

Dell EMC PowerEdge R240

Technical Specifications Guide

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.

Technical specifications

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

Topics:

- Chassis dimensions
- System weight
- Processor specifications
- PSU specifications
- Cooling fans 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

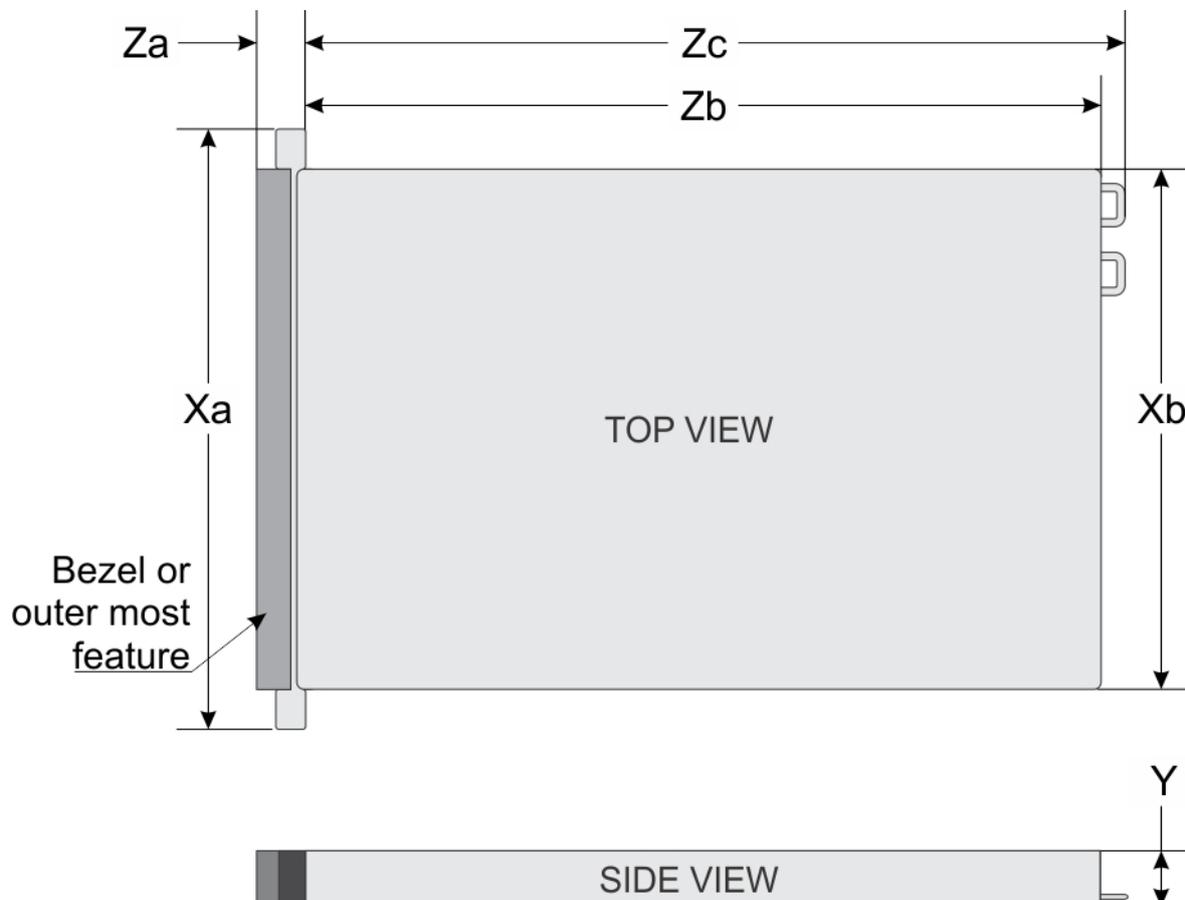


Figure 1. Chassis dimensions

Table 1. Dell EMC PowerEdge R240 chassis dimensions

Xa	Xb	Y	Za	Zb	Zc
482.0 mm (18.97 inches)	434.0 mm (17.08 inches)	42.8 mm (1.68 inches)	With bezel: 35.64 mm (1.4 inches) Without bezel: 22.0 mm (0.87 inches)	534.496 mm (21.04 inches)	573.596 mm (22.58 inches)

System weight

Table 2. Dell EMC PowerEdge R240 system weight

System configuration	Maximum weight (with all drives/SSDs)
4 x 3.5-inch drives	12.2 kg (26.89 lb)

Processor specifications

Table 3. Dell EMC PowerEdge R240 processor specifications

Supported processor	Number of processors supported
Intel Xeon processor E-2200 product family Intel Core i3 9100 processor Intel Pentium G5420 processor Intel Celeron G4930 processor Intel Xeon processor E-2100 product family Intel Core i3 8100 processor Intel Pentium G5500 processor Intel Celeron G4900 processor	One

PSU specifications

The Dell EMC PowerEdge R240 system supports a cabled AC power supply unit (PSU).

Table 4. Dell EMC PowerEdge R240 PSU specifications

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage	AC		Current
					High line 100–240 V	Low line 100–120 V	
450 W AC	Platinum	1725 BTU/hr	50/60 Hz	100-240 V AC, autoranging	450 W	NA	6.5A-3.5A
250 W AC	Bronze	1039 BTU/hr	50/60 Hz	100-240 V AC, autoranging	250 W	N/A	4.0A-2.0 A

NOTE: This system is also designed to connect to the IT power systems with a phase-to-phase voltage not exceeding 230 V.

Cooling fans specifications

The Dell EMC PowerEdge R240 system supports the following cooling fans.

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.

Table 5. Dell EMC PowerEdge R240 fan support matrix

Front storage	Fan 1	Fan 2	Fan 3	Fan 4
Max allowable 3.5-inch drive counts = 2	Required when PCIe is installed	Required	Required	N/A
Max allowable 3.5-inch drive counts = 4	Required when PCIe is installed	Required	Required	Required

System battery specifications

The Dell EMC PowerEdge R240 system supports CR 2032 3.0-V lithium coin cell system battery.

Expansion card riser specifications

The Dell EMC PowerEdge R240 system supports up to two PCI express (PCIe) generation 3.

Table 6. Expansion card slots supported on the system board

PCIe slot	Riser	PCIe slot height	PCIe slot length	Slot width
Slot 1	x8 PCIe	Low-profile	Half-length	x8
Slot 2	x16 PCIe	Low-profile/Full-height	Half-length	x16

Memory specifications

The PowerEdge R240 system supports the following memory specifications for optimized operation.

Table 7. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Minimum RAM	Maximum RAM
UDIMM	Single rank	8 GB	8 GB	32 GB
		16 GB	16 GB	64 GB
	Dual rank	8 GB	8 GB	32 GB
		16 GB	16 GB	64 GB

Table 8. Memory module sockets

Memory module sockets	Speed
Four 288-pin	2666 MT/s

Storage controller specifications

The Dell EMC PowerEdge R240 system supports the following controller cards:

Table 9. Dell EMC PowerEdge R240 system controller cards

Internal controllers	External controllers
<ul style="list-style-type: none"> • PERC H730P • PERC H330 • S140 • HBA330 	<ul style="list-style-type: none"> • 12Gbps SAS Ext. HBA

Drive specifications

Drives

The Dell EMC PowerEdge R240 system supports:

- 4 x 3.5-inch hot-swappable SAS, SATA, or SSD
- 4 x 3.5-inch cabled drives
- 2 x 3.5-inch cabled drives

NOTE: LED functionality is not supported on cabled hard disk drive configuration.

Backplane:

- Up to 4 x 3.5-inch SAS, SATA drives, or SSD drives
- Up to 4 x 2.5-inch SAS, SATA drives, or SSD drives

Optical drives

The Dell EMC PowerEdge R240 system supports the following optical drives.

Table 10. Supported optical drive type

Supported drive type	Supported number of drives
Dedicated SATA DVD-ROM drive or DVD +/-RW drive	One

Ports and connectors specifications

USB ports specifications

Table 11. Dell EMC PowerEdge R240 system USB specifications

Front		Rear		Internal	
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	Two	Internal USB 3.0-compliant port	One
Micro USB 2.0-compliant port for iDRAC Direct	One				

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

NIC ports specifications

The Dell EMC PowerEdge R240 system supports up to two 10/100/1000 Mbps Network Interface Controller (NIC) ports that are located on the back panel.

Serial connector specifications

The Dell EMC PowerEdge R240 system supports one serial connector on the back panel, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant.

VGA ports specifications

The Dell EMC PowerEdge R240 system supports DB-15 VGA connector.

IDSDM module

The Dell EMC PowerEdge R240 system supports optional Internal Dual SD module (IDSDM) module.

The module supports three microSD cards; two cards for IDSDM and one card for vFlash. In 14th generation of PowerEdge servers, the IDSDM or vFlash module is combined into a single card module, and is available in the following configurations:

- vFlash or
- vFlash and IDSDM

Table 12. Supported microSD card storage capacity

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

NOTE: There are two dip switches on the IDSDM or vFlash module for write-protection.

NOTE: One IDSDM card slot is dedicated for redundancy.

NOTE: Use Dell EMC branded microSD cards that are associated with the IDSDM or vFlash configured systems.

Video specifications

The Dell EMC PowerEdge R240 system supports integrated Matrox G200 graphics controller with 16 MB of video frame buffer.

Table 13. Supported video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
640 x 480	60, 72	8, 16, 24
800 x 600	60, 75, 85	8, 16, 24
1024 x 768	60, 75, 85	8, 16, 24
1152 x 864	60, 75, 85	8, 16, 24
1280 x 1024	60, 75	8, 16, 24

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 14. Temperature specifications

Temperature	Specifications
Storage	-40–65°C (-40–149°F)
Continuous operation (for altitude less than 950 m or 3117 ft)	10–35°C (50–95°F) with no direct sunlight on the equipment
Fresh air	For information about fresh air, see the Expanded operating temperature section.
Maximum temperature gradient (operating and storage)	20°C/h (68°F/h)

Table 15. Relative humidity specifications

Relative humidity	Specifications
Storage	5% to 95% RH with 33°C (91°F) maximum dew point. Atmosphere must be noncondensing at all times.
Operating	10% to 80% RH with 29°C (84.2°F) maximum dew point.

Table 16. 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 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.
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.

Table 18. Maximum altitude specifications

Maximum altitude	Specifications
Operating	3048 m (10,000 ft)
Storage	12,000 m (39,370 ft)

Table 19. Operating temperature derating specifications

Operating temperature derating	Specifications
Up to 35°C (95°F)	Maximum temperature is reduced by 1°C/300 m (1°F/547 ft), above 950 m (3,117 ft).
35–40°C (95–104°F)	Maximum temperature is reduced by 1°C/175 m (1°F/319 ft), above 950 m (3,117 ft).
40–45°C (104–113°F)	Maximum temperature is reduced by 1°C/125 m (1°F/228 ft), above 950 m (3,117 ft).

Standard operating temperature

Table 20. Standard operating temperature specifications

Standard operating temperature	Specifications
Continuous operation (for altitude less than 950 m or 3117 ft)	10–35°C (50–95°F) with no direct sunlight on the equipment.

Expanded operating temperature

Table 21. Expanded operating temperature specifications

Expanded operating temperature	Specifications
Continuous operation	<p>5°C–40°C at 5% to 85% RH with 29°C dew point.</p> <p>NOTE: Outside the standard operating temperature (10°C–35°C), the system can operate continuously in temperatures as low as 5°C and as high as 40°C.</p> <p>For temperatures 35°C– 40°C, derate maximum allowable temperature by 1°C per 175 m (1°F per 319 ft) above 950 m (3,117 ft).</p>
≤ 1% of annual operating hours	<p>-5°C–45°C at 5% to 90% RH with 29°C dew point.</p> <p>NOTE: Outside the standard operating temperature (10°C–35°C), the system can operate down to -5°C or up to 45°C for a maximum of 1% of its annual operating hours.</p> <p>For temperatures 40°C– 45°C, derate maximum allowable temperature by 1°C per 125 m (1°F per 228 ft) above 950 m (3,117 ft).</p>

NOTE: When operating in the expanded temperature range, the performance of the system may be impacted.

NOTE: When operating in the expanded temperature range, ambient temperature warnings may be reported on the System Event Log.

Expanded operating temperature restrictions

- Do not perform a cold startup of the system below 5°C.
- The operating temperature specified is for a maximum altitude of 950m for fresh air cooling.
- Four system fans are required.
- Support for up to 71W processor.
- GPU is not supported.
- Non-Dell qualified peripheral cards and/or peripheral cards greater than 25 W are not supported.

Particulate and gaseous contamination specifications

The following table defines the limitations that help avoid any damages 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 22. 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>NOTE: 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>NOTE: 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>NOTE: This condition applies to data center and non-data center environments.</p>
Corrosive dust	<ul style="list-style-type: none"> Air must be free of corrosive dust. Residual dust present in the air must have a deliquescent point less than 60% relative humidity. <p>NOTE: This condition applies to data center and non-data center environments.</p>

Table 23. Gaseous contamination specifications

Gaseous contamination	Specifications
Copper Coupon Corrosion	<300 Å/month per Class G1 as defined by ANSI/ISA71.04-1985.
Silver Coupon Corrosion	<200 Å/month as defined by AHSRAE TC9.9.

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