DELL EMC UNITY XT STORAGE SERIES

Simplify the path to IT transformation and unlock the full potential of your data capital with the new Dell EMC Unity XT storage arrays that feature up to 2X more IOPS, more memory, and up to 50% more drives than previous Dell EMC Unity models. These All-Flash and Hybrid storage systems with dual-active controller architecture and enterprise-class features are designed for performance, optimized for efficiency with up to 5:1 data reduction, and built to simplify your multi-cloud journey.

Architecture

Based on the powerful family of Intel Xeon™ processors, Dell EMC's Unity XT storage systems implement an integrated architecture for block, file, and VMware VVols with concurrent support for native NAS, iSCSI, and Fibre Channel protocols. Each system leverages dual storage processors, full 12 Gb SAS back end connectivity and Dell EMC's patented multicore architected operating environment to deliver unparalleled performance & efficiency. Additional storage capacity is added via Disk Array Enclosures (DAEs).

Physical Specifications

	380F/380	480F/480	680F/680	880F/880
Min/Max Drives	6/500	6/750	6/1000	6/1500
Array Enclosure	A 2U Disk Processor Enclosure (DPE) with twenty five 2.5" drives			
Drive Enclosure (DAE - Disk Array Enclosure)	All-Flash (F) models support 2.5" drives in 2U twenty five drive and 3U eighty drive trays. Hybrid models support 2.5" drives in 2U twenty five drive and 3U eighty drive trays; and 3.5" drives in 3U fifteen drive trays.			
Standby Power System	Dell EMC Unity systems are powered by 2 power supplies (PS) per DPE/DAE. Each power supply can provide power to the entire module if the peer PS has been removed or is faulted. DPE power during a power failure is provided by a Battery Back Up (BBU) module. BBU is located within the SP enclosure and provides power to a single module (power zone)			
RAID Options	1/0, 5, 6			
CPU per Array	2 x Intel CPUs, 12 cores per Array, 1.7GHz	2 x dual-socket Intel CPUs, 32 cores per Array, 1.8GHz	2 x dual-socket Intel CPUs, 48 cores per Array, 2.1GHz	2 x dual-socket Intel CPUs 64 cores per Array, 2.1GHz
System Memory/Cache per Array	128 GB	192 GB	384 GB	768 GB
Max FAST Cache per Array*	Up to 800 GBs	Up to 1.2 TBs	Up to 3.2 TBs	Up to 6.0TBs
Total Cache*	Up to 928 GBs	Up to 1.39 TBs	Up to 3.58 TBs	Up to 6.76 TBs
Max Mezzanine cards per Array**	NA	2	2	2
Max IO Modules per Array***	4	4	4	4
Embedded SAS IO Ports per Array	4 x 4 lane 12Gb/s SAS ports for BE (back end) Connection	4 x 4 lane 12Gb/s SAS ports for BE Connection	4 x 4 lane 12Gb/s SAS ports for BE Connection	4 x 4 lane 12Gb/s SAS ports for BE Connection

	380F/380	480F/480	680F/680	880F/880
Optional SAS IO ports per Array	NA	8 x 4 lane or 4 x 8 lane 12Gb/s SAS ports (for BE Connection)	8 x 4 lane or 4 x 8 lane 12Gb/s SAS ports (for BE Connection)	8 x 4 lane or 4 x 8 lane 12Gb/s SAS ports (for BE Connection)
Base 12 Gb/s SAS BE Buses per Array	2 x 4 Lane	2 x 4 Lane	2 x 4 Lane	2 x 4 Lane
Max 12 Gb/s SAS BE Buses per Array	2 x 4 Lane	6 x 4 Lane; or 2 x 4 lane and 2 x 8 lane	6 x 4 Lane; or 2 x 4 lane and 2 x 8 lane	6 x 4 Lane; or 2 x 4 lane and 2 x 8 lane
Max FE (front end) Total Ports per Array (all types)	24	24	24	24
Max Initiators per Array	1,024	2,048	2,048	4,096
Max FC Ports per Array	20	16	16	16
Embedded 10GbaseT Ports per Array	4	NA	NA	NA
Embedded CNA ports per Array	4 ports: 8/16 Gb FC***, 10Gb IP/iSCSI, or 1Gb RJ45	NA	NA	NA
1 Gbase-T/iSCSI Max Total Ports per Array	24	24	24	24
10/25 GbE/iSCSI Max Total Ports per Array	24 – 10GbE 16 – 25GbE	24	24	24
Max Raw Capacity****	2.4 PBs	4.0 PBs	8.0 PBs	16.0 PBs
Max SAN Hosts	512	1,024	1,024	2,048
Max Number of Pools	20	30	40	100
Max Number of LUNs per Array	1,000	1,500	2,000	6,000
Max LUN Size	256 TB	256 TB	256 TB	256 TB
Max file systems per Array	1000	1500	2000	4000
Max File System Size	256 TB	256 TB	256 TB	256 TB
Max attached snapshots per Array (Block)	1000	1500	2000	6000
OS Support	See the Dell EMC Simple Support Matrix on dellemc.com			

* Specific to Hybrid Arrays
** One Mezzanine card per Storage Processor (SP), mirrored.
*** Two IO Modules per Storage Processor (SP), mirrored.
**** 16Gb available in both single mode and multimode.
***** Maximum raw capacity will vary based on drive sizes available at time of purchase.

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Connectivity

Connectivity options via Mezzanine cards and IO modules for both the file for NFS/SMB connectivity and the block storage for FC and iSCSI host connectivity (see above table for number of modules supported per SP).

Connectivity Options

Type	Description	Details
Mezzanine card or IO Module	Four-Port 10Gbase-T Module (File & Block)	Four port 10Gbase-T Ethernet IP/iSCSI module with four 10Gbase-T Ethernet ports with copper connection to Ethernet switch
Mezzanine card or IO Module	Four-Port 10 Gb/s Optical Module (File & Block)	Four port 10GbE IP/iSCSI module with choice of SFP+ optical connection or active/passive twinax copper connection to Ethernet switch
Mezzanine card or IO Module	Four-Port 25 Gb/s Optical Module (File & Block)	Four port 10GbE IP/iSCSI module with choice of SFP+ optical connection or passive twinax copper connection to Ethernet switch
IO Module	Four-Port 16 Gb/s Fibre Channel Module (Block only)	Four port FC module with four ports auto-negotiating to 4/8/16 Gbps; uses single mode or multimode optical SFP and OM2/OM3/OM4 cabling to connect directly to host HBA or FC switch
IO Module	Four-Port 12 Gb/s SAS V3.0 Module*	Four port SAS module, used for back-end storage (DAE) connectivity to Storage Processors. Each SAS port has 4 lanes/port @ 12Gbps, delivering 48Gbps nominal throughput. Also available specifically for the 80 drive DAE is 8 lane connectivity utilizing a pair of SAS ports to deliver high bandwidth for added performance.
	* For 480F/480, 680F/680 and 880F/880 models	

Maximum Cable Lengths

Shortwave optical OM4: 125 meters (16 Gb) 190 meters (8 Gb), 400 meters (4 Gb), and 500 meters (2 Gb)

Back-end (Drive) Connectivity

Each storage processor connects to one side of each of two redundant pairs of four-lane x 12 Gb/s Serial Attached SCSI (SAS) buses, providing continuous drive access to hosts in the event of a storage processor or bus fault. All models require four "system" drives and support a platform specific maximum number of disks (see Physical Specifications table above). 107 GBs per system drive on the Dell EMC Unity XT 380 models and 150 GBs on the Dell EMC Unity XT 480, 680, and 880 models is consumed by the operating environment software and data structures.

Disk Array Enclosure (DAE)

	25 X 2.5" Drive DAE	80 X 2.5" Drive DAE	15 X 3.5" Drive DAE (Hybrid Arrays only)
Drive Types Supported	FLASH & SAS	FLASH & SAS	NL-SAS
Controller Interface	12 Gb SAS	12 Gb SAS	12 Gb SAS

Supported Media

System Category	Type	Usage/ Purpose	Nominal Capacity	Formatted Capacity*	Interface	DPE 25 Drive	25 X 2.5" Drive DAE	80 X 2.5" Drive DAE	15 X 3.5" Drive DAE
All-Flash	SSD (SAS)	All-Flash	800 GB	733.5 GB	12 Gb SAS	✔	✔	✔	
All-Flash	SSD (SAS)	All-Flash	1.92 TB	1751.9 GB	12 Gb SAS	✔	✔	✔	
All-Flash	SSD (SAS)	All-Flash	3.84 TB	3503.9 GB	12 Gb SAS	✔	✔	✔	

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All-Flash	SSD (SAS)	All-Flash	7.68 TB	7006.9 GB	12 Gb SAS	✔	✔	✔	
All-Flash	SSD (SAS)	All-Flash	15.36 TB	14014.9 GB	12 Gb SAS	✔	✔	✔	
Hybrid	SSD (SAS)	FAST Cache & Mixed Pool	400 GB	366.7 GB	12 Gb SAS	✔	✔	✔	
Hybrid	SSD (SAS)	Mixed Pool	800 GB	733.5 GB	12 Gb SAS	✔	✔	✔	
Hybrid	SSD (SAS)	Mixed Pool	1.6 TB	1467.45 GB	12 Gb SAS	✔	✔	✔	
Hybrid	SSD (SAS)	Mixed Pool	3.2 TB	2919.9 GB	12 Gb SAS	✔	✔	✔	
Hybrid	SSD (SAS)	All-Flash	7.6 TB	7006.9 GB	12 Gb SAS	✔	✔	✔	
Hybrid	10K HDD (SAS)	Mixed Pool	600 GB	536.7 GB	12 Gb SAS	✔	✔	✔	
Hybrid	10K HDD (SAS)	Mixed Pool	1.2 TB	1100.5 GB	12 Gb SAS	✔	✔	✔	
Hybrid	10K HDD (SAS)	Mixed Pool	1.8 TB	1650.8 GB	12 Gb SAS	✔	✔	✔	
Hybrid	7.2K HDD (NL-SAS)	Mixed Pool	4.0 TB	3668.6 TB	12 Gb SAS				✔
Hybrid	7.2K HDD (NL-SAS)	Mixed Pool	6.0 TB	5505.0 TB	12 Gb SAS				✔
Hybrid	7.2K HDD (NL-SAS)	Mixed Pool	12.0 TB	10948.7 TB	12 Gb SAS				✔

*GB = Base2 GiB (GiB = 1024x1024x1024)
All drives are 520 bytes/sector.
All drives are non-SED. Data at Rest Encryption is done via the storage controller

Dell EMC Unity OE Protocols and Software Facilities

Support is provided for a wide variety of protocols and advanced features available via various software suites, plug-ins, drivers and packs.

Protocols and Facilities Supported		
Access-based Enumeration (ABE) for SMB protocol	Address Resolution Protocol (ARP)	Block Protocols: iSCSI, Fibre Channel (FCP SCSI-3)
Controller based Data at Rest Encryption (D@RE), with self-managed keys	DFS Distributed File System (Microsoft) as Leaf node or Standalone Root Server	Direct Host Attach for Fibre Channel and iSCSI
Dynamic Access Control (DAC) with claims support	Fail-Safe Networking (FSN)	Internet Control Message Protocol (ICMP)
Kerberos Authentication	Key Management Interoperability Protocol (KMIP) compliant external key manager for D@RE	LDAP (Lightweight Directory Access Protocol)
LDAP SSL	Link Aggregation for File (IEEE 802.3ad)	Lock Manager (NLM) v1, v2, v3, and v4
Management & Data Ports IPv4 and/or IPv6	NAS Servers Multi-protocol for UNIX and SMB clients (Microsoft, Apple, Samba)	Network Data Management Protocol (NDMP) v1-v4, 2-way & 3-way
Network Information Service (NIS) Client	Network Status Monitor (NSM) v1 Network Status Monitor (NSM) v1	Network Time Protocol (NTP) client
NFS v3/v4 Secure Support	NT LAN Manager (NTLM)	Portmapper v2
REST API: Open API that uses HTTP requests to provide management	Restriction of Hazardous Substances (RoHS) compliance	RSVD v1 for Microsoft Hyper-V
Simple Home Directory access for SMB protocol	SMI-S v1.6.0 compatible Dell EMC Unity Block & File client	Simple Mail Transfer Protocol (SMTP)
Simple Network Management Protocol v2c & v3 (SNMP)	Virtual LAN (IEEE 802.1q)	VMware Virtual Volumes (VVols) 2.0

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Security & Compliance (applies to all Dell EMC Unity XT systems, except Dell EMC UnityVSA)

Common Criteria (in planning)
Controller based Data at Rest Encryption (D@RE) with self-managed keys
KMIP compliant external key manager for D@RE
FIPS 140-2 Level 1 validation (in planning)
IPv6 and dual stack (IPv4) modes of operation
Native SHA2 certificate
Security Technical Implementation Guide /Security Requirements Guide (STIG/SRG)
TLS 1.2 support and TLS 1.0 disablement
File-Level Retention: Enterprise FLR-E and Compliance FLR-C with requirements for SEC rule 17a-4(f)

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Software

All Inclusive Base Software	**Management Software:** • Unisphere: Element Manager • Unisphere Central: Consolidated dashboard and alerting • CloudIQ: Cloud-based storage analytics • Thin Provisioning • Dynamic Pools - All-Flash Arrays (AFA) only • Data Reduction: Zero Detect/Deduplication/Compression (AFA and All-Flash Pools in Hybrid Arrays, Block & File) • Proactive Assist: Configure remote support, online chat, open a service request, etc. • Quality of Service (Block and VVols) • Dell EMC Storage Analytics Adapter for VMware® vRealize™ • File & Block Tiering / Archiving to Public/Private Cloud (Cloud Tiering Appliance) • File-Level Retention (FLR-E & FLR-C) **Unified Protocols:** • File • Block • VVols **Local Protection:** • Controller Based Encryption (optional), with self-managed or external key management • Local Point-In-Time Copies (Snapshots and Thin Clones) • AppSync Basic • Dell EMC Common Event Enabler; AntiVirus Agent, Event Publishing Agent **Remote Protection:** • Native Asynchronous Block & File Replication • Native Synchronous Block & File Replication • MetroSync Manager (optional software to automate synchronous file replication sessions) • Snapshot Shipping • Dell EMC RecoverPoint Basic **Migration:** • Native Block & File migration from Dell EMC VNX • SAN Copy Pull: Integrated Block migration from 3rd party arrays **Performance Optimization for Hybrid Arrays:** • FAST Cache • FAST VP
Interface Protocols	NFSv3, NFSv4, NFSv4.1; CIFS (SMB 1), SMB 2, SMB 3.0, SMB 3.02, and SMB 3.1.1; FTP and SFTP; FC, iSCSI and VMware Virtual Volumes (VVols) 2.0
Optional Software	• AppSync Advanced • Data Protection Suite: Backup, Archive and Collaboration Software • Dell EMC RecoverPoint Advanced • PowerPath Migration Enabler • PowerPath Multipathing • VPLEX
Note: For more details on software licensing, please contact your sales representative	

Virtualization Solutions

Dell EMC Unity offers support for a wide variety of protocol and advanced features available via various software suites and packs including but not limited to:

• Dell EMC Storage Integrator (ESI): For provisioning within the Microsoft management context (Systems Center) for Hyper-V and SharePoint

• OpenStack Cinder Driver: For provisioning and managing block volumes within an OpenStack environment

• OpenStack Manila Driver: For managing shared file systems within an OpenStack environment

• Dell EMC Virtual Storage Integrator (VSI) for VMware vSphere™: For provisioning, management, and cloning

• VMware Site Recovery Manager (SRM) Integration: Managing failover and failback making disaster recovery rapid and reliable

• Virtualization API Integration: VMware: VAAI and VASA. Hyper-V: Offloaded Data Transfer (ODX) and Offload Copy for File

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Electrical Specifications

All power figures shown represent a worst case product configuration with max normal values operating in an ambient temperature environment of 20°C to 25°C.

The chassis power numbers provided may increase when operating in a higher ambient temperature environment.

Disk Processor Enclosure (DPE)				
	380F/380 DPE 25 2.5" SFF drives and four IO modules	480F/480 DPE 25 2.5" SFF drives and four IO modules	680F/680 DPE 25 2.5" SFF drives and four IO modules	880F/880 DPE 25 2.5" SFF drives and four IO modules
POWER				
AC Line Voltage	100 to 240 VAC ± 10%, single phase, 47 to 63 Hz			
AC Line Current (operating maximum)	10.07 A max at 100 VAC; 5.04 A max at 200VAC	10.6 A max at 100 VAC; 5.3 A max at 200VAC	11.72 A max at 100 VAC; 5.86 A max at 200VAC	14.41 A max at 100 VAC; 7.2 A max at 200VAC
Power Consumption (operating maximum)	1007 VA (970.5 W) max at 100 VAC; 1007 VA (970.5 W) max at 200 VAC	1060 VA (1050 W) max at 100 VAC; 1060 VA (1050 W) max at 200 VAC	1172 VA (1161 W) max at 100 VAC; 1172 VA (1161 W) max at 200 VAC	1440.77 VA (1411.96 W) max at 100 VAC; 1440.77 VA (1411.96 W) max at 200 VAC
Power Factor	0.95 minimum at full load, @ 100/ 200 VAC			
Heat Dissipation (operating maximum)	3.49×10^6 J/hr, (3,311 Btu/hr) max at 100 VAC; 3.49×10^6 J/hr, (3,311 Btu/hr) max (100V)	3.78×10^6 J/hr, (3,581 Btu/hr) max at 100 VAC; 3.78×10^6 J/hr, (3,581 Btu/hr) max 200VAC	4.18×10^6 J/hr, (3,960 Btu/hr) max at 100 VAC; 4.18×10^6 J/hr, (3,960 Btu/hr) max 200VAC	5.08×10^6 J/hr, (4,818 Btu/hr) max at 100 VAC; 5.08×10^6 J/hr, (4,818 Btu/hr) max 200VAC
In-rush Current	45 Apk "cold" per line cord, at any line voltage			
Startup Surge Current	120 Apk "hot" per line cord, at any line voltage			
AC Protection	15 A fuse on each power supply, single line	20 A fuse on each power supply, single line		
AC Inlet Type	IEC320-C14 appliance coupler, per power zone	IEC320-C14 appliance coupler, per power zone for High Line Power IEC320-C20 appliance coupler, per power zone for Low Line Power		
Ride-through Time	10 ms min			
Current Sharing	± 5 percent of full load, between power supplies			

DIMENSIONS				
Weight kgs/lbs	empty 24.60/54.11	empty 25.90/57.10	empty 25.90/57.10	empty 25.90/57.10
Vertical size	2 NEMA units	2 NEMA units	2 NEMA units	2 NEMA units
Height cm/inches	8.88/3.5	8.72/3.43	8.72/3.43	8.72/3.43
Width cm/inches	44.76/17.62	44.72/17.61	44.72/17.61	44.72/17.61
Depth cm/inches	60.9/24.0	79.55/31.32	79.55/31.32	79.55/31.32

Note: Power consumption values for DPEs and DAEs are based on fully populated enclosures (power supplies, drives and I/O modules).

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Disk Array Enclosure (DAE)

	25 X 2.5" Drive DAE	80 X 2.5" Drive DAE	15 X 3.5" Drive DAE
POWER			
AC Line Voltage	100 to 240 VAC ± 10%, single phase, 47 to 63 Hz		
AC Line Current (operating maximum)	4.50 A max at 100 VAC, 2.40 A max at 200 VAC	13.18 A max at 100 VAC, 6.59 A max at 200 VAC	2.90 A max at 100 VAC, 1.60 A max at 200 VAC
Power Consumption (operating maximum)	453.0 VA/ 432.0 W max at 100 VAC 485.0 VA/ 427.0 W max at 200VAC	1318.0 VA/ 1233.0 W max at 100 VAC 1318.0 VA/ 1233.0 W max at 200VAC	287.0 VA/ 281.0 W max at 100 VAC 313.0 VA/ 277.0 W max at 200VAC
Power Factor	0.95 minimum at full load, @ 100V/200V		0.90 minimum at full load, @ 100V/200V
Heat Dissipation (operating maximum)	1.56×10^6 J/hr, (1,474 Btu/hr) max at 100 VAC 1.54×10^6 J/hr, (1,457 Btu/hr) max at 200 VAC	4.43×10^6 J/hr, (4,207 Btu/hr) max at 100 VAC 4.43×10^6 J/hr, (4,207 Btu/hr) max at 200 VAC	1.01×10^6 J/hr, (959 Btu/hr) max at 100 VAC 1.00×10^6 J/hr, (945 Btu/hr) max at 200 VAC
In-rush Current	30 Apk "cold" per line cord, at any line voltage	45 Apk "cold" per line cord, at any line voltage	30 A max "cold" for ½ line cycle, per line cord at 240 VAC
Startup Surge Current	40 Apk "cold" per line cord, at any line voltage	120 Apk "hot" per line cord, at any line voltage	25 Amps peak max per line cord, at any line voltage
AC Protection	15 A fuse on each power supply, single line		10 A fuse on each power supply, single line
AC Inlet Type	IEC320-C14 appliance coupler, per power zone		
Ride-through Time	12 ms minimum	10 ms minimum	30 ms minimum
Current Sharing	± 5 percent of full load, between power supplies		Droop Load Sharing
WEIGHT AND DIMENSIONS			
Weight kg/lbs	Empty: 10.0/22.1 Full: 20.23/44.61	Empty: 11.33/25 Full: 58.9/130	Empty: 14.5/32 Full: 30.8/68
Vertical size	2 NEMA units	3 NEMA units	3 NEMA units
Height cm/inches	8.46/3.40	13.21/5.20	13.33/5.25
Width cm/inches	44.45/17.5	44.70/17.6	44.45/17.5
Depth cm/inches	33.02/13	76.20/30	35.56/14

Note: Power consumption values for DPEs and DAEs are based on fully populated enclosures (power supplies, drives and I/O modules).

Cabinets

	Standard 40U Cabinet
AC Line Voltage	200 to 240 VAC ± 10%, single-phase, 47 to 63 Hz
Power Configuration	One, two, three or four power domains, each redundant
Power Inlet Count	Two, four, six, or eight (two per domain)
Plug Types	NEMA L6-30P or IEC309-332 P6 or IP57 (Australia)
Input Power Capacity	1 Domain: 4,800 VA @ 200 VAC, 5,760 VA @ 240 VAC 2 Domain: 9,600 VA @ 200 VAC, 11,520 VA @ 240 VAC 3 Domain: 14,400 VA @ 200 VAC, 17,280 VA @ 240 VAC 4 Domain: 19,200 VA @ 200 VAC, 20,040 VA @ 240 VAC
AC Protection	30 A site circuit breakers on each power branch
40U Cabinet Dimensions	Height - 75 in (190.8 cm); Width - 24.0 in (61.1 cm); Depth - 39.0 in (99.2 cm); Weight Empty – 380 lb (173 kg)

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Operating environment

The Dell EMC Unity XT 480F/480 – 880F/880 models meet ASHRAE Equipment Class A3 and the 380F/380 models meet ASHRAE Equipment Class A4.

	Description	Specification
Recommended Range Operation	The limits under which equipment will operate the most reliably while still achieving reasonably energy-efficient data center operation.	18°C to 27°C (64.4°F to 80.6°F) at 5.5°C (59°F) dew.
Continuous Allowable Range Operation	Data center economization techniques (e.g. free cooling) may be employed to improve overall data center efficiency. These techniques may cause equipment inlet conditions to fall outside the recommended range but still within the continuously allowable range. Equipment may be operated without any hourly limitations in this range.	5°C to 35°C (50°F to 95°F) at 20% to 80% relative humidity with 21°C (69.8°F) maximum dew point (maximum wet bulb temperature). De-rate maximum allowable dry bulb temperature at 1°C per 300m above 950m (1°F per 547 ft above 3117 ft).
Improbable Operation (Excursion Limited)	During certain times of the day or year, equipment inlet conditions may fall outside the continuously allowable range but still within the expanded improbable range. Equipment operation is limited to ≤ 10% of annual operating hours in this range.	35°C to 40°C (with no direct sunlight on the equipment) at -12°C dew point and 8% to 85% relative humidity with 24°C dew point (maximum wet bulb temperature). Outside the continuously allowable range (10°C to 35°C), the system can operate down to 5°C or up to 40°C for a maximum of 10% of its annual operating hours. For temperatures between 35°C and 40°C (95°F to 104°F), de-rate maximum allowable dry bulb temperature by 1°C per 175m above 950m (1°F per 319 ft above 3117 ft).
Exceptional Operation (Excursion Limited) ASHRAE 4 only	During certain times of the day or year, equipment inlet conditions may fall outside the continuously allowable range but still within the expanded exceptional range. Equipment operation is limited to ≤ 1% of annual operating hours in this range.	40°C to 45°C (with no direct sunlight on the equipment) at -12°C dew point and 8% to 90% relative humidity with 24°C dew point (maximum wet bulb temperature). Outside the continuously allowable range (10°C to 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. For temperatures between 35°C and 45°C (95°F to 104°F), de-rate maximum allowable dry bulb temperature by 1°C per 125m above 950m (1°F per 228 ft above 3117 ft).
Temperature Gradient		20°C / hour (36°F / hour)
Altitude	Max Operating	3050m (10,000ft)

Statement of Compliance

This Information Technology Equipment is compliant with the electromagnetic compatibility (Dell EMC) and product safety regulations/standards required by the countries in which the product is sold. Dell EMC compliance is based on FCC part 15, CISPR 32/CISPR24 and EN55032/EN55024 standards, including applicable international variations. Dell EMC compliant Class A products are marketed for use in business, industrial, and commercial environments. Product Safety compliance is based on IEC/EN 60950-1 and IEC/EN 62368-1 standards, including applicable national deviations.

This Information Technology Equipment is in compliance with EU RoHS Directive 2011/65/EU.

The individual devices used in this product are approved under a unique regulatory model identifier that is affixed to each individual device rating label, which may differ from any marketing or product family name in this data sheet.

For additional information see https://support.emc.com, under the Safety & EMI Compliance Information tab.

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