

# Precision 3560

## Technical Guidebook



## 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.

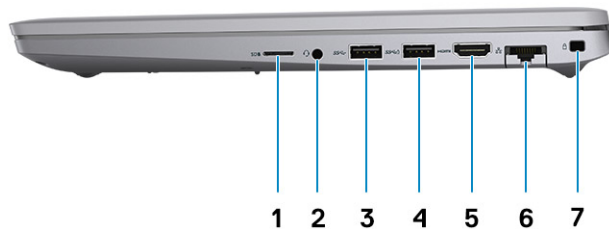
 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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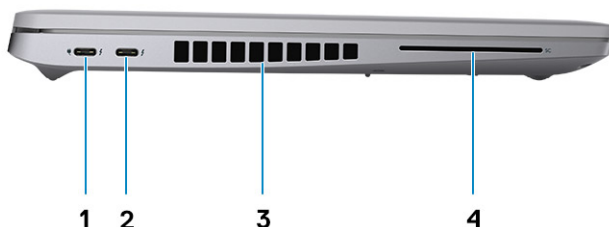
# Views of Precision 3560

## Right view



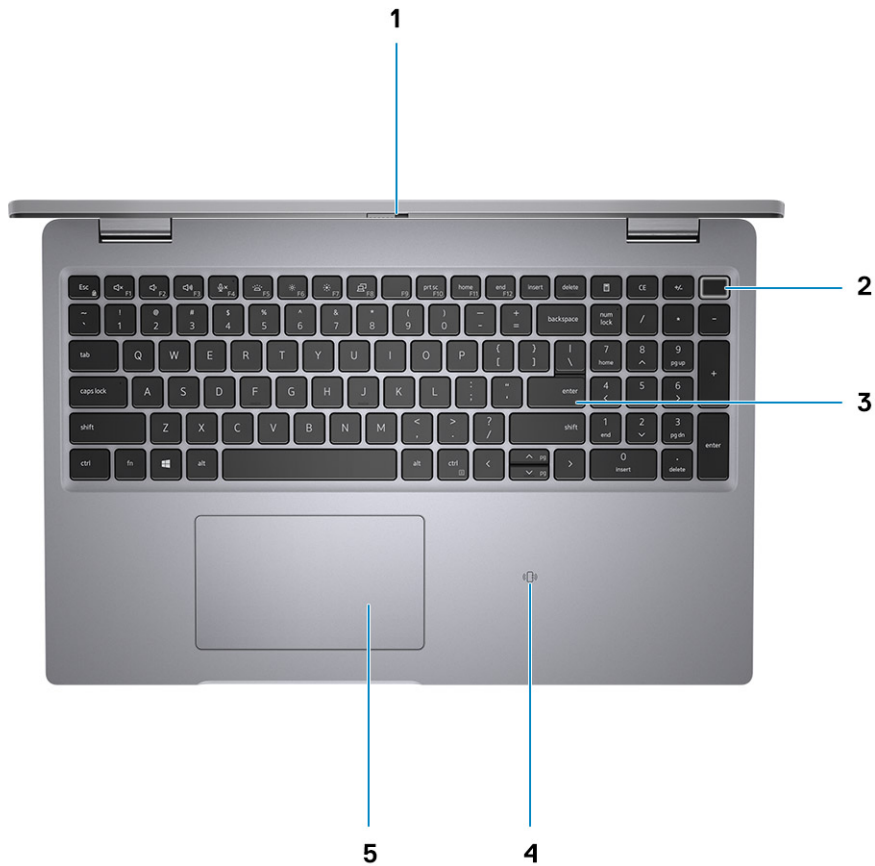
- |                           |                                       |
|---------------------------|---------------------------------------|
| 1. micro-SD card slot     | 2. Universal audio port               |
| 3. USB 3.2 Gen 1 port     | 4. USB 3.2 Gen 1 port with PowerShare |
| 5. HDMI 2.0 port          | 6. RJ-45 Ethernet port                |
| 7. Wedge-shaped lock slot |                                       |

## Left view



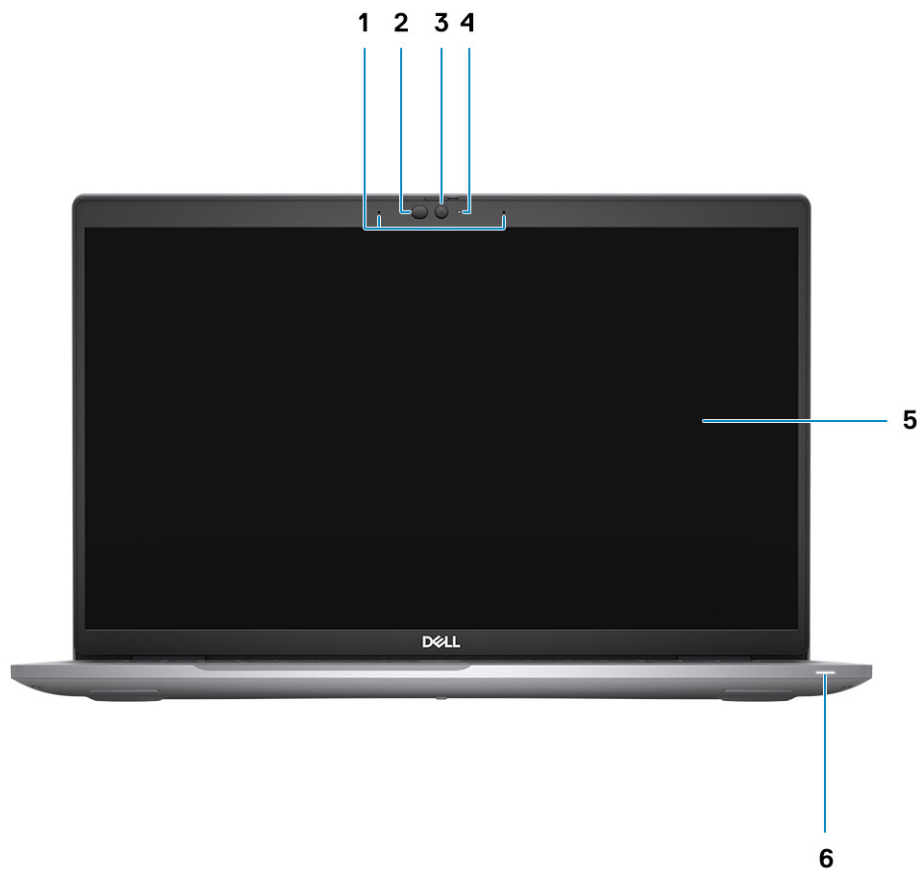
- |   |   |
|---|---|
| 1. Thunderbolt 4 port with DisplayPort Alt Mode/USB4/Power Delivery | 2. Thunderbolt 4 port with DisplayPort Alt Mode/USB4/Power Delivery |
| 3. Air vents  | 4. Smart card reader slot (optional)                                |

## Palm-rest view



- |                    |  |
|--------------------|--|
| 1. Privacy shutter | 2. Power button with fingerprint reader—(optional) |
| 3. Keyboard        | 4. NFC/Contactless smart card reader—(optional)    |
| 5. Clickpad        |  |

## Display view



1. Dual-array microphones
3. Camera (IR/RGB)
5. Display panel

2. IR emitter/Ambient Light Sensor (ALS)—(optional)
4. Camera status LED
6. Battery indicator LED

# Bottom view



1. Speakers
2. microSIM-card slot (optional)
3. Service tag label
4. Air vent

## Keyboard shortcuts


**NOTE:** Keyboard characters may differ depending on the keyboard language configuration. Keys that are used for shortcuts remain the same across all language configurations.

Table 1. List of keyboard shortcuts

Keys	Primary Behavior	Secondary Behavior (Fn + Key)
Fn + Esc	Escape	Toggle Fn-key lock
Fn + F1	Mute audio	F1 behavior
Fn + F2	Decrease volume	F2 behavior
Fn + F3	Increase volume	F3 behavior
Fn + F4	Mic Mute	F4 behavior
Fn + F5	Keyboard backlight	F5 behavior



**Table 1. List of keyboard shortcuts (continued)**

Keys	Primary Behavior	Secondary Behavior (Fn + Key)
	 <b>NOTE:</b> Not applicable for non-backlight keyboard.	
Fn + F6	Decrease screen brightness	F6 behavior
Fn + F7	Increase screen brightness	F7 behavior
Fn + F8	Switch to external display	F8 behavior
Fn + F9	Disable camera	F9 behavior
Fn + F10	Print Screen	F10 behavior
Fn + F11	Home	F11 behavior
Fn + F12	End	F12 behavior
Fn + Right Ctrl	Emulates right click	--

## Battery Charge and Status LED

**Table 2. Battery Charge and Status LED Indicator**

Power Source	LED Behavior	System Power State	Battery Charge Level
AC Adapter	Off	S0 - S5	Fully Charged
AC Adapter	Solid White	S0 - S5	< Fully Charged
Battery	Off	S0 - S5	11-100%
Battery	Solid Amber (590+/-3 nm)	S0 - S5	< 10%

- S0 (ON) - System is turned on.
- S4 (Hibernate) - The system consumes the least power compared to all other sleep states. The system is almost at an OFF state, expect for a trickle power. The context data is written to hard drive.
- S5 (OFF) - The system is in a shutdown state.

# Specifications of Precision 3560





## Dimensions and weight

**Table 3. Dimensions and weight**

Description	Values
Height:	
Front	0.78 in. (19.87 mm)
Rear	0.87 in. (22.15 mm)
Width	14.08 in. (357.80 mm)
Depth	9.29 in. (236.20 mm)
Weight (Minimum)	3.50 lb (1.59 kg)

## Processors

**Table 4. Processors**

Description	Values			
Processors	11 <sup>th</sup> Generation Intel Core i5-1135G7	11 <sup>th</sup> Generation Intel Core i5-1145G7	11 <sup>th</sup> Generation Intel Core i7-1165G7	11 <sup>th</sup> Generation Intel Core i7-1185G7
Wattage	17.50 W	17.50 W	17.50 W	17.50 W
Core count	4	4	4	4
Thread count	8	8	8	8
Speed	2.40 GHz to 4.20 GHz	2.60 GHz to 4.40 GHz	2.80 GHz to 4.70 GHz	3 GHz to 4.80 GHz
Cache	8 MB	8 MB	12 MB	12 MB
Integrated graphics	Intel Iris X <sup>e</sup> Graphics  <b>NOTE:</b> System with single-channel memory is shown as Intel UHD Graphics in Intel Graphics Command Center (IGCC)	Intel Iris X <sup>e</sup> Graphics  <b>NOTE:</b> System with single-channel memory is shown as Intel UHD Graphics in Intel Graphics Command Center (IGCC)	Intel Iris X <sup>e</sup> Graphics  <b>NOTE:</b> System with single-channel memory is shown as Intel UHD Graphics in Intel Graphics Command Center (IGCC)	Intel Iris X <sup>e</sup> Graphics  <b>NOTE:</b> System with single-channel memory is shown as Intel UHD Graphics in Intel Graphics Command Center (IGCC)

# Chipset

**Table 5. Chipset**

Description	Values
Chipset	Intel PCH-LP
Processor	11th Generation Intel Core i5/i7 processors
DRAM bus width	64-bit
Flash EPROM	32 MB
PCIe bus	Upto Gen 4

# Operating system

- Windows 10 Pro, 64-bit
- Windows 10 Home, 64-bit
- Ubuntu Linux 20.04 LTS, 64-bit

# Memory

**Table 6. Memory specifications**

Description	Values
Slots	Two SO-DIMM slots
Type	DDR4, Dual-channel
Speed	3200 MHz
Maximum memory	64 GB
Minimum memory	4 GB
Configurations supported	<ul style="list-style-type: none"><li>• 4 GB, 1 x 4 GB, DDR4, 3200 MHz</li><li>• 8 GB, 2 x 4 GB, DDR4, 3200 MHz</li><li>• 8 GB, 1 x 8 GB, DDR4, 3200 MHz</li><li>• 16 GB, 2 x 8 GB, DDR4, 3200 MHz</li><li>• 16 GB, 1 x 16 GB, DDR4, 3200 MHz</li><li>• 32 GB, 2 x 16 GB, DDR4, 3200 MHz</li><li>• 64 GB, 2 x 32 GB, DDR4, 3200 MHz</li></ul>

# Ports and connectors


**Table 7. External ports and connectors**

Description	Values
Network	One RJ-45 port
USB	<ul style="list-style-type: none"><li>• One USB 3.2 Gen 1 port</li></ul>

**Table 7. External ports and connectors (continued)**

Description	Values
	<ul style="list-style-type: none"> <li>One USB 3.2 Gen 1 port with PowerShare</li> <li>Two Thunderbolt 4 ports with DisplayPort Alt Mode/USB4/Power Delivery</li> </ul>
Audio	One universal audio port
Video	One HDMI 2.0 port
Power adapter port	USB Type-C power input
Security	One wedge-shaped lock slot
Card slot	<ul style="list-style-type: none"> <li>One microSD-card slot</li> <li>One Smart card reader slot (optional)</li> <li>One microSIM-card slot (optional)</li> </ul>

**Table 8. Internal ports and connectors**

Description	Values
<b>Internal:</b>	
M.2	<ul style="list-style-type: none"> <li>M.2 2230 slot for WiFi and Bluetooth combo card</li> <li>M.2 3042 for WWAN</li> <li>One M.2 2280 slot for solid-state drive (computer shipped with discrete graphics card)</li> <li>Two M.2 2280 slots for solid-state drive (computer shipped with UMA graphics card)</li> </ul> <p> <b>NOTE:</b> To learn more about the features of different types of M.2 cards, see the knowledge base article <a href="#">SLN301626</a>.</p>

## Communications

### Ethernet

**Table 9. Ethernet specifications**

Description	Values
Model number	<ul style="list-style-type: none"> <li>Intel I219-LM</li> <li>Intel I219-V</li> </ul>
Transfer rate	10/100/1000 Mbps

### Wireless module

**Table 10. Wireless module specifications**

Description	Values		
Model number	Intel Wi-Fi 6 AX201	Intel AX210	Qualcomm QCA61x4A
Transfer rate	Up to 2400 Mbps	Up to 2400 Mbps	Up to 867 Mbps

**Table 10. Wireless module specifications (continued)**

Description	Values		
Frequency bands supported	2.4 GHz/5 GHz	2.4 GHz/5 GHz/6 GHz	2.4 GHz/5 GHz
Wireless standards	<ul style="list-style-type: none"> <li>• Wi-Fi 802.11a/b/g</li> <li>• Wi-Fi 4 (WiFi 802.11n)</li> <li>• Wi-Fi 5 (WiFi 802.11ac)</li> <li>• Wi-Fi 6 (WiFi 802.11ax)</li> </ul>	<ul style="list-style-type: none"> <li>• Wi-Fi 802.11a/b/g</li> <li>• Wi-Fi 4 (WiFi 802.11n)</li> <li>• Wi-Fi 5 (WiFi 802.11ac)</li> <li>• Wi-Fi 6 (WiFi 802.11ax)</li> </ul>	<ul style="list-style-type: none"> <li>• Wi-Fi 802.11a/b/g</li> <li>• Wi-Fi 4 (WiFi 802.11n)</li> <li>• Wi-Fi 5 (WiFi 802.11ac)</li> </ul>
Encryption	<ul style="list-style-type: none"> <li>• 64-bit/128-bit WEP</li> <li>• AES-CCMP</li> <li>• TKIP</li> </ul>	<ul style="list-style-type: none"> <li>• 64-bit/128-bit WEP</li> <li>• AES-CCMP</li> <li>• TKIP</li> </ul>	<ul style="list-style-type: none"> <li>• 64-bit/128-bit WEP</li> <li>• AES-CCMP</li> <li>• TKIP</li> </ul>
Bluetooth	Bluetooth 5.1	Bluetooth 5.2	Bluetooth 5.0

## WWAN module

**Table 11. Wireless module specifications**

Description	Values
Model number	Intel XMM 7360 Global LTE-Advanced, CAT9
Transfer rate	Up to 450 Mbps DL/50 Mbps UL (Cat 9)
Frequency bands supported	(1,2,3,4,5,7,8,11,12,13,17,18,19,20,21,26,28,29,30,38,39,40,41,66 ), HSPA+ (1, 2, 4,5, 8)
Wireless standards	Not Applicable
Encryption	Not Applicable
Bluetooth	Not Applicable

## Audio

**Table 12. Audio specifications**

Description	Values
Controller	REALTEK ALC3204
Stereo conversion	Supported
Internal interface	High definition audio interface
External interface	Universal audio port
Speakers	Two
Internal speaker amplifier	Supported (audio codec integrated)
External volume controls	Keyboard shortcut controls
Speaker output:	
Average speaker output	2 W

**Table 12. Audio specifications (continued)**

Description		Values
	Peak speaker output	2.5 W
Subwoofer output		Not supported
Microphone		Dual-array microphones

## Storage

Your computer supports one of the following configurations:

- One M.2 2230, Gen 3 PCIe x4 NVMe, Class 35 SSD (slot 1)
- One M.2 2230, Gen 3 PCIe x4 NVMe, Class 35 SSD (slot 1) with one M.2 2280, Gen 4 PCIe x4 NVMe, Class 40 SSD (slot 2)
- One M.2 2280, Gen 3 PCIe x4 NVMe, Class 40 SSD (slot 1)
- One M.2 2280, Gen 3 PCIe x4 NVMe, Class 40 SSD (slot 1) with M.2 2280, Gen 4 PCIe x4 NVMe, Class 40 SSD (slot 2)
- One M.2 2280, Gen 4 PCIe x4 NVMe, Class 40 SSD (slot 2)
- One M.2 2280, Gen 3 PCIe x4 NVMe, Class 40 SSD, Self-encrypting drive (slot 1)
- One M.2 2280, Gen 3 PCIe x4 NVMe, Class 40 SSD, Self-encrypting drive (slot 1) with one M.2 2280, Gen 4 PCIe x4 NVMe, Class 40 SSD (slot 2)

The primary drive of your computer varies with the storage configuration.

**Table 13. Storage specifications**

Form factor	Interface type	Capacity
M.2 2230, Class 35 solid-state drive	Gen 3 PCIe x4 NVMe	Up to 512 GB
M.2 2280, Class 40 solid-state drive	Gen 3 PCIe x4 NVMe	Up to 1 TB
M.2 2280, Class 40 solid-state drive	Gen 4 PCIe x4 NVMe	2 TB
M.2 2280, Class 40 solid-state drive, Self-encrypting drive	Gen 3 PCIe x4 NVMe	Up to 512

## Media-card reader

**Table 14. Media-card reader specifications**


Description	Values
Type	One microSD-card
Cards supported	<ul style="list-style-type: none"> <li>• Secure Digital (SD 4.0)</li> <li>• Secure Digital High Capacity (SDHC)</li> <li>• Secure Digital Extended Capacity (SDXC)</li> </ul>

## Keyboard

**Table 15. Keyboard specifications**

Description	Values
Type	<ul style="list-style-type: none"> <li>• US/UK/JP layout, single point, non-backlit keyboard</li> <li>• US/UK/JP layout, single point, backlit keyboard</li> </ul>

**Table 15. Keyboard specifications (continued)**

Description	Values
Layout	QWERTY
Number of keys	<ul style="list-style-type: none"> <li>• United States and Canada: 79 keys</li> <li>• United Kingdom: 80 keys</li> <li>• Japan: 83 keys</li> </ul>
Size	X=18.05 mm key pitch Y=18.05 mm key pitch
Shortcut keys	<p>Some keys on your keyboard have two symbols on them. These keys can be used to type alternate characters or to perform secondary functions. To type the alternate character, press Shift and the desired key. To perform secondary functions, press Fn and the desired key.</p> <p> <b>NOTE:</b> You can define the primary behavior of the function keys (F1–F12) by changing the <b>Function Key Behavior</b> in system setup program. <a href="#">Keyboard shortcuts</a></p>

## Camera

**Table 16. Camera specifications**

Description		Values
Number of cameras		Two
Type		FHD RGB Infrared camera or HD RGB Infrared camera
Location		Front camera
Sensor type		CMOS sensor technology
Resolution		
	Camera	
	Still image	0.92 megapixel
	Video	1280 x 720 (HD/FHD) at 30 fps
	Infrared camera	
	Still image	0.23 megapixel
	Video	640 x 480 (VGA) at 30 fps
Diagonal viewing angle		
	Camera	<ul style="list-style-type: none"> <li>• FHD: 87.6 degrees</li> <li>• HD: 87 degrees</li> </ul>
	Infrared camera	<ul style="list-style-type: none"> <li>• FHD: 87.6 degrees</li> <li>• HD: 87 degrees</li> </ul>

# Clickpad

**Table 17. Clickpad specifications**

Description		Values
Resolution		>=300 dpi
Dimensions:		
	Horizontal	115 mm (4.53 inch)
	Vertical	67 mm (2.64 inch)

## Power adapter

**Table 18. Power adapter specifications**

Description		Values		
Type		65 W AC adapter, USB-C	90 W AC adapter, USB-C	130 W AC adapter, USB-C
Input voltage		100 VAC x 240 VAC	100 VAC x 240 VAC	100 VAC x 240 VAC
Input frequency		50 Hz to 60 Hz	50 Hz to 60 Hz	50 Hz to 60 Hz
Input current (maximum)		1.7 A	1.5 A	1.8 A
Output current (continuous)		<ul style="list-style-type: none"> <li>20 V/3.25 A (Continuous)</li> <li>15 V/3 A (Continuous)</li> <li>9.0 V/3 A (Continuous)</li> <li>5.0 V/3 A (Continuous)</li> </ul>	<ul style="list-style-type: none"> <li>20 V/4.5 A (Continuous)</li> <li>15 V/3 A (Continuous)</li> <li>9.0 V/3 A (Continuous)</li> <li>5.0 V/3 A (Continuous)</li> </ul>	<ul style="list-style-type: none"> <li>20 V/6.5 A (Continuous)</li> <li>5.0 V/1 A (Continuous)</li> </ul>
Rated output voltage		20 VDC/15 VDC/9 VDC/5 VDC	20 VDC/15 VDC/9 VDC/5 VDC	20 VDC/5 VDC
Temperature range:				
	Operating	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°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)

## Battery

**NOTE:** Dell recommends that you charge the battery regularly for optimal power consumption. If your battery charge is completely depleted, connect the power adapter, turn on your computer, and then restart your computer to reduce the power consumption.

**Table 19. Battery specifications**

Description	Values			
Type	3-cell lithium-ion, 42 WHr, ExpressChargeBoost	3-cell lithium-ion 42 WHr, LCL	4-cell lithium-ion, 63 WHr, ExpressChargeBoost	4-cell lithium-ion 63 WHr, LCL



**Table 19. Battery specifications (continued)**

Description		Values			
Voltage		11.40 VDC	11.40 VDC	15.20 VDC	15.20 VDC
Weight (maximum)		0.18 kg ( 0.40 lb)	0.18 kg ( 0.40 lb)	0.25 kg ( 0.55 lb)	0.25 kg ( 0.55 lb)
Dimensions:					
	Height	5.70 mm (0.22 in.)	5.70 mm (0.22 in.)	5.70 mm (0.22 in.)	5.70 mm (0.22 in.)
	Width	95.90 mm (3.78 in.)	95.90 mm (3.78 in.)	95.90 mm (3.78 in.)	95.90 mm (3.78 in.)
	Depth	207.90 mm (8.19 in.)	207.90 mm (8.19 in.)	238.00 mm (9.37 in.)	238.00 mm (9.37 in.)
Temperature range:					
	Operating	<ul style="list-style-type: none"> <li>Charge: 0°C to 50°C (32°F to 122°F)</li> <li>Discharge: 0°C to 70°C (32°F to 158°F)</li> </ul>	<ul style="list-style-type: none"> <li>Charge: 0°C to 50°C (32°F to 122°F)</li> <li>Discharge: 0°C to 70°C (32°F to 158°F)</li> </ul>	<ul style="list-style-type: none"> <li>Charge: 0°C to 50°C (32°F to 122°F)</li> <li>Discharge: 0°C to 70°C (32°F to 158°F)</li> </ul>	<ul style="list-style-type: none"> <li>Charge: 0°C to 50°C (32°F to 122°F)</li> <li>Discharge: 0°C to 70°C (32°F to 158°F)</li> </ul>
	Storage	-20°C to 60°C (-4°F to 140°F)	-20°C to 60°C (-4°F to 140°F)	-20°C to 60°C (-4°F to 140°F)	-20°C to 60°C (-4°F to 140°F)
Operating time		Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.
Charging time (approximate)		From 0% up to 35% in 20 minutes (ExpressCharge Boost), 2hr (Express charge), 3hr (Standard charge) hours (when the computer is off) <i>i</i> <b>NOTE:</b> Control the charging time, duration, start and end time, and so on using the Dell Power Manager application.	2hr ( Express charge), 3hr (Standard charge) hours (when the computer is off) <i>i</i> <b>NOTE:</b> Control the charging time, duration, start and end time, and so on using the Dell Power Manager application.	From 0% up to 35% in 20 minutes (ExpressCharge Boost), 2hr (Express charge), 3hr (Standard charge) hours (when the computer is off) <i>i</i> <b>NOTE:</b> Control the charging time, duration, start and end time, and so on using the Dell Power Manager application.	2hr (Express charge), 3hr (Standard charge) hours (when the computer is off) <i>i</i> <b>NOTE:</b> Control the charging time, duration, start and end time, and so on using the Dell Power Manager application.
Life span (approximate)		1 year	1 year	3 years	3 years
Coin-cell battery		CR-2032	CR-2032	CR-2032	CR-2032
Operating time		Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain	Varies depending on operating conditions and can significantly reduce under certain	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.

**Table 19. Battery specifications (continued)**

Description	Values			
		power-intensive conditions.	power-intensive conditions.	

## Display

**Table 20. Display specifications**

Description	Values					
Type	High Definition (HD)	Full High Definition (FHD)	Full High Definition (FHD)	Full High Definition (FHD)	Ultra High Definition (UHD)	
Panel technology	TFT, TN (Twisted Nematic )	TFT, Wide Viewing Angle (WVA)	TFT, Wide Viewing Angle (WVA)	TFT, Wide Viewing Angle (WVA), Low Blue Light (LBL)	TFT, Wide Viewing Angle (WVA), Low Blue Light (LBL)	
Luminance (typical)	220 nits	250 nits	250 nits	400 nits	400 nits	
<b>Dimensions</b>						
	Height	344.16 mm	344.16 mm	344.16 mm	344.16 mm	344.16 mm
	Width	193.59 mm	193.59 mm	193.59 mm	193.59 mm	193.59 mm
	Diagonal	396.24 mm	396.24 mm	396.24 mm	396.24 mm	396.24 mm
Native resolution	1366 x 768	1920 x 1080	1920 x 1080	1920 x 1080	3840 x 2160	
Megapixels	1.05	2.07	2.07	2.07	8.29	
Color gamut	NTSC 45%	NTSC 45%	NTSC 45%	sRGB 100%	sRGB 100%	
Pixels per inch (PPI)	100	141	141	141	283	
Contrast ratio (min)	500:1	700:1	700:1	700:1	1000:1	
Response time (max)	25 ms	25 ms	25 ms	25 ms	19 ms	
Refresh rate	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz	
Horizontal view angle	40 +/-degrees	80 +/-degrees	80 +/-degrees	80 +/-degrees	80 +/-degrees	
Vertical view angle	10 (U) / 30 (D) +/-degrees	80 +/-degrees	80 +/-degrees	80 +/-degrees	80 +/-degrees	
Pixel pitch	0.252 mm	0.17925 mm	0.17925 mm	0.17925 mm	0.08964 mm	
Power consumption (maximum)	4.2 W	4.6 W	4.5 W	4.5 W	4.5 W	

**Table 20. Display specifications (continued)**

Description	Values				
Anti-reflective vs Anti-smudge	Anti-glare	Anti-glare	Anti-glare	Anti-glare	Anti-glare
Touch options	No	Yes	No	No	No
Stylus support	No	No	No	No	No

## Fingerprint reader (optional)

**Table 21. Fingerprint reader specifications**

Description	Power button option	FIPS option
Sensor technology	Capacitive	Capacitive
Sensor resolution	500 dpi	508 dpi
Sensor pixel size, X	108	256
Sensor pixel size, Y	88	360

## Video

**Table 22. Discrete graphics specifications**

Discrete graphics			
Controller	External display support	Memory size	Memory Type
NVIDIA T500	NA	2 GB	GDDR6

**Table 23. Integrated graphics specifications**

Integrated graphics			
Controller	External display support	Memory size	Processor
Intel Iris Xe Graphics	HDMI 2.0, DisplayPort over USB Type-C	Shared system memory	11 <sup>th</sup> Generation Intel Core i5/i7 processors <i>i</i> <b>NOTE:</b> System with single-channel memory is shown as Intel UHD Graphics in Intel Graphics Command Center (IGCC).

## Security

**Table 24. Hardware Security**

Hardware security options
Trusted Platform Module (TPM) 2.0 discrete

**Table 24. Hardware Security (continued)**

Hardware security options
FIPS 140-2 certification for TPM
TCG (Trusted Computing Group) Certification for TPM
Fingerprint reader in power button tied to ControlVault 3
ControlVault 3 Advanced Authentication with FIPS 140-2 Level 3 Certification
Contacted Smart Card and ControlVault 3
Contactless Smart Card, NFC, and ControlVault 3
SED SSD NVMe, SSD and HDD (Opal and non-Opal) per SDL
FIPS 201 Full Scan FPR and ControlVault 3

**Table 25. Data Security**

Data security options
McAfee Small Business Security 30-day trial
McAfee Small Business Security 12-months subscription, digitally delivered
McAfee Small Business Security 24-months subscription, digitally delivered
McAfee Small Business Security 36-months subscription, digitally delivered

## Computer environment

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

**Table 26. Computer environment**

Description	Operating	Storage
Temperature range	0°C to 40°C (32°F to 104°F)	-40°C to 60°C (-40°F to 140°F)
Relative humidity (maximum)	10% to 90% (non-condensing)	0% to 95% (non-condensing)
Vibration (maximum)*	0.66 GRMS	1.30 GRMS
Shock (maximum)	140 G†	160 G†
Altitude (maximum)	-15.2 m to 3048 m (-50 ft to 10000 ft)	-15.2 m to 10668 m (-50 ft to 35000 ft)

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

† Measured using a 2 ms half-sine pulse when the hard drive is in use.

## Sensor and control

**Table 27. Sensor and control**


Sensor support	
Sensor	Ambient Light Sensor on the hinge-up (optional)
	P-sensor on the hinge-up (optional)
	Accelerometer (G sensor): One on the base (system board) and another on the hinge-up (optional)

## Engineering specifications

### Graphics options

#### Integrated graphics

Table 28. Integrated graphics

Feature	Intel Iris X <sup>e</sup> Graphics  <b>NOTE:</b> System with single-channel memory is shown as Intel UHD Graphics in Intel Graphics Command Center (IGCC)
Bus type	Integrated
Memory type	DDR4
Memory interface	N/A (Unified Memory Architecture)
Estimated Maximum Power Consumption (TDP)	15 W - included in the CPU power
External connectors	HDMI and Type-C DisplayPort alt mode
Multiple display support	Yes (up to 3 displays - including internal panel display)

### Communications

#### Wireless LAN options

#### Intel Wi-Fi 6 AX201 802.11AX 2x2 Wi-Fi and Bluetooth 5.1

Table 29. Intel AX201 802.11AX 2x2 Wi-Fi and Bluetooth 5.1

Feature	Specifications
Type	Intel AX201
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160 MHz channel use, MU-MIMO
Wi-Fi Alliance certifications	Wi-Fi CERTIFIED* a/b/g/n/ac with wave 2 features, designed to be Wi-Fi CERTIFIED* ax (Wi-Fi 6), WMM*, WMM-PS*, WPA*, WPA2*, WPS2*, Protected Management Frames, and Wi-Fi Direct (For Microsoft Windows* only)
Transfer rate	Up to 2400 Gbps
Operating Frequency Bands	Dual band 2.4 GHz and 5 GHz
Data Rate	<ul style="list-style-type: none"> <li>2.4 GHz 40 M - Up to 574 Mbps</li> <li>5 GHz 80 M - Up to 1.2 Gbps</li> <li>5 GHz 160 M - Up to 2 Gbps</li> </ul>

**Table 29. Intel AX201 802.11AX 2x2 Wi-Fi and Bluetooth 5.1 (continued)**

Feature	Specifications
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity.
Authentication	WPA* and WPA2* Personal and Enterprise; WPA3* (pending operating system support)
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
Government Compliance	FIPS 140-2, FISMA
Client Utility	Intel PRO/Set Wireless Software v21 and later
Antenna Diversity	Supported
Radio On/Off	Supported
Wake On Wireless	Supported
Wireless Display	Native Miracast* support by Windows 10
Wireless PAN Standard	Wi-Fi 802.11ac, Wi-Fi 802.11b/g/n
Bluetooth	5.1
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 10
Bluetooth Data Encryption	128-bit encryption
Bluetooth Output Power	Power class 1
Temperature	<ul style="list-style-type: none"> <li>Operating temperature 0°C to + 50°C (Full performance at shield temperatures up to 80°C)</li> <li>Storage temperature of -40°C to +70°C</li> </ul>
Humidity	Up to 90% RH non-condensing (at temperatures of 25°C to 35°C)

## Intel Wi-Fi 6 AX210 160 MHz (Typhoon Peak 2) 2x2 Wi-Fi and Bluetooth 5.2 M.2 wireless card

**Table 30. Intel Wi-Fi 6 AX210 160 MHz (Typhoon Peak 2) 2x2 Wi-Fi and Bluetooth 5.2 M.2 wireless card**

Feature	Specifications
Type	Intel AX210
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160 MHz channel use, MU-MIMO
Wi-Fi Alliance certifications	Wi-Fi CERTIFIED* a/b/g/n/ac with wave 2 features, designed to be Wi-Fi CERTIFIED* ax (Wi-Fi 6), WMM*, WMM-PS*, WPA*, WPA2*, WPS2*, Protected Management Frames, and Wi-Fi Direct (For Microsoft Windows* only)
Transfer rate	Up to 2400 Gbps
Operating Frequency Bands	2.4 GHz, 5 GHz, and 6 GHz
Data Rate	<ul style="list-style-type: none"> <li>2.4 GHz 40 M - Up to 574 Mbps</li> <li>5/6 GHz 80 M - Up to 1.2 Gbps</li> </ul>

**Table 30. Intel Wi-Fi 6 AX210 160 MHz (Typhoon Peak 2) 2x2 Wi-Fi and Bluetooth 5.2 M.2 wireless card (continued)**

Feature	Specifications
	<ul style="list-style-type: none"> <li>5/6 GHz 160 M - Up to 2.4 Gbps</li> </ul>
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity.
Authentication	WPA* and WPA2* Personal and Enterprise; WPA3* (pending operating system support)
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
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 10
Wireless PAN Standard	Dual Mode bluetooth 5.2, BLE
Bluetooth	5.2
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 10
Bluetooth Data Encryption	128-bit encryption
Bluetooth Output Power	Power class 1
Temperature	<ul style="list-style-type: none"> <li>Operating temperature 0°C to + 50°C (Full performance at shield temperatures up to 80°C)</li> <li>Storage temperature of -40°C to +70°C</li> </ul>
Humidity	Up to 90% RH non-condensing (at temperatures of 25°C to 35°C)

## Dell Qualcomm QCA61x4A, 802.11ac

**Table 31. Dell Qualcomm QCA61x4A, DW1820 802.11ac**

Feature	Specifications
Host interface	Qualcomm QCA61x4A
Transfer rate	Up to 867 Mbps
Wi-Fi Alliance Certifications	Wi-Fi CERTIFIED* a/b/g/n/ac with wave 2 features, WMM*, WMM-PS*, WPA*, WPA2*, WPS2*, Protected Management Frames, Wi-Fi Miracast* as Source, and Wi-Fi Direct (For Microsoft Windows* only)
Operating Frequency Bands	Dual band 2.4 GHz/5 GHz
Data Rate	2.4 GHz 40M: Up to 300 Mbps

**Table 31. Dell Qualcomm QCA61x4A, DW1820 802.11ac (continued)**

Feature	Specifications
	5 GHz 80M: Up to 867 Mbps 5 GHz 160M: Up to 1.73 Gbps
Power consumption	WPA* and WPA2*, 802.1X (EAP-TLS, TTLS, PEAP, EAP-SIM, EAP-AKA, EAP-AKA')
Authentication	Open, Shared, WPA, WPA-PSK, WPA2, WPA2-PSK
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAP*v2
Encryption	64-bit and 128-bit WEP, TKIP, 128-bit AES-CCMP
Government Compliance	FIPS, FISMA
Client Utility	Intel PRO/Set Wireless Software v20 and later
Antenna Diversity	Supported
Radio On/Off	Supported
Wake On Wireless	Supported
Wireless Display	Native Miracast support by Windows 10
Bluetooth	Bluetooth 5.0
Wireless PAN Standard	Wi-Fi 802.11ac Wi-Fi 802.11b/g/n
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 10
Bluetooth Data Encryption	64/128-bit encryption
Bluetooth Output Power	Power class 1
Temperature	Operating temperature 0 to + 50 C (Full performance at shield temperatures up to 80 C) Storage temperature of -40 to +70 C
Humidity	Up to 90% RH non-condensing (at temperatures of 25 C to 35 C)

## Wireless WAN options

### Intel XMM 7360 Global LTE-Advanced (DW5820e) CAT9, WWAN Module

Feature	Specifications
Host interface	M.2 3042 form factor
Network standard	LTE FDD/TDD, WCDMA/HSPA+, GNSS/Beidou
Transfer rate	Up to 450 Mbps DL/50 Mbps UL (Cat 9)
Operating FrequencyBands	(1,2,3,4,5,7,8,11,12,13,17,18,19,20,21,26,28,29,30,38,39,40,41,66), HSPA+ (1, 2, 4,5, 8)
Data Rate	<ul style="list-style-type: none"> <li>• LTE FDD: 450 Mbps DL/50 Mbps UL (Cat 9)</li> <li>• LTE TDD: 347 Mbps DL/30 Mbps UL (Cat 9)</li> <li>• UMTS/HSPA+: UMTS 384 kbps DL/384 kbps UL</li> </ul>



Feature	Specifications
Power supply	DC 3.135 V to 4.4 V, Typical 3.3 V
SIM card (Micro or Nano)	Supported <sup>1</sup>
eSIM card (Micro or Nano)	Supported <sup>1,2</sup>
Antenna Diversity	Supported
Radio On/Off	Supported
Wake On Wireless	Supported
Temperature	<ul style="list-style-type: none"> <li>Normal operating temperature: -10°C to + 55°C</li> <li>Extended Operating temperature: -20°C to +65°C</li> </ul>
Antenna connector	<ul style="list-style-type: none"> <li>WWAN Main Antenna x1</li> <li>WWAN Diversity Antenna x1</li> </ul>
<b>NOTE:</b> <ul style="list-style-type: none"> <li><sup>1</sup> Use of SIM card is supported through external SIM slot, some model support Nano card only.</li> <li><sup>2</sup> The availability of eSIM functionality depends on the region and carrier requirements.</li> </ul>	

## Supported hard drives

### M.2 2230 128 GB Gen 3 PCIe x4 NVMe Class 35 Solid-State Drive

**Table 32. M.2 2230 128 GB Gen 3 PCIe x4 NVMe Class 35 Solid-State Drive**

Features	Specifications
Capacity	128 GB
Dimensions	22.00 mm x 30.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s (Up to 4 lanes)
MTTF	1.4 M hours
Logical blocks	250,069,680
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>Idle : 5 mW (PS4)</li> <li>Active : 3.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2230 256 GB Gen 3 PCIe x4 NVMe Class 35 Solid-State Drive

**Table 33. M.2 2230 256 GB Gen 3 PCIe x4 NVMe Class 35 Solid-State Drive**

Features	Specifications
Capacity	256 GB
Dimensions	22.00 mm x 30.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s (Up to 4 lanes)
MTTF	1.4 M hours
Logical blocks	500,118,192
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>• Idle : 5 mW (PS4)</li> <li>• Active : 3.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2230 512 GB Gen 3 PCIe x4 NVMe Class 35 Solid-State Drive

**Table 34. M.2 2230 512 GB Gen 3 PCIe x4 NVMe Class 35 Solid-State Drive**

Features	Specifications
Capacity	512 GB
Dimensions	22.00 mm x 30.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s (Up to 4 lanes)
MTTF	1.4 M hours
Logical blocks	1,000,215,216
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>• Idle : 5 mW (PS4)</li> <li>• Active : 3.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%

**Table 34. M.2 2230 512 GB Gen 3 PCIe x4 NVMe Class 35 Solid-State Drive (continued)**

Features	Specifications
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2280 256 GB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive

**Table 35. M.2 2280 256 GB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive**

Features	Specifications
Capacity	256 GB
Dimensions	22.00 mm x 80.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s
MTTF	1.4 M hours
Logical blocks	500,118,192
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>Idle : 5 mW (PS4)</li> <li>Active : 4.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2280 512 GB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive

**Table 36. M.2 2280 512 GB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive**

Features	Specifications
Capacity	512 GB
Dimensions	22.00 mm x 80.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s
MTTF	1.4 M hours

**Table 36. M.2 2280 512 GB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive (continued)**

Features	Specifications
Logical blocks	1000,215,216
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>Idle : 5 mW (PS4)</li> <li>Active : 4.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2280 1 TB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive

**Table 37. M.2 2280 1 TB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive**

Features	Specifications
Capacity	1 TB
Dimensions	22.00 mm x 80.00 mm x 3.73 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s
MTTF	1.4 M hours
Logical blocks	2000,409,264
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>Idle : 5 mW (PS4)</li> <li>Active : 4.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2280 2 TB Gen 4 PCIe x4 NVMe Class 40 Solid-State Drive

**Table 38. M.2 2280 2 TB Gen 4 PCIe x4 NVMe Class 40 Solid-State Drive**

Capacity	2 TB
Dimensions	22.00 mm x 80.00 mm x 3.73 mm
Interface type and maximum speed	Gen 4 PCIe 32 Gb/s
MTTF	1.4 M hours
Logical blocks	4000,797,360
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>Idle : 5 mW (PS4)</li> <li>Active : 4.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2280 256 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive

**Table 39. M.2 2280 256 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive**

Features	Specifications
Capacity	256 GB
Dimensions	22.00 mm x 80.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s (Up to 4 lanes)
MTTF	1.4 M hours
Logical blocks	500,118,192
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>Idle : 5 mW (PS4)</li> <li>Active : 4.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%

**Table 39. M.2 2280 256 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive (continued)**

Features	Specifications
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2280 512 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive

**Table 40. M.2 2280 512 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive**

Features	Specifications
Capacity	512 GB
Dimensions	22.00 mm x 80.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s
MTTF	1.4 M hours
Logical blocks	1000,215,216
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>Idle : 5 mW (PS4)</li> <li>Active : 4.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## Accessories

**Table 41. Accessories**

Accessories
3Dconnexion SpaceMouse Wireless
Dell Premier Multi-Device Wireless Keyboard and Mouse - KM7321W
Dell Premier Rechargeable Wireless Mouse - MS7421W

**Table 41. Accessories (continued)**

<b>Accessories</b>
Dell Mobile Adapter Speakerphone - MH3021P
Dell USB-C Mobile Adapter - DA310
Jabra Evolve2 85
Dell Thunderbolt Dock - WD19TB
Dell Notebook Power Bank Plus USB-C, 65 Wh - PW7018LC
Dell Premier Rechargeable Wireless Mouse - MS7421W
Dell Pro Hybrid Briefcase Backpack 15 - PO1521HB
Dell UltraSharp 27 4K Premier Color Monitor - UP2720Q
Dell UltraSharp 27 4K USB-C Monitor - U2720Q

## Systems management


**Table 42. Systems management**

<b>Systems management</b>
Dell Power Manager (DPM) version 3.0 or later
BIOS complies to Dell SMBIOS implementation spec (DSIS)
SW and Drivers MUP/DUP compliant
Dell Command   Configure (DCC) version 4.0 or later
Dell Command   Monitor (DCM) version 10.0 or later
Dell Command   Update (DCU) version 3.0 or later
Dell Command   Update Catalog (DCUC)
Dell Command   Deploy (DCP)
Dell Command   Integration Suite for System Center (DCIS) version 5.0
Dell Command   Intel vPro Out of Band (DCIV)
Dell Command   PowerShell Provider version 2.0 or later
Dell Command   Deploy Driver Pack Catalog version 1.0 or later

# Getting help

## Contacting Dell

### Prerequisites

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

### About this task

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

### Steps

1. Go to **Dell.com/support**.
2. Select your support category.
3. Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
4. Select the appropriate service or support link based on your need.