

Dell EMC PowerEdge MX740c

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:

- System dimensions
- System weight
- Processor specifications
- Supported operating systems
- System battery specifications
- Memory specifications
- Hard drives
- Mezzanine and Mini Mezzanine slots specifications
- Storage controller specifications
- Ports and connectors specifications
- Video specifications
- Environmental specifications

System dimensions

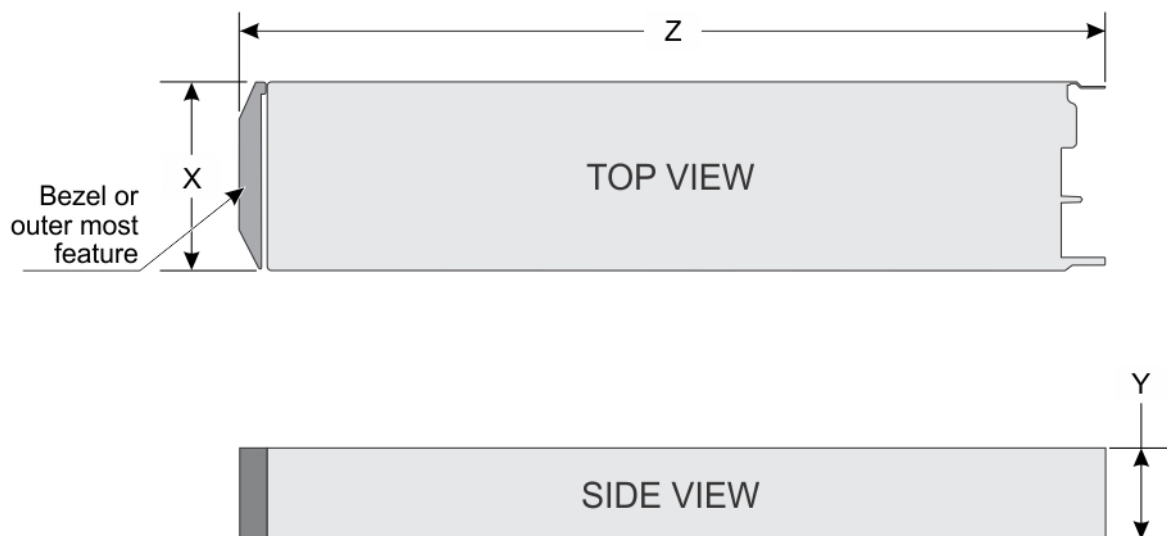


Figure 1. System dimensions

Table 1. System dimensions of the PowerEdge MX740c system

System	X	Y	Z (handle closed).
Dell EMC PowerEdge MX740c	250.2 mm (9.85 inches)	42.15 mm (1.65 inches)	620.35 mm (24.42 inches)

System weight

Table 2. System weight

System	Maximum weight
Dell EMC PowerEdge MX740c	9.5 kg (20.94 lb)

Processor specifications

The Dell EMC PowerEdge MX740c system supports up to two Intel Xeon Scalable processors, up to 28 cores per processor.

Processor wattage and heat sink dimensions

Table 3. Processor wattage and heat sink dimensions

Processor configuration	Processor type	Heat sink width	Number of maximum DIMMS per processor	Number of DIMMS, (RAS)
All	Up to 205 W	90 mm	12	12

Intel Quick Assist Technology

The Intel® Quick Assist Technology (QAT) on the Dell EMC PowerEdge MX740c is supported with chipset integration and is enabled through an optional license. The license files are enabled on the sleds through iDRAC.

For more information about iDRAC, see the *Dell Integrated Remote Access Controller User's Guide* at www.dell.com/poweredgemanuals

For more information about drivers, documentation, and white papers on the Intel® QAT, see <https://01.org/intel-quickassist-technology>.

Supported operating systems

The Dell EMC PowerEdge MX740c sled supports the following operating systems:

- Citrix XenServer
- Microsoft Windows Server with Hyper-V
- Red Hat Enterprise Linux
- SuSE Linux Enterprise Server
- Ubuntu
- VMWare ESXi

For more information about the specific versions and editions, go to <https://www.dell.com/ossupport>.

System battery specifications

The Dell EMC PowerEdge MX740c system supports CR 2032 3.0-V Nickel-Plated lithium coin cell system battery.

Memory specifications

Table 4. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Single processor		Dual processors	
			Minimum RAM	Maximum RAM	Minimum RAM	Maximum RAM
LRDIMM	Octal rank	128 GB	128 GB	1536 GB	256 GB	3072 GB
	Quad rank	64 GB	64 GB	768 GB	128 GB	1536 GB
RDIMM	Single rank	8 GB	8 GB	96 GB	16 GB	192 GB
	Dual rank	16 GB	16 GB	192 GB	32 GB	384 GB
		32 GB	32 GB	384 GB	64 GB	768 GB
		64 GB	64 GB	768 GB	128 GB	1536 GB
NVDIMM-N	Single rank	16 GB	Not supported with single processor	Not supported with single processor	RDIMM: 192 GB NVDIMM-N: 16 GB	RDIMM: 384 GB NVDIMM-N: 192 GB
DCPMM	NA	128 GB	RDIMM: 64 GB	RDIMM: 384 GB	RDIMM: 128 GB	LRDIMM: 1536 GB
			DCPMM: 128 GB	DCPMM: 128 GB	DCPMM: 1536 GB	DCPMM: 1536 GB
	NA	256 GB	NA	NA	RDIMM: 192 GB	LRDIMM: 1536 GB
			NA	NA	DCPMM: 2048 GB	DCPMM: 3072 GB
	NA	512 GB	NA	NA	RDIMM: 384 GB	RDIMM: 1536 GB
			NA	NA	DCPMM: 4096 GB	DCPMM: 6144 GB

- NOTE:** 8 GB RDIMMs and NVDIMM-N must not be mixed.
- NOTE:** 64 GB LRDIMMs and 128 GB LRDIMMs must not be mixed.
- NOTE:** Minimum of two processors are required for any configurations that support NVDIMM-N.
- NOTE:** DCPMM can be mixed with RDIMMs and LRDIMMs.
- NOTE:** Mix of Intel DCPMM operating modes (App Direct, Memory Mode) is not supported within socket or across sockets.

Hard drives

The Dell EMC PowerEdge MX740c system supports upto six 2.5-inch, hot-swappable SAS/SATA HDDs, SSDs, or PCIe NVMe drives.

The drives are supplied in a hot-swappable drive carriers and these drives connect to the system board or RAID controller through the backplane.

- NOTE:** A dual-processor configuration is required to support NVMe drives.

Mezzanine and Mini Mezzanine slots specifications

The Dell EMC PowerEdge MX740c supports:

- One x16 PCIe Gen3 for Mini Mezzanine cards - connected to Processor 2.
- Two x16 PCIe Gen3 for Mezzanine cards - Mezzanine A1 is connected to Processor 1, Mezzanine B1 is connected to Processor 2.

Storage controller specifications

The Dell EMC PowerEdge MX740c system supports PowerEdge RAID Controller (PERC) HBA330 MX, HBA330, H730P MX, H745P MX, H730P, H745P, S140 (SATA and NVMe drives), HBA330 MMZ (mini Mezzanine card), Fiber Fiber channel HBA (in Mini mezzanine Fab C slot), and Boot Optimized Server Storage (BOSS M.2).

Ports and connectors specifications

USB ports

The Dell EMC PowerEdge MX740c system supports:

- One USB 3.0-compliant port on the front of the system
- One micro USB/iDRAC Direct USB 2.0-compliant port on the front of the system
- One USB 3.0-compliant internal port

NOTE: The micro USB 2.0-compliant port on the front of the system can only be used as an iDRAC Direct management port.

Internal Dual SD Module

The Dell EMC PowerEdge MX740c system supports optional Internal Dual SD module (IDSDM) module. In 14th generation of PowerEdge servers, IDSDM module supports two micro SD cards. Micro SD cards capacities for IDSDM are 16, 32, 64 GB.

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

NOTE: One IDSDM card slot is dedicated for redundancy.

NOTE: It is recommended to use Dell branded MicroSD cards associated with the IDSDM configured systems.

Micro SD vFlash connector

The Dell EMC PowerEdge MX740c system supports one dedicated micro SD card on iDRAC module for future vFlash support. It is recommended to use Dell branded MicroSD card associated with the iDRAC module.

Video specifications

Table 5. Video specifications

Type	Description	
Video type	Matrox G200eW3 graphics controller integrated with iDRAC	
Video memory	4 Gb DDR4 shared with iDRAC application memory	

Environmental specifications

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

Table 6. Temperature specifications

Temperature	Specifications
Storage	-40°C to 65°C (-40°F to 149°F)
Continuous operation (for altitude less than 950 m or 3117 ft)	10°C to 35°C (50°F to 95°F) with no direct sunlight on the equipment.
Maximum temperature gradient (operating and storage)	20°C/h (68°F/h)

Table 7. Relative humidity specifications

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

Table 8. Maximum vibration specifications

Maximum vibration	Specifications
Operating	0.26 G _{rms} at 5 Hz to 350 Hz (all operation orientations).
Storage	1.87 G _{rms} at 10 Hz to 500 Hz for 15 min (all six sides tested).

Table 9. Maximum shock specifications

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

Table 10. Maximum altitude specifications

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

Table 11. 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°C to 40°C (95°F to 104°F)	Maximum temperature is reduced by 1°C/175 m (1°F/319 ft) above 950 m (3,117 ft).
40°C to 45°C (104°F to 113°F)	Maximum temperature is reduced by 1°C/125 m (1°F/228 ft) above 950 m (3,117 ft).

Particulate and gaseous contamination specifications

The following table defines the limitations that help avoid any equipment damage or failure from particulates and gaseous contamination. If the levels of particulates or gaseous pollution exceed the specified limitations and result in equipment damage or failure, you may must rectify the environmental conditions. Remediation of environmental conditions is the responsibility of the customer.

Table 12. Particulate contamination specifications

Particulate contamination	Specifications
Air filtration	Data center air filtration as defined by ISO Class 8 per ISO 14644-1 with a 95% upper confidence limit. <i>i</i> 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. <i>i</i> NOTE: Air entering the data center must have MERV11 or MERV13 filtration.
Conductive dust	Air must be free of conductive dust, zinc whiskers, or other conductive particles. <i>i</i> NOTE: This condition applies to data center and nondata center environments.
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. <i>i</i> NOTE: This condition applies to data center and nondata center environments.

Table 13. Gaseous contamination specifications

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

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

Standard operating temperature

Table 14. Standard operating temperature specifications

Standard operating temperature	Specifications
Continuous operation (for altitude less than 950 m or 3117 ft)	10°C to 35°C (50°F to 95°F) with no direct sunlight on the equipment.
Humidity percentage range	10% to 80% Relative Humidity with 29°C (84.2°F) maximum dew point.

Expanded operating temperature

Table 15. Expanded operating temperature specifications

Expanded operating temperature	Specifications
Continuous Operation	5°C–40°C at 5% to 85% RH with 29°C dew point <i>i</i> 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. For temperatures 35°C–40°C, derate maximum allowable dry bulb temperature by 1°C per 175 m above 950 m (1°F per 319 ft).
Less than or equal to 1% of annual operating hours	–5°C–45°C at 5% to 90% RH with 29°C dew point

Table 15. Expanded operating temperature specifications (continued)

Expanded operating temperature	Specifications
	<p>i 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 above 950 m (1°F per 228 ft).</p>

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

i **NOTE:** When operating in the expanded temperature range, ambient temperature warnings maybe reported on the LCD panel and in the System event log.

Expanded operating temperature restrictions

1. Do not perform a cold startup below 5°C.
2. The operating temperature that is specified is for a maximum altitude of 3050 m(10,000 ft).
3. Low core count processors [Gold 6146,6144,6134,6128,5222,5217,5122] and higher wattage processors [Thermal Design Power (TDP)>140 W] are not supported.
4. Non-Dell qualified peripheral cards or peripheral cards greater than 30 W are not supported.
5. PCIe SSD is not supported.
6. NVDIMM are not supported.
7. DCPMMs are not supported.

Thermal

PowerEdge servers have an extensive collection of sensors that automatically track thermal activity, which helps regulate temperature thereby reducing server noise and power consumption. The sensors in the MX740c interact with the chassis management services module which regulates fan speed. All fans which cool the MX740c are contained in the MX7000 chassis.

Thermal management of PowerEdge MX740c delivers high performance for the right amount of cooling to components at the lowest fan speeds across a wide range of ambient temperatures from 10°C to 35°C (50°F to 95°F) and to extended ambient temperature ranges (see Environmental Specifications section). The benefits to you are lower fan power consumption (lower server system power and data center power consumption) and greater acoustical versatility.

For detailed information about thermal please consult the MX7000 Technical Guide.

Table 16. Thermal restriction matrix

Ambient Support	25 ° C	30 ° C	35 ° C	40 ° C ~ 45 ° C Expanded Operating Temperature
CPU	No restriction	No restriction	No restriction (The recommended operating temperature for processors with Thermal Design Power (TDP) > 165W is under 32°C) Not Supported for the below SKUs: CLX R 205W, x6 BP (6258R, 6248R, 6246R, 6242R) on MX740c	Does not support CPU with TDP> 140W No Support: Gold 6132(140W 14C), Gold 6134(130W 8C), Gold 6128(115W 6C), Gold 5122(105W 4C)processors 6234(130W 8C), 5217(115W 8C),5222(105W 4C) processors
DIMM	No restriction	No restriction	No restriction	Does not support NVDIMM

Table 16. Thermal restriction matrix (continued)

Ambient Support	25 ° C	30 ° C	35 ° C	40 ° C ~ 45 ° C Expanded Operating Temperature
Drives	No restriction	No restriction	No restriction	Does not support NVMe (PCIe SSDs)
PCIe card	No restriction	No restriction	No restriction	No support for card power above 30W
CLX Refresh 205W CPU (6242R, 6246R, 6248R, 6258R) configuration	No restriction	No restriction (The recommended operating temperature for processors with Thermal designs power 205W is <=25 ° C)	Not supported	Not supported