APPENDIX D

Chassis and Module Power and Heat Values

This appendix provides the power and heat numbers for the Catalyst 6500 series chassis and modules. The following power requirements and heat dissipation tables are provided:

- Chassis and fan trays—Table D-1
- IP phones—Table D-2
- Supervisor engines—Table D-3
- Policy Feature Cards (PFCs)—Table D-4
- Distributed Forwarding Cards (DFCs)—Table D-5
- Switch fabric modules—Table D-6
- 10-Gigabit Ethernet modules—Table D-7
- Gigabit Ethernet modules—Table D-8
- 10/100/1000 Ethernet modules—Table D-9
- Fast Ethernet switching modules—Table D-10
- 10/100 Ethernet switching modules—Table D-11
- 10BASE Ethernet switching modules—Table D-12
- FlexWAN and Enhanced FlexWAN modules—Table D-13
- Service modules—Table D-14
- Miscellaneous modules—Table D-15

Unless otherwise noted, the information in the following tables is measured under fully loaded conditions (transceivers installed). Typical numbers are approximately 20 percent below the numbers listed in these tables.

Note Module power is the output from the power supply (internal to the system). The AC-input power is the input from the outlet to the power supply. The percentage difference between the two values is the efficiency of the power supply.

Table D-1 Power Requirements and Heat Dissipation—Chassis and Fan Trays

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
Catalyst 6503 chassis						
FAN-MOD-3 fan tray	0.80	34.00	43.00	145.00	46.00	156.00
FAN-MOD-3HS fan tray	2.98	125.16	156.45	534.28	168.23	574.49
Catalyst 6503-E chassis						
WS-C6503-E-FAN fan tray[1]	1.37	57.54	71.93	245.62	77.34	264.11
	3.10	130.20	162.75	555.79	175.00	597.63
Catalyst 6504-E chassis						
FAN-MOD-4HS fan tray[1]	1.43	60.06	75.08	256.38	80.73	275.68
	2.17	91.14	113.93	389.05	122.50	418.34
Catalyst 6506 chassis						
WS-C6K-6SLOT-FAN fan tray	0.71	30.00	37.48	128.00	40.00	136.88
WS-C6K-6SLOT-FAN2 fan tray	2.00	84.00	105.00	359.00	113.00	386.00
Catalyst 6506-E chassis						
WS-C6506-E-FAN fan tray[1]	2.35	98.70	123.40	421.33	132.66	453.04
	3.35	140.70	175.88	600.61	189.11	645.82
Catalyst 6509 chassis						
WS-C6K-9SLOT-FAN fan tray	1.10	46.00	58.00	196.00	62.00	212.00
WS-C6K-9SLOT-FAN2 fan tray	3.04	127.68	159.60	545.03	171.70	586.06
Catalyst 6509-E chassis						
WS-C6509-E-FAN fan tray[1]	3.58	150.36	187.95	641.85	202.10	690.16
	5.00	210.00	262.50	896.44	282.26	963.91
Catalyst 6509-NEB chassis						
WS-C6K-NEB-FAN fan tray	7.00	294.00	368.00	1255.00	395.00	1349.00

Table D-1 Power Requirements and Heat Dissipation—Chassis and Fan Trays (continued)

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
Catalyst 6509-NEB-A chassis						
FAN-MOD-09[2] fan tray	5.75	242.00	302.00	1031.00	325.00	1108.00
Catalyst 6509-V-E chassis[3]						
WS-C6509-V-E-FAN fan tray	5.75	242.00	302.00	1031.00	325.00	1108.00
Catalyst 6513 chassis						
WS-C6K-13SLOT-FAN fan tray	1.58	73.00	146.00	499.00	157.00	536.00
WS-C6K-13SLOT-FAN2 fan tray	7.10	298.20	372.75	1272.94	400.81	1368.75
Catalyst 6513-E chassis						
WS-C6513-E-FAN	7.10	298.20	372.75	1272.94	400.81	1368.75

1. Two sets of values are given for these fan trays. The Catalyst 6500-E series fan trays are designed to provide two levels of cooling. The lower set of values shown are for chassis where modules that do not require the additional cooling capacity are installed. The higher set of values shown are for chassis where either the WS-X6708-10G-3C or -3CXL, or the WS-X6716-10G-3C or -3CXL Ethernet modules are installed. Both of these Ethernet modules require the fan tray's additional cooling capacity.
2. Values given are per fan tray. The Catalyst 6509-NEB-A switch chassis ships with one fan tray installed by default. A second fan tray can be installed in the chassis. The power and heat numbers for a chassis equipped with two fan trays are double the values listed.
3. Values given are per fan tray. The Catalyst 6509-V-E switch chassis ships with one fan tray installed by default. A second fan tray can be installed in the chassis. The power and heat numbers for a chassis equipped with two fan trays are double the values listed.

Table D-2 Power Requirements and Heat Dissipation—IP Phones

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
Cisco IP Phone 7960	0.15	6.3	7.88	26.89	8.47	28.92
Cisco IP Phone 7940	0.15	6.3	7.88	26.89	8.47	28.92
Cisco IP Phone 7910	0.13	5.46	6.83	23.31	7.34	25.06

The module power values are based on 42 VDC. Power is distributed to each slot in the chassis from the power supply's 42 VDC output. Each module has DC-to-DC power supplies that convert the 42 VDC into +2.5 VDC, +3.3 VDC, and +5 VDC to power the module. The 42 VDC is independent of the power supply's input voltage, either 110 VAC or 220 VAC.

Table D-3 lists the power and the heat numbers for the supervisor engines.

Table D-3 Power Requirements and Heat Dissipation—Supervisor Engines

Model Number/ Module Type	Module Current (A) @ 42 VDC	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-X6K-SUP1A-2GE Supervisor Engine 1A	1.70	71.40	89.25	304.79	95.97	327.73
WS-X6K-SUP1A-PFC Supervisor Engine 1A with PFC daughter card	2.50	105	131.25	448.22	141.13	481.96
WS-X6K-SUP1A-MSFC Supervisor Engine 1A with PFC and MSFC daughter cards	3.30	138.60	173.25	519.65	186.29	559.18
WS-X6K-SUP1A-MSFC2 Supervisor Engine 1A with PFC and MSFC2 daughter cards	2.90	121.80	152.25	519.93	163.71	559.07
WS-X6K-S2-PFC2 Supervisor Engine 2 with PFC2 daughter card	3.06	128.52	160.65	548.62	172.74	589.91
WS-X6K-S2-MSFC2 Supervisor Engine 2 with PFC2 and MSFC2 daughter cards	3.46	145.32	181.65	620.33	195.32	667.03
WS-X6K-S2U-MSFC2 Supervisor Engine 2 with PFC2 and MSFC2 daughter cards—Has 512 MB of DRAM	3.46	145.32	181.65	620.33	195.32	667.03

Table D-3 Power Requirements and Heat Dissipation—Supervisor Engines (continued)

Model Number/ Module Type	Module Current (A) @ 42 VDC	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-SUP32-10GE-3B Supervisor Engine 32 with PFC3B and MSFC2A daughter cards	4.19	175.98	219.98	751.21	236.53	807.76
WS-SUP32-GE-3B Supervisor Engine 32 with PFC3B and MSFC2A daughter cards	3.69	154.98	193.73	661.57	208.31	711.37
WS-S32-GE-PISA Supervisor Engine 32 with PFC3B and Programmable IP Services Accelerator (PISA) daughter cards.	2.96	124.32	155.40	530.69	167.10	570.64
WS-S32-10GE-PISA Supervisor Engine 32 with PFC3B and Programmable IP Services Accelerator (PISA) daughter cards	2.97	124.74	155.93	532.48	167.66	572.56
WS-SUP720 Supervisor Engine 720 with PFC3A daughter card and integrated MSFC3 and switch fabric	7.50	315.0	393.75	1344.66	423.39	1445.87
WS-SUP720-3B Supervisor Engine 720 with PFC3B daughter card and integrated MSFC3 and switch fabric	6.72	282.24	350.80	1204.81	379.35	1295.5
WS-SUP720-3BXL Supervisor Engine 720 with PFC3BXL daughter card and integrated MSFC3 and switch fabric	7.82	328.44	410.55	1402.03	441.45	1507.56
VS-S720-10G-3C Supervisor Engine 720-10GE with PFC3C daughter card and integrated MSFC3 and switch fabric	8.05	338.10	422.63	1443.26	454.44	1551.90
VS-S720-10G-3CXL Supervisor Engine 720-10GE with PFC3CXL daughter card and integrated MSFC3 and switch fabric	8.65	363.30	454.13	1550.84	488.31	1667.57

Table D-4 lists the power and the heat numbers for the Policy Feature Cards (PFCs).

Table D-4 Power Requirements and Heat Dissipation—Policy Feature Cards (PFCs)

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-F6K-PFC3A Policy Feature Card 3A	2.25	94.50	118.13	403.40	127.02	433.76
WS-F6K-PFC3B Policy Feature Card 3B	1.47	61.74	77.18	263.55	82.98	283.39
WS-F6K-PFC3BXL Policy Feature Card 3BXL	2.57	107.94	134.93	460.77	145.08	495.45
VS-F6K-PFC3C Policy Feature Card 3C	1.90	79.80	99.75	340.65	107.26	366.29
VS-F6K-PFC3CXL Policy Feature Card 3CXL	2.50	105.00	131.25	448.22	141.13	481.96

Table D-5 lists the power and the heat numbers for the Distributed Forwarding Cards (DFCs).

Table D-5 Power Requirements and Heat Dissipation—Distributed Forwarding Cards (DFCs)

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-F6K-DFC Distributed Forwarding Card	2.10	88.20	110.25	376.50	118.55	404.84
WS-F6K-DFC3A Distributed Forwarding Card 3A	2.57	107.94	134.93	460.77	145.08	495.45
WS-F6K-DFC3B Distributed Forwarding Card 3B	1.67	70.14	87.68	299.41	94.27	321.95
WS-F6K-DFC3BXL Distributed Forwarding Card 3BXL	2.38	99.96	124.95	426.70	134.35	458.82
WS-F6700-CFC Centralized Forwarding Card	0.75	31.5	39.38	134.47	42.34	144.59

Table D-5 Power Requirements and Heat Dissipation—Distributed Forwarding Cards (DFCs) (continued)

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-F6700-DFC3A Distributed Forwarding Card 3A	3.0	126	157.5	537.86	169.35	578.35
WS-F6700-DFC3B Distributed Forwarding Card 3B	2.7	113.40	141.75	484.08	152.42	520.51
WS-F6700-DFC3BXL Distributed Forwarding Card 3BXL	3.3	138.60	173.25	591.65	186.29	636.18
WS-F6700-DFC3C Distributed Forwarding Card 3C for use on CEF720 modules. Supported only with Supervisor Engine 720 and Supervisor Engine 720-10GE	1.65	69.30	86.63	295.82	93.15	318.09
WS-F6700-DFC3CXL Distributed Forwarding Card 3CXL for use on CEF720 modules. Supported only with Supervisor Engine 720 and Supervisor Engine 720-10GE.	2.35	98.70	123.38	421.33	132.66	453.04

Table D-6 lists the power and the heat numbers for the switch fabric modules.

Table D-6 Power Requirements and Heat Dissipation—Switch Fabric Modules

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-C6500-SFM Switch Fabric Module	2.79	117.18	146.5	500.2	157.5	537.86
WS-X6500-SFM2 Switch Fabric Module 2	3.09	129.78	162.23	554	174.4	595.7

Table D-7 lists the power and the heat numbers for the 10-Gigabit Ethernet modules.

Note For the WS-X6502-10GE and WS-X6704-10GE Ethernet modules, the values shown are for the baseboard only. When the baseboard has a CFC or DFC3 daughter card installed, you must add the daughter card power to the baseboard power to get the total slot power. For the WS-X6708-10G-3C, WS-X6708-10G-3CXL, WS-X6716-10G-3C , and the WS-X6716-10G-3CXL Ethernet modules, the values shown include the factory installed WS-F6700-DFC3C or WS-F6700-DFC3CXL daughter cards.

Table D-7 Power Requirements and Heat Dissipation—10-Gigabit Ethernet Modules

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-X6502-10GE 2-port 10-Gigabit Ethernet module	3.30	138.60	173.25	591.65	186.29	636.18
WS-X6704-10GE 4-Port 10-Gigabit Ethernet module	6.28	263.76	329.70	1125.93	354.52	1210.67
WS-X6708-10G-3C 8-Port 10-Gigabit Ethernet module with WS-F6700-DFC3C daughter card.	10.58	444.36	555.45	1896.86	600.49	2050.66
WS-X6708-10G-3CXL 8-Port 10-Gigabit Ethernet module with WS-F6700-DFC3CXL daughter card.	11.28	473.76	592.20	2022.36	640.22	2186.34
WS-X6716-10G-3C 16-Port 10-Gigabit Ethernet module with WS-F6700-DFC3C daughter card.	10.90	457.80	572.25	1954.23	615.32	2101.33
WS-X6716-10G-3CXL 16-Port 10-Gigabit Ethernet module with WS-F6700-DFC3CXL daughter card.	11.60	487.20	609.00	2079.74	654.84	2236.27
WS-X6716-10T-3C 16-Port 10-Gigabit Ethernet module with WS-F6700-DFC3C daughter card.	11.53	484.26	605.33	2067.18	650.89	2222.78
WS-X6716-10T-3CXL 16-Port 10-Gigabit Ethernet module with WS-F6700-DFC3CXL daughter card.	12.23	513.66	642.08	2192.69	690.40	2357.73

Table D-8 lists the power and the heat numbers for the Gigabit Ethernet modules.

Table D-8 Power Requirements and Heat Dissipation—Gigabit Ethernet Modules

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-X6316-GE-TX 16-port 1000BASE-T Gigabit Ethernet module	5.15	216.3	270.38	923.33	290.73	992.83
WS-X6408A-GBIC 8-port 1000BASE-X Gigabit Ethernet module	2.00	84.00	105.00	358.58	112.90	385.56
WS-X6416-GBIC 16-port 1000BASE-X Gigabit Ethernet module	2.81	118.02	147.53	503.8	158.63	541.72
WS-X6416-GE-MT 8-port 1000BASE-SX Gigabit Ethernet module	2.50	105.00	131.25	448.22	141.13	481.96
WS-X6516-GBIC 16-port 1000BASE-X Gigabit Ethernet module	3.40	142.80	178.50	609.58	191.94	655.46
WS-X6516A-GBIC 16-port 1000BASE-X Gigabit Ethernet module	3.62	152.04	190.05	649.02	204.35	697.87
WS-X6724-SFP 24-Port 1000BASE-X Ethernet module	2.23	99.66	117.08	399.81	125.89	429.90
WS-X6748-SFP 48-Port 1000BASE-X Ethernet module	5.32	223.44	279.30	953.81	300.32	1025.60
WS-X6816-GBIC 16-Port1000BASE-X Gigabit Ethernet module	3.84	161.28	201.60	688.46	216.77	740.28

Table D-9 lists the power and the heat numbers for the 10/100/1000 Ethernet switching modules.

Table D-9 Power Requirements and Heat Dissipation—10/100/1000 Ethernet Switching Modules

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-X6148-GE-TX 48-port 10/100/1000 Ethernet module	2.47	104.0	130.0	443.0	139.0	476.0
WS-X6148V-GE-TX 48-port 10/100/1000 Ethernet module with WS-F6K-VPWR-GE PoE daughter card	2.89	121.38	151.72	518.14	163.15	557.14
WS-X6148-GE-45AF 48-port 10/100/1000 Ethernet module with WS-F6K-GE48-AF PoE daughter card	2.65	111.30	139.13	475.11	149.60	510.87
WS-X6148A-GE-TX 48-port 10/100/1000 Ethernet module	2.5	105.0	131.25	448.22	141.13	481.96
WS-X6148A-GE-45AF 48-port 10/100/1000 Ethernet module with WS-F6K-GE48-AF PoE daughter card	2.68	112.56	140.70	480.49	151.29	516.66
WS-X6516-GE-TX 16-port 10/100/1000 Ethernet module	3.45	144.90	181.13	618.54	194.76	665.10
WS-X6548-GE-TX 48-port 10/100/1000 Ethernet module	2.98	125.16	156.45	534.28	168.23	574.49
WS-X6548V-GE-TX 10/100/1000 Ethernet module with WS-F6K-VPWR-GE PoE daughter card	3.40	142.80	178.50	609.58	191.94	655.46
WS-X6548-GE-45AF 48-port 10/100/1000 Ethernet module with WS-F6K-GE48-AF PoE daughter card	3.16	132.72	165.90	566.55	178.39	609.19
WS-X6748-GE-TX 10/100/1000 Ethernet module	7.00	294.00	367.50	1255.01	395.16	1349.48

Table D-10 lists the power and the heat numbers for the Fast Ethernet switching modules.

Table D-10 Power Requirements and Heat Dissipation—Fast Ethernet Switching Modules

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-X6148-FE-SFP 48-port 100BASE-X module	2.3	96.60	120.75	412.36	129.84	443.40
WS-X6224-100FX-MT 24-port 100BASE-FX Ethernet module, MMF	1.90	79.8	99.75	340.65	107.26	366.3
WS-X6324-100FX-MM 24-port 100BASE-FX Ethernet module, MMF	1.52	63.84	79.8	272.52	85.81	293.03
WS-X6324-100FX-SM 24-port 100BASE-FX Ethernet module, SMF	1.52	63.84	79.8	272.52	85.81	293.03
WS-X6524-100FX-MM 24-port 100BASE-FX Ethernet module	1.90	79.8	99.75	340.65	107.3	366.3

Table D-11 lists the power and the heat numbers for the 10/100 Ethernet switching modules.

Table D-11 Power Requirements and Heat Dissipation—10/100 Ethernet Switching Modules

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-X6148-RJ-21 48-port 10/100 Ethernet module	2.39	100.38	125.48	428.5	134.92	460.75
WS-X6148-RJ21V 48-port 10/100 Ethernet module with WS-F6K-VPWR PoE daughter card	2.39	100.38	125.48	428.50	134.02	460.75
WS-X6148-21AF 48-port 10/100 Ethernet module with WS-F6K-FE48-AF PoE daughter card	2.57	107.94	134.93	460.77	145.08	495.45
WS-X6148-RJ-45 48-port 10/100 Ethernet module	2.39	100.38	125.48	428.50	134.92	460.75
WS-X6148-RJ45V 48-port 10/100 Ethernet module with WS-F6K-VPWR PoE daughter card	2.39	100.38	125.48	428.50	134.92	460.75

Table D-11 Power Requirements and Heat Dissipation—10/100 Ethernet Switching Modules (continued)

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-X6148-45AF 48-port 10/100 Ethernet module with WS-F6K-FE48-AF PoE daughter card	2.57	107.94	134.93	460.77	145.08	495.45
WS-X6148A-RJ-45 48-port 10/100 Ethernet module	1.00	42.0	52.5	179.29	56.45	192.78
WS-X6148A-45AF 48-port 10/100 Ethernet module	2.57	107.94	134.93	460.77	145.08	495.45
WS-X6148X2-RJ-45 96-port 10/100 Ethernet module	2.65	111.30	139.13	475.11	149.60	510.87
WS-X6148X2-45AF 96-port 10/100 Ethernet module with WS-F6K-FE48X2-AF PoE daughter card	3.07	128.94	161.18	550.41	173.31	591.84
WS-X6196-RJ-21 96-port 10/100 Ethernet module	2.74	115.08	143.85	491.25	154.68	528.22
WS-X6196-21AF 96-port 10/100 Ethernet module with WS-F6K-FE48X2-AF PoE daughter card	3.16	132.72	165.90	566.55	178.39	609.19
WS-X6248A-TEL 48-port 10/100 Ethernet module (telco)	2.69	113	141.23	482.28	151.85	518.58
WS-X6348-RJ21V 48-port 10/100 Ethernet module with WS-F6K-VPWR PoE daughter card	2.39	100.38	125.48	428.5	134.92	460.75
WS-X6348-RJ-45 48-port 10/100 Ethernet module	2.39	100.38	125.48	428.5	134.92	460.75
WS-X6348-RJ-45V 48-port 10/100 Ethernet module with WS-F6K-VPWR PoE daughter card	2.39	100.38	125.48	428.5	134.92	460.75
WS-X6548-RJ-21 48-port 10/100 Ethernet module	2.90	121.80	152.25	519.93	163.71	559.07
WS-X6548-RJ-45 48-port 10/100 Ethernet module	2.90	121.80	152.25	519.93	163.71	559.07

Table D-12 lists the power and the heat numbers for the 10BASE Ethernet switching modules.

Table D-12 Power Requirements and Heat Dissipation—10BASE Ethernet Switching Modules

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-X6024-10FL-MT 24-port 10BASE-FL Ethernet module	1.52	63.84	79.8	272.52	85.81	293.0

Table D-13 lists the power and the heat numbers for the FlexWAN and the enhanced FlexWAN modules.

Table D-13 Power Requirements and Heat Dissipation—FlexWAN and Enhanced FlexWAN Modules

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-X6182-2PA FlexWAN module	2.38	99.96	125	426.7	134.35	458.82
WS-X6582-2PA Enhance FlexWAN module	2.50	105.00	131.25	448.22	141.13	481.96

Table D-14 lists the power and the heat numbers for the available service modules.

Table D-14 Power Requirements and Heat Dissipation—Service Modules

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
ACE10-6500-K9 Applications Control Engine (ACE) module	5.23	219.66	274.58	937.67	295.24	1008.25
WS-SVC-ADM-1-K9 Traffic Anomaly Detector Module	4.00	168.00	210.00	717.15	225.81	771.13
WS-SVC-AGM-1-K9 Anomaly Guard Module	4.00	168.00	210.00	717.15	225.81	771.13
WS-SVC-AON-1-K9 Application-Oriented Networking (AON) module	4.00	168.00	210.00	717.15	225.81	771.31
WS-SVC-CMM Communications Media Module	6.00	252.0	315.0	1075.73	338.71	1156.69

Table D-14 Power Requirements and Heat Dissipation—Service Modules (continued)

Model Number/ Module Type	Module Current (A)	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-SVC-CSG-1 Content Services Gateway module	3.00	126.0	157.5	537.86	169.35	578.35
WS-SVC-FWM-1-K9 Firewall Services Module	4.09	171.78	214.73	733.29	230.89	788.48
WS-SVC-IDSM2-K9 Intrusion Detection System Module 2	2.50	105.00	131.25	448.22	141.13	481.96
WS-SVC-IPSEC-1 IPSec VPN Services module	1.89	79.38	99.23	338.85	106.69	364.36
WS-SVC-MWAM-1 Multiprocessor WAN Application Module	3.57	149.94	187.43	640.06	201.53	688.23
WS-SVC-NAM-1 Network Analysis Module 1	2.89	121.38	151.73	518.14	163.15	557.14
WS-SVC-NAM-2 Network Analysis Module 2	3.47	145.74	182.18	622.13	195.89	668.95
WS-SVC-PSD-1 Persistent Storage Device module	4.00	168.0	210.0	717.15	225.81	771.13
WS-SVC-WEBVPN-K9 WebVPN Services module	2.94	123.48	154.35	527.11	165.97	566.78
WS-SVC-WISM-1-K9 Wireless Services Module (WiSM)	6.07	254.94	318.68	1088.25	342.66	1170.19
WS-SVC-WLAN-1-K9 Wireless LAN Services module	3.10	130.20	162.75	555.79	175.0	597.63
WS-X6066-SLB-S-K9 Content Switching module with SSL	2.15	90.30	112.88	385.47	121.37	414.48

Table D-15 lists the power and the heat numbers for miscellaneous modules.

Table D-15 Power Requirements and Heat Dissipation—Miscellaneous Modules

Model Number/ Module Type	Module Current (A) @ 42 VDC	Module Power (Watts)	AC		DC	
			AC-Input Power (Watts)	Heat Diss. (BTU/HR)	DC-Input Power (Watts)	Heat Diss. (BTU/HR)
WS-X6066-SLB-APC Content Switching Module	3.0	126.0	157.5	537.9	169.35	578.35
WS-X6101-OC12-SMF **WS-X6101-OC12-MMF** 1-port ATM module	2.10	88.2	110.3	376.5	118.5	404.8
WS-X6302-MSM Multilayer Switch Module	5.20	218.4	273	932.3	293.55	1002.47
WS-X6380-NAM Network Analysis Module	1.31	55.02	68.78	234.87	73.95	252.54
WS-X6608-T1/E1 8-Port T1/E1 PSTN interface module	1.98	83.16	103.95	355	111.77	381.71
WS-X6624-FXS 24-Port FXS analog interface module	1.54	64.68	80.85	267.10	86.94	296.88