

# Dell EMC PowerEdge R250

## 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
- System weight
- Processor specifications
- PSU specifications
- Supported operating systems
- Cooling fans specifications
- System battery specifications
- Expansion card riser specifications
- Memory specifications
- Storage controller specifications
- Drives
- Ports and connectors specifications
- Video specifications
- Environmental specifications

# Chassis dimensions

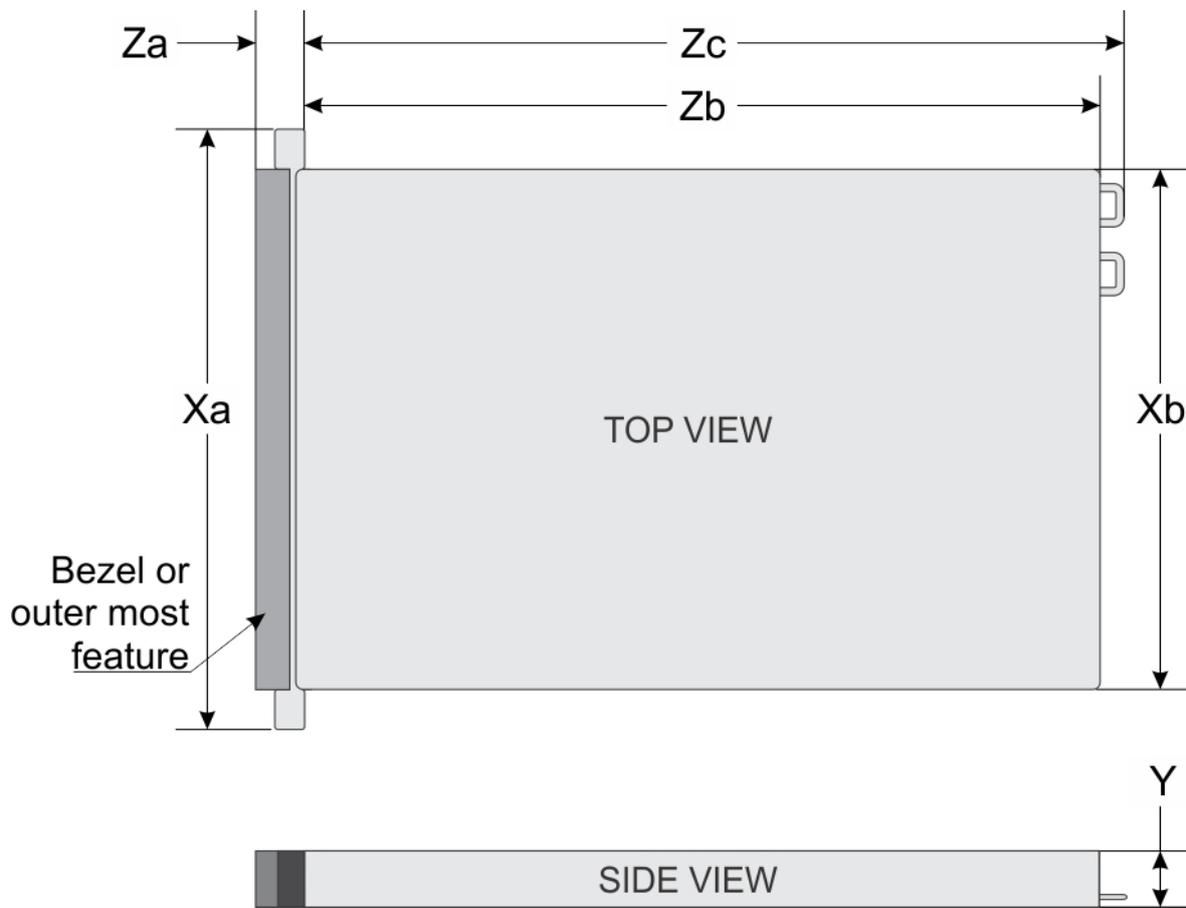


Figure 1. PowerEdge R250 Chassis dimensions

Table 1. Chassis dimensions

Drives	Xa	Xb	Y	Za	Zb	Zc
4 x 3.5-inch and 2 x 3.5-inch	482 mm (18.976 inches)	434 mm (17.08 inches)	42.8 mm (1.685 inches)	22 mm (0.866 inches) without bezel 35.64 mm (1.40 inches) with bezel	534.59 mm (21.04 inches) (Ear to PSU surface)	563 mm (22.16 inches)

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

# System weight

Table 2. PowerEdge R250 system weight

System configuration	Maximum weight (with all drives/SSDs)
4 x 3.5-inch system	12.48 kg (27.51 lbs.)
2 x 3.5-inch system	

# Processor specifications

**Table 3. PowerEdge R250 processor specifications**

Supported processor	Number of processors supported
Intel Xeon E-2300 series processor with up to 8 cores or Intel Xeon Pentium processor with up to 2 cores per processor	One

**NOTE:** Note: For Pentium processor, maximum memory speed supported is 2666 MT/s.

# PSU specifications

The PowerEdge R250 system supports one AC cabled power supply unit (PSU).

**Table 4. PowerEdge R250 PSU specifications**

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage	AC		DC	Current
					High line 200–240 V	Low line 100–120 V		
450 W Mixed Mode	Bronze	1871 BTU/hr	50/60 Hz	100–240 V AC, autoranging	450 W	450 W	NA	6.5 A-3.5 A
450 W Mixed Mode	Platinum	1725 BTU/hr	50/60 Hz	100–240 V AC, autoranging	450 W	450 W	NA	6.5 A-3.5 A

**NOTE:** Heat dissipation is calculated using the PSU wattage rating.

**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](https://Dell.com/ESSA).

# Supported operating systems

The PowerEdge R250 system supports the following operating systems:

- Canonical Ubuntu Server LTS
- Citrix Hypervisor
- Microsoft Windows Server with Hyper-V
- Red Hat Enterprise Linux
- SUSE Linux Enterprise Server

For more information, go to [www.dell.com/ossupport](https://www.dell.com/ossupport).

# Cooling fans specifications

The PowerEdge R250 system supports up to three non hot plug system fans and one optional non hot plug PCIe fan connected to the system board.

**NOTE:** For more information about the fan support configuration or matrix, see Thermal restriction matrix.

# System battery specifications

The PowerEdge R250 system supports CR 2032 3.0-V lithium coin cell system battery.

# Expansion card riser specifications

The PowerEdge R250 system supports up to two PCI express (PCIe) Gen 4 expansion cards.

**Table 5. Expansion card slots supported on the system board**

PCIe slot	Form factor	Processor	PCIe slot bandwidth	PCIe slot connector
Slot 1	Half Height	Processor 1	Gen4 x8 lanes	x8
Slot 2	Half Height	Processor 1	Gen4 x8 lanes	x16
Internal	Half Length	Processor 1	Gen4 x4 lanes	x8

**Table 6. Riser Configuration 0**

PCIe slot	Risers	Riser width	PCIe slot height	PCIe slot length	PCIe slot width
Slot 1	Butterfly Riser	Single Wide	Half Height	Half Length	x8
Slot 2	Butterfly Riser	Single Wide	Half Height	Half Length	x8
Internal	NA	Single Wide	Half Height	Half Length	x4

**NOTE:** For information on the expansion card installation guidelines, see the system specific *Installation and Service Manual* available at <https://www.dell.com/poweredgemanuals>.

# Memory specifications

The PowerEdge R250 system supports the following memory specifications for optimized operation.

**Table 7. PowerEdge R250 system memory specifications**

DIMM type	DIMM rank	DIMM capacity	Single processor	
			Minimum DIMM capacity	Maximum DIMM capacity
ECC UDIMM	Single rank	8 GB	8 GB	32 GB
		16 GB	16 GB	64 GB
	Dual rank	32 GB	32 GB	128 GB

**Table 8. Memory module sockets**

Memory module sockets	Speed
4, 288-pin	3200 MT/s, 2933 MT/s, 2666 MT/s

**NOTE:** Memory DIMM slots are not hot pluggable.

**NOTE:** Pentium processors support up to 2666 MT/s only. All channels in a system run at the fastest common frequency.

**NOTE:** Using dual rank UDIMMs with two DIMMs per channel (2DPC) limits the speed to 2933 MT/s.

# Storage controller specifications

The PowerEdge R250 system supports the following controller cards:

**Table 9. PowerEdge R250 storage controller cards**

Internal controllers	External controllers
<ul style="list-style-type: none"> <li>• H345</li> <li>• H755</li> <li>• HBA355i</li> <li>• S150</li> </ul>	<ul style="list-style-type: none"> <li>• HBA355e</li> </ul>

## Drives

The PowerEdge R250 system supports:

- 4 x 3.5-inch non-hot plug SATA (HDD/SSD) drives.
- 2 x 3.5-inch non-hot plug SATA (HDD/SSD) drives.
- 4 x 3.5-inch hot plug SAS, SATA

# Ports and connectors specifications

## USB ports specifications

**Table 10. PowerEdge R250 USB ports 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 port	One	Internal USB 3.0-compliant port	One
iDRAC Direct port (Micro-AB USB 2.0-compliant port)	One	USB 2.0 port	One		

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

## NIC port specifications

The PowerEdge R250 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 Open Compute Project (OCP) cards.

**Table 11. NIC port specification for the system**

Feature	Specifications
LOM card	1 GbE x 2

## Serial connector specifications

The PowerEdge R250 system supports one optional card type serial connector on rear of the system, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant .

The process to install the optional serial connector card is similar to an expansion card filler bracket.

## VGA ports specifications

The PowerEdge R250 system supports one DB-15 VGA port on the rear panel of the system.

## IDSDM

The PowerEdge R250 system supports Internal Dual SD module (IDSDM).

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

**Table 12. Supported SD card storage capacity**

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

**NOTE:** One IDSDM card slot is dedicated for redundancy.

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

## Video specifications

The PowerEdge R250 system supports integrated Matrox G200 graphics controller with 16 MB of video frame buffer.

**Table 13. Supported video resolution options for the system**

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 Documentation > Regulatory Information on [www.dell.com/support/home](http://www.dell.com/support/home).

**Table 14. 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

**Table 14. Operational climatic range category A2 (continued)**

Temperature	Specifications
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 (1.8°F/984 Ft) above 900 m (2953 Ft)

**Table 15. 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 (9°F in 15 minutes), 5°C in an hour* (9°F in an hour) for tape <i>i</i> <b>NOTE:</b> * - Per ASHRAE thermal guidelines for tape hardware, these are not instantaneous rates of temperature change.
Non-operational temperature limits	-40 to 65°C (-40 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 16. Maximum vibration specifications**

Maximum vibration	Specifications
Operating	0.21 G <sub>rms</sub> at 5 Hz to 500 Hz for 10 minutes (all x, y, and z axis)
Storage	1.88 G <sub>rms</sub> at 10 Hz to 500 Hz for 15 minutes (all six sides tested)

**Table 17. 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. Six consecutively executed shock pulses in the positive and negative x, y, and z axis of 6G for up to 11ms.
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

## Particulate and gaseous contamination specifications

The following table defines the limitations that prevent the damage to the IT equipment and/or, or both failure from particulate and gaseous contamination. If the levels of particulate or gaseous pollution exceed the specified limitations and results in equipment damage or failure, you must rectify the environmental conditions. Remediation of environmental conditions is the responsibility of the customer.

**Table 18. Particulate contamination specifications**

Particulate contamination	Specifications
Air filtration	<p>Data center air filtration as defined by ISO Class 8 per ISO 14644-1 with a 95% upper confidence limit.</p> <p><b>i</b> <b>NOTE:</b> This condition applies to data center environments only. Air filtration requirements do not apply to IT equipment designed to be used outside a data center, in environments such as an office or factory floor.</p> <p><b>i</b> <b>NOTE:</b> Air entering the data center must have MERV11 or MERV13 filtration.</p>
Conductive dust	<p>Air must be free of conductive dust, zinc whiskers, or other conductive particles.</p> <p><b>i</b> <b>NOTE:</b> This condition applies to data center and non-data center environments.</p>
Corrosive dust	<ul style="list-style-type: none"> <li>• Air must be free of corrosive dust.</li> <li>• Residual dust present in the air must have a deliquescent point less than 60% relative humidity.</li> </ul> <p><b>i</b> <b>NOTE:</b> This condition applies to data center and non-data center environments.</p>

**Table 19. Gaseous contamination specifications**

Gaseous contamination	Specifications
Copper Coupon Corrosion rate	<300 Å/month per Class G1 as defined by ANSI/ISA71.04-2013
Silver Coupon Corrosion rate	<200 Å/month as defined by ANSI/ISA71.04-2013

**i** **NOTE:** Maximum corrosive contaminant levels measured at ≤50% relative humidity.

## Thermal restrictions

- Four fans population is required.
- Non Dell qualified peripheral cards or peripheral cards greater than 25 W are not supported.

**i** **NOTE:** DIMM blank is not required.