Precision 3460 Small Form Factor

Technical Guidebook

Regulatory Model: D17S
Regulatory Type: D17S004
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DELL Technologies

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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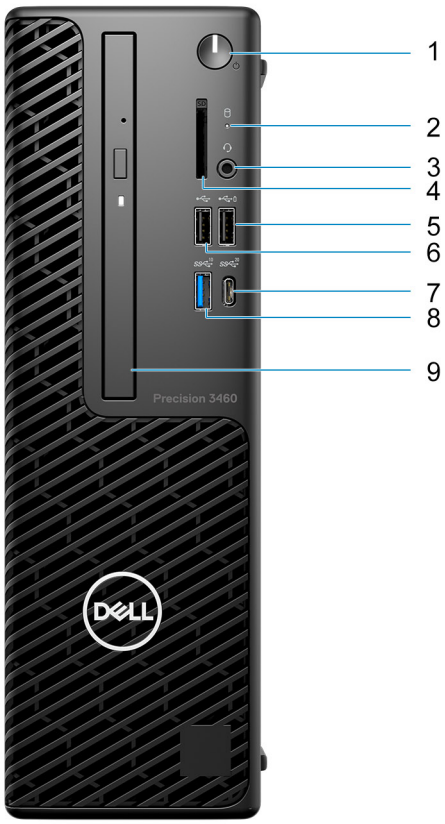
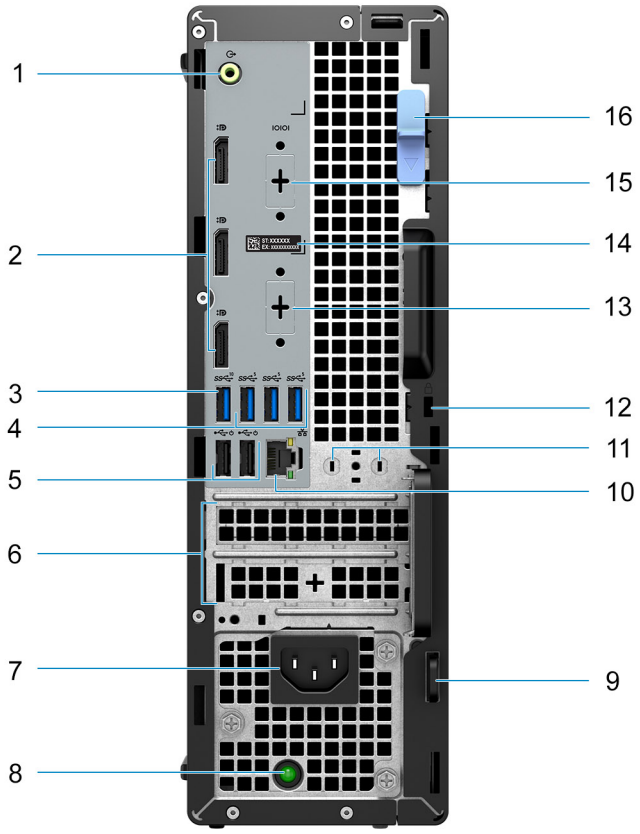
Views of Precision 3460 Small Form Factor

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 2x2 Type-C port
8. USB 3.2 Gen 2 port
9. Optical drive (optional)

Back



1. Re-tasking Line-out/Line-in audio port
2. Three DisplayPort 1.4a ports (HBR2)
3. USB 3.2 Gen 2 port
4. Three USB 3.2 Gen 1 ports
5. Two USB 2.0 ports with Smart Power On
6. Two expansion card slots
7. Power connector port
8. Power supply diagnostic light
9. Padlock ring
10. RJ45 Ethernet port
11. Antenna module slot
12. Kensington security-cable slot
13. HDMI 2.1/DisplayPort 1.4/VGA/USB 3.2 Gen 2 type-C port with DisplayPort Alt Mode (optional)
14. Service Tag
15. Serial port (optional)
16. Release latch

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Specifications of Precision 3460 Small Form Factor

Dimensions and weight

The following table lists the height, width, depth, and weight of your Precision 3460 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: 3.87 kg (8.52 lb) • Maximum: 5.34 kg (11.77 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 for your Precision 3460 Small Form Factor.

Table 2. Processor

Description	Option one	Option two	Option three	Option four	Option five	Option six
Processor type	14th Generation Intel Core i3-14100	14th Generation Intel Core i5-14400	14th Generation Intel Core i5-14500, vPro	14th Generation Intel Core i5-14600, vPro	14th Generation Intel Core i7-14700, vPro	14th Generation Intel Core i9-14900, vPro
Processor wattage	60 W	65 W	65 W	65 W	65 W	65 W
Processor core count	4	10	14	14	20	24
Processor thread count	8	16	20	20	28	32
Processor speed	3.5 GHz to 4.7 GHz	2.5 GHz to 4.7 GHz	2.6 GHz to 5.0 GHz	2.7 GHz to 5.2 GHz	2.1 GHz to 5.4 GHz	2.0 GHz to 5.8 GHz
Processor cache	12 MB	20 MB	24 MB	24 MB	33 MB	36 MB

Table 2. Processor (continued)

Description	Option one	Option two	Option three	Option four	Option five	Option six
Integrated graphics	Intel UHD Graphics 730	Intel UHD Graphics 730	Intel UHD Graphics 770	Intel UHD Graphics 770	Intel UHD Graphics 770	Intel UHD Graphics 770

Chipset

The following table lists the details of the chipset that is supported for your Precision 3460 Small Form Factor.

Table 3. Chipset

Description	Values
Chipset	Intel W680
Processor	• 14th Generation Intel Core i3/i5/i7/i9
DRAM bus width	64-bit, Dual-channel
Flash EPROM	• 16 MB (nRPMC) • 32 MB (RPMC)
PCIe bus	Up to Gen 4.0

Operating system

Your Precision 3460 Small Form Factor supports the following operating systems:

- Windows 11 Home
- Windows 11 Pro
- Windows 11 Pro for Workstations
- Windows 11 Pro National Education
- Ubuntu Linux 22.04 LTS, 64-bit

Memory

The following table lists the memory specifications of your Precision 3460 Small Form Factor.

Table 4. Memory specifications

Description	Values
Memory slots	Two SODIMM slots
Memory type	DDR5
Memory speed	5600 MT/s
Maximum memory configuration	64 GB
Minimum memory configuration	8 GB
Memory size per slot	8 GB, 16 GB, 32 GB

Table 4. Memory specifications (continued)

Description	Values
Memory configurations supported	• 8 GB: 1 x 8 GB, DDR5, 5200 MT/s, ECC • 16 GB: 1 x 16 GB, DDR5, 5200 MT/s, ECC • 16 GB: 2 x 8 GB, DDR5, 5200 MT/s, ECC, dual-channel • 32 GB: 1 x 32 GB, DDR5, 5200 MT/s, ECC • 32 GB: 2 x 16 GB, DDR5, 5200 MT/s, ECC, dual-channel • 64 GB: 2 x 32 GB, DDR5, 5200 MT/s, ECC, dual-channel • 8 GB: 1 x 8 GB, DDR5, 5600 MT/s, non-ECC • 16 GB: 1 x 16 GB, DDR5, 5600 MT/s, non-ECC • 16 GB: 2 x 8 GB, DDR5, 5600 MT/s, non-ECC, dual-channel • 32 GB: 1 x 32 GB, DDR5, 5600 MT/s, non-ECC • 32 GB: 2 x 16 GB, DDR5, 5600 MT/s, non-ECC, dual-channel • 64 GB: 2 x 32 GB, DDR5, 5600 MT/s, non-ECC, dual-channel

Memory matrix

The following table lists the memory configurations supported on your Precision 3460 Small Form Factor.

Table 5. Memory matrix

Configuration	SO-DIMM1	SO-DIMM2
8 GB DDR5	8 GB	NA
16 GB DDR5	16 GB	NA
16 GB DDR5	8 GB	8 GB
32 GB DDR5	32 GB	NA
32 GB DDR5	16 GB	16 GB
64 GB DDR5	32 GB	32 GB

External ports

The following table lists the external ports of your Precision 3460 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 2 ports (front) • One USB 3.2 Gen 2x2 Type-C port (front)

Table 6. External ports (continued)

Description	Values
	• Three USB 3.2 Gen 1 ports (rear) • One USB 3.2 Gen 2 port (rear) • Two USB 2.0 ports with Smart Power On (rear)
Audio port	• One Universal audio port (front) • One Re-tasking Line-out/Line-in audio port (rear)
Video port	• Three DisplayPort 1.4a (HBR2) ports (rear) **NOTE:** Maximum resolution up to 4096 x 2304 @60Hz. • One Optional video port (DisplayPort 1.4a (HBR3)/HDMI 2.1/VGA) (optional) **NOTE:** Maximum resolution: ○ HDMI 2.1: Up to 4096 x 2160 @60Hz ○ DisplayPort 1.4a (HBR3): Up to 5120 x 3200 @60Hz ○ VGA: Up to 1920 x 1200 @60Hz • One USB 3.2 Gen 2 type-C port with DisplayPort Alt Mode (rear, optional) **NOTE:** Maximum resolution up to 5120 x 3200 @60Hz **NOTE:** Download and install the latest Intel Graphics driver from Dell Support Site to enable multiple displays.
Media-card reader	One SD 4.0 card slot (front, optional card)
Security-cable slot	• One Kensington lock slot • One Padlock ring

Internal slots

The following table lists the internal slots of your Precision 3460 Small Form Factor.

Table 7. Internal slots

Description	Values
PCIe Expansion	• One Half-height Gen4 PCIe x16 slot • One Half-height Gen3 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 • Three M.2 2230/2280 slots for SSD ○ 1st M.2 slot for 2230/2280 SSD ○ 2nd M.2 slot for 2230/2280 SSD ○ 3rd M.2 slot for 2280 SSD **NOTE:** To learn more about the features of different types of M.2 cards, see the knowledge base article 000144170 at Dell Support Site.

Ethernet

The following table lists the wired Ethernet Local Area Network (LAN) specifications of your Precision 3460 Small Form Factor.

Table 8. Ethernet specifications

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

Wireless module

The following table lists the Wireless Local Area Network (WLAN) modules that are supported on your Precision 3460 Small Form Factor.

Table 9. Wireless module specifications

Description	Option one	Option two
Model number	Intel AX211	Qualcomm WCN6856-DBS
Transfer rate	Up to 2400 Mbps	Up to 3571 Mbps
Frequency bands supported	2.4 GHz/5 GHz/6 GHz	2.4 GHz/5 GHz/6 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) • Wi-Fi 6E (WiFi 802.11ax)
Encryption	• 64-bit and 128-bit WEP • 128-bit AES-CCMP • TKIP	• 64-bit and 128-bit WEP • AES-CCMP • TKIP
Bluetooth wireless card	5.3 wireless card	5.3 wireless card
	NOTE: The version of the Bluetooth wireless card may vary depending on the operating system that is installed on your computer.	

Audio

The following table lists the audio specifications of your Precision 3460 Small Form Factor.

Table 10. Audio specifications

Description	Values
Audio controller	Waves MaxxAudio API
Stereo conversion	24-bit DAC (Digital-to-Analog) and ADC (Analog-to-Digital)
Internal audio interface	Intel HDA (high-definition audio)
External audio interface	• One Universal audio port (front) • One Line-out audio port with re-tasking to Line-in (rear)

Table 10. Audio specifications (continued)

Description		Values
Number of speakers		Not supported
Internal-speaker amplifier		Not supported
External volume controls		Not supported
Speaker output:		
	Average speaker output	2 Watts
	Peak speaker output	2.5 Watts
Subwoofer output		Not supported
Microphone		Not supported

Storage

This section lists the storage options on your Precision 3460 Small Form Factor.

Your computer supports one of the following configurations:

- One 2.5-inch hard drive
- Two 2.5-inch hard drives
- One 3.5-inch hard drive
- One M.2 2230 solid-state drive
- One M.2 2230 solid-state drive (Class 35) and one 2.5 inch hard drive
- One M.2 2230 solid-state drive (Class 35) and two 2.5 inch hard drive
- One M.2 2230 solid-state drive (Class 35) and one 3.5 inch hard drive
- One M.2 2280 solid-state drive
- One M.2 2280 solid-state drive (Class 40) and one 3.5 inch hard drive
- One M.2 2280 solid-state drive (Class 40) and one 2.5 inch hard drive
- One M.2 2280 solid-state drive (Class 40) and two 2.5 inch hard drives
- Two M.2 2280 solid-state drive (Class 40) and one 3.5 inch hard drive
- Two M.2 2280 solid-state drive (Class 40) and one 2.5 inch hard drive
- Two M.2 2280 solid-state drive (Class 40) and two 2.5 inch hard drives
- Three M.2 2280 solid-state drive (Class 40) and one 3.5 inch hard drive
- Three M.2 2280 solid-state drive (Class 40) and one 2.5 inch hard drive
- Three M.2 2280 solid-state drive (Class 40) and two 2.5 inch hard drives

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

- with a M.2 solid-state drive, the M.2 solid-state drive is the primary drive
- without a M.2 drive, either the 3.5-inch hard drive or one of the 2.5-inch hard drives is the primary drive

Table 11. Storage specifications

Storage type	Interface type	Capacity
2.5-inch, 5400 RPM, hard drive	SATA 3.0	Up to 2 TB
2.5-inch, 7200 RPM, hard drive	SATA 3.0	Up to 1 TB
2.5-inch, 7200 RPM, Opal Self-Encrypting hard drive	SATA 3.0	Up to 500 GB
3.5-inch, 5400 RPM, hard drive	SATA 3.0	Up to 4 TB
3.5-inch, 7200 RPM, hard drive	SATA 3.0	Up to 2 TB

Table 11. Storage specifications (continued)

Storage type	Interface type	Capacity
M.2 2280, Class 40 solid-state drive	PCIe NVMe Gen3 x4	Up to 1 TB
M.2 2280, Class 40 solid-state drive	PCIe NVMe Gen4 x4	Up to 4 TB
M.2 2280, Class 40, Opal Self-Encrypting solid-state drive	PCIe NVMe Gen3 x4	Up to 1 TB
M.2 2280, Class 50 solid-state drive	PCIe NVMe Gen3 x4	Up to 1 TB

Redundant Array of Independent Disks (RAID)

For optimal performance when configuring drives as a RAID volume, Dell Technologies recommends drive models that are identical.

NOTE: RAID is not supported on Intel Optane configurations.

RAID 0 (Striped, Performance) volumes benefit from higher performance when drives are matched because the data is split across multiple drives: any I/O operations with block sizes larger than the stripe size splits the I/O and become constrained by the slowest of the drives. For RAID 0 I/O operations where block sizes are smaller than the stripe size, whichever drive the I/O operation targets, determines the performance, which increases variability and results in inconsistent latencies. This variability is particularly pronounced for write operations, and it can be problematic for applications that are latency sensitive. One such example of this is any application that performs thousands of random writes per second in very small block sizes.

RAID 1 (Mirrored, Data Protection) volumes benefit from higher performance when drives are matched because the data is mirrored across multiple drives all I/O operations must be performed identically to both drives, thus variations in drive performance when the models are different result in the I/O operations completing only as fast as the slowest drive. While this does not suffer from the variable latency issue in small random I/O operations as with RAID 0 across heterogeneous drives, the impact is nonetheless large because the higher performing drive becomes limited in all I/O types. One of the worst examples of constrained performance here is when using unbuffered I/O. To ensure that that writes are fully committed to nonvolatile regions of the RAID volume, unbuffered I/O bypasses cache (for example by using the Force Unit Access bit in the NVMe protocol) and the I/O operation will not complete until all the drives in the RAID volume have completed the request to commit the data. This kind of I/O operation completely negates any advantage of a higher performing drive in the volume.

Care must be taken to match not only the drive vendor, capacity, and class, but also the specific model. Drives from the same vendor, with the same capacity, and even within the same class, can have different performance characteristics for certain types of I/O operations. Thus, matching by model ensures that the RAID volume consists of a homogeneous array of drives that deliver all the benefits of a RAID volume without incurring the additional penalties when one or more drives in the volume are lower performing.

Precision 3460 Small Form Factor supports RAID with more than one hard drive configuration.

Media-card reader

The following table lists the media cards that are supported on your Precision 3460 Small Form Factor.

Table 12. Media-card reader specifications

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

Power ratings

The following table lists the power rating specifications of Precision 3460 Small Form Factor.

Table 13. Power ratings

Description	Option one	Option two
Type	300 W (92% Efficient, 80 PLUS Platinum)	260 W (85% Efficient, 80 PLUS Bronze)
Input voltage	90 VAC to 264 VAC	90 VAC to 264 VAC
Input frequency	47 Hz to 63 Hz	47 Hz to 63 Hz
Input current (maximum)	3.2 A	3.2 A
Output current (continuous)	• 12 VA/16.5 A • 12 VB/14 A Standby mode: • 12 VA/1.5 A • 12 VB/2.5 A	• 12 VA/16.5 A • 12 VB/14 A Standby mode: • 12 VA/1.5 A • 12 VB/2.5 A
Rated output voltage	• +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)
Storage	-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 Precision 3460 Small Form Factor.

Table 14. Power supply connector

Power supply unit	Connectors
300 W (80 PLUS Platinum)	• 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

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Precision 3460 Small Form Factor.

Table 15. GPU—Integrated

Controller	External display support	Memory size	Processor
Intel UHD Graphics 730	• Three DisplayPort 1.4a (HBR2) ports	Shared system memory	14th Generation Intel Core i3-14100 and i5-14400 processor

Table 15. GPU—Integrated (continued)

Controller	External display support	Memory size	Processor
Intel UHD Graphics 770	• Three DisplayPort 1.4a (HBR2) ports	Shared system memory	14th Generation Intel Core i5-14500, i5-14600, i7-14700, and i9-14900 processors

Multiple display support matrix

The following table lists the multiple display support matrix for your Precision 3460 Small Form Factor.

Table 16. Multiple display support matrix

Description	Option 1	Option 2
Integrated Graphics Card	UHD Graphics 730 with 3 Display Port	UHD Graphics 770 with 3 Display Port
Optional Module	• Optional card with VGA (1920 x 1200 @ 60 Hz) • Optional card with DP 1.4a (HBR3) (5120 x 3200 @ 60 Hz) • Optional card with HDMI 2.1 (4096 x 2160 @ 60 Hz) • Optional card with Type-C (5120 x 3200 @ 60 Hz)	• Optional card with VGA (1920 x 1200 @ 60 Hz) • Optional card with DP 1.4a (HBR3) (5120 x 3200 @ 60 Hz) • Optional card with HDMI 2.1 (4096 x 2160 @ 60 Hz) • Optional card with Type-C (5120 x 3200 @ 60 Hz)
Supported 4K Displays	DP1.4a HBR2, 4096 x 2304 @ 60 Hz	DP1.4a HBR2, 4096 x 2304 @ 60 Hz
Supported 5K Displays	5K tiled resolution (5120x2880) support on DP panels. **NOTE:** Requires 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:** Requires 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 Precision 3460 Small Form Factor.

Table 17. GPU—Discrete

Controller	External display support	Memory size	Memory type
NVIDIA Quadro T1000 (low profile)	Four Mini-DisplayPort ports	8 GB	GDDR6
NVIDIA Quadro T400 (low profile)	Three Mini-DisplayPort ports	4 GB	GDDR6
NVIDIA RTX A2000 (low profile)	Four Mini-DisplayPort ports	12 GB	GDDR6
AMD Radeon Pro WX6400 (low profile)	Two DisplayPort ports	4 GB	GDDR6
AMD Radeon Pro WX3200 (low profile)	Three DisplayPort 1.4 ports	4 GB	GDDR5
Intel Arc Pro A40	Four Mini-DisplayPort ports	6 GB	GDDR6

Table 17. GPU—Discrete (continued)

Controller	External display support	Memory size	Memory type
NVIDIA RTX 4000 SFF Ada	Four Mini-DisplayPort ports	20 GB	GDDR6

Multiple display support matrix

The following table lists the multiple display support matrix for your Precision 3460 Small Form Factor.

Table 18. Multiple display support matrix

Graphics Card	Memory	Ports	Supported external displays with Direct Connect	Supported external displays with DP Multi-Stream	Supported 4K Displays	Supported 5K Displays	Resolution	Total Power
NVIDIA Quadro T400	4 GB GDDR6	Three mini DisplayPort 1.4 with latching mechanism	3	TBD	TBD	TBD	• Three 3840 x 2160 @ 120 Hz • Three 5120 x 2880 @ 60 Hz	30 W
NVIDIA Quadro T1000	4 GB GDDR6	Four mini DisplayPort 1.4	4	TBD	TBD	TBD	• Four 3840 x 2160 @ 120 Hz • Four 5120 x 2880 @ 60 Hz • Two 7680 x 4320 @ 60 Hz	50 W
NVIDIA RTX A2000	8 GB GDDR6	Four mini DisplayPort 1.4	4	TBD	TBD	TBD	Four 5120 x 3200 @ 60 Hz	70 W
NVIDIA RTX 4000 SFF Ada	20 GB GDDR6	Four mini DisplayPort 1.4	4	TBD	TBD	TBD	Four 5120 x 3200 @ 60 Hz	70 W
AMD Radeon Pro WX3200	4 GB GDDR6	Three mini DisplayPort 1.4	3	TBD	TBD	TBD	• Three 3840 x 2160 @ 120 Hz • Three 5120 x 2880 @ 60 Hz	50 W
AMD Radeon Pro WX6400	4 GB GDDR6	Three mini DisplayPort 1.4	3	TBD	TBD	TBD	• Three 3840 x 2160 @ 120 Hz • Three 5120 x 2880 @ 60 Hz	57 W
Intel Arc Pro A40	6 GB GDDR6	Four mini DisplayPort 1.4	4	TBD	TBD	TBD	• Four 3840 x 2160 @ 120 Hz	50 W

Table 18. Multiple display support matrix (continued)

Graphics Card	Memory	Ports	Supported external displays with Direct Connect	Supported external displays with DP Multi-Stream	Supported 4K Displays	Supported 5K Displays	Resolution	Total Power
							• Four 5120 x 2880 @ 60 Hz • Two 7680 x 4320 @ 60 Hz	

Hardware security

The following table lists the hardware security of your Precision 3460 Small Form Factor.

Table 19. Hardware security

Hardware security
Kensington security-cable slot
Padlock ring
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 Precision 3460 Small Form Factor.

Table 20. Environmental

Feature	Values
Recyclable packaging	Yes

Table 20. Environmental (continued)

Feature	Values
BFR/PVC—free	No
Vertical orientation packaging support	Yes
Multi-Pack packaging	No
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 Precision 3460 Small Form Factor.

Table 21. Regulatory compliance

Regulatory compliance
Product Safety, EMC and Environmental Datasheets
Dell Regulatory Compliance Home page
Dell and the Environment

Operating and storage environment

This table lists the operating and storage specifications of your Precision 3460 Small Form Factor.

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

Table 22. 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	3048 m (10,000 ft)	10,668 m (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 the user environment.

† Measured using a 2 ms half-sine pulse.

3

Engineering specifications

System Limitations

This section contains information about some new features and need-to-know information about this computer.

- Modern Standby Limitations
- Thermal pad for solid-state drive
- Intel System Agent Enhanced Speed Step (SAGV) always disabled
- System board TPM settings through BIOS

Modern Standby Limitations

- Legacy PCI cards do not support Modern Standby through TI PCI bridge.
- Enterprise Hard Drives do not support Modern Standby.
- Systems with 2.5-inch/ 3.5-inch Hard drives take longer to enter Modern Standby for the first time. System can enter Modern Standby normally from the second time onwards.
- Graphics Cards or Add-In Cards not factory installed by Dell may not be Modern Standby compliant and would not allow the system to enter Modern Standby.
- PSU LED may not turn off sporadically even after system enters Modern Standby

Table 23. System behavior with HDDs/ AICs which do not support Modern Standby

	Screen	dGfx fan	Hard drive LED	PWR LED	PSU LED	PSU fan	CPU fan	System fan
Expected system behavior under Modern Standby	**Off**	**Off**	**Off**	**Off**	**Off**	**Off**	**Off**	**Off**
Enterprise SATA hard drive	Off	Off	Off	Off	On	On	On	On
PCIe AIC not supporting ModS	Off	Off/On (Up to dGfx)	Off/On	Off/On (by S/W Drips)	On	On	On	On
Legacy PCI Card (via TI Bridge)	Off	Off/On (Up to dGfx)	Off/On	Off/On (by S/W Drips)	On	On	On	On

NOTE: ModS = Modern Standby

NOTE: PSU = Power Supply Unit

NOTE: CPU = Processor

Thermal pad for solid-state drive

While replacing the serviceable system board, you can reuse the nonadhesive thermal pad for solid-state drive from the old system board.

Intel System Agent Enhanced Speed Step (SAGV) always disabled

All systems will have SAGV disabled by default. If enabled, systems will incur additional boot time when memory is added or swapped.

System board TPM settings through BIOS

When the system board is replaced, by default the TPM is enabled and this is applicable for most of the computers in the rest of the world. Select the **Enable Firmware/Integrated TPM - For Regional Restrictions** option, this option permanently disables the Discrete Hardware TPM and applicable for China region.

Physical system dimensions

The following table provides the physical dimensions of your Precision 3460 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

Table 24. Physical system dimensions (continued)

Feature	Values
Chassis Weight	Maximum: 5.34 kg (11.77 lb) Minimum: 3.87 kg (8.52 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)	6.72 kg (14.80 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 Precision 3460 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	75 W **NOTE:** The total add-in card slots maximum wattage is < 80W
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	40 W **NOTE:** The total add-in card slots maximum wattage is < 80W

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

Voltage	3.3 V

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

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 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 Precision 3460 Small Form Factor.

Table 28. 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 %
Thickness	0.004 in. (0.01 cm)
Remark	PET

PCIe add-in cards

USB 3.1 Gen 2 PCIe card, low profile

The following table lists the USB 3.1 Gen 2 PCIe card specifications.

Table 29. USB 3.1 Gen 2 PCIe card specifications

Feature	Values
Bus	PCIe /USB
Controller	ASM3142
USB standard	USB 3.2 Gen2
IRQ and I/O	System assigned
USB Communication	

Table 29. USB 3.1 Gen 2 PCIe card specifications (continued)

Feature	Values
Host interface	USB 3.2 Gen2
Speed	10 G bit/sec
Number of ports	2
USB connector	Type-A
Protection	N/A
Power	
Power source	PCIe bus power
Output power capacity	5 V/1.5 A for each port
Over current protection	Yes
Power consumption	0.796 W @ idle
Operating System	
Supported operating system	• Windows 10 • Windows 11
Environment	
Operating temperature	0°C to 60°C (32°F to 140°F)
Operating humidity	5% to 95% RH
Storage temperature	-20°C to 70°C (-4°F to 158°F)
Standards and Certifications	
EMC	CE/FCC/BSMI/VCCI
Green	Rohs

Parallel port PCIe card, low profile

The following table lists the Parallel port PCIe card specifications.

NOTE: OptiPlex 7000 series supports Modern Standby.

Table 30. Parallel port PCIe card specifications

Feature	Values
Interface	PCIe
Data rates	PCIe Gen 2
Controller details	
Controller	SUN2212
Controller bus architecture	PCIe to Parallel port
Driver support	• Windows 10 • Windows 11
Half-height serial add-in dongle	N/A
Environment	
Operating temperature	0°C to 60°C (32°F to 140°F)
Operating humidity	5% to 95% RH

Table 30. Parallel port PCIe card specifications (continued)

Feature	Values
Storage temperature	-20°C to 85°C (-4°F to 185°F)

PS/2 Serial add-in bracket, low profile

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

Table 31. 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)

Common access card / Personal identification verification module

Table 32. CAC/PIV module speficiations

Feature	Values
PCB	
Dimension	74.50 mm x 45.70 mm
Layer	6
Processor/Chipset	
NFC	Broadcom Cortex-M3 BC58102
Card reader driver	NXP TDA8034HN/C2
USB 2.0 Hub	GENESYS GL850-OHY50
PROM	WINBOND W25Q32JVSS1Q 32M/bit
Power IC	RICHTEK RT5796AHGJ5
Power LDO (NFC VBAT)	GMT G9141T11U
Add-in slots	
Card reader connector	1 - 10 pin
USB 2.0 header	1 - 5 pin
NFC header	1 - 6 pin

Table 32. CAC/PIV module speficiations (continued)

Feature	Values
Bracket space	1

Ethernet

Intel Ethernet Connection i226

The following table lists the i226 specifications.

Table 33. Intel Ethernet Connection i226 specifications

Feature	Values
External connector type	RJ45
Data rate	10/100/1000/2500 Mbps
Adapter Features	
Bus Type/Bus Width	PCI Express 3.1 x 1
Interrupt levels	INTA, MSI, MSI-X
Hardware certifications	FCC B, UL, CE, VCCI, BSMI, CTICK, KCC
Controller	Intel Ethernet Controller I226
Bracket	Full-height bracket installed.
Wake-on-LAN	Supported
Power Consumption	
Link Speed/Traffic	Typical power
10 Mbps	0.5W
100 Mbps	0.6W
1 Gbe	0.9W
2.5 Gbe	1.4W
Environmental	
Operating temperature range	0°C–55°C (32°F–131°F)
Storage temperature range	-40°C–70°C (-40°F–158°F)
Storage humidity	Maximum 90% non-condensing relative humidity at 35°C
Physical Dimensions	
Dimensions	68.70 mm x 65.30 mm

Wireless module

Intel AX211, 2x2 MIMO, 2400 Mbps, 2.4/5/6 GHz, Wi-Fi 6E (WiFi 802.11ax), Bluetooth 5.3

The following table lists the Intel AX211 specifications.

NOTE: Wi-Fi 6 is supported in regions where Wi-Fi 6E is unavailable.

Table 34. Intel AX211 specifications

Description	Specifications
Host interface	CNVio
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160 MHz channel use, MU-MIMO, new 6 GHz 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

Table 34. Intel AX211 specifications (continued)

Description	Specifications
Wake on wireless	Supported
Wireless display	Native Miracast support by Windows
Wireless PAN standard	• Dual Mode Bluetooth 5.3 • BLE
Bluetooth data rates	Up to 3 Mbps
Bluetooth operating frequency bands	2.4 GHz
Bluetooth profiles supported	Support for Microsoft Inbox Bluetooth Wireless Card 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)

Qualcomm WCN6856, 2x2, Wi-Fi 6E DBS, Bluetooth 5.3

The following table lists the Intel Qualcomm WCN6856 specifications.

Table 35. Qualcomm WCN6856 specifications

Description	Specifications
Host interface	• Wi-Fi - PCIe • Bluetooth - USB
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160MHz channel use, MU-MIMO
Wi-Fi Alliance certifications	• 802.11 a/b/g/n/ac R2/ax R2 • WMM • WMM-PS • WPA3 • WPS2 • PMF • WFD • Miracast • Passpoint R2 • Voice Personal
Operating frequency bands	• 2.4 GHz • 5 GHz • 6 GHz
Data rate	• 2.4 GHz 40M: Up to 691 Mbps • 5 GHz 160M: Up to 2.88 Gbps • 6 GHz 160M: Up to 2.88 Gbps • DBS mode • 2.4 GHz 40M + 5/6 GHz 160M: Up to 3.57 Gbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity

Table 35. Qualcomm WCN6856 specifications (continued)

Description	Specifications
Authentication	• WPA and WPA2 Personal and Enterprise • WPA3 Personal and Enterprise
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)
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 5.3 • 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
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 730

Table 36. Intel UHD Graphics 730

Feature	Specifications
Bus type	Integrated
Memory type	Shared memory

Table 36. Intel UHD Graphics 730 (continued)

Feature	Specifications
Graphics level	Intel Core i3: GT1 (UHD)
Estimated Maximum Power Consumption (TDP)	60 W
Overlay planes	Yes
Operating systems graphics/ video API support	DirectX 12, OpenGL (4.6)
Maximum vertical refresh rate	• On board integrated DP1.4 (HBR2) (4096 x 2304 @ 60Hz) • Optional card with VGA (1920 x 1200 @ 60Hz) • Optional card with DP1.4a (HBR3) (5120 x 3200 @ 60Hz) • Optional card with HDMI 2.1 (4096 x 2160 @ 60Hz) • Optional card with Type-C (5120 x 3200 @ 60Hz)
External ports	• Three DisplayPort 1.4a ports • One Optional port (VGA port/HDMI 2.1 port/Displayport 1.4a(HBR3)/USB Type-C with DisplayPort Alt mode)
Multiple display support	Up to 4 displays through DisplayPort Multi-Streaming Technology

Intel UHD Graphics 770

Table 37. Intel UHD Graphics 770

Feature	Specifications
Bus type	Integrated
Memory type	Shared memory
Graphics level	Intel Core i5/i7/i9: GT1 (UHD)
Estimated Maximum Power Consumption (TDP)	65 W
Overlay planes	Yes
Operating systems graphics/ video API support	DirectX 12, OpenGL (4.6)
Maximum vertical refresh rate	• On board integrated DP1.4a (HBR2) (4096 x 2304 @ 60Hz) • Optional card with VGA (1920 x 1200 @ 60Hz) • Optional card with DP1.4a (HBR3) (5120 x 3200 @ 60Hz) • Optional card with HDMI 2.1 (4096 x 2160 @ 60Hz) • Optional card with Type-C (5120 x 3200 @ 60Hz)
External ports	• Three DisplayPort 1.4a ports • One Optional port (VGA port/HDMI 2.1 port/Displayport 1.4a(HBR3)/USB Type-C with DisplayPort Alt mode)
Multiple display support	Up to 4 displays through DisplayPort Multi-Streaming Technology

GPU—Discrete

NVIDIA Quadro T1000, 4 GB GDDR6, low profile

The following table lists the NVIDIA Quadro T1000.

Table 38. NVIDIA Quadro T1000

Feature	Values
Dedicated graphics memory	4 GB, GDDR6

Table 38. NVIDIA Quadro T1000 (continued)

Feature	Values
Memory bus	128-bit
Memory config	256 M x 16
Width	Single slot
Approximate wattage	50 W
Base clock	1065 MHz
Boost clock	2100 MHz
NVIDIA CUDA cores	896
G-Sync / Freesync ready	Yes
Supported APIs	• DirectX 12.07 • Shader Model 5.17 • OpenGL 4.68 • Vulkan 1.2
Maximum resolution	• 4x 3840 x 2160 @ 120Hz • 4x 5120 x 2880 @ 60Hz • 2x 7680 x 4320 @ 60Hz
HDMI support	HDMI 2.0
HDCP support	HDCP 2.2
I/O ports	3 DisplayPort 1.4a (HBR2)

NVIDIA RTX A2000, 12 GB GDDR6

The following table lists the NVIDIA RTX A2000 specifications.

Table 39. NVIDIA RTX A2000 specifications

Feature	Values
GPU frequency	562 MHz
DirectX 12	12
Shader model	5.17
Open CL	3
Open GL	4.6
GPU memory interface	192 bits
PCIe bus	PCIe 4.0 x16
Display support	Four mini-DP 1.2 Certified, 1.3/1,4 Ready
Graphics memory configuration	12 GB, GDDR6
Graphics memory clock speed	6001 MHz
Active fan sink	4-pin embedded fan controller
Slot number	Dual Slots
PCB form factor	Half Height, Half Length
PCB layer	NA

Table 39. NVIDIA RTX A2000 specifications (continued)

Feature	Values
PCB solder mask	NA
Bracket form factor	Full Height
Maximum resolution	7680 x 4320 x 24 bpp at 120 Hz (Requires two DPs 1.4a & DSC)
Power consumption	70 W

NVIDIA T400, 4 GB GDDR6

The following table lists the NVIDIA T400 specifications.

Table 40. NVIDIA T400 specifications

Feature	Values
GPU frequency	420 MHz
DirectX 12	12
Shader model	5.17
Open CL	3
Open GL	4.6
GPU memory interface	64 bits
PCIe bus	PCIe 3.0 x16
Display support	Three mini-DP 1.2 Certified, 1.3/1,4 Ready
Graphics memory configuration	4 GB, GDDR6
Graphics memory clock speed	5001 MHz
Active fan sink	4-pin embedded fan controller
Slot number	Single Slot
PCB form factor	Half Height
PCB layer	N/A
PCB solder mask	N/A
Bracket form factor	Low Profile
Maximum resolution	7680 x 4320 x 24 bpp at 120 Hz (Requires two DPs 1.4a and DSC)
Power consumption	30 W

NVIDIA RTX 4000 SFF Ada Generation, 20 GB GDDR6

The following table lists the NVIDIA RTX 4000 SFF Ada Generation specifications.

Table 41. NVIDIA RTX 4000 SFF Ada Generation specifications

Description	Values
GPU Memory	20 GB GDDR6
Memory Interface	160-bit
Memory Bandwidth	280 GB/s

Table 41. NVIDIA RTX 4000 SFF Ada Generation specifications (continued)

Description	Values
NVIDIA CUDA Cores	6144
System Interface	PCI Express 4.0 x16
Max Power Consumption	70 W
Thermal Solution	Active
Form Factor	Height: 2.70 in./68.58 mm and Length: 6.60 in./167.64 mm, dual Slot
Display Connectors	4x DP 1.4a
Max Simultaneous Displays	4 direct, 4 DP 1.4 Multi-Stream
Display Resolution	• 2x 7680 x 4320 @ 60 Hz • 4x 5120 x 2880 @ 60 Hz • 4x 4096 x 2160 @ 120 Hz
Graphics APIs	• Shader Model 6.6 • OpenGL 4.6 • DirectX 12 • Vulkan 1.3
Compute APIs	• CUDA 11.6 • DirectCompute • OpenCL 3.0

AMD Radeon Pro W6400, 4 GB GDDR6

The following table lists the AMD Radeon Pro W6400 specifications.

Table 42. AMD Radeon Pro W6400 specifications

Feature	Values
GPU frequency	1923 MHz (base clock)
DirectX 12	12.0 Ultimate
Shader model	6.6
Open CL	2.2
Open GL	4.6
GPU memory interface	64-bit
PCIe bus	Gen 4 (x4 lanes)
Display support	x2 DP 1.4
Graphics memory configuration	4 GB DDR6
Graphics memory clock speed	14 Gbps
Active fan sink	Fan Controller Embedded(4 pin)
Slot number	Single slot
PCB form factor	Full Height, Full length
PCB layer	6
PCB solder mask	Black
Bracket form factor	Full Height

Table 42. AMD Radeon Pro W6400 specifications (continued)

Feature	Values
Maximum resolution	7680 x 4320 @ 60 Hz
Power consumption	50 W

AMD Radeon Pro W3200, 4 GB GDDR6

The following table lists the AMD Radeon Pro W3200 specifications.

Table 43. AMD Radeon Pro W3200 specifications

Feature	Values
GPU frequency	1923 MHz (base clock)
DirectX 12	12.0 Ultimate
Shader model	6.6
Open CL	2.2
Open GL	4.6
GPU memory interface	64-bit
PCIe bus	Gen 4 (x4 lanes)
Display support	x3 DP 1.4
Graphics memory configuration	4 GB DDR6
Graphics memory clock speed	14 Gbps
Active fan sink	Fan Controller Embedded(4 pin)
Slot number	Single slot
PCB form factor	Full Height, Full length
PCB layer	6
PCB solder mask	Black
Bracket form factor	Full Height
Maximum resolution	7680 x 4320 @ 60 Hz
Power consumption	50 W

Intel Arc Pro A40 , 6 GB GDDR6

The following table lists the Intel Arc Pro A40 specifications.

Table 44. Intel Arc Pro A40 specifications

Feature	Values
GPU frequency	1500 MHz (base clock)
DirectX 12	12.0 Ultimate
Shader model	6.6
Open CL	3.0
Open GL	4.6
Vulkan	1.3

Table 44. Intel Arc Pro A40 specifications (continued)

Feature	Values
GPU memory interface	96-bit
PCIe bus	Gen 4 (x4 lanes)
Display support	x4 mDP++
Graphics memory configuration	6 GB DDR6
Graphics memory clock speed	16 Gbps
Active fan sink	Fan Controller Embedded(4 pin)
Slot number	Single slot
PCB form factor	Full Height, Full length
PCB layer	6
PCB solder mask	Black
Bracket form factor	Full Height
Maximum resolution	7680 x 4320 @ 60 Hz
Power consumption	50 W

GPU and PSU matrix

The following table provides the GPU and PSU matrix of your Precision 3460 Small Form Factor.

Table 45. GPU and PSU matrix

GFx card	Card length	Weight (kg)	Power connector	I/O connector	Single/Dual wide	PSU
NVIDIA Quadro T1000	6.60 in.	0.132	N/A	4 x mDP	Single	260 W/300 W
NVIDIA Quadro T400	6.60 in.	0.123	N/A	3 x mDP	Single	260 W/300 W
NVIDIA RTX A2000	6.60 in.	0.294	N/A	4 x mDP	dual	260 W/300 W
AMD Radeon Pro WX6400	6.60 in.	0.162	N/A	2 x DP	Single	260 W/300 W
AMD Radeon Pro WX3200	6.60 in.	0.162	N/A	3 x DP	Single	260 W/300 W
Intel Arc Pro A40	6.60 in.	0.220	N/A	4 x mDP	Single	260 W/300 W
NVIDIA RTX 4000 SFF Ada	6.60 in.	0.277	N/A	4 x mDP	dual	260 W/300 W

Video port and resolution matrix

The following table lists the Video port and resolution matrix of your Precision 3460 Small Form Factor.

Table 46. Video port and resolution matrix

Port type	DisplayPort 1.4a (HBR2)	Optional card
Maximum resolution—single display	On board integrated DP1.4a (4096 x 2304 @ 60Hz)	• Optional card with VGA (1920 x 1200 @ 60Hz) • Optional card with DP 1.4a (HBR3) (5120 x 3200 @ 60Hz)

Table 46. Video port and resolution matrix (continued)

Port type	DisplayPort 1.4a (HBR2)	Optional card
		• Optional card with HDMI 2.1 (4096 x 2160 @ 60Hz) • Optional card with Type-C (5120 x 3200 @ 60Hz)
Maximum resolution—dual MST	On board integrated DP1.4a (4096 x 2304 @ 60Hz) + On board integrated DP1.4a (4096 x 2304 @ 60Hz)	• On board integrated DP1.4a (HBR2) (4096 x 2304 @ 60Hz) + Optional card with VGA (1920 x 1200 @ 60Hz) • On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + Optional card with DP 1.4a (HBR3) (5120 x 3200 @ 60Hz) • On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + Optional card with HDMI 2.1 (4096 x 2160 @ 60Hz) • On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + Optional card with Type-C (5120 x 3200 @ 60Hz)
Maximum resolution—triple MST	• On board integrated DP 1.4a (4096 x 2304 @ 60Hz) + On board integrated DP 1.4a (4096 x 2304 @ 60Hz) + On board integrated DP1.4a (4096 x 2304 @ 60Hz)	• On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + Optional card with VGA (1920 x 1200 @ 60Hz) • On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + Optional card with DP 1.4a (HBR3) (5120 x 3200 @ 60Hz)
Maximum resolution—four MST	On board integrated DP 1.4a (4096 x 2304 @ 60Hz) + On board integrated DP 1.4a (4096 x 2304 @ 60Hz) + On board integrated DP 1.4a (4096 x 2304 @ 60Hz) + Optional card with VGA (1920 x 1200 @ 60Hz)	• On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + Optional card with VGA (1920 x 1200 @ 60Hz) • On board integrated DP1.4a (HBR2) (4096x2304 @ 60 Hz) + On board integrated DP1.4a (HBR2) (4096x2304 @ 60 Hz) + On board integrated DP1.4a (HBR2) (4096x2304 @ 60 Hz) + Option card with DP1.4a (HBR3) (5120x3200 @ 60 Hz) • On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + Optional card with HDMI 2.1 (4096 x 2160 @ 60Hz) • On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + On board integrated DP 1.4a (HBR2) (4096 x 2304 @ 60Hz) + Optional card with Type-C (5120 x 3200 @ 60Hz)

Hard-disk drive Preloaded bracket matrix

The following table lists the hard-disk drive preloaded bracket information of your Precision 3460 Small Form Factor.

Table 47. 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

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

Table 48. 2.5-inch, 500 GB, 7200 RPM, SATA, HDD specifications

Capacity	500 GB
Speed	7200 RPM
Height (approximate)	9.50 mm (0.37 in.)
Width (approximate)	69.85 mm (2.75 in.)
Depth (approximate)	100.45 mm (3.95 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 49. 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

Table 49. 2.5-inch, 1 TB, 7200 RPM, SATA, HDD specifications (continued)

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 50. 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%

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

Table 51. 3.5-inch, 4 TB, 5400 RPM, SATA, HDD specifications

Description	Values
Capacity	4 TB
Speed	5400 RPM
Height (approximate)	25.40 mm (1.00 in.)

Table 51. 3.5-inch, 4 TB, 5400 RPM, SATA, HDD specifications (continued)

Description	Values
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 52. 3.5-inch, 1 TB, 7200 RPM, SATA, HDD specifications

Description	Values
Capacity	1 TB
Speed	7200 RPM
Height (approximate)	26.10 mm (1.02 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 52. 3.5-inch, 1 TB, 7200 RPM, SATA, HDD specifications (continued)

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

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

Table 53. 3.5-inch, 2 TB, 7200 RPM, SATA, HDD specifications

Description	Values
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%

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 54. 256 GB SSD specifications

Description	Values
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)

Table 54. 256 GB SSD specifications (continued)

Description	Values
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 55. 512 GB SSD specifications

Description	Values
Capacity	512 GB
Height (approximate)	2.38 mm (0.17 in.)
Width (approximate)	22 mm (0.87 in.)
Depth (approximate)	80 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 56. 1 TB SSD specifications

Description	Values
Capacity	1 TB
Height (approximate)	2.38 mm (0.17 in.)
Width (approximate)	22 mm (0.87 in.)
Depth (approximate)	80 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
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 57. 2 TB SSD specifications

Description	Values
Capacity	2 TB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22 mm (0.87 in.)
Depth (approximate)	80 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

Table 57. 2 TB SSD specifications (continued)

Description	Values
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, 4 TB, PCIe NVMe Gen4 x4, Class 40 SSD

The following table lists the M.2 2280, 4 TB SSD specifications.

Table 58. 4 TB SSD specifications

Description	Values
Capacity	4 TB
Height (approximate)	3.73 mm (0.15 in.)
Width (approximate)	22 mm (0.87 in.)
Depth (approximate)	80 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	8,001,573,552
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 59. 512 GB SSD, self-encrypting drive specifications

Description	Values
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
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 60. 1 TB SSD, self-encrypting drive specifications

Description	Values
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	

Table 60. 1 TB SSD, self-encrypting drive specifications (continued)

Description	Values
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%

Media-card reader

The following table lists the media-card reader specifications on your Precision 3460 Small Form Factor.

Table 61. 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	
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 Precision 3460 Small Form Factor.

Table 62. Power ratings specifications

Description	Values	
Type	260 W (85% Efficient, 80 Plus Bronze)	300 W (92% Efficient, 80 Plus Platinum)
Diameter (connector)	Not supported	Not supported

Table 62. Power ratings specifications (continued)

Description	Values	
Input voltage	90 VAC to 264 VAC	90 VAC to 264 VAC
Input frequency	47 Hz to 63 Hz	47 Hz to 63 Hz
Input current (maximum)	4.2 A	5 A
Output current (continuous)	• 12 VA/16 A • 12 VB/18 A Standby mode: • 12 VA/1.5 A • 12 VB/2.5 A	• 12 VA/18 A • 12 VB/18 A • 12 VC/12 A Standby mode: • 12 VA/1.5 A • 12 VB/2.5 A • 12 VC/0 A
Rated output voltage	• +12 VA • +12 VB • +12 VC	• +12 VA • +12 VB • +12 VC
BTUs/h (based on PSU max wattage)	888	1229
Temperature range		
Operating	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)
Compliance		
Erp Lot6 Tier 2 requirement	Yes	Yes
80Plus compliant	Yes	Yes
Energy Star 8.0 compliant	Yes	Yes
GS mark compliant	Yes	Yes
NCTC Anti Power Surge certification	Yes	Yes
NCTC Anti Lightning Strike certification	Yes	Yes

Thermal dissipation

The following table lists the thermal dissipation of your Precision 3460 Small Form Factor.

Table 63. Thermal dissipation

Power supply unit	Heat dissipation	Voltage
300 W (80 Plus Platinum)	260*3.412=888 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 Precision 3460 Small Form Factor.

Table 64. 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 Precision 3460 Small Form Factor.

Table 65. 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 Precision 3460 Small Form Factor.

Table 66. 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)

Table 66. Software security (continued)

Security options
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 Precision 3460 Small Form Factor.

Table 67. 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
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 Precision 3460 Small Form Factor.

Table 68. Trusted Platform Module (TPM)

TPM: NUVOTON NPCT750JADYX
SPI interface
TPM 2.0
FIPs 140-2 certificate

Mil-SPEC

The Precision 3460 Small Form Factor meets military specifications for the following MIL-STD 810H tests:

Table 69. Small Form Factor - Military specifications

Test Category	Test Method	Test Parameters	Value
Altitude Storage Transport	Method 500.6 Procedure I	Test Pressure: Equivalent to cabin altitude of 15,000 ft Temperature: 21°C; Altitude Change Rate: <10 m/s	S1, S2

Table 69. Small Form Factor - Military specifications (continued)

Test Category	Test Method	Test Parameters	Value
		Duration: 1 hour	
Altitude Operation/Air Carriage	Method 500.6 Procedure II	Test Pressure: Equivalent to cabin altitude of 15,000 ft Temperature: 21°C; Altitude Change Rate: <10 m/s Duration: 1 hour	S1, S2
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 / storage) Table 501. 7 - III High temperature cycles. Climate category A1 Hot Dry	S1, S2
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 501.7 - III High Temperature cycle Climate category A1 - Hot Dry	S3, S4
Low Temperature (Exaggerated)	Method 502.7 Procedure I - Storage	Duration: 24-hour exposure Temperature: -51°C	S3, S4
Low temperature	Method 502.7 Procedure II - Operation	Duration: 24-hour exposure Temperature: -29°C	S3, S4
Humidity Induced (Storage andTransit) and Natural and Cycles	Method 507.6 Procedure I	Duration: Table 507.6-II, (Hot-humid Cycle B3) Material Category: Non-Hazardous Items Normal Test Duration.	S5, S6
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 (1750 ft/min) Temperature:60°C Relative Humidity: 30%	S7, S8
Vibration	Method 514. 8 Procedure I - Category4	Operational Vibration, 10-500 Hz, 1.04 Grms, random 1 hour on Bottom, Left, and Back side. Unit is operational during test.	S5, S6
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.	S5, S6
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-VII)	S5, S6

Table 69. Small Form Factor - Military specifications (continued)

Test Category	Test Method	Test Parameters	Value
		- Test unit orientations at x, y and z axis for both test. - Unit is Non-Operational during both test - Saw tooth wave form can be replaced by other classical wave forms necessary to meet test equipment capability. See Durability Engineering for acceptable alternative wave forms if needed. Example: ● Alternate Half Sine for On-road shock 5 g, 5 ms. ● Alternate Half Sine for Off-Road shock 15 g, 5 ms"	
Shock - Crash Hazard Shock	Method 516.8 Procedure V	Non-Operational. 185 g, 2 ms Half Sine 2 shocks/axis/direction for a total of 12 shocks **NOTE:** Dell to use noted test to replace MIL-STD-8108, Method 516.8, Procedure V, Table 516.8-XIII.	S9, S10
Bench Handling	Method 516. 8 Procedure VI	Angle drops onto solid wooden bench thickness least 4.25 cm (1.675 inch). Test height judgment as two conditions as rise test units at one edge 100 mm (4 in.) or rise an angle of 45° about a solid wooden bench top.	S7, S8

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 10.20 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 35°C. 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 5.10 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 | 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 (Certification Registry).

4

Dell Optimizer

This section details the Dell Optimizer specifications of your Precision 3460 Small Form Factor.

On Precision 3460 Small Form Factor with Dell Optimizer, the following features are supported:

- **Express Connect**—Automatically joins the access point with the strongest signal, and directs bandwidth to conferencing applications when in use.
- **Express Sign-in**—The Intel Context Sensing Technology's proximity sensor detects your presence to instantly wake up the computer and login using the IR camera and Windows Hello feature. Windows locks when you walk away.
- **ExpressResponse**—Prioritizes the most important applications. Applications open faster and perform better.
- **ExpressCharge**—Extends the battery runtime and improves battery performance by adapting to your patterns.

For more information about configuring and using these features, see Dell Optimizer User Guide.

5

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 70. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	Dell Site
Tips	
Contact Support	In Windows search, type `Contact Support`, and press Enter.
Online help for operating system	Windows Support Site Linux Support Site
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals, and documents.	Your Dell computer is uniquely identified using 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 Dell Support Site. For more information about how to find the Service Tag for your computer, see Locate the Service Tag on your computer.
Dell knowledge base articles	1. Go to Dell Support Site. 2. On the menu bar at the top of the Support page, select **Support** > **Support Library**. 3. In the Search field on the Support Library 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 Dell Support Site.

NOTE: Availability of the services may vary depending on the country or region, and product.

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.