller bus architecture	• PCI Express 2.0 • Single-Lane (x1)
Driver support	Windows 10 (64-bit)
Half-height serial add-in dongle	Optional
Environment	
Operating temperature	0°C to 60°C (32°F–140°F)
Operating humidity	5% to 95% RH
Storage temperature	-20°C to 85°C (-4°F to 185°F)

Parallel port PCIe add-in card

Table 32. Parallel port PCIe add-in card

Feature	Values
Interface	• RS-232 • IEEE1284
Data rates	• 50 bps ~115.2 Kbps (serial) • maximum 1.8 Mbps (parallel)
Controller details	
Controller	SUNIX SUN2212 (16C950 UART compatible)
Controller bus architecture	• PCI Express 2.0 • Single-Lane (x1)
Driver support	Windows 10 (64-bit)
Half-height parallel add-in dongle	Optional
Environment	
Operating temperature	0°C to 60°C (32°F–140°F)
Operating humidity	5% to 95% RH
Storage temperature	-20°C to 85°C (-4°F to 185°F)

PS/2 Serial add-in bracket

The following table lists the PS/2 Serial add-in bracket specifications.

Table 33. PS/2 Serial add-in bracketspecifications

Feature	Values
Interface	UART
Data rates	250 kbps / 235 kbps
Controller details	
Controller	Microchip DEC1515
Controller bus architecture	PCIe
Driver support	N/A
Half-height serial add-in dongle	N/A
Environment	
Operating temperature	0°C to 70°C (32°F to 158°F) / -40°C to 85°C (-40°F to 185°F
Operating humidity	60% RH
Storage temperature	-65°C to 150°C (-85°F to 302°F)

Ethernet

Intel Ethernet Connection i219-LM

Table 34. Integrated Intel i219-LM Gigabit Ethernet LAN 10/100/1000

Feature	Values
External connector type	RJ45
Supported data rates	10/100/1000 Mbps
Controller Details	
Controller bus architecture	PCI Express base specification revision 1.1
Integrated memory	Yes
Data transfer mode	Yes (Bus-Master DMA)
Power consumption (Full operation per data rate connection speed)	542 mW (Max)
Power consumption (Standby operation)	76 mW (Max)
IEEE standards compliance	802.3
Hardware certifications	N/A
Boot ROM support	EEPROM (Located in SPI)
Network Transfer Mode	
Network transfer rate	10 Mb (full/half-duplex)
10BASE-T (full-duplex) 20 Mbps	100 Mb (full/half-duplex)
100BASE-TX (half-duplex) 100 Mbps	1000 Mb (full-duplex)
100BASE-TX (full-duplex) 200 Mbps	
1000BASE-T (full-duplex) 2000 Mbps	
Environmental	
Operating temperature	0°C–85°C (32°F–185°F)
Operating humidity	20% to 80% (noncondensing)
Operating system driver Support	• Windows 11 • Windows 10 • Ubuntu • Neokylin
Manageability	• Wakeup On LAN • PXE 2.1
Management capabilities alerting	Optional Intel Standard Manageability (must be made at time of purchase).

This term does not connote an actual operating speed of 1 Gb/sec. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

Wireless module

Realtek RTL8822CE, 1x1, Wi-Fi 5 (WiFi 802.11ac), Bluetooth 5.0

The following table lists the Realtek RTL8822CE specifications.

Table 35. Realtek RTL8822CE specifications

Host interface	• Wi-Fi - PCIe • Bluetooth - USB
Network standard	IEEE 802.11a/b/g/n/ac, MU-MIMO
Wi-Fi Alliance certifications	• Wi-Fi certified a/b/g/n/ac • WMM • WPA • WPA2 • Wi-Fi Direct (Windows only)
Operating frequency bands	• 2.4 Ghz • 5 Ghz
Data rate	• 2.4 GHz 40M: Up to 300 Mbps • 5 GHz 80M: Up to 867 Mbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity
Authentication	• Open • Shared • WPA • WPA-PSK • WPA2 • WPA2-PSK
Client utility	Native Wi-Fi and Bluetooth Microsoft UI support
Software support	• Microsoft WHQL certified for Windows • Linux • Chrome
Radio On/Off	Supported
Roaming	Support seamless roaming between access points
Wake on wireless	supported
Wireless display	Native Miracast support by Windows
Wireless PAN standard	• Dual Mode Bluetooth 5.0 • BLE
Bluetooth data rates	Up to 3 Mbps
Bluetooth operating frequency bands	2.4 GHz
Bluetooth profiles supported	Support for Microsoft Inbox Bluetooth profiles in Windows
Bluetooth data encryption	128-bit encryption
Operating temperature	0°C to + 70°C
Storage temperature	-40°C to +85°C

Realtek RTL8821CE, 1x1, Wi-Fi 5 (WiFi 802.11ac), Bluetooth 5.0

The following table lists the Realtek RTL8821CE specifications.

Table 36. Realtek RTL8821CE specifications

Host interface	• Wi-Fi - PCIe • Bluetooth - USB
Network standard	IEEE 802.11a/b/g/n/ac, MU-MIMO
Wi-Fi Alliance certifications	• Wi-Fi certified a/b/g/n/ac • WMM • WPA • WPA2 • Wi-Fi Direct (Windows only)
Operating frequency bands	• 2.4 Ghz • 5 Ghz
Data rate	• 2.4 GHz 40M: Up to 150 Mbps • 5 GHz 80M: Up to 433 Mbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity
Authentication	• Open • Shared • WPA • WPA-PSK • WPA2 • WPA2-PSK
Client utility	Native Wi-Fi and Bluetooth Microsoft UI support
Software support	• Microsoft WHQL certified for Windows • Linux
Radio On/Off	Supported
Roaming	Support seamless roaming between access points
Wake on wireless	Supported
Wireless display	Native Miracast support by Windows
Wireless PAN standard	• Dual Mode Bluetooth 5.0 • BLE
Bluetooth data rates	Up to 3 Mbps
Bluetooth operating frequency bands	2.4 GHz
Bluetooth profiles supported	Support for Microsoft Inbox Bluetooth profiles in Windows
Bluetooth data encryption	128-bit encryption
Operating temperature	0°C to + 70°C
Storage temperature	-40°C to +85°C

Intel AX211, 2x2 MIMO, 2400 Mbps, 2.4/5/6 GHz, Wi-Fi 6E (WiFi 802.11ax), Bluetooth 5.2

The following table lists the Intel AX211 specifications.

Table 37. Intel AX211 specifications

Host interface	CNVi3 (Connectivity Integration 3rd generation)
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160MHz channel use, MU-MIMO, new 6GHz band
Wi-Fi Alliance certifications	Wi-Fi CERTIFIED 6, Wi-Fi CERTIFIED a/b/g/n/ac,WMM, WMM-Power Save, WPA2, WPA3, WPS, PMF,Wi-Fi Direct, Wi-Fi Agile Multiband **NOTE:** Other names and brands may be claimed as the property of others.
Operating frequency bands	• 2.4 GHz • 5 GHz • 6 GHz
Data rate	• 2.4 GHz 40M: Up to 574 Mbps • 5/6 GHz 80M: Up to 1.2 Gbps • 5/6 GHz 160M: Up to 2.4 Gbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity
Security methods	• WPA2 Personal and Enterprise • WPA3
Authentication protocols	• 802.1X EAP-TLS • EAP-TTLS/MSCHAPv2 • PEAPv0 -MSCHAPv2 (EAP-SIM, EAP-AKA, EAP-AKA)
Encryption	• 64-bit and 128-bit WEP • TKIP • 128-bit AES-CCMP • 256-bit AES-GCMP
Product safety	• UL • C-UL • CB (IEC60950-1)
Management capabilities alerting	Support for Intel AMT
Government compliance	• FIPS 140-2 • FISMA
Client utility	Intel PRO/Set wireless software v22 and later
Antenna diversity	Supported
Radio On/Off	Supported
Roaming	Support seamless roaming between access points
Wake on wireless	Supported
Wireless display	Native Miracast support by Windows
Wireless PAN standard	• Dual Mode Bluetooth 5.2 • BLE
Bluetooth data rates	Up to 3 Mbps

Table 37. Intel AX211 specifications (continued)

Bluetooth operating frequency bands	2.4 GHz
Bluetooth profiles supported	Support for Microsoft Inbox Bluetooth profiles in Windows
Bluetooth data encryption	128-bit encryption
Bluetooth output power	Power class 1
Operating temperature	0°C to + 50°C (Full performance at shield temperatures up to 80°C)
Storage temperature	-40°C to +70°C
Humidity	Up to 90% RH non-condensing (at temperatures of 25° C to 35° C)

GPU—Integrated

Intel UHD Graphics 710

Table 38. Intel UHD Graphics 710 specifications

Intel UHD Graphics 710		
Bus Type		Integrated
Memory type		Shared memory
Graphics Level		Intel Pentium G7400: GT0.5 (UHD)
Overlay Planes		Yes
Operating Systems Graphics/ Video API Support		DirectX 12, OpenGL (4.6)
HDMI Support		HDMI 1.4b
HDCP Support		HDCP 2.3
Supports maximum resolution		• On board integrated DP1.4 (HBR2)(4096x2304 @ 60 Hz) • Option card with VGA (1920x1200 @ 60 Hz) • Option card with DP1.4 (HBR3) (5120x3200 @ 60 Hz) • Option card with HDMI 2.0 (4096x2160 @ 60 Hz) • Option card with Type-C (5120x3200 @ 60 Hz) • On board integrated HDMI 1.4b (4096x2160 @ 30Hz)
Number of display supported		Up to four displays supported
Multiple Display Support	2 displays	• On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4(4096x2304 @ 60 Hz)

Table 38. Intel UHD Graphics 710 specifications (continued)

Intel UHD Graphics 710		
		• On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with VGA (1920x1200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with DP1.4 (5120x3200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with HDMI 2.0 (4096x2160 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with Type-C (5120x3200 @ 60 Hz)
	3 displays	• On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4(4096x2304 @ 60 Hz) + Option card with VGA (1920x1200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4(4096x2304 @ 60 Hz) + Option card with DP1.4 (5120x3200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4(4096x2304 @ 60 Hz) + Option card with HDMI 2.0 (4096x2160 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with Type-C (5120x3200 @ 60 Hz)
External connectors		Two system-board integrated DP1.4 HBR2 + One video option (VGA/DP1.4 HBR3/ HDMI2.0/USB3.2 Gen2 type-C Alt-mode) • One DisplayPort 1.4 port (rear) • One HDMI 1.4b port (rear) • One Optional video port (VGA port/HDMI 2.0b port/ Displayport 1.4a HBR3)

Intel UHD Graphics 730

Table 39. Intel UHD Graphics 730 specifications

Intel UHD Graphics 730		
Bus Type		Integrated
Memory type		Shared memory
Graphics Level		i3/i5/i7: GT1 (UHD)
Overlay Planes		Yes
Operating Systems Graphics/ Video API Support		DirectX 12, OpenGL (4.5 from Intel CML POR)
HDMI Support		HDMI2.0
HDCP Support		HDCP2.3
Supports maximum resolution		• On board integrated DP1.4 (HBR2)(4096x2304 @ 60 Hz) • Option card with VGA (1920x1200 @ 60 Hz) • Option card with DP1.4 (HBR3) (5120x3200 @ 60 Hz) • Option card with HDMI 2.0 (4096x2160 @ 60 Hz) • Option card with Type-C (5120x3200 @ 60 Hz)
Number of display supported		Up to four displays supported
Multiple Display Support	2 displays	• On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4(4096x2304 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with VGA (1920x1200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with DP1.4 (5120x3200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with HDMI 2.0 (4096x2160 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with Type-C (5120x3200 @ 60 Hz)
	3 displays	• On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated

Table 39. Intel UHD Graphics 730 specifications (continued)

Intel UHD Graphics 730		
		DP1.4(4096x2304 @ 60 Hz) + Option card with VGA (1920x1200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4(4096x2304 @ 60 Hz) + Option card with DP1.4 (5120x3200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4(4096x2304 @ 60 Hz) + Option card with HDMI 2.0 (4096x2160 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with Type-C (5120x3200 @ 60 Hz)
External connectors		Two system-board integrated DP1.4 HBR2 + One video option (VGA/DP1.4 HBR3/ HDMI2.0/USB3.2 Gen2 type-C Alt-mode)

Intel UHD Graphics 770

Table 40. Intel UHD Graphics 770 specifications

Intel UHD Graphics 770	
Bus Type	Integrated
Memory Type	Shared memory
Graphics Level	i3/i5/i7: GT1 (UHD)
Overlay Planes	Yes
Operating Systems Graphics/ Video API Support	DirectX 12, OpenGL 4.6
HDMI Support	HDMI2.0
HDCP Support	HDCP2.3
Supports maximum resolution	• On board integrated DP1.4 (HBR2)(4096x2304 @ 60 Hz) • Option card with VGA (1920x1200 @ 60 Hz) • Option card with DP1.4 (HBR3) (5120x3200 @ 60 Hz) • Option card with HDMI 2.0 (4096x2160 @ 60 Hz)

Table 40. Intel UHD Graphics 770 specifications (continued)

Intel UHD Graphics 770		
		• Option card with Type-C (5120x3200 @ 60 Hz)
Number of display supported		Up to four displays supported
Multiple Display Support	2 displays	• On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4(4096x2304 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with VGA (1920x1200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with DP1.4 (5120x3200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with HDMI 2.0 (4096x2160 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with Type-C (5120x3200 @ 60 Hz)
	3 displays	• On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4(4096x2304 @ 60 Hz) + Option card with VGA (1920x1200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4(4096x2304 @ 60 Hz) + Option card with DP1.4 (5120x3200 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4(4096x2304 @ 60 Hz) + Option card with HDMI 2.0 (4096x2160 @ 60 Hz) • On board integrated DP1.4 (4096x2304 @ 60 Hz) + On board integrated DP1.4 (4096x2304 @ 60 Hz) + Option card with Type-C (5120x3200 @ 60 Hz)
External connectors		Two system-board integrated DP1.4 HBR2 + One video option (VGA/DP1.4 HBR2/

Table 40. Intel UHD Graphics 770 specifications (continued)

Intel UHD Graphics 770	
	HDMI2.0/USB3.2 Gen2 type-C Alt-mode)

GPU—Discrete

AMD Radeon RX 640, 4 GB, GDDR5, low profile

The following table lists the AMD Radeon RX 640 specifications.

Table 41. AMD Radeon RX 640 specifications

Feature	Values
Dedicated graphics memory	4 GB, GDDR5
Memory bus	128-bit
Memory config	256 M x 32
Width	Single slot
Approximate wattage	50 W
Base clock	N/A
Boost clock	1500 MHz
Stream processors	512/640
G-Sync / Freesync ready	Yes
Supported APIs	• DirectX 12 • OpenGL 4.5 • Vulkan API
Maximum resolution	5120 x 2880
HDMI support	N/A
HDCP support	N/A
I/O ports	• Two Mini-DisplayPort 1.4 ports • One DisplayPort 1.4 port

AMD Radeon 550, 2 GB, GDDR5, low profile

The following table lists the AMD Radeon 550 specifications.

Table 42. AMD Radeon 550 specifications

Feature	Values
Dedicated graphics memory	2 GB, GDDR5
Memory bus	64-bit
Memory config	256 M x 32
Width	Single slot
Approximate wattage	50 W
Base clock	N/A

Table 42. AMD Radeon 550 specifications (continued)

Feature	Values
Boost clock	1500 MHz
Stream processors	512
G-Sync / Freesync ready	Yes
Supported APIs	• DirectX 12 • OpenGL 4.5 • Vulkan API
Maximum resolution	5120 x 2880
HDMI support	N/A
HDCP support	N/A
I/O ports	• Two DisplayPort 1.4 ports

AMD Radeon 540, 1 GB, GDDR5, low profile

The following table lists the AMD Radeon 540 specifications.

Table 43. AMD Radeon 540 specifications

Feature	Values
Dedicated graphics memory	1 GB, GDDR5
Memory bus	32-bit
Memory config	256 M x 32
Width	Single slot
Approximate wattage	50 W
Base clock	N/A
Boost clock	1500 MHz
Stream processors	512
G-Sync / Freesync ready	Yes
Supported APIs	• DirectX 12 • OpenGL 4.5 • Vulkan API
Maximum resolution	5120 x 2880
HDMI support	N/A
HDCP support	N/A
I/O ports	• Two DisplayPort 1.4 ports

GPU and PSU matrix

The following table provides the GPU and PSU matrix of your OptiPlex 5000 Small Form Factor.

Table 44. GPU and PSU matrix

GFx card	Card length	Weight (kg)	Power connector	I/O connector	Single/Dual wide	PSU
AMD Radeon RX 640	6.60 in.	0.174	NA	1 x DP/2 x mDP	Single	75 W
AMD Radeon 550	6.60 in.	0.133	NA	2 x DP	Single	75 W
AMD Radeon 540	6.60 in.	0.132	NA	2 x DP	Single	75 W

Video port and resolution matrix

The following table lists the Video port and resolution matrix on your OptiPlex 5000 Small Form Factor.

Table 45. Video port and resolution matrix

Port type	DP++ 1.4 / HDCP 2.3 port (UMA and Discrete Graphics)	HDMI-OUT port—HDMI 1.4b (UMA Graphics)	HDMI-OUT port—HDMI 2.0 (Discrete Graphics)
Maximum resolution—single display	4096 x 2304 @ 60 Hz	4096 x 2160 @ 30 Hz	4096 x 2160 @ 60 Hz
Maximum resolution—dual MST	4096 x 2304 @ 60 Hz, 1400 x 1050 @ 60 Hz or 2880 x 1800 @ 60 Hz, 2880 x 1800 @ 60 Hz	Not applicable	Not applicable
Maximum resolution—triple MST	4096 x 2304 @ 60 Hz, 1360 x 768 @ 60 Hz, 640 x 480 @ 60 Hz or 2304 x 1440 @ 60 Hz, 2304 x 1440 @ 60 Hz, 2304 x 1440 @ 60 Hz	Not applicable	Not applicable
Maximum resolution—four MST	5120 x 3200 @ 60 Hz, 4096 x 2304 @ 60 Hz, 1360 x 768 @ 60 Hz, 640 x 480 @ 60 Hz or 2304 x 1440 @ 60 Hz, 2304 x 1440 @ 60 Hz, 2304 x 1440 @ 60 Hz	Not applicable	Not applicable

Hard-disk drive Preloaded bracket matrix

The following table lists the hard-disk drive preloaded bracket information of your OptiPlex 5000 Small Form Factor.

Table 46. Hard-disk drive Preloaded bracket matrix

Hard-disk drive Preloaded bracket	Available
3.5 in. Caddy/Bracket	Yes
2.5 in. Caddy/Bracket	No

Storage

3.5-inch, 4 TB, 5400 RPM, SATA, HDD

Table 47. 3.5-inch, 4 TB, 5400 RPM, SATA, HDD specifications

Capacity	4 TB

Table 47. 3.5-inch, 4 TB, 5400 RPM, SATA, HDD specifications (continued)

Speed	5400 RPM
Height (approximate)	25.40 mm (1.00 in.)
Width (approximate)	147.06 mm (5.79 in.)
Depth (approximate)	101.60 mm (4.00 in.)
Interface	SATA 3.0
Speed (maximum)	Up to 6 Gbps
MTBF	550,000 hours
Logical blocks	7,814,037,168
Power source	
Power consumption (reference only)	• Idle: 5 W • Active: 10 W
Environmental operating conditions (non-condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock	65G @2ms
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 95%

3.5-inch, 1 TB, 7200 RPM, SATA, HDD

Table 48. 3.5-inch, 1 TB, 7200 RPM, SATA, HDD specifications

Capacity	1 TB
Speed	7200 RPM
Height (approximate)	25.40 mm (1.00 in.)
Width (approximate)	147.06 mm (5.79 in.)
Depth (approximate)	101.60 mm (4.00 in.)
Interface	SATA 3.0
Speed (maximum)	Up to 6 Gbps
MTBF	550,000 hours
Logical blocks	1,953,525,168
Power source	
Power consumption (reference only)	• Idle: 5 W • Active: 10 W
Environmental operating conditions (non-condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock	65G @2ms
Environmental non-operating conditions (non-condensing)	

Table 48. 3.5-inch, 1 TB, 7200 RPM, SATA, HDD specifications (continued)

Temperature range	-40°C to 65°C
Relative humidity range	5% to 95%

3.5-inch, 2 TB, 7200 RPM, SATA, HDD

Table 49. 3.5-inch, 2 TB, 7200 RPM, SATA, HDD specifications

Capacity	2 TB
Speed	7200 RPM
Height (approximate)	25.40 mm (1.00 in.)
Width (approximate)	147.06 mm (5.79 in.)
Depth (approximate)	101.60 mm (4.00 in.)
Interface	SATA 3.0
Speed (maximum)	Up to 6 Gbps
MTBF	550,000 hours
Logical blocks	3,907,029,168
Power source	
Power consumption (reference only)	• Idle: 5 W • Active: 10 W
Environmental operating conditions (non-condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock	65G @2ms
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 95%

2.5-inch, 1 TB, 5400 RPM, SATA, HDD

Table 50. 2.5-inch, 1 TB, 5400 RPM, SATA, HDD specifications

Capacity	1 TB
Speed	5400 RPM
Height (approximate)	7.11 mm (0.28 in.)
Width (approximate)	69.85 mm (2.75 in.)
Depth (approximate)	100.58 mm (3.96 in.)
Interface	SATA 3.0
Speed (maximum)	Up to 6 Gbps
MTBF	550,000 hours
Logical blocks	1,953,525,168
Power source	

Table 50. 2.5-inch, 1 TB, 5400 RPM, SATA, HDD specifications (continued)

Power consumption (reference only)	• Idle: 0.7 W • Active: 3.10 W
Environmental operating conditions (non-condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock	350G @2ms
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 95%

2.5-inch, 2 TB, 5400 RPM, SATA, HDD

Table 51. 2.5-inch, 2 TB, 5400 RPM, SATA, HDD specifications

Capacity	2 TB
Speed	5400 RPM
Height (approximate)	7.11 mm (0.28 in.)
Width (approximate)	69.85 mm (2.75 in.)
Depth (approximate)	100.58 mm (3.96 in.)
Interface	SATA 3.0
Speed (maximum)	Up to 6 Gbps
MTBF	550,000 hours
Logical blocks	3,907,029,168
Power source	
Power consumption (reference only)	• Idle: 0.7 W • Active: 3.10 W
Environmental operating conditions (non-condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock	350G @2ms
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 95%

2.5-inch, 500 GB, 7200 RPM, SATA, HDD

Table 52. 2.5-inch, 500 GB, 7200 RPM, SATA, HDD specifications

Capacity	500 GB
Speed	7200 RPM
Height (approximate)	7.11 mm (0.28 in.)
Width (approximate)	69.85 mm (2.75 in.)

Table 52. 2.5-inch, 500 GB, 7200 RPM, SATA, HDD specifications (continued)

Depth (approximate)	100.58 mm (3.96 in.)
Interface	SATA 3.0
Speed (maximum)	Up to 6 Gbps
MTBF	550,000 hours
Logical blocks	976,773,168
Power source	
Power consumption (reference only)	• Idle: 0.7 W • Active: 3.25 W
Environmental operating conditions (non-condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock	350G @2ms
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 95%

2.5-inch, 1 TB, 7200 RPM, SATA, HDD

Table 53. 2.5-inch, 1 TB, 7200 RPM, SATA, HDD specifications

Capacity	1 TB
Speed	7200 RPM
Height (approximate)	7.11 mm (0.28 in.)
Width (approximate)	69.85 mm (2.75 in.)
Depth (approximate)	100.58 mm (3.96 in.)
Interface	SATA 3.0
Speed (maximum)	Up to 6 Gbps
MTBF	550,000 hours
Logical blocks	1,953,525,168
Power source	
Power consumption (reference only)	• Idle: 0.7 W • Active: 3.25 W
Environmental operating conditions (non-condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock	350G @2ms
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 95%

2.5-inch, 500 GB, 7200 RPM, SATA, HDD, Self-Encrypting, Opal 2.0, FIPS

Table 54. 2.5-inch, 500 GB, 7200 RPM, SATA, HDD, Self-Encrypting, Opal 2.0, FIPS specifications

Capacity	500 GB
Speed	7200 RPM OPAL SED FIPS
Height (approximate)	7.11 mm (0.28 in.)
Width (approximate)	69.85 mm (2.75 in.)
Depth (approximate)	100.58 mm (3.96 in.)
Interface	SATA 3.0
Speed (maximum)	Up to 6 Gbps
MTBF	550,000 hours
Logical blocks	976,773,168
Power source	
Power consumption (reference only)	• Idle: 0.7 W • Active: 3.25 W
Environmental operating conditions (non-condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock	350G @2ms
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 95%

M.2 2230, 256 GB, PCIe NVMe Gen3 x4, Class 35 SSD

The following table lists the M.2 2230, 256 GB SSD specifications.

Table 55. 256 GB SSD specifications

Capacity	256 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	500,118,192
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4) • Active: 3.50 W
Environmental operating conditions (non-condensing)	

Table 55. 256 GB SSD specifications (continued)

Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2230, 512 GB, PCIe NVMe Gen3 x4, Class 35 SSD

The following table lists the M.2 2230, 512 GB SSD specifications.

Table 56. 512 GB SSD specifications

Capacity	512 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4) • Active: 3.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2230, 1 TB, PCIe NVMe Gen3 x4, Class 35 SSD

The following table lists the M.2 2230, 1 TB SSD specifications.

Table 57. 1 TB SSD specifications

Capacity	1 TB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen3

Table 57. 1 TB SSD specifications (continued)

Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	2,000,409,264
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4) • Active: 3.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2230, 256 GB, PCIe NVMe Gen3 x4, Opal Self-Encrypting Class 35 SSD

The following table lists the M.2 2230, 256 GB SSD, self-encrypting drive specifications.

Table 58. 256 GB SSD, self-encrypting drive specifications

Capacity	256 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	500,118,192
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4) • Active: 3.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280, 512 GB, PCIe NVMe Gen4 x4, Class 40 SSD

The following table lists the M.2 2280, 512 GB SSD specifications.

Table 59. 512 GB SSD specifications

Capacity	512 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4 - L1.2) • Active: 5 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280, 1 TB, PCIe NVMe Gen4 x4, Class 40 SSD

The following table lists the M.2 2280, 1 TB SSD specifications.

Table 60. 1 TB SSD specifications

Capacity	1 TB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	2,000,409,264
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4 - L1.2) • Active: 5 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C

Table 60. 1 TB SSD specifications (continued)

Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280, 2 TB, PCIe NVMe Gen4 x4, Class 40 SSD

The following table lists the M.2 2280, 2 TB SSD specifications.

Table 61. 2 TB SSD specifications

Capacity	2 TB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	4,000,797,360
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4 - L1.2) • Active: 5 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280, 512 GB, PCIe NVMe Gen3 x4, Class 40 SSD, self-encrypting drive

The following table lists the M.2 2280, 512 GB SSD, self-encrypting drive specifications

Table 62. 512 GB SSD, self-encrypting drive specifications

Capacity	512 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen3

Table 62. 512 GB SSD, self-encrypting drive specifications (continued)

Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4 - L1.2) • Active: 4.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280, 1 TB, PCIe NVMe Gen3 x4, Class 40 SSD, self-encrypting drive

The following table lists the M.2 2280, 1 TB SSD, self-encrypting drive specifications

Table 63. 1 TB SSD, self-encrypting drive specifications

Capacity	1 TB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	2,000,409,264
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4 - L1.2) • Active: 4.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

8x DVD±RW, slimline

Table 64. 8x DVD±RW, slimline specifications

Height (without bezel)	9.50 mm (0.37 in.)
Width (without bezel)	128.00 mm (5.04 in.)
Depth (without bezel)	126.01 mm (4.97 in.)
Weight (maximum)	140 grams
Interface	SATA 1.5
Speed (maximum)	Up to 1.5 Gbps
Disc capacity	Standard
Internal buffer size	0.5 MB
Access times (typical)	Supplier dependent
Maximum data transfer rates	
Writes	8x DVD/ 24x CD
Reads	8x DVD/ 24x CD
Power source	
DC power requirements	5 V
DC current	1300 mA
Environmental operating conditions (non-condensing)	
Operating temperature range	5°C to 60°C
Relative humidity range	10% to 90% RH
Maximum wet bulb temperature	29°C
Altitude range	0 m to 3048 m
Environmental non-operating conditions (non-condensing)	
Operating temperature range	-40°C to 65°C
Relative humidity range	5% to 95% RH
Maximum wet bulb temperature	38°C
Altitude range	0 m to 10600 m

Media-card reader

The following table lists the media-card reader specifications on your OptiPlex 5000 Small Form Factor.

Table 65. Media-card reader (standard offering)

Media supported (Maximum capacity supported will vary by Flash Media Types)	
Media Supported	SDXC, SDHC, SD Secure Digital (SD) 4.0 UHS-II Secure Digital (SD) 3.0 UHS-I
Support Specification Versions	Secure Digital (SD) 4.0
Power source	

Table 65. Media-card reader (standard offering) (continued)

Max Power Requirements	1.2 A
Supply Voltage Range	3.3 V
Power Consumption	MS 0.08 mA
Environmental operating conditions (Non-condensing)	
Operating Temperature Range	0°C to 70°C
Relative Humidity Range	N/A
Environmental non-operating conditions (Non-condensing)	
Operating Temperature Range	N/A
Relative Humidity Range	N/A

Power ratings

The following table lists the power ratings specifications of your OptiPlex 5000 Small Form Factor.

Table 66. Power ratings specifications

Description	Values		
Type	240 W (85% Efficient, 80 Plus Bronze)	260 W (85% Efficient, 80 Plus Bronze)	300 W (92% Efficient, 80 Plus Platinum)
Diameter (connector)	Not supported	Not supported	Not supported
Input voltage	90 VAC to 264 VAC	90 VAC to 264 VAC	90 VAC to 264 VAC
Input frequency	47 Hz to 63 Hz	47 Hz to 63 Hz	47 Hz to 63 Hz
Input current (maximum)	4 A	4.2 A	4.2 A
Output current (continuous)	• 12 VA/18 A • 12 VB/15 A Standby mode: • 12 VA/1.5 A • 12 VB/3.3 A	• 12 VA/18 A • 12 VB/16 A Standby mode: • 12 VA/1.5 A • 12 VB/3.3 A	• 12 VA/18 A • 12 VB/18 A Standby mode: • 12 VA/1.5 A • 12 VB/3.3 A
Rated output voltage	• +12 VA • +12 VB	• +12 VA • +12 VB	• +12 VA • +12 VB
BTUs/h (based on PSU max wattage)	818	888	1023
Temperature range			
Operating	5°C to 45°C (41°F to 113°F)	5°C to 45°C (41°F to 113°F)	5°C to 45°C (41°F to 113°F)
Storage	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)
Compliance			
Erp Lot6 Tier 2 requirement	Yes	Yes	Yes
80Plus compliant	Yes	Yes	Yes

Table 66. Power ratings specifications (continued)

Description	Values		
Energy Star 8.0 compliant	Yes	Yes	Yes
GS mark compliant	Yes	Yes	Yes
FEMP Standby Power Compliant	Yes	Yes	Yes

Thermal dissipation

The following table lists the thermal dissipation of your OptiPlex 5000 Small Form Factor.

Table 67. Thermal dissipation

Power supply unit	Heat dissipation	Voltage
240 W (80 Plus Bronze)	240*3.412=818 BTU/hr	100 to 240 VAC, 50 to 60 Hz, 4.2 A/2.1 A
260 W (80 Plus Bronze)	260*3.412=888 BTU/hr	100 to 240 VAC, 50 to 60 Hz, 4.2 A/2.1 A
300 W (80 Plus Platinum)	300*3.412=1023 BTU/hr	100 to 240 VAC, 50 to 60 Hz, 4.2 A/2.1 A

CMOS battery

The following table lists the CMOS battery specifications of your OptiPlex 5000 Small Form Factor.

Table 68. CMOS battery

Brand	Type	Voltage	Composition	Battery life
MITSUBISHI	CR2032	3.0 V	Lithium metal	Continuous Discharge Under 15 kΩ Load to 2.0 V End-Voltage. 20℃±2℃ 940 Hrs. or Longer.910 Hrs.or Longer after 12 mo.

Accessories

The following table lists the supported accessories on your OptiPlex 5000 Small Form Factor.

Table 69. Accessories

Accessories
Dell Pro Wireless Keyboard and Mouse - KM5221W
Dell Slim Soundbar - SB521A
Dell Pro Stereo Headset - WH3022
Dell commercial displays including E series, Professional P series, UltraSharp, and Collaboration monitors

Security

Software security

The following table lists the software security details of your OptiPlex 5000 Small Form Factor.

Table 70. Software security

Security options
McAfee® Small Business Security 30-day Free Trial
McAfee® Small Business Security 12-month subscription
McAfee® Small Business Security 36-month Subscription
Intel Guard Technologies & Secure Key: Software Guard (SGX), Data Guard (vPro only), Boot Guard, BIOS Guard (Core CPU's only), OS Guard (Core CPU's only) and Secure Key (i5 or greater only)
Intel Runtime BIOS Resilience (Copper Point) with attestation via Nifty Rock + Intel TXT
Support of Absolute Persistent Module BIOS agent v2
OpenXT validation required
SafeGuard and Response, powered by VMware Carbon Black and Secureworks
Next Generation Antivirus (NGAV)
Endpoint Detection and Response (EDR)
Threat Detection and Response (TDR)
Managed Endpoint Detection and Response
Incident Management Retainer
Emergency Incident Response

Dell ControlVault 3.0

The following table lists the Dell ControlVault 3.0 specifications of your OptiPlex 5000 Small Form Factor.

Table 71. Dell ControlVault 3.0 specifications

Title	Description	Dell ControlVault 3.0
CPU technology	N/A	1 GHz ARM Cortex A7
RAM	N/A	1 MB
ROM	N/A	16 MB
TPM included	TPM enumeration included within ControlVault	No
Host Interface	N/A	USB 2.0
Fingerprint procession on chip	Fingerprint processing occurs within secure boundary of ControlVault	Yes
Windows WBF support	Support for Windows biometric framework when Fingerprint reader is attached	Yes

Table 71. Dell ControlVault 3.0 specifications (continued)

Title	Description	Dell ControlVault 3.0
FIPS 140-2 level 3 complaint	Device complaint with FIPS 140-2 level 3 requirements	Yes
FIPS 140-2 level 3 certified	Device certified with FIPS 140-2 level 3 requirements	Yes

Trusted Platform Module

The following table lists the Trusted Platform Module (TPM) of your OptiPlex 5000 Small Form Factor.

Table 72. Trusted Platform Module (TPM)

TPM: ST/ST33 HTPH2X32AHD8
SPI interface
TPM 2.0
FIPs 140-2 certificate

Mil-SPEC

The OptiPlex 5000 Small Form Factor meets military specifications for the following MIL-STD 810H tests:

Table 73. Small Form Factor - Military specifications

Test Category	Test Method	Test Parameters
Altitude Storage Transport	Method 500.6 Procedure I	Test Pressure: Equivalent to cabin altitude of 15 Temperature: 21°C; Altitude Change Rate: <10 r Duration: 1 hour
Altitude Operation/Air Carriage	Method 500.6 Procedure II	Test Pressure: Equivalent to cabin altitude of 15 Temperature: 21°C; Altitude Change Rate: <10 r Duration: 1 hour
High Temperature Storage and Transition	Method 501.7 Procedure I	Duration: 7-day exposure (7 X 24-hr. cycles) Temperature: 33 °C–71 °C (nonoperational / st Table 501. 7 - III High temperature cycles. Climate category A1 Hot Dry
High Temperature Operational	Method 501.7 Procedure II	Duration: 5-day exposure (5 X 24-hr. cycles) Temperature: 32 °C–49 °C (Ambient Air) Table High Temperature cycle Climate category A1 - Hot Dry
Low Temperature (Exaggerated)	Method 502.7 Procedure I - Storage	Duration: 24-hour exposure Temperature: -51°C
Low temperature	Method 502.7 Procedure II - Operation	Duration: 24-hour exposure Temperature: -29°C
Humidity Induced (Storage andTransit) and Natural and Cycles	Method 507.6 Procedure I	Duration: Table 507.6-II, (Hot-humid Cycle B3)

Table 73. Small Form Factor - Military specifications (continued)

Test Category	Test Method	Test Parameters
		Material Category: Non-Hazardous Items Norma Duration.
Sand and Dust Blowing Dust	Method 510. 7 Procedure I	Duration: 12 hours Air velocity = 1.5 m/s (300 ft/min) to 8.9 m/s (min) Temperature:60°C Relative Humidity: 30%
Vibration	Method 514. 8 Procedure I - Category4	Operational Vibration, 10-500 Hz, 1.04 Grms, ra hour on Bottom, Left, and Back side. Unit is ope during test.
Vibration - Minimum integrity test	Method 514.8 Procedure I - Category 24	Non-OP vibration, 20-2000 Hz, 7.69 Grms Test Duration: 1 hr Test axis: X,Y, and Z.
Shock - Transportation Shock	Method 516. 8 Procedure II: Material to be Packaged	On-road Shock, 5.1 g / 11 m (Table 516-8-VII) - Off-road Shocks 15.2 g / 5 ms (Table 516-8-V - Test unit orientations at x, y and z axis for bot - Unit is Non-Operational during both test - Saw tooth wave form can be replaced by othe wave forms necessary to meet test equipment capability. See Durability Engineering for acceptable altern wave forms if needed. Example: • Alternate Half Sine for On-road shock 5 g, 5 • Alternate Half Sine for Off-Road shock 15 g,
Shock - Crash Hazard Shock	Method 516.8 Procedure V	Non-Operational. 185 g, 2 ms Half Sine 2 shocks direction for a total of 12 shocks **NOTE:** Dell to use noted test to replace MIL STD-8108, Method 516.8, Procedure V, Tab XIII.
Bench Handling	Method 516. 8 Procedure VI	Angle drops onto solid wooden bench thickness cm (1.675 inch). Test height judgment as two c as rise test units at one edge 100 mm (4 in.) or angle of 45° about a solid wooden bench top.

Acoustic noise emission information tower

The following table lists the acoustic noise emission information of your OptiPlex 5000 Small Form Factor.

Table 74. Acoustic noise emission information tower

Component	Test Configuration
CPU	Intel Pentium G6405
Memory	4 GB
HDD (#, capacity)	2.5-inch hard drive

Table 74. Acoustic noise emission information tower (continued)

Component	Test Configuration
ODD	No
Graphics Adapter	Intel UHD Graphics 610

Table 75. Declared Sound Power (LWAd)

Operating Mode	Declared Sound Power(LWAd)
Idle	3.5
HDD Operating	3.6
CPU Stressed	3.8
ODD Operating	4.0

Table 76. A-Weighted Sound Pressure Level (dB)

Declared Sound Pressure (LpA)				
	Tabletop System		Floor Standing System	
Operating Mode	Operator Position	Bystander Position	Operator Position	Bystander Position
Idle	25.3	N/A	N/A	N/A
CPU Stressed	26.6	N/A	N/A	N/A

All tests are conducted according to ISO 7779 and declared according to ISO 9296 except CPU Stressed. This test mode is not specified in ISO 7779, but was measured using the same microphone distances and measurement techniques defined for the other reported operating modes.

Declared Sound Power rounded to nearest tenth of a bel per ISO 9296 section 4.4.2

Chassis enclosure and ventilation requirements

Enclosure ventilation

If your enclosure has doors, they need to be of a type that allows at least 30% airflow through the enclosure (front and back).

Enclosure minimum clearance

Leave a 10.2 cm (4 in.) minimum clearance on all vented sides of the computer to permit the airflow required for proper ventilation.

Recommended enclosure

Do not install your computer in an enclosure that does not allow airflow/dusty environment/temperate over 35ºC. Do not put any objects to directly block air-vent. This restricts the airflow and impacts your computer's performance, possibly causing it to overheat.

Open desk minimum clearance

If your computer is installed in a corner, on a desk, or under a desk, leave at least 5.1 cm (2 in.) clearance from the back of the computer to the wall to permit the airflow required for proper ventilation.

System management features

Dell commercial systems come with a number of systems management options that are include by default for In-Band management with our Dell Client Command Suite. In-Band management meaning that the Operating System is functional and the device is connected to a network so that it can be managed. The Dell Client Command Suite of tools can be leveraged individually or with a systems management console like SCCM, LANDESK, KACE, etc.

We also offer Out-of-Band management as an option. Out-of-band management is when the system does not have a functional operating system or is turned off and you still want to be able to manage the system in that state.

Dell Client Command Suite for In-Band systems management

Dell Client Command Suite is a free toolkit available for download, for all Latitude Rugged tablets at dell.com/support, that automates and streamlines systems management tasks, saving time, money, and resources. It consists of the following modules that can be used independently, or with a variety of systems management consoles such as SCCM.

Dell Client Command Suite's integration with VMware Workspace ONE Powered by AirWatch, now allows customers to manage their Dell client hardware from the cloud, using a single Workspace ONE console.

Dell Command | Deploy enables easy operating system (OS) deployment across all major OS deployment methodologies and provides numerous system-specific drivers that have been extracted and reduced to an OS-consumable state.

Dell Command I Configure is a graphical user interface (GUI) admin tool for configuring and deploying hardware settings in a pre-OS or post-OS environment, and it operates seamlessly with SCCM and Airwatch and can be self-integrated into LANDesk and KACE. Simply, this is all about the BIOS. Command I Configure allows you to remotely automate and configure over 150+ BIOS settings for a personalized user experience.

Dell Command I PowerShell Provider can do the same things as Command I Configure, but with a different method. PowerShell is a scripting language that allows customers to create a customized and dynamic configuration process.

Dell Command I Monitor is a Windows Management Instrumentation (WMI) agent that provides IT admins with an extensive inventory of the hardware and health-state data. Admins can also configure hardware remotely by using command line and scripting.

Dell Command I Power Manager (end-user tool) is a GUI-based factory-installed battery management tool that allows end users to choose the battery management methods that meet their personal preferences or work schedule without sacrificing IT's capability to control those settings with Group Policy.

Dell Command | Update (end-user tool) is factory-installed and allows admins to individually manage and automatically present and install Dell updates to the BIOS, drivers, and software. Command I Update eliminates the time-consuming hunting and pecking process of update installation.

Dell Command I Update Catalog provides searchable metadata that allows the management console to retrieve the latest system-specific updates (driver, firmware or BIOS). The updates are then delivered seamlessly to end-users using the customer's systems management infrastructure that is consuming the catalog (like SCCM).

Dell Command | vPro Out of Band console extends hardware management to systems that are offline or have an un-reachable OS (Dell exclusive features).

Dell Command | Integration Suite for System Center - This suite integrates all the key components of the Client Command Suite into Microsoft System Center Configuration Manager 2012 and Current Branch versions.

Out of Band Systems Management

Intel Standard Manageability option **must be configured in our factory at the time of purchase, as it is NOT field upgradable.** It offers out-of-band management and DASH compliance (https://registry.dmtf.org/registry/results/field_initiative_name%3A%22DASH%201.0%22).

Intel vPro Essentials

Intel vPro provides an enhanced level of built-in security, hardware-level security and comprehensive cyber defense. Intel vPro allows you to remotely power on devices, streamline PC life cycle management without compromising productivity, secure, repair and maintain when needed.

Systems configured with Intel Core i5/i7 processors support Intel vPro Essentials. Check the processor specifications section for the list of Intel vPro enabled processors.

4

Getting help and contacting Dell

Self-help resources

You can get information and help on Dell products and services using these self-help resources:

Table 77. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	www.dell.com
My Dell app	
Tips	
Contact Support	In Windows search, type `Contact Support`, and press Enter.
Online help for operating system	www.dell.com/support/windows www.dell.com/support/linux
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals and documents.	Your Dell computer is uniquely identified by a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, enter the Service Tag or Express Service Code at www.dell.com/support. For more information on how to find the Service Tag for your computer, see Locate the Service Tag on your computer.
Dell knowledge base articles for a variety of computer concerns	1. Go to www.dell.com/support. 2. On the menu bar at the top of the Support page, select **Support** > **Knowledge Base**. 3. In the Search field on the Knowledge Base page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.

Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see www.dell.com/contactdell.

NOTE: Availability varies by country/region and product, and some services may not be available in your country/region.

NOTE: If you do not have an active Internet connection, you can find contact information about your purchase invoice, packing slip, bill, or Dell product catalog.