Overview

QuickSpecs
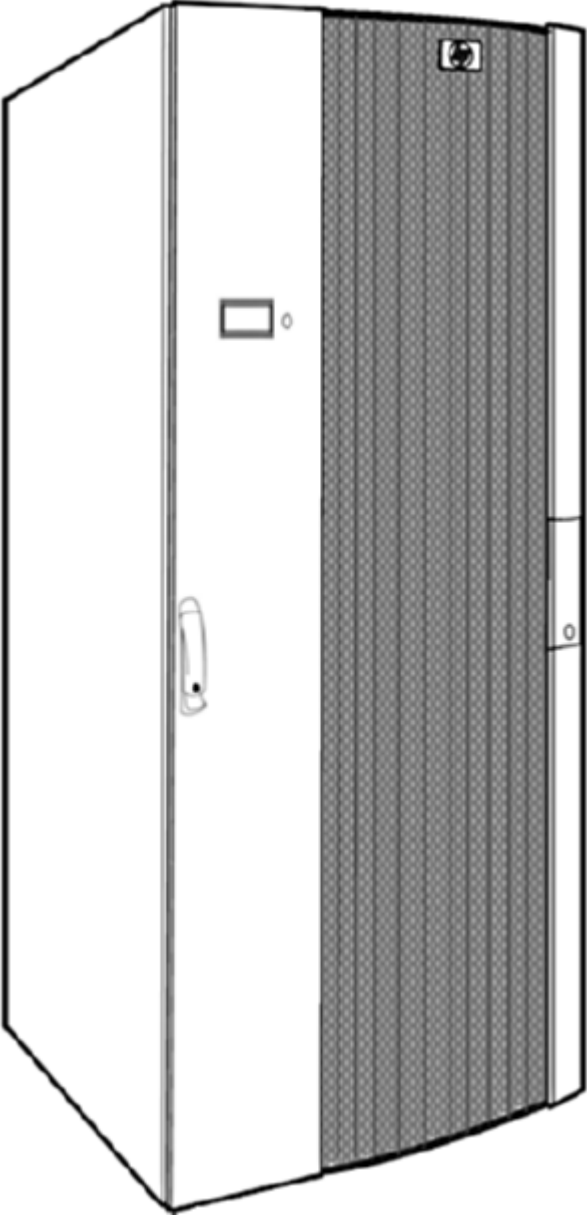
Overview

At a Glance

- Supports cooling two HP 42U racks at a time at 17.5kW per side or 35kW in a single rack
- 35kW of cooling capacity, up from 30kW
- Six hot swappable high airflow fans
- High air flow heat exchanger with bi-directional air distribution
- CTO capability of up to 2000 Lbs dynamic load for both the standard MCS G2 rack as well as the MCS G2 Expansion rack
- Expand MCS G2 to support a second rack with MCS G2 Expansion rack
- Automatic door opening system for both racks ships standard with every MCS G2. The automatic door opening mechanism is not CTO capable and therefore ships in the accessories box and is to be installed onsite
- 42U rack height (2 meters) and 1.5 racks wide to maintain datacenter tiling configuration.
- Environmental Monitor with SNMP integration to Systems Insight Manager (SIM)
- Power Input Redundancy for dual power source
- Condensate Evacuation system to prevent condensation from entering air stream
- Site Preparation Guide available at:
  http://h20000.www2.hp.com/bizsupport/TechSupport/DocumentIndex.jsp?contentType=SupportManual&lang=en
  &cc=us&docIndexId=64179&taskId=101&prodTypeId=3447589&prodSeriesId=3657806

Models

Site Preparation

MCS G2 Flex Hose and Coupling Kit	AF027A
HP MCS G2 Site Preparation Service	N/A

NOTE: Use Per Event Support and Consulting Service
http://h20219.www2.hp.com/services/cache/11077-0-0-225-121.aspx.

NOTE: The Modular Cooling System Water Hook-up kit can be ordered ahead of the MCS G2 for site preparation purposes. The kit contains set of 1.0 inch diameter, Couplings and Parallel-to-Tapered adapter included to address regional differences.

Modular Cooling System G2 (MCS G2)

Modular Cooling System G2	AF025A
HP 10642 G2 Rack Rear Extension Kit	AF036A

NOTE: The Rack Rear Extension kit is required when racking the HP c7000 Enclosure in conjunction with an HP Monitored PDU

MCS G2 10642 G2 Expansion Rack	AF026A
MCS G2 Onsite Installation (includes unpacking and power up)	UE005E

NOTE: Install MCS G2 per the product user installation manual. All MCS G2 units ship with shock pallet for CTO.

NOTE: Install MCS G2 per the product user installation manual. All MCS G2 units ship with shock pallet for CTO.

NOTE: The purchase of HP Modular Cooling System G2 (P/N AF025A) includes 10642 G2 rack and cooling unit attached.

NOTE: A loaded MCS G2 rack should only be moved by professional movers.

Standard Features

Product Description
HP Modular Cooling System G2 rack is designed for high density server and blade deployments. It re-circulates and cools the hot server exhaust air through the heat exchanger residing in the MCS G2 unit. The air is then expelled in front of the enclosed rack at a much lower temperature providing sufficient cool air for a load of 35kW of servers or blades, or two racks at 17.5kW each.

The MCS G2 unit contains six fans and a heat exchanger deployed along the full height of the rack to ensure that all the equipment installed receives sufficient chilled air. All fans are swappable while the unit is online, providing great servicing flexibility. Redundant power is ensured through a failover power switch that can be connected to two power sources. The environmental monitor controls the air temperature to the servers and adjusts automatically to meet the pre-established air temperature goal. The environmental monitor interacts with HP SIM (Systems Insight Manager) via SNMP traps.

The Water Hookup kit is made available as a separate kit to prepare the water hookup ahead of the arrival of the MCS G2.

A Site Preparation Guide is available for download at:
http://h20000.www2.hp.com/bizsupport/TechSupport/DocumentIndex.jsp?contentType=SupportManual&lang=en&cc=us&docIndexId=64179&taskId=101&prodTypeId=3447589&prodSeriesId=3657806.

This guide provides details on how to prepare the datacenter for the successful deployment of the MCS G2. It may be advisable to contact HP Professional Services for a Site Datacenter Thermal Quick Assessment Service, reference HB691A1 and HB691AE. Visit http://www.hp.com/hps/support for additional information.
The MCS G2 unit mounted next to a HP 10000 G2 Series rack is designed to occupy 1.5 tiles in the datacenter maintaining tile count for cable routing and access to the plenum.

The MCS G2 and the MCS G2 Expansion Rack are CTO capable with a dynamic load capacity of 2000 Lbs each. For HP CTO services go to:
http://h18004.www1.hp.com/products/servers/platforms/rackandpower.html

NOTE: A loaded MCS G2 unit should only be moved by professional movers.

NOTE: We support 3000lbs of static IT Equipment on leveling feet.
Caution: Static loading limits cannot be achieved if the rack is

1. Not on its leveling feet and
2. Rolled or pushed from its position.

Not responsible for floor damages where the rack resides. Your floor weight capacity may not support the full static load capacity. Check with your floor provider before loading.

Standard Features

HP 10000 G2 Series Rack

All HP rack-mountable products are designed to fit our industry-standard 19-inch wide racks. Racks and rack-mountable components are typically described using "U" measurements. One "U" is 1.75" (44.45 mm) high.

The MCS G2 ships attached to a specially adapted 42U 10000 Series G2 rack 600mm wide (10642). This sturdy, industrial-strength rack series offers the following features:

- Universal - Accommodates all HP server platforms (ProLiant, BladeSystem, Integrity, HP 9000, Alpha, StorageWorks,) in addition to select third party equipment.
  NOTE: MCS G2 does not support rx7xxx, rp7xxx, rp84xx, rx86xx servers, 10U and other 17U servers.
- Design - The doors on the HP 10000 G2 Series rack bayed to the MCS G2 unit are fitted with carbonite insert mounted inside the front door and solid split rear doors to prevent air from escaping to the environment and to reduce the noise level.
- Load Capacity - The MCS G2 and the MCS G2 Expansion rack will accommodate up to 2000 lb. of equipment each in a static or dynamic environment. A static environment is one where the rack is positioned into place and the leveling feet are extended prior to equipment being installed. A dynamic environment is one where the rack is shipped on a shock pallet with equipment installed or rolling racks with equipment installed to new locations within the data center.
- Unique Frame and Rail Design - Enables fast assembly, easy mounting and outstanding structural integrity. Equipment installation effort is dramatically reduced because the vertical mounting system was specifically designed to minimize the time required to install HP products, and can be used with many other non-HP products as well. U markings on the front and sides of rails make it easy to align parts when installing equipment. Cut outs in the rails also allow for cabling between racks.
- Security Provisions - Front and rear doors are lockable, which provides the necessary level of security to prevent unauthorized entry. Side panels are also lockable* allowing for your entire rack row to be secure

HP MCS G2 Key Features

- Cooling Capacity of up to 35kW - MCS G2 has been designed to support a full load of blade servers in a single rack or 17.5kW per rack when deployed as a rack solution. The MCS G2 unit will provide cool air distributed along the full height of the MCS G2 rack.
- Power Input Redundancy - Automatically detects power failure and switches to alternate source.
- Environmental Control and Safety - The MCS G2 features full environmental control of the cooled air temperature being placed in front of the servers. The heat exchanger unit features safety quick disconnect valves that prevent accidental chilled water leakage during service. A water leak detector ships standard with the MCS G2. Alarms can be sent via SNMP traps to Systems Insight Manager (SIM).
- Hot-swappable components - Fans can be replaced while the unit is operating allowing for great flexibility in servicing the MCS G2.

Industry Standard Support

All rack products are 19 inch RETMA standard and will support select third-party equipment. For additional rack information, please refer to the HP 10000 G2 Series rack QuickSpecs at:
http://h18004.www1.hp.com/products/servers/proliantstorage/racks/10000g2series.html

Standard Features

Service and Support Offerings (HP Care Pack Services)	HP Modular Cooling System: One year warranty, parts only (1-0-0) HP 10642 G2 Series Rack: Three year warranty, parts only (3-0-0) NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical.

A full range of HP Care Pack hardware and software services are available including:

- Installation and start up
- Education courses
- Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMware-base d IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

NOTE: For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: http://www.hp.com/hps/carepack

NOTE: For more complete information on HP Services offerings, customers and resellers, please visit us at: http://www.hp.com/hps

NOTE: Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

NOTE: For additional information on Server Services, Rack and Power Options, please visit: http://h20219.www2.hp.com/services/cache/111072-0-0-225-121.html

NOTE: The information contained herein is subject to change without notice and is provided "as is" without warranty of any kind.

NOTE: The warranties for HP products and services are set forth in the express limited warranty statements accompanying such products and services.

NOTE: Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Related Options

Rack Light Kit	110V/220V Rack Light Kit (supports 10000 Series racks)	361589-B21
	NOTE: This neon light kit is mounted inside the rack and used to provide light to the rear section of the rack.	
9000/10000 Grounding Kit	10000 G2 Rack Grounding Kit	AF074A
Cable Management	Cable Management "D" Rings Kit	168233-B21
	Hook and loop strips (50 pk)	379820-B21
Universal 1U Filler Panels (Carbon Graphite)	HP 10pk Carbonite 1U Universal Filler Panel	AF070A
	HP 100pk Carbonite 1U Universal Filler Panel	AF071A
Rack Drawer	2U Universal Drawer	361591-B21
Rack Shelves	150 lbs (68 kg) Fixed Utility Shelf	253449-B21
	220 lbs (100 kg) Sliding Shelf	234672-B21
Cable Trays Kits	Rack Top Cable Tray, 600W, 8-Pack	383982-B21
	Rack to Rack Adjustable Cable Tray, Aisle Transfer Bridge	383984-B21
Rear Extension Kits	10642 G2 Rear Extension Kit (200mm)	AF036A
	NOTE: The 10642 G2 extension kit is required when using HP monitored PDU's.	
Service and Support Offerings (HP Care Pack Services)	Hardware Services On-site Service	
	Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	UE001E
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UE002E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE003E
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE004E
	Installation Services	
	MCS Onsite Installation	UE005E
	NOTE: Install MCS G2 per the product user installation manual, BTO MCS G2 units only, no CTO units.	

Technical Specifications

MCS G2 Specifications

Dimensions	Height in U	42U
	Maximum Height	78.9 in (2004 mm)
	Maximum Width	35.8 in (909 mm)
	Maximum Depth	51 in (1,270 mm)
	Shipping Height (on skid)	88.5 in (2248 mm)
	Shipping Width (on skid)	48 in (1220 mm)
	Shipping Depth (on skid)	70 in (1778 mm)
	Ramp length	103 in (2616 mm)
	Total length required for offloading MCS G2	20.25 ft (6.17 m)
Weight	Net (including rack)	434 kg (957 1bs)
	Shipping	1370 lbs (621.4 kg)
Load	Static	3000 lbs. (1364 kg)
	Dynamic (CTO) weight allowed	2000 lbs (908 kg)
Color	Graphite Metallic	Doors
	Carbon	Frame
Hot Swap Components	Heat exchangers	No
	Fans	Yes
Cooling	Cooling agent	Primary or auxiliary chilled water supply
	Condensate evacuation tube	Yes
	Air temperature regulation	Yes
	Heat exchangers	1
	Fans	6
	Rack Front door	Transparent polycarbonate insert behind mesh
	Rack Rear doors (split)	Solid, no mesh
	Chilled water connections	Rear
	MCS G2 mounting location	Left hand side
	Side panels included	Yes
	Max Cooling capacity	35kW
	Air Temperature to servers	Settable, suggested at 68-77 ° F (20-25° C)
	Air Flow to servers	2400 CFM Max
	Recommended Chilled Water inlet temperature	45.0 ° F (7.00 ° C) 7° to 15° C
	Maximum Chilled Water Flow Rate	15.8 US gallons per minute (60 liters per minute)
	Chilled Water Pressure Drop	17 psi (1.2 bar) at 60 liters per minute

Technical Specifications

	Water connections	1.00 in (25.4 mm)
	Coupling type	1.00 in NPT or BSPP (G type) supplied in Main Hose Kit AF027A
	Flexible hose length (not installed)	3.5 m(11.5 ft)
	Pipe thread	Parallel (parallel-to-tapered adapter included)
Power Input	Nominal Input Voltage	208-240 VAC + - 10%
	Frequency range (min-max)	50/60 Hz
	Input Power	1900 Watts Max
	Single phase	Yes
	Rated line current	15 A per line cord
	Max inrush current	54 A peak for 20 ms per line cord
	Dropout carry through time at min voltage	20 ms
	Circuit breaker rating	20A per line cord
	Power factor correction	>0.98 at all loads
	Ground leakage current (mA)	<3.0 (mA) per line cord
	Input Connections USA, Japan	NEMA L6-20P
	Input Connections International	IEC309 (16 Amps)
	Power Cords	2 (for redundancy)
	Power input redundancy	Yes, with auto failover switch
Environment	Room temperature requirements	41.0 ° F (5° C) Min to 95.0 ° F (35.00 ° C) Max
	Humidity Range	Allowable 20%-80% Recommended 40%-55%
Environmental Monitoring	Air temperature to servers control	Yes
	Water-In temperature monitor	Yes
Communications & Management	Control panel	Multi-function LCD status and control console
	SIM 5.0 Integration	Yes, via SNMP traps
	RJ 45 Plug	1
Certifications	Regulatory Approvals	UL Listing 484, CUL Canadian std. 22.2 No.236 EN61000-3-2 EN61000-3-3 Flicker EN61000-4-2 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-6

Technical Specifications

		EN61000-4-8
		EN61000-4-11
		CB report to IEC 60950-1
		TÜV / GS EN 60335-1 (according to 60335-2-40)
Warranty	Standard MCS G2 Warranty	1-0-0
	Standard Rack Warranty	3-0-0

MCS G2 Expansion Rack Specifications

Dimensions	Height in U	42U
	Maximum Height	78.9 in (2004 mm)
	Maximum Width	24 in (600 mm)
	Maximum Depth	51 in (1,270 mm)
	Shipping Height (on skid)	88.5 in (2248 mm)
	Shipping Width (on skid)	48 in (1220 mm)
	Shipping Depth (on skid)	70 in (1778 mm)
	Ramp length	103 in (2616 mm)
	Total length required for offloading MCS G2	20.25 ft (6.17 m)
Weight	Net	253 lbs (115 kg)
	Shipping	284 lbs (129 kg)
Load	Static	3000 lbs (1364 kg)
	Dynamic (CTO) weight allowed	2000 lbs (908 kg)
Color	Graphite Metallic	Doors
	Carbon	Frame
Warranty	MCS G2 Expansion Rack	3-0-0

| Environment-friendly Products and Approach | End-of-life Management and Recycling | Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment. |
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Technical Specifications