

EQUIPMENT DESCRIPTION (UNIT)	QTY.	ELECTRICAL REQUIREMENTS ² ³								AIR CONDITIONING REQUIREMENTS ²			EST PER UNIT MAX WEIGHT LB. (KG)	SIZE IN. (mm)			
		VOLTAGE	PHASE	Hz	WIRES	(PER UNIT)		POWER FACTOR	CIRCUIT SIZE ⁴	RECEP TYPE ⁵	(PER UNIT)			HEIGHT	WIDTH	DEPTH	
						KVA	KW				KBTU/HR	KW					TONS
HPE 42U CRAY XD2000 DLC COMPUTE RACKS	8	400	3	50	5 (3W+N+PE)	(79.19) 633.52	(77.60) 620.80	.98	63 AMP 4 EACH RACK ⁶	IEC60309 63 AMP 4 EACH RACK ⁶	(72.95) 583.60 ⁶	(21.38) 171.04 ⁶	(6.08) 48.64 ⁶	2300 (1043)	79.02 (2007)	31.38 (797)	50.65 (1287)
HPE 42U G2 RACK (INTERCONNECT)	1	400	3	50	5 (3W+N+PE)	15.48	14.70	.95	32 AMP 2 EACH RACK ⁶	IEC60309 32 AMP 2 EACH RACK ⁶	50.16	14.70	4.18	803 (364)	79.02 (2007)	31.38 (797)	50.65 (1287)
HPE 42U G2 RACK (SERVICE)	1	400	3	50	5 (3W+N+PE)	31.23	29.66	.95	32 AMP 2 EACH RACK ⁶	IEC60309 32 AMP 2 EACH RACK ⁶	101.20	29.66	8.44	1897 (860)	79.02 (2007)	31.38 (797)	50.65 (1287)
SYSTEM TOTAL						680.23	665.16		SYSTEM TOTAL		734.96	215.40	61.26				

1. THIS DOCUMENT IDENTIFIES THE GENERAL POWER, COOLING, AND ENVIRONMENTAL REQUIREMENTS ASSOCIATED WITH PREPARING A FACILITY FOR THE INSTALLATION OF A HEWLETT PACKARD ENTERPRISE (HPE) SCALEABLE NODE COMPUTER SYSTEM. FOR ADDITIONAL QUESTIONS E-MAIL "siteplanners@hpe.com".

² FIGURES DISPLAYED IN THE "(PER UNIT)" COLUMN OF THE ELECTRICAL AND AIR CONDITIONING REQUIREMENTS COLUMNS REPRESENT THE MAXIMUM POWER AND COOLING REQUIREMENTS BASED ON THE CONFIGURATION LISTED IN THE CONFIGURATION TABLE BELOW WHILE RUNNING AN OPTIMIZED VERSION OF THE LINPACK BENCHMARK UNDER NORMAL OPERATING CONDITIONS [AMBIENT 72°F (22°C), ELEVATION UP TO 5000 FT (1524 M) MSL]. ACTUAL POWER & COOLING LOAD MAY VARY BASED ON THE CUSTOMER'S SPECIFIC APPLICATION.

³ ELECTRICAL REQUIREMENTS
FACILITY WIRING MUST BE SIZED IN ACCORDANCE WITH THE ASSOCIATED VALUES DISPLAYED IN THE ELECTRICAL REQUIREMENTS SECTION OF THE CHART. ALL ELECTRICAL WIRING MUST CONFORM TO LOCAL AND NATIONAL CODES.

⁴ OVERCURRENT PROTECTION
HPE REQUIRES PRIMARY CIRCUITS SUPPLYING POWER TO HPE EQUIPMENT BE PROTECTED AGAINST OVERCURRENTS, SHORT CIRCUITS, AND EARTH FAULTS. HPE RECOMMENDS CIRCUITS SUPPLYING POWER TO HPE EQUIPMENT BE PROTECTED WITH CIRCUIT BREAKERS SIZED IN ACCORDANCE WITH THE AMPERAGE RATING DISPLAYED ON THE CHART.

⁵ EQUIPMENT POWER CONNECTION
NUMBERS IN THE "RECEPTACLE TYPE" COLUMN AND NOTE 6 ARE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA) REFERENCE NUMBERS (UNLESS OTHERWISE NOTED) WHICH IDENTIFY THE CUSTOMER SUPPLIED MATING BOX MOUNTED RECEPTACLES. AT THE CUSTOMERS OPTION EQUIVALENT IN-LINE CORD CONNECTION RECEPTACLES MAY BE UTILIZED IN LIEU OF THE BOX MOUNTED RECEPTACLES. THE MAIN INPUT POWER PLUGS FOR THE HPE RACKS ARE CONSIDERED DISCONNECT DEVICES. THE CUSTOMER SUPPLIED MATING RECEPTALES SHALL BE INSTALLED WITHIN 4 FEET (1.2 M) OF EACH ASSOCIATED FLOOR CUTOUT AND SHALL BE EASILY ACCESSIBLE.

⁶ SEE THE FOLLOWING TABLE FOR RACK INPUT POWER CIRCUIT REQUIREMENTS.

INPUT VOLTAGE	(QTY) RECEPTACLES REQUIRED PER EACH HPE 42U CRAY XD2000 DLC RACK	(QTY) RECEPTACLES REQUIRED PER EACH HPE 42U G2 RACK
3 PHASE, 400 VAC	(4) 63 AMP, 5-WIRE(3P+N+PE), IEC60309 TYPE (HUBBELL HBL560C6W OR EQUIV.)	(2) 32 AMP, 5-WIRE(3P+N+PE), IEC60309 TYPE (HUBBELL HBL530C6W OR EQUIV.)

⁷ COOLING WATER REQUIREMENTS

EACH HPE CRAY XD2000 DLC RACK REQUIRES A CUSTOMER SUPPLIED SOURCE OF CLEAN COOLING WATER. THE HPE CRAY XD2000 DLC RACKS WILL OPERATE ON COOLING WATER SUPPLY TEMPERATURES FROM 42°F (5.6°C) TO 90°F (32°C). FOR THE SYSTEM CONFIGURED ON THIS DOCUMENT. THE HEAT REJECTION TO WATER, WATER FLOW RATE, AND PRESSURE DROP VALUES ARE LISTED IN THE TABLE BELOW. THESE VALUES ARE BASED ON 100% WATER AT A SUPPLY TEMPERATURES OF 64°F (18°C).

BASED ON 64°F(18°C) WATER SUPPLY TEMP	HEAT REJECTION TO WATER			WATER FLOW RATE		PRESSURE DROP (MAXIMUM)		WATER DELTA T ACROSS EACH RACK
	KW	KBTU/HR	TONS	GPM	M ³ /HR	PSI	KPA	
EACH HPE CRAY XD2000 DLC RACK	56.22	191.83	15.99	20.80	4.73	6	42	18.7°F(10.4°C)
SYSTEM TOTAL	449.76	1534.64	127.92	166.40	37.84			

CAUTION: WATER FLOW AND PRESSURE DROP VALUES WILL DIFFER FOR TREATED WATER (i.e. ANTIFREEZE, CORROSION INHIBITORS, ETC.) DEPENDING ON THE PERCENTAGE (MAXIMUM 30% BY VOLUMN) OF TREATMENT IN THE SOLUTION. WATER FLOW AND PRESSURE DROP VALUES WILL ALSO DIFFER WITH THE TEMPERATURE AND PRESSURE OF THE WATER SUPPLY. WATER PRESSURE MUST BE LIMITED TO 100 PSIG (690 KPA) MAXIMUM.

8. MAXIMUM ENVIRONMENTAL REQUIREMENTS:

TEMPERATURE:	41-95°F (5-35°C) < 5000 ft (1524 m) MEAN SEA LEVEL 41-86°F (5-30°C) 5000-10000 ft (1524-3048 m)	TEMPERATURE RATE OF CHANGE MUST NOT EXCEED 18°F/HOUR (10°C/HOUR)
HUMIDITY:	20% TO 80% NON-CONDENSING	10% RELATIVE HUMIDITY/HOUR

9. NOTE: THIS DOCUMENT IS A SUPPLEMENT TO THE HPE CRAY XD DIRECT LIQUID COOLING SYSTEM SITE PREPARATION, USER AND MAINTENANCE GUIDE AND MANDATORY HPE SITE READINESS MEETING WITH YOUR HPE SERVICE REPRESENTATIVE.

PLEASE REFER TO THE FOLLOWING URL BELOW.

HPE CRAY XD DIRECT LIQUID COOLING SYSTEM SITE PREPARATION, USER AND MAINTENANCE GUIDE

https://support.hpe.com/hpsc/public/docDisplay?docId=sd00002347en_us&docLocale=en_US&page=GUID-8406B005-BC98-44F4-BA8A-1E52DCACC300.html

EACH HPE XD2000 DLC COMPUTE RACK

QUANTITY OF XD2000 CHASSIS	16
TYPE OF SOCKETS	AMD 8593Q 2.2GHz 64 CORE 385W
MEMORY/DIMM TYPE	32GB DIMMS
QUANTITY OF SWITCHES	3 MANAGEMENT 1 NDR
QUANTITY OF IN-RACK CDU'S	1

HPE 42U G2 RACK (INTERCONNECT)

QUANTITY OF SWITCHES	16	2 ARUBA 8325 8 NDR
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HPE 42U G2 RACK (SERVICE)

QUANTITY OF SWITCHES	2	2 ARUBA 8360 2 NDR
QUANTITY OF DL380	4	
QUANTITY OF DL360	16	
QUANTITY OF MSA 2060	3	
QUANTITY OF KVM	1	



MACHINE UNIT SPECIFICATION
8 HPE 42U CRAY XD2000 DLC COMPUTE RACKS
(128 CRAY V2240 CHASSIS)
18C FACILITY WATER SUPPLY TEMPERATURE
2 HPE 42U G2 RACKS (INTERCONNECT & SERVICE)
CHPC

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