

Dell EMC PowerEdge R7525

Technical Specifications

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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Technical specifications

The technical and environmental specifications of your system are outlined in this section.

Topics:

- Chassis dimensions
- Chassis weight
- Processor specifications
- PSU specifications
- Supported operating systems
- Cooling fan specifications
- System battery specifications
- Expansion card riser specifications
- Memory specifications
- Storage controller specifications
- Drive specifications
- Ports and connectors specifications
- Video specifications
- Environmental specifications

Chassis dimensions

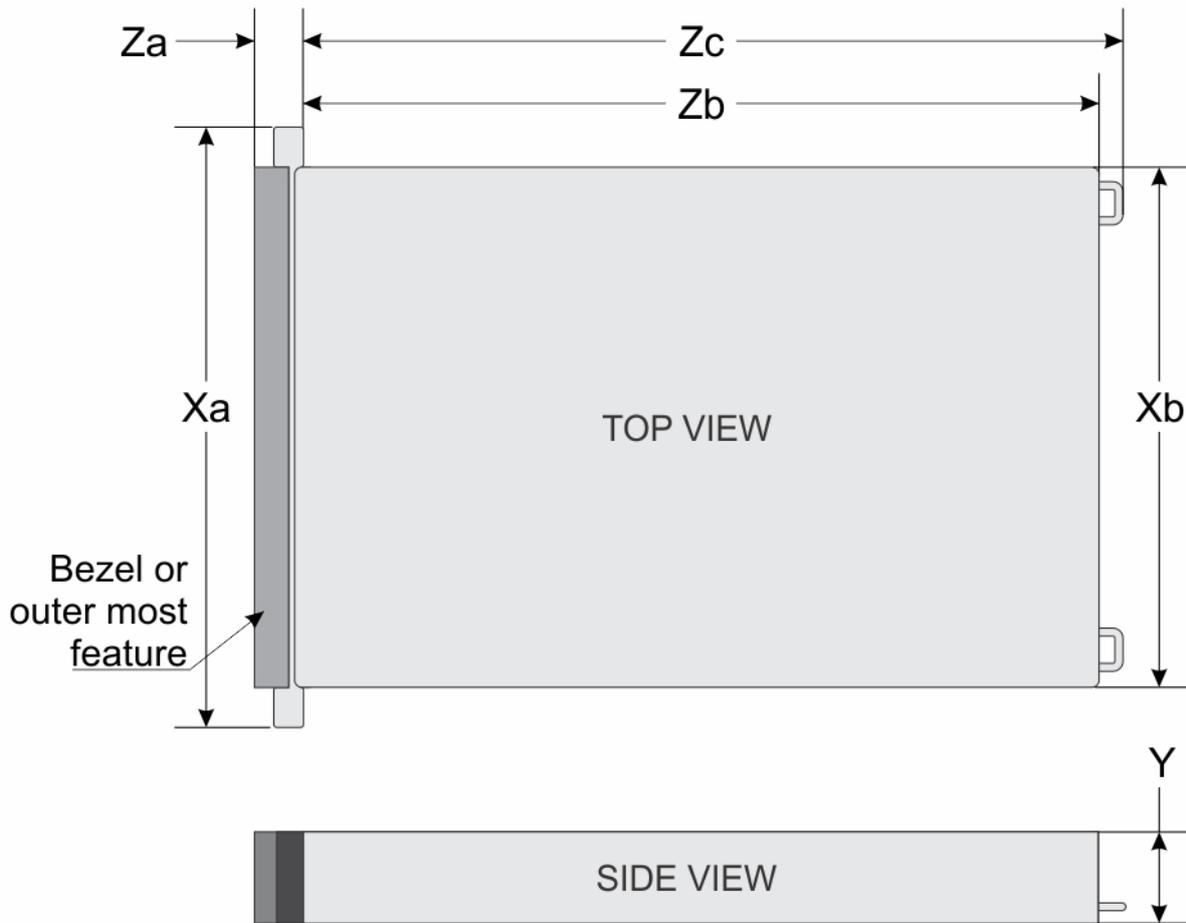


Figure 1. Chassis dimensions

Table 1. PowerEdge R7525

Drives	Xa	Xb	Y	Za	Zb	Zc
12 drives	482.0 mm (18.97 inches)	434.0 mm (17.08 inches)	86.8 mm (3.41 inches)	With bezel: 35.84 mm (1.4 inches) Without bezel: 22.0 mm (0.87 inches)	700.7 mm (27.58 inches) (Ear to rear wall)	736.29 mm (28.98 inches) (Ear to PSU handle)
24 drives	482.0 mm (18.97 inches)	434.0 mm (17.08 inches)	86.8 mm (3.41 inches)	With bezel: 35.84 mm (1.4 inches) Without bezel: 22.0 mm (0.87 inches)	700.7 mm (27.58 inches) (Ear to rear wall)	736.29 mm (28.98 inches) (Ear to PSU handle)

NOTE: Zb is the nominal rear wall external surface where the system board I/O connectors reside.

Chassis weight

Table 2. PowerEdge R7525

System configuration	Maximum weight (with all drives/SSDs)
12 x 3.5-inch	36.3 kg (80.02 lb)
8 x 3.5-inch	33.2 kg (73.19 lb)
24 x 2.5-inch	28.6 kg (63.05 lb)
16 x 2.5-inch	26.6 kg (58.64 lb)
8 x 2.5-inch	24.6 kg (54.23 lb)

Processor specifications

Table 3. PowerEdge R7525 processor specifications

Supported processor	Number of processors supported
AMD EPYC 7002 or 7003 series processor	Two

PSU specifications

The PowerEdge R7525 system supports up to two AC or DC power supply units (PSUs).

⚠ WARNING: Instructions for the qualified electricians only:

System using -(48-60) V DC or 240 V DC power supplies are intended for restricted access locations in accordance with Articles 110-5, 110-6, 110-11, 110-14, and 110-17 of the National Electrical Code, American National Standards Institute (ANSI)/National Fire Protection Association (NFPA) 70.

240 V DC power supplies shall be connected to the 240 V DC outlet from certified power distribution units if applicable in country of use.

Power supply cords/jumper cords and the associated plugs/inlets/connectors shall have appropriate electrical ratings referencing the rating label on the system when used for connection.

Table 4. PowerEdge R7525 PSU specifications

PSU	Class (AC only)	Heat dissipation (maximum)	Frequency	Voltage	Current
800 W Mixed Mode	Platinum	3000 BTU/hr	50/60 Hz	100 -240 V AC	9.2 - 4.7 A
	N/A		DC	240 V DC	3.8 A
1100 W Mixed Mode	Titanium	4100 BTU/hr	50/60 Hz	100–240 V AC	12 A-6.3 A (X2)
	N/A		DC	240 V DC	5.2 A DC
1100 W (-48Vdc)	N/A	4265 BTU/hr	DC	(-48)-(-60) V DC	27 A
1400 W Mixed Mode	Platinum	5250 BTU/hr	50/60 Hz	100 - 240 V AC	12 - 8 A AC
	N/A		DC	240 V DC	6.6 A DC
2400W Mixed Mode	Platinum	9000 BTU/hr	50/60 Hz	100 - 240 V AC	13.5 - 11 A AC
	N/A		DC	240 V DC	11.2 A DC

ⓘ NOTE: If a system with AC 1400 W PSU operate at low line 100-120 V AC, then the power rating per PSU is derated to 1050 W.

NOTE: : If a system with AC 2400 W PSU operate at low line 100-120 V AC, then the power rating per PSU is derated to 1400 W.

NOTE: When selecting or upgrading the system configuration, to ensure optimum power utilization, verify the system power consumption with the Dell Energy Smart Solution Advisor available at Dell.com/ESSA.

Supported operating systems

The PowerEdge R7525 supports the following operating systems:

- Canonical Ubuntu Server LTS
- Citrix XenServer
- Microsoft Windows Server with Hyper-V
- Red Hat Enterprise Linux
- SUSE Linux Enterprise Server
- VMware vSAN/ESXi

For more information, see www.dell.com/ossupport.

Cooling fan specifications

The PowerEdge R7525 system supports up to six (STD), high performance silver grade (HPR (Silver)), or high performance gold grade (HPR (Gold)) cooling fans.

Table 5. Cooling fan specifications

Fan type	Abbreviation	Also known as	Label color	Label image
Standard fan	STD	STD	No label	
High-performance fan (Silver grade) fan	HPR (Silver)	HPR	Silver	NOTE: New cooling fans comes with the High Performance Silver Grade label. While the older cooling fans has the High Performance label.

Table 5. Cooling fan specifications (continued)

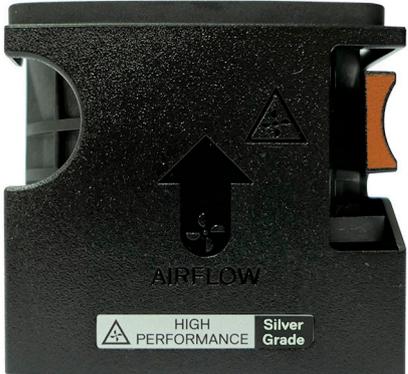
Fan type	Abbreviation	Also known as	Label color	Label image
				 <p data-bbox="986 712 1366 743">Figure 2. High performance fan</p>  <p data-bbox="986 1229 1407 1285">Figure 3. High performance (Silver grade) fan</p>
<p>High-performance fan (Gold grade) fan</p>	<p>HPR (Gold)</p>	<p>VHP - Very High Performance</p>	<p>Gold</p>	<p>NOTE: New cooling fans come with the High Performance Gold Grade label. While the older cooling fans have the High Performance label.</p>  <p data-bbox="986 1926 1426 1957">Figure 4. Very high performance fan</p>

Table 5. Cooling fan specifications (continued)

Fan type	Abbreviation	Also known as	Label color	Label image
				 <p>Figure 5. High performance (Gold grade) fan</p>

NOTE: Mixing of STD, HPR (Silver), or HPR (Gold) fan is not supported.

NOTE: The STD, HPR (Silver), or HPR (Gold) fan installation depends on the system configuration. For more information about the supported fan configuration or matrix, see [Thermal restriction matrix](#).

System battery specifications

The PowerEdge R7525 system supports CR 2032 3.0-V lithium coin cell system battery.

Expansion card riser specifications

WARNING: Consumer-Grade GPU should not be installed or used in the Enterprise Server products.

The PowerEdge R7525 system supports up to eight PCI express (PCIe) Gen 4 expansion cards.

Table 6. Expansion card slots supported on the system board

PCI slot	With Regular shroud	PCIe slot length	R1a	R1b	R1c	R2a	R3a	R3b	R4a	R4b	R4c
Slot 1	Low profile and Full Height-Half Length	Low profile and Full Height-Half Length		x8	x16						
Slot 2	Low profile and Full Height-Half Length	Full Height-3/4 and Full Length	x16(GPU)	x8	x16						
Slot 3	Low profile-					x16					

Table 6. Expansion card slots supported on the system board (continued)

PCI e slot	With Regular shroud	PCIe slot length	R1a	R1b	R1c	R2a	R3a	R3b	R4a	R4b	R4c
	Half Length										
Slot 4	Low profile and Full Height-Half Length							x8			
Slot 5	Low profile and Full Height-Half Length	Full Height-3/4 and Full Length					x16(GPU)	x8			
Slot 6	Low profile-Half Length					x16					
Slot 7	Low profile and Full Height-Half Length	Full Height-3/4 and Full Length							x16(GPU)	x8	x16
Slot 8	Low profile and Full Height-Half Length	Low profile and Full Height-Half Length								x8	x16

Memory specifications

The PowerEdge R7525 system supports the following memory specifications for optimized operation.

Table 7. Memory specifications

DIMM type	Rank	Capacity	DIMM rated voltage and speed	Operating Speed on AMD EPYC™ processor	
				1 DIMM per channel (1DPC)	2 DIMMs per channel (2DPC)
RDIMM	1R	8 GB	DDR4 (1.2V), 3200 MT/s	3200 MT/s	2933 MT/s
	2R	16 GB, 32 GB, 64 GB	DDR4 (1.2V), 3200 MT/s	3200 MT/s	2933 MT/s
LRDIMM	4 R	128 GB	DDR4 (1.2 V), 3200 MT/s	3200 MT/s	2933 MT/s
	8R	128 GB	DDR4 (1.2V), 2666 MT/s	2666 MT/s	2666 MT/s
	8R	128 GB	DDR4 (1.2V), 3200 MT/s	3200 MT/s	2933 MT/s

NOTE: The older 32 GB capacity RDIMM memory with x4 data width and 8Gb DRAM density cannot be mixed with the newer 32GB capacity RDIMM memory with x8 data width and 16Gb DRAM density in the same AMD EPYC™ processor unit.

NOTE: The older 128 GB capacity LRDIMM memory at 2666 MT/s speed cannot be mixed with the new 128 GB capacity LRDIMM memory at 3200 MT/s speed.

Table 8. Memory module sockets

Memory module sockets	Speed
32, 288-pin	3200 MT/s, 2933 MT/s, 2666 MT/s

Storage controller specifications

The PowerEdge R7525 system supports the following controller cards:

Table 9. PowerEdge R7525 system controller cards

Internal controllers	External controllers
<ul style="list-style-type: none"> PERC H755 PERC H755N PERC H745 PERC H345 HBA345 HBA355 S150 Boot Optimized Storage Subsystem (BOSS-S1): HWRAID 2 x M.2 SSDs Boot Optimized Storage Subsystem (BOSS-S2): HWRAID 2 x M.2 SSDs 	<ul style="list-style-type: none"> 12Gbps SAS Ext. HBA PERC H840 HBA355E

Table 10. PowerEdge R7525 Front PERC and Adapter PERC support on back planes

Front PERC	Adapter PERC
8 x 3.5 inches SAS/SATA	12 x 3.5 inches SAS/SATA
16 x 2.5 inches SAS/SATA	12 x 3.5 inches + Rear 2 x 2.5 inches
24 x 2.5 inches (16 SAS/SATA X 2.5 inches + 8 X 2.5 inches NVME)	12 x 3.5 inches + Rear 2 x 2.5 inches NVME
8 x 2.5 inches NVMe	16 x 2.5 inches SAS/SATA

Drive specifications

Drives

The PowerEdge R7525 system supports:

- 8 x 3.5-inch hot-swappable SAS, SATA drives.
- 8 x 2.5 inch NVMe drives.
- 12 x 3.5-inch hot-swappable SAS, SATA drives.
- 16 x 2.5-inch hot-swappable SAS, SATA drives.
- 24 x 2.5-inch hot-swappable SAS, SATA , or NVMe drives.

Backplane

- Up to 8 x 3.5-inch SAS, SATA drives.
- Up to 8 x 2.5 inch NVMe drives.
- Up to 12 x 3.5-inch SAS, SATA drives.
- Up to 16 x 2.5-inch SAS, SATA drives.
- Up to 24 x 2.5-inch NVMe drives.

- Up to 2 x 2.5-inch rear SAS, SATA, or NVMe drives

NOTE: For more information about how to hot swap NVMe PCIe SSD U.2 device, see the *Dell Express Flash NVMe PCIe SSD User's Guide* at <https://www.dell.com/support> **Browse all Products > Data Center Infrastructure > Storage Adapters & Controllers > Dell PowerEdge Express Flash NVMe PCIe SSD > Documentation > Manuals and Documents.**

Ports and connectors specifications

USB ports specifications

Table 11. PowerEdge R7525 system USB specifications

Front		Rear		Internal (Optional)	
USB port type	No. of ports	USB port type	No. of ports	USB port type	No. of ports
USB 2.0-compliant port	One	USB 3.0-compliant ports	One	Internal USB 3.0-compliant port	One
Micro-USB 2.0 compliant port	One	USB 2.0-compliant ports	One		

NOTE: The micro USB 2.0 compliant port can only be used as an iDRAC Direct or a management port.

NOTE: The USB 2.0 specifications provide a 5 V supply on a single wire to power connected USB devices. A unit load is defined as 100 mA in USB 2.0, and 150 mA in USB 3.0. A device may draw a maximum of 5 unit loads (500 mA) from a port in USB 2.0; 6 (900 mA) in USB 3.0.

NOTE: The USB 2.0 interface can provide power to low-power peripherals but must adhere to USB specification. An external power source is required for higher-power peripherals to function, such as external CD/DVD Drives.

NIC port specifications

The PowerEdge R7525 system supports up to two 10/100/1000 Mbps Network Interface Controller (NIC) ports embedded on the LAN on Motherboard (LOM) and integrated on the optional OCP cards.

Table 12. NIC port specification

Feature	Specifications
LOM card	1 GB x 2
OCP card (OCP 3.0)	1 GbE x 4, 10 GbE x 2, 25 GbE x 2, 25 GbE x 4, 50 GbE x 2, 100 GbE x 2

Serial connector specifications

The PowerEdge R7525 system supports one optional card type serial connector, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant.

The optional serial connector card is installed similar to an expansion card filler bracket.

VGA ports specifications

The PowerEdge R7525 system supports two DB-15 VGA port one each on the front and back panels.

IDSDM

The PowerEdge R7525 system supports Internal Dual SD module (IDSMD).

The IDSMD supports two SD cards and is available in the following configurations:

Table 13. Supported SD card storage capacity

IDSDM card
<ul style="list-style-type: none">• 16 GB• 32 GB• 64 GB

NOTE: One IDSMD card slot is dedicated for redundancy.

NOTE: Use Dell EMC branded SD cards that are associated with the IDSMD configured systems.

Video specifications

The PowerEdge R7525 system supports integrated Matrox G200 graphics controller with 16 MB of video frame buffer.

Table 14. Supported front video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32

Table 15. Supported rear video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

NOTE: For additional information about environmental certifications, refer to the *Product Environmental Datasheet* located with the Manuals & Documents on www.dell.com/support/home.

Table 16. Operational climatic range category A2

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2953 ft)	10–35°C (50–95°F) with no direct sunlight on the equipment
Humidity percent ranges (non-condensing at all times)	8% RH with -12°C minimum dew point to 80% RH with 21°C (69.8°F) maximum dew point
Operational altitude de-rating	Maximum temperature is reduced by 1°C/300 m (33.8°F/984 Ft) above 900 m (2953 Ft)

Table 17. Operational climatic range category A3

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2953 ft)	5–40°C (41–104°F) with no direct sunlight on the equipment
Humidity percent ranges (non-condensing at all times)	8% RH with -12°C minimum dew point to 85% RH with 24°C (75.2°F) maximum dew point
Operational altitude de-rating	Maximum temperature is reduced by 1°C/175 m (33.8°F/574 Ft) above 900 m (2953 Ft)

Table 18. Operational climatic range category A4

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2953 ft)	5–45°C (41–113°F) with no direct sunlight on the equipment
Humidity percent ranges (non-condensing at all times)	8% RH with -12°C minimum dew point to 90% RH with 24°C (75.2°F) maximum dew point
Operational altitude de-rating	Maximum temperature is reduced by 1°C/125 m (33.8°F/410 Ft) above 900 m (2953 Ft)

Table 19. Shared requirements across all categories

Temperature	Specifications
Allowable continuous operations	
Maximum temperature gradient (applies to both operation and non-operation)	20°C in an hour* (36°F in an hour) and 5°C in 15 minutes (41°F in 15 minutes), 5°C in an hour* (41°F in an hour) for tape  NOTE: * - Per ASHRAE thermal guidelines for tape hardware, these are not instantaneous rates of temperature change.
Non-operational temperature limits	-40 to 65°C (-104 to 149°F)
Non-operational humidity limits	5% to 95% RH with 27°C (80.6°F) maximum dew point
Maximum non-operational altitude	12,000 meters (39,370 feet)
Maximum operational altitude	3,048 meters (10,000 feet)

Table 20. Maximum vibration specifications

Maximum vibration	Specifications
Operating	0.26 G _{rms} at 5 Hz to 350 Hz (all operation orientations)
Storage	1.88 G _{rms} at 10 Hz to 500 Hz for 15 minutes (all six sides tested)

Table 21. Maximum shock pulse specifications

Maximum shock pulse	Specifications
Operating	Six consecutively executed shock pulses in the positive and negative x, y, and z axis of 6 G for up to 11 ms.
Storage	Six consecutively executed shock pulses in the positive and negative x, y, and z axis (one pulse on each side of the system) of 71 G for up to 2 ms.

Thermal air restrictions

Fresh air environment

- Two PSUs are required in redundant mode, however single PSU failure is not supported.
- NVMe drive is not supported.
- 128 GB or greater capacity DIMMs are not supported.
- Both SW and DW GPGPU/FPGA are not supported.
- CPU TDP equal or greater than 180 W are not supported.
- Rear drives are not supported.
- PCIe card TDP more than 25 W is not supported

ASHRAE A3 environment

- Two PSUs are required in redundant mode, however single PSU failure is not supported.
- NVMe drive is not supported.
- 128 GB or greater capacity DIMMs are not supported.
- Both SW and DW GPGPU/FPGA are not supported.
- CPU TDP equal or greater than 180 W are not supported.
- Rear drives are not supported.
- PCIe card TDP more than 25 W is not supported.

ASHRAE A4 environment

- Two PSUs are required in redundant mode, however single PSU failure is not supported.
- NVMe drive is not supported.
- 128 GB or greater capacity DIMMs are not supported.
- CPU TDP equal or greater than 155 W are not supported (Only 120 W processor supports A4).
- Rear drives are not supported.
- 12 x 3.5-inch chassis is not supported.
- BOSS and OCP are not supported.
- PCIe card TDP more than 25 W is not supported.

Liquid cooling: Fresh air environment

- Two PSUs are required in redundant mode. Single PSU failure is not supported.
- NVMe drive is not supported.
- 256 GB and higher capacity DIMM is not supported.
- Both SW and DW GPGPU/FPGA are not supported.
- Rear drive configuration is not supported.
- PCIe card TDP more than 25 W is not supported.

Liquid cooling: ASHRAE A3 environment

- Two PSUs are required in redundant mode, however single PSU failure is not supported.

- NVMe drive is not supported.
- 256 GB and higher capacity DIMM is not supported.
- Both SW and DW GPGPU/FPGA are not supported.
- Rear drive configuration is not supported.
- PCIe card TDP more than 25 W is not supported.

Liquid cooling: ASHRAE A4 environment

- Two PSUs are required in redundant mode, however single PSU failure is not supported.
- NVMe drive is not supported.
- 256 GB and higher capacity DIMM is not supported.
- Both SW and DW GPGPU/FPGA are not supported.
- Rear drive configuration is not supported.
- PCIe card TDP more than 25 W is not supported.

Thermal restriction matrix

Table 22. Thermal restriction matrix

Configurati on	8 x 2.5- inch NVMe	16 x 2.5- inch SAS	16 x 2.5- inch NVMe	24 x 2.5-inch SAS			16 x 2.5- inch SAS + 8 x 2.5- inch NVMe	24 x 2.5- inch NV Me	8 x 3.5- inch	12 x 3.5-inch			Ambie nt tempe rature	
	Rear storage	No Rear Drive s	No Rear Drive s	No Rear Drive s	No Rear Drives	2 x Rear 2.5- inch No Rear Fan	4 x Rear 2.5- inch with Rear Fan	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	2 x Rear 2.5- inch No Rear Fan		4 x Rear 2.5- inch with Rear Fan
CPU TDP/ cTDP	120 W	STD fan 1U STD HSK	STD fan 1U STD HSK	STD fan 1U STD HSK	STD fan 1U STD HSK	HPR fan 1U STD HSK	HPR fan 1U STD HSK	STD fan 1U STD HSK	HPR fan 1U STD HSK	STD fan 1U STD HSK	HPR fan 1U STD HSK	HPR fan 1U STD HSK	HPR fan 1U STD HSK	35°C
	155 W	STD fan 1U STD HSK	STD fan 1U STD HSK	STD fan 1U STD HSK	STD fan 1U STD HSK	HPR fan 1U STD HSK	HPR fan 1U STD HSK	STD fan 1U STD HSK	HPR fan 1U STD HSK	STD fan 1U STD HSK	HPR fan 1U STD HSK	HPR fan 1U STD HSK	HPR fan 1U STD HSK	35°C
	170 W	STD fan 1U STD HSK	STD fan 1U STD HSK	STD fan 1U STD HSK	STD fan 1U STD HSK	HPR fan 1U STD HSK	HPR fan 1U STD HSK	STD fan 1U STD HSK	HPR fan 1U STD HSK	STD fan 1U STD HSK	HPR fan 1U STD HSK	HPR fan 1U STD HSK	HPR fan 1U STD HSK	35°C
	180 W	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK

Table 22. Thermal restriction matrix (continued)

Configurat ion	8 x 2.5- inch NVMe	16 x 2.5- inch SAS	16 x 2.5- inch NVMe	24 x 2.5-inch SAS			16 x 2.5- inch SAS + 8 x 2.5- inch NVMe	24 x 2.5- inch NVMe	8 x 3.5- inch	12 x 3.5-inch				Ambie nt tempe rature
	No Rear Drive s	No Rear Drive s	No Rear Drive s	No Rear Drives	2 x Rear 2.5- inch No Rear Fan	4 x Rear 2.5- inch with Rear Fan	No Rear Drives	No Rear Drive s	No Rear Drives	No Rear Drives	2 x Rear 2.5- inch No Rear Fan	4 x Rear 2.5- inch with Rear Fan		
	200 W	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	35°C
	225 W	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	35°C
	240 W	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	STD fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	HPR fan 2U Full HSK	35°C
	280 W - 64C	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan* 2U Full HSK	HPR fan 2U Full HSK	VHP fan 2U Full HSK	STD fan* 2U Full HSK	HPR fan* 2U Full HSK	STD fan 2U Full HSK	HPR fan* 2U Full HSK	HPR fan* 2U Full HSK	HPR fan* 2U Full HSK	35°C
	280 W - 32C	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan* 2U Full HSK	HPR fan 2U Full HSK	VHP fan 2U Full HSK	STD fan* 2U Full HSK	HPR fan* 2U Full HSK	STD fan 2U Full HSK	-	-	-	35°C
	280 W - 64C/ 32C	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan 2U Full HSK	STD fan* 2U Full HSK	HPR fan 2U Full HSK	VHP fan 2U Full HSK	STD fan* 2U Full HSK	HPR fan* 2U Full HSK	STD fan 2U Full HSK	-	-	-	35°C
	280 W - 24C/ 16C	VHP fan 2U Full HSK	VHP fan 2U Full HSK	VHP fan 2U Full HSK										

Table 22. Thermal restriction matrix (continued)

Configurat ion	8 x 2.5- inch NVM e	16 x 2.5- inch SAS	16 x 2.5- inch NVM e	24 x 2.5-inch SAS				16 x 2.5- inch SAS + 8 x 2.5- inch NVM e	24 x 2.5- inch NV Me	8 x 3.5- inch	12 x 3.5-inch			Ambie nt tempe rature
	Rear storage	No Rear Drive s	No Rear Drive s	No Rear Drive s	No Rear Drives	2 x Rear 2.5- inch No Rear Fan	4 x Rear 2.5- inch with Rear Fan	No Rear Drives	No Rear Drive s	No Rear Drives	No Rear Drives	2 x Rear 2.5- inch No Rear Fan	4 x Rear 2.5- inch with Rear Fan	
128 GB LRDI MM	-	STD fan	STD fan	STD fan	STD fan	HPR (Silver) fan	HPR (Silver) fan	STD fan	HPR (Silv er) fan	STD fan	HPR (Silver) fan*, if TDP ≥ 200 W	HPR (Silver) fan*, if TDP ≥ 170 W	HPR (Silver) fan*	35°C

NOTE: * Supported ambient temperature is 30°C.

NOTE: Three fan modules are required for single processor, and six fan modules are required for dual processor system.

Table 23. Air cooling and liquid cooling: GPU/FPGA thermal restriction matrix

Confi gurat ion (Fron t stor age)	Fan type	Max CPU TDP/ cTDP	GPU/FPGA (Ambient temperature)															
			T4	V10 0 (16 GB)	V10 0S	M10	Sno w whit e	RTX 600 0	RTX 800 0	A100	MI10 0	A40	A10	A30	A16	MI21 0	A2	
No Bac kpa ne	HPR (Silv er)	280 W	30° C	35° C	30° C	35° C	35° C	35° C	35° C	35° C	35°C	30°C	30°C	30°C	35°C	35°C	35°C	30°C
8 x 2.5- inch NV Me	HPR (Silv er)	280 W	30° C	35° C	30° C	35° C	35° C	35° C	35° C	35° C	35°C	30°C	30°C	30°C	35°C	35°C	35°C	30°C
16 x 2.5- inch SAS	HPR (Silv er)	280 W	30° C	35° C	30° C	35° C	35° C	35° C	35° C	35° C	35°C	30°C	30°C	30°C	35°C	35°C	35°C	30°C
16 x 2.5- inch NV Me	HPR (Gol d)	280 W	30° C	35° C	30° C	35° C	35° C	35° C	35° C	35° C	35°C	30°C	30°C	30°C	35°C	35°C	35°C	30°C
16 x 2.5- inch SAS + 8 x 2.5-	HPR (Gol d)	280 W	30° C	35° C	30° C	35° C	35° C	35° C	35° C	35° C	35°C	30°C	30°C	30°C	35°C	35°C	35°C	30°C

Table 23. Air cooling and liquid cooling: GPU/FPGA thermal restriction matrix (continued)

Con figu ration (Fron t stor age)	Fan type	Max CPU TDP/ cTDP	GPU/FPGA (Ambient temperature)															
			T4	V10 0 (16 GB)	V10 0S	M10	Sno w whit e	RTX 600 0	RTX 800 0	A100	MI10 0	A40	A10	A30	A16	MI21 0	A2	
8 x 3.5- inch SAS	HPR (Silv er)	280 W	30° C	35° C	30° C	35° C	35° C	35° C	35° C	35° C	35° C	30° C	30° C	30° C	35° C	35° C	35° C	30° C

NOTE: GPU is not supported in 12 x 3.5-inch hard drive and 24 x 2.5-inch NVMe configuration systems.

NOTE: Low Profile and Full Height T4 cards are installed in order to support maximum 6 pcs T4 in x 16 slots.

NOTE: In Liquid Cooling system, maximum two DW GPUs are supported.

Table 24. Processor and heat sink matrix

Heat sink	Processor TDP
STD HSK	< 180 W
2U HPR (Silver) HSK	>= 180 W
L-type HSK	Supports all TDP (system should be installed with GPU/FGPA/long PCIe cards)

NOTE: All GPU/FGPA cards require 1U L-type HSK and GPU shroud.

Table 25. Label reference

Label	Description
STD	Standard
HPR (Silver)	High performance (silver grade)
HPR (Gold)	High performance (gold grade)
HSK	Heat sink
LP	Low profile
FH	Full height

Table 26. Liquid cooling: CPU thermal restrictions (non-GPU/FPGA)

Configuration	8 x 2.5- inch NVMe	16 x 2.5- inch SAS	16 x 2.5- inch NVMe	16 x 2.5- inch SAS + 8 x 2.5-inch NVMe	24 x 2.5- inch NVMe	8 x 3.5- inch	12 x 3.5-inch		
Rear storage	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	2 x rear 2.5- inch, No rear fan	
CPU TDP/ cTDP	120 W	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)

Table 26. Liquid cooling: CPU thermal restrictions (non-GPU/FPGA) (continued)

Configuration		8 x 2.5-inch NVMe	16 x 2.5-inch SAS	16 x 2.5-inch NVMe	16 x 2.5-inch SAS + 8 x 2.5-inch NVMe	24 x 2.5-inch NVMe	8 x 3.5-inch	12 x 3.5-inch	
Rear storage		No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	2 x rear 2.5-inch, No rear fan
	155 W	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)
	170 W	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)
	180 W	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)
	200 W	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)
	225 W	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)
	240 W	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)
	280 W	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)

Table 27. Liquid cooling: Memory thermal restrictions (non-GPU/FPGA)

Configuration		1 DPC	2 DPC	8 x 2.5-inch NVMe	16 x 2.5-inch SAS	16 x 2.5-inch NVMe	16 x 2.5-inch SAS + 8 x 2.5-inch NVMe	24 x 2.5-inch NVMe	8 x 3.5-inch	12 x 3.5-inch	
Rear storage				No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	2 x rear 2.5-inch, No rear fan
Memory	8 GB RDIM M 3200	2.8	2.0	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)
	16 GB RDIM M 3200	4.3	3.0	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)
	32 GB RDIM M 3200	6.9	4.8	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)

Table 27. Liquid cooling: Memory thermal restrictions (non-GPU/FPGA) (continued)

Configuration		1 DPC	2 DPC	8 x 2.5-inch NVMe	16 x 2.5-inch SAS	16 x 2.5-inch NVMe	16 x 2.5-inch SAS + 8 x 2.5-inch NVMe	24 x 2.5-inch NVMe	8 x 3.5-inch	12 x 3.5-inch	
Rear storage				No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	No Rear Drives	2 x rear 2.5-inch, No rear fan
	64 GB RDIMM 3200	8.3	5.8	STD fan	STD fan (A4 support)	STD fan	STD fan	STD fan	STD fan (A4 support)	STD fan (A4 support)	STD fan (A3 support)
	128 GB LRDIMM 2666	12.4	9.9	STD fan	STD fan (A3 support)	STD fan	STD fan	STD fan	STD fan (A3 support)	STD fan (A3 support)	STD fan (A3 support)