DELL SCv2080 Storage System





DELL SCv2080 Storage System User Guide

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DELL SCv2080 Storage System



Product Information

Specifications

Regulatory Model: E11JRegulatory Type: E11J001

• Weight: Fully configured – 130 kg (287 lb), Unpopulated – 62 kg (137 lb)

Safety Warnings

Before setting up the SCv2080 storage system, please take note of the following safety warnings:

- Restricted Access: This product is intended for use in restricted access locations such as dedicated equipment rooms or equipment closets.
- 2. **Rack Temperature:** If installed in a closed or multi-unit rack assembly, ensure that the operating ambient temperature of the rack environment is compatible with the maximum ambient temperature specified by the manufacturer.
- 3. **Heavy Weight:** The fully configured SCv2080 storage system weighs up to 130 kg (287 lb). When installing, use appropriate lifting methods to avoid injury.
- 4. **Electrical Disconnection:** Before proceeding with any maintenance or installation, ensure that all electrical supply connections to the storage system are disconnected.
- 5. **Battery Pack Warning:** Remove the battery pack before removing a storage controller from the storage system. Ensure that only compatible batteries are used to avoid the risk of fire or explosion.
- 6. **Laser Radiation:** When open, avoid direct exposure to laser radiation. The SCv2080 storage system is certified as a Class I laser product, ensuring that there is no hazardous exposure to laser radiation during normal operation or maintenance.

Setting Up the Storage System

Follow these steps to set up your SCv2080 storage system:

- 1. Ensure that the installation location is a restricted access area with an appropriate ambient temperature.
- 2. Use proper lifting methods when installing the storage system due to its heavy weight.
- 3. Disconnect all electrical supply connections before proceeding with any maintenance or installation.

- 4. Remove the battery pack before removing the storage controller from the system, using only compatible batteries.
- 5. Avoid direct exposure to laser radiation when accessing the storage system.

Worksheet to Record System Information

Use the following worksheet to record important information for installing the SCv2080 storage system:

Storage Center Information

Service Tag	
Management IPv4 address (Storage Center management address)	·
Left Controller IPv4 address (Controller 1 MGMT port)	
Right Controller IPv4 address (Controller 2 MGMT port)	
Subnet mask	··
Gateway IPv4 address	
Domain name	
DNS server address	
Secondary DNS server address	··

Frequently Asked Questions (FAQ)

Q: What is the weight of the fully configured SCv2080 storage system?

• A: The fully configured SCv2080 storage system weighs up to 130 kg (287 lb).

Q: What precautions should be taken when removing a storage controller from the system?

• A: Remove the battery pack before removing a storage controller to avoid the risk of fire or explosion. Use only compatible batteries.

Q: What safety measures should be followed when accessing the storage system?

- A: When open, avoid direct exposure to laser radiation.
- The SCv2080 storage system is certified as a Class I laser product, ensuring that there is no hazardous exposure to laser radiation during normal operation or maintenance.

Notes, Cautions, and Warnings

- NOTE indicates important information that helps you make better use of your computer.
- CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

• WARNING indicates a potential for property damage, personal injury, or death.

Setting Up the Storage System

- Consider the following best practices when setting up an SCv2080 storage system.
- Dell recommends that you use a dedicated SAN network for data transmission when using a Fibre Channel or iSCSI storage system.
- Complete the Worksheet to Record System Information in this guide before configuring the storage system.
- Always configure redundant data paths to provide alternate paths to and from the host server should one of the data paths become disabled.
- Before connecting any cables between the storage system and the host server or expansion enclosure, physically label each port and connector.
- Always follow proper power-up and power-down procedures when cycling power across the network. Verify that
 critical network components are on separate power circuits.
- NOTE: This product is intended for restricted access locations, such as a dedicated equipment room or equipment closet.
- **WARNING:** If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

Safety Warnings



Heavyweight warning

• A fully configured SCv2080 storage system weighs up to 130 kg (287 lb). An unpopulated storage system weighs 62 kg (137 lb). Use appropriate lifting methods when installing the storage system.



High-temperature warning

• The operating temperature inside the drawers of a storage system can reach up to 60°C (140°F). Take care when opening drawers and removing drive carriers.



Indicates that all electrical supply connections to the storage system must be disconnected before proceeding.



Battery pack warning

Remove the battery pack before removing a storage controller from the storage system.

• WARNING: Installing an incompatible battery may increase the risk of fire or explosion.

Observe the following precautions:

- The battery should only be replaced with a battery that is the same or equivalent as the factory-installed battery.
- Do not attempt to open or service the battery. Do not dispose of the battery in a fire or with household waste. Contact the local waste disposal agency for the location of the nearest battery deposit site.

Laser Radiation for Fibre Channel Storage Systems

- CAUTION: Class I laser radiation when open, avoid exposure to beam.
- WARNING: Laser radiation, avoid direct exposure to beam.
- The unit is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class I (1) laser products, and elsewhere is certified as a Class I laser product conforming to the requirements of IEC 60825-1:2007.
- Class I laser products are not considered to be hazardous. The laser system and unit are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance, or prescribed service conditions.

Worksheet to Record System Information

• Use the following worksheet to record the information that is needed to install the SCv2080 storage system.

Storage Center Information

• Gather and record the following information about the Storage Center network and the administrator user.

Table 1. Storage Center Network

Service Tag	
Management IPv4 address (Storage Center management address)	
Left Controller IPv4 address (Controller 1 MGMT port)	·
Right Controller IPv4 address (Controller 2 MGMT port)	
Subnet mask	
Gateway IPv4 address	
Domain name	
DNS server address	
Secondary DNS server address	

Table 2. Storage Center Administrator

Password for the default Storage Center "Admin" user	
Email address of the default Storage Center "Admin" user	

iSCSI Fault Domain Information

- For a storage system with iSCSI front-end ports, gather and record network information for the iSCSI fault domains. This information is needed to complete the Discover and Configure Uninitialized SCv2000 Series Storage Centers wizard.
- **NOTE:** For a storage system deployed with two Ethernet switches, Dell recommends setting up each fault domain on separate subnets.
- See the Dell Storage Center SCv2080 Storage System Deployment Guide for information about setting up iSCSI fault domains.

Table 3. iSCSI Fault Domain 1

Target IPv4 address		
Subnet mask		
Gateway IPv4 address		
IPv4 address for storage controller module 1: port 1		
IPv4 address for storage controller module 2: port 1		
(Four port I/O card only) IPv4 address for storage controller r	module 1: port	
(Four port I/O card only) IPv4 address for storage controller r	module 2: port	
Table 4. iSCSI Fault Domain 2		
Target IPv4 address		
Subnet mask		
Gateway IPv4 address		
IPv4 address for storage controller module 1: port 2		
IPv4 address for storage controller module 2: port 2		
(4-port I/O card only) IPv4 address for storage controller module 1: port 4		
(4-port I/O card only) IPv4 address for storage controller		
module 2: port 4		
Additional Storage Center Information		
 The Network Time Protocol (NTP) and Simple Mail Transfe The proxy server information is also optional, but it may be Uninitialized SCv2000 Series Storage Centers wizard. 	•	
Table 5. NTP, SMTP, and Proxy Servers		
NTP server IPv4 address		
SMTP server IPv4 address		
Backup SMTP server IPv4 address		·
SMTP server login ID		

SMTP server password

Proxy server IPv4 address

Fibre Channel Zoning Information

- For a storage system with Fibre Channel front-end ports, record the physical and virtual WWNs of the Fibre Channel ports in Fault Domain 1 and Fault Domain 2.
- This information is displayed on the Review Front-End page of the Discover and Configure
- Uninitialized SCv2000 Series Storage Centers wizard. Use this information to configure zoning on each Fibre Channel switch.
- See the Dell Storage Center SCv2080 Storage System Deployment Guide for information about setting up Fibre Channel zoning.

Table 6. Physical WWNs in Fault Domain 1

,	
Physical WWN of storage controller 1: port 1	
Physical WWN of the storage controller 2: port 1	
(4-port I/O card only) Physical WWN of the storage controller 1: port 3	
(4-port I/O card only) Physical WWN of the storage controller 2: port 3	
Table 7. Virtual WWNs in Fault Domain 1	
Virtual WWN of storage controller 1: port 1	
Virtual WWN of storage controller 2: port 1	

Table 8. Physical WWNs in Fault Domain 2

(4-port I/O card only) Virtual WWN of storage controller 1: port 3

(4-port I/O card only) Virtual WWN of storage controller 2: port 3

Physical WWN of storage controller 1: port 2	
Physical WWN of the storage controller 2: port 2	
(4-port I/O card only) Physical WWN of the storage controller 1: port 4	
(4-port I/O card only) Physical WWN of the storage controller 2: port 4	

Table 9. Virtual WWNs in Fault Domain 2

Virtual WWN of storage controller 1: port 2	
Virtual WWN of storage controller 2: port 2	
(4-port I/O card only) Virtual WWN of storage controller 1: port 4	
(4-port I/O card only) Virtual WWN of storage controller 2: port 4	

Locating Your Service Tag

- Your storage system is identified by a unique service tag and Express Service Code. You can find the service tag on the back of the storage system chassis.
- Dell uses this information to route support calls to the appropriate personnel.

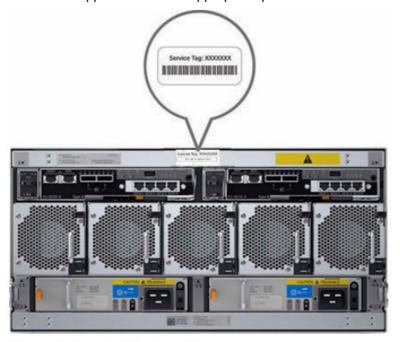


Figure 1. Service Tag Location

Other Information You May Need

- To install the storage system, you may need the following additional information.
- **NOTE:** See the safety and regulatory information that shipped with your Storage Center components. Warranty information is included as a separate document.
- The Dell Storage Center SCv2080 Storage System Deployment Guide provides information about cabling storage system hardware components and configuring a new storage system using the Dell Storage Manager Client.
- The Dell Storage Manager Storage Center Administrator's Guide describes how to use the Dell Storage Manager Client to manage a Storage Center.
- The Dell Storage Manager Administrator's Guide describes how to use Dell Storage Manager to manage multiple Storage Center systems.

Installation and Configuration

• Before you begin installation, make sure that the site where you plan to install the storage system has 208 V power from an independent source or a rack power distribution unit with a UPS. (110 V power is not

supported.)

• In addition, verify that there is a 5U space in the lower 20U of the rack to install the storage system. If you plan to install the storage system above the lower 20U of a rack, a customer-provided mechanical lift must be used to avoid injury.

Safety Precautions

- Always follow these safety precautions to avoid injury and damage to Storage Center equipment.
- If the equipment described in this section is used in a manner not specified by Dell, the protection provided by the equipment could be impaired.
- For your safety and protection, observe the rules described in the following sections.
- **NOTE:** See the safety and regulatory information that shipped with each Storage Center component. Warranty information is included within this document or as a separate document.

Installation Safety Precautions Follow these safety precautions:

- Dell recommends that only individuals with rack-mounting experience install the SCv2080 in a rack.
- You need at least two people to lift the storage system chassis from the shipping box and three people to install it in the rack. The empty chassis weighs approximately 62 kg (137 lbs).
- Make sure the storage system is always fully grounded to prevent damage from electrostatic discharge.
- When handling the storage system hardware, use an electrostatic wrist guard (not included) or a similar form of protection.
- The chassis must be mounted in a rack. The following safety requirements must be considered when the chassis is being mounted.
- The rack construction must be capable of supporting the total weight of the installed chassis. The design should incorporate stabilizing features suitable to prevent the rack from tipping or being pushed over during installation or in normal use.
- To avoid the danger of the rack toppling over, slide only one chassis out of the rack at a time.
- The storage system must be operated with low-pressure rear exhaust installation (back pressure created by rack doors and obstacles not to exceed 5 Pascals [0.5 mm water gauge]).

Unpacking Storage Center Equipment

Unpack the storage system and identify the items in your shipment.

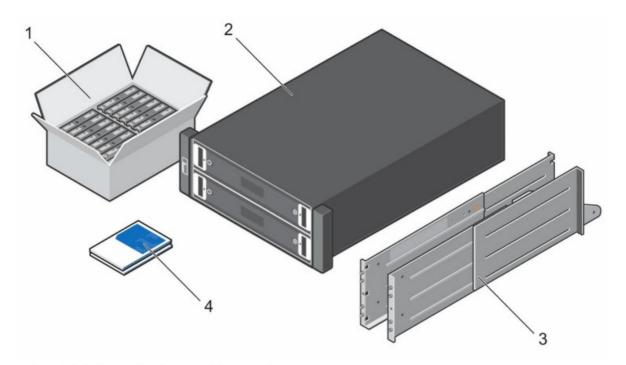


Figure 2. SCv2080 Storage System Components

- 1. Hard Drives
- 2. Storage system
- 3. Rack rails (2)
- 4. Documentation

WARNING: Two people using lift straps are required to lift the storage system to avoid injury.

Installing the Storage System in a Rack

- Install the SCv2080 storage system and other Storage Center system components in a rack.
- **NOTE:** Mount the storage system in a manner that allows for expansion in the rack and prevents the rack from becoming top-heavy.
- **WARNING:** If you plan to install the storage system above the lower 20U of a rack, a customer-provided mechanical lift must be used to avoid injury.
- 1. Determine where to mount the storage system in the rack and mark the location at the front and rear of the rack.
 - NOTE: The storage system and expansion enclosures each require 5U of rack space for installation.
- 2. Position the rails at the marked locations and extend the rails to fit the rack.
- 3. Install the shelf and rails in the rack following the safety instructions and the rack installation instructions provided with your rail kit.

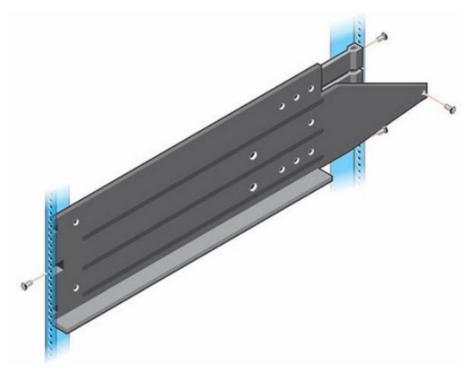


Figure 3. Attach the Mounting Rails to the Rack

4. Slide the storage system chassis onto the rails until the rear of the array passes through the rear hold-down brackets.

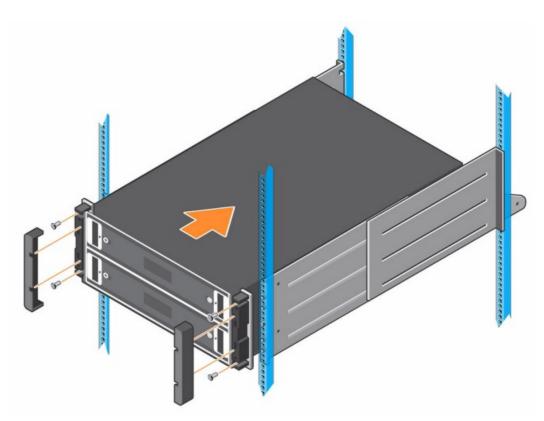


Figure 4. Mount the SCv2080 Storage System Chassis

- 5. Secure the storage system chassis to the rails using mounting screws and bolting the rear hold-down brackets to the chassis.
- 6. Attach the plastic covers to the left and right side of the front of the storage system chassis.
 - For more information about installing the storage system, see the Dell Storage Center SCv2080 Storage System Deployment Guide.
- 7. If the Storage Center system includes an expansion enclosure, mount the expansion enclosure above the storage system. For more information about installing an expansion enclosure, see the Getting Started Guide

included with the expansion enclosure.

Installing the Hard Drives

- Hard drives are connected to the backplane of the drawers using Disk Drive in Carrier (DDIC) hard drive carriers.
- The minimum number of drives for an SCv2080 storage system is 28, which is one full, front row in the top drawer and one full, front row in the bottom drawer.
- Populate each row with identical drives. Do not mix types, speeds, or sizes in a single row.
- 1. Open the top drawer
 - **CAUTION:** If the storage system operates for too long (depending on altitude) with a drawer open, the storage system may overheat, causing a power failure and data loss. Such use may invalidate the warranty.
 - a. Push and hold both drawer latches toward the center of the drawer.
 - **b**. Pull out the drawer until it stops.
- 2. Populate the first row with 14 drives. Insert each disk drive in a carrier (DDIC) into the drawer, one at a time.
 - **CAUTION:** To maintain proper airflow, the drawers must be populated with drives in whole rows (there are three rows of 14 drives per drawer).
 - a. Hold the DDIC vertically and slide it most of the way into the slot.
 - b. Using both hands, apply downward pressure firmly and equally across the DDIC.
 - c. While maintaining downward pressure on the DDIC, slide the top plate toward the back of the drawer until it clicks in place.

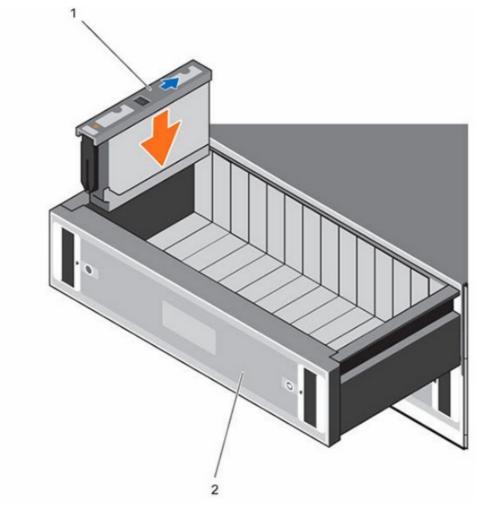


Figure 5. Installing DDIC in Drawer

- DDI
- Top drawer
- **CAUTION:** If the DDIC fails to latch, do not use it and request a replacement from Dell Technical Support. If a faulty DDIC unlatches within a closed drawer, it can make the drawer unable to be opened.
- 3. Close the drawer after inserting the DDICs.
 - a. Locate the two lock-release buttons situated midway along the runners on each side of the drawer.
 - **b**. Press the lock-release buttons inward and use your body to push the drawer toward the chassis until the locks disengage.
 - c. Place your hands on the front bezel and continue to push the drawer inward until the bezel is flush with the chassis and the front drawer locks engage.
 - WARNING: Keep your fingers clear of the chassis as the drawer is closed.
- 4. Repeat the previous steps for the bottom drawer, populating the first row with 14 drives.
- 5. To maintain proper airflow, populate the remaining rows in the following order:
 - a. Top drawer middle row
 - **b.** Bottom drawer middle row
 - c. Top drawer back row
 - d. Bottom drawer back row

Connecting the Power Cables

Connect the power cables to the storage system

- 1. Before connecting the power cables, make sure that the power switches on the storage system are in the OFF position.
- 2. Connect the power cables to the power supplies in the storage system chassis.

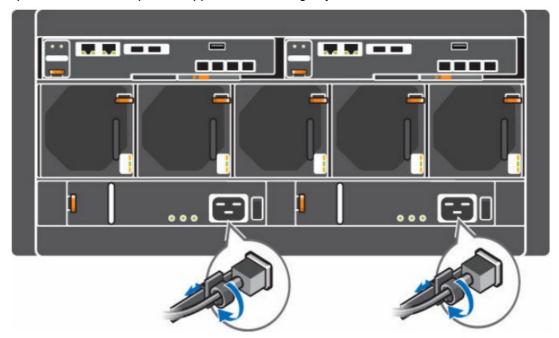


Figure 6. Power Cables

- 3. Secure each power cable to the storage system chassis using the strain relief fasteners.
- 4. Plug the other end of the power cables into a grounded electrical outlet or a separate power source such as an uninterrupted power supply (UPS) or a power distribution unit (PDU).

CAUTION: Be careful when closing the rear rack door to ensure that power cords have adequate space as some racks might not be sufficiently deep.

NOM Information Mexico Only

The following information is provided on the device described in this document in compliance with the requirements of the official Mexican standards (NOM):

Importer	Dell Inc. de México, S.A. de C.V Paseo de la Reforma 2620-11 ° Piso Col. Lomas Atlas 11950 México, D.F.
Model number	E11J
Supply voltage	200–240 VAC
Frequency	50/60 Hz
Current consumption	16 A

Technical Specifications

The technical specifications for the SCv2080 storage system are shown in the following tables.

Storage Controllers	
	Two hot-swappable storage controllers with the following IO options:
	Two 16 Gbps Fibre Channel ports
Storage controllers	Four 8 Gbps Fibre Channel ports
	Two 10 Gbps iSCSI ports
	Four 1 Gbps iSCSI ports

- Storage Controllers Four 12 Gbps SAS ports
- Storage Connectivity ConfigurationsStorage Center supports up to 168 drives on a single redundant-path SAS chain.
 - The SCv2080 storage system supports one SC180.

Redundant Array of Independent Disks (RAID)

- Controller Two hot-swappable storage controllers
- Management RAID management using Dell Storage Manager Client 2016 R2

Storage Controllers

Four 12 Gbps SAS ports

Storage Connectivity

Configurations Storage Center supports up to 168 drives on a single

redundant-path SAS chain.

The SCv2080 storage system supports one SC180.

Redundant Array of Independent Disks (RAID)

Controller Two hot-swappable storage controllers

Management RAID management using Dell Storage Manager Client 2016 R2

Back-Panel Ports Connectors (per Storage Controller)

Fibre Channel, iSCSI, or SAS connectors Connection to a Fibre Channel fabric, a iSCSI network, or a

direct connection to servers with SAS HBAs

Ethernet connectors

MGMT: 1 Gbps or 10 Gbps embedded Ethernet/iSCSI port

that is typically used for Storage Center management

REPL: 1 Gbps or 10 Gbps embedded iSCSI port that is typically

used for replication to another Storage Center

SAS connectors 6 Gbps SAS connectors for SAS port redundancy and an

additional expansion enclosure

U

NOTE: SAS connectors are SFF-8086/SFF-8088

compliant.

USB Connector

One USB 3.0 connector used for Storage Center updates

Serial connector

Ø

NOTE: Not for customer use.

LED Indicators	
	One two-color LED indicator for power status
	One single-color LED indicator for module fault status (enclosure as a whole)
	One single-color LED indicator for logical fault status (drive, HBA, RAID controll er, and so on)
	One single-color LED indicator for drawer 1 fault status
	One single-color LED indicator for drawer 2 fault status
	One single-color LED indicator for the side plane card and power status
	One single-color LED indicator for drawer fault status
Drawer	One single-color LED indicator for logical fault status
	One single-color LED indicator for cable fault status
	Six single-color LED indicators for data transfer status
Disk Drive In Carrier (DDI C)	One single-color LED for drive fault status
6 Gb SAS IO module	14 one-color LED status indicators, four each for the three SAS ports and two for th e module status
	One single-color LED indicator for module status
Cooling module	One single-color LED indicator for battery fault status (not currently used)
	One single-color LED indicator for fan fault status
	One single-color LED indicator for PSU fault status
Power supply unit (PSU)	One single-color LED indicator for AC power fault status
	One single-color LED indicator for power status

Power Supplies

AC power supply (per power supply)

- Wattage 2.8 kW
- Voltage 200-240 VAC (16 A)
- Heat dissipation 191-147 W
- Input frequency 50/60 Hz
- Max input power 1791 VA
- Input current 7.4 A@241 VAC
- Maximum inrush current Under typical line conditions and over the entire system ambient operating range, the inrush current may reach 55 A per power supply for 10 ms or less

Available Hard Drive Power (per Slot)

• Supported hard drive power consumption (continuous) Up to 1.16 A at +5 V Up to 1.6 A at +12 V

I/O Card Power (per Slot)

- Maximum power consumed by I/O card: 11 W at +12 V
- Maximum available power 100 W at +12 V
- Minimum available power 1 W at +5 V (standby)

Physical

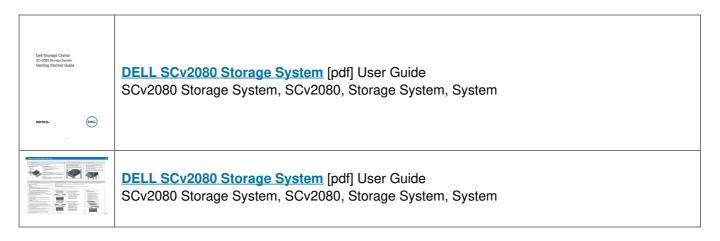
- **Height** 22.23 cm (8.8 inches)
- Width 48.26 cm (19 inches)
- **Depth** (front mounting bracket to rear surface) 91.44 cm (36 inches)
- **Depth** (front surface to rear surface) 96 cm (38 inches)
- Weight (maximum configuration) 130.1 kg (287 lb)
- Weight without drives 62.1 kg (137 lb)

Environmental	
For additional inform	nation about environmental measurements for specific storage system configurations, see <u>d</u> ntal_datasheets.
Temperature	
Operating	10°C to 35°C (50°F to 95°F) with a maximum temperature gradation of 20°C per hour NOTE: Maximum temperature of 35°C is reduced by 1°C per 300 meters (1°F per 547 fee t) above 950 meters (3,117 feet)
Storage	-40°C to 65°C (-40°F to 149°F) at a maximum altitude of 12,000 m (39,370 ft)
Relative humidity	
Operating	10% to 80% (noncondensing) with 29°C (84.2°F) maximum dew point
Storage	5% to 95% (noncondensing) with 33°C (91°F) maximum dew point
Maximum vibration	
Operating	0.21 G at 5-500 Hz for 15 min
Storage	1.04 G at 2-200 Hz for 15 min
Maximum shock	
Operating	Half-sine shock 5 G +/- 5% with a pulse duration of 10 ms +/- 10% (in operational orientations only)
Storage	 Z-axis: 30 g 10 ms half-sine X- and Y-axes: 20 g 10 ms half-sine

Environmental	
Altitude	
Operating	0 m to 3048 m (0 ft to 10,000 ft)
Storage	-300 m to 12,000 m (-1000 ft to 39,370 ft)
Airborne Contaminant Level	
Class	G2 or lower as defined by ISA-S71.04-1985

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Documents / Resources



References

- Support | Dell US
- Dell Storage Information | Dell Australia
- Product Safety, EMC and Environmental Datasheets | Dell
- User Manual

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