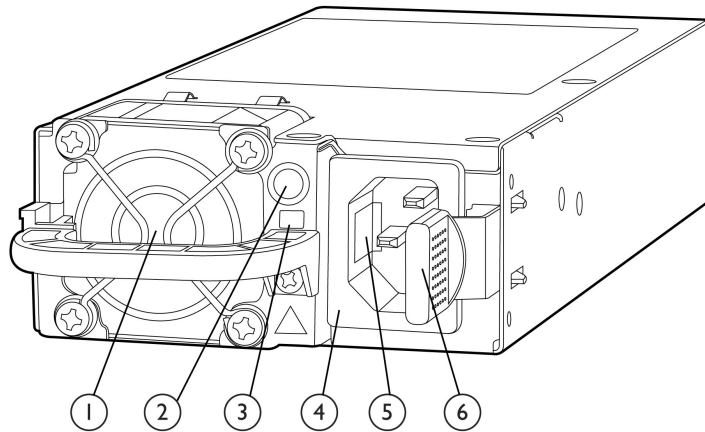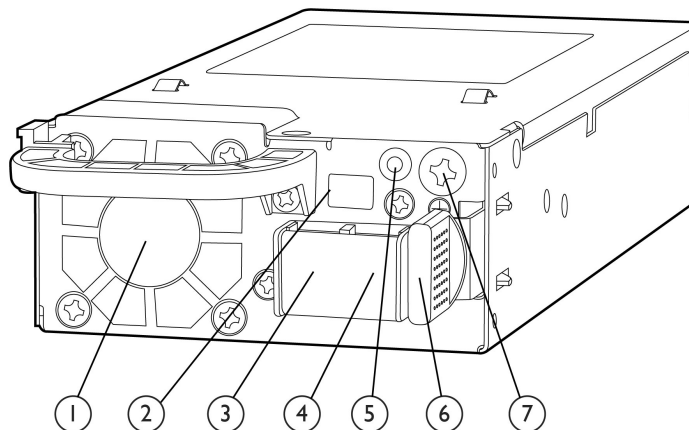# QuickSpecs

Overview

HP Common Slot (CS) Power Supplies share a common electrical and physical design that allows for hot-swap, tool-less installation into HP server and storage solutions. HP's CS power supplies offer high-efficiency power options available in multiple input and output options, allowing users to "right-size" a power supply for specific server/storage configurations and environments. This flexibility helps to minimize power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

HP's CS Platinum/Platinum Plus Power Supplies provide a power efficiency rating of up to94%, one of the highest levels recognized in the IT industry. Both options also support HP Power Discovery Services via embedded PLC technology. This feature enables each server to communicate identification, location, and power-related data to the Intelligent Power Distribution Unit in the rack which can then be shared with HP Insight Control to manage power usage and efficiency in the data center.

HP Common Slot Platinum Plus Power Supplies

1. Power Supply Identification Label

2. Power LED

3. Front-Side Revision Control Label

4. Blue C-13 Power Connector (indicates support for HP Power Discovery Services)

5. Power Line Communication Port (requires PLC power cable for use)

6. Quick-Release Lever

HP 750W Common Slot -48VDC Power Supply

Overview

1. Power Supply Identification Label
2. Front-Side Revision Control Label
3. Power Input Connector
4. Power Return Connector
5. Power LED
6. Quick-Release Lever
7. Power Grounding Connector

What's New

- New HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit supporting high-line AC input voltages, up to 94% power efficiency (80+ Platinum-certified), and HP Power Discovery Services
- New 1200W Common Slot 380VDC Hot Plug Power Supply Kit supporting DC power infrastructure from 200V to 380V with up to 94% efficiency

Models

HP Power Supplies

NOTE: Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.

HP Common Slot Platinum Plus Power Supply Kits
NOTE: 94% efficiency with support for HP Power Discovery Services.

HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21
HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit	684532-B21

HP Common Slot Platinum Power Supplies
NOTE: 94% efficiency with support for HP Power Discovery Services.

HP 460W Common Slot Platinum Hot Plug Power Supply Kit	593188-B21
HP 460W Common Slot Platinum Hot Plug Power Supply Kit with Backplane	605923-B21
HP 750W Common Slot Platinum Hot Plug Power Supply Kit	593831-B21
HP 1200W Common Slot Platinum Hot Plug Power Supply Kit	578322-B21

HP Common Slot Gold Power Supplies
NOTE: 92% efficiency.

HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
HP 460W Common Slot Gold Hot Plug Factory Integrated Power Supply Kit with Backplane	535684-B21
HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
HP 750W Common Slot Gold Hot Plug Factory Integrated Power Supply Kit with Backplane	535683-B21

HP Common Slot Silver Power Supplies
NOTE: 92% efficiency.

HP 1200W Common Slot Silver Hot Plug Power Supply Kit	500172-B21

HP Common Slot -48VDC Power Supplies

HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit	437573-B21
HP 750W Common Slot -48VDC Hot Plug Power Supply Kit	636673-B21

NOTE: The 750W Common Slot -48VDC Hot Plug Power Supply Kit does not include a power cord. To select an appropriate power cord for your server, please review the "Related Options" section of this document.

Overview

HP Common Slot 277VAC Power Supplies
NOTE: 94% efficiency.

HP 1200W Common Slot 277VAC Hot Plug Power Supply Kit   717359-B21
NOTE: The 1200W Common Slot 277VAC Hot Plug Power Supply Kit does not include a power cord. To select an appropriate power cord for your server, please review the "Related Options" section of this document.

HP Common Slot 380VDC Power Supplies
NOTE: 94% efficiency.

HP 1200W Common Slot 380VDC Hot Plug Power Supply Kit   684539-B21
NOTE: The 1200W Common Slot 380VDC Hot Plug Power Supply Kit does not include a power cord. To select an appropriate power cord for your server, please review the "Related Options" section of this document.

Standard Features

Common Slot Features and Benefits

Common Slot Design

- Tool-less hot-swap design allows for quick and easy access to power supplies
- Wide range of compatibility across HP server and storage solutions minimizes the cost and management effort to maintain different sets of power supply spares

Multiple Output and Input Options

- Multiple output options allowing users to "right-size" their power needs and avoid "trapped" power capacity in their data centers caused by over-subscribing power needs
- Both AC and DC power input options available providing flexibility to operate in different IT environments
- Most Common Slot AC power supply options support both low-line and high-line voltage inputs providing additional flexibility to operate in multiple It environments

Power Management for Redundant Power Configurations

- Supports multiple operating modes to maximize power efficiency when configuring servers and storage with redundant power supplies
- Load-Balancing mode designed to maximize power efficiency at higher power supply utilization loads
- High-Efficiency mode designed to maximize power efficiency at lower power supply utilization loads

Platinum/Platinum Plus Features and Benefits

Highest Rated Power Efficiency

- Platinum (94%) power efficiency certification from 80Plus program - highest certifications available in the IT industry
- Minimize data center operating costs related to power by reducing power waste and requirements for HP server and storage solutions

Supports HP's Power Discovery Services

- Creates energy-aware network through embedded power line communication feature in Platinum power options
- Communicates power-related data to both iPDU and HP Insight Manager
- Reduces human error, reclaims over-provisioned power capacity, and accurately measures/monitors power usage

Standard Features

80Plus Certification

The 80PLUS test protocol was developed jointly by Ecos Plug Load Solutions and the Electric Power Research Institute (EPRI) in 2003, with the program being formally launched in 2004.

The 80 PLUS performance specification requires power supplies in servers to be 80% or greater energy efficient at 20%, 50% and 100% of rated load with a true power factor of 0.9 or greater. This makes an 80 PLUS certified power supply substantially more efficient than typical power supplies found in many other electrical devices.

Who benefits from the 80PLUS power supply program?

- Commercial/Residential Consumers - empowered with information regarding energy efficient IT options that help them cut energy costs and reduce their environmental impact
- Utility/Power Providers - participation in a program that focuses on reducing power demands on overburdened grids as well as reducing power waste and its associated environmental impact

What are the efficiency requirements for each certification level?

80 PLUS Certification	230V Internal		
% of Rated Load	20%	50%	100%
80 PLUS Bronze	81%	85%	81%
80 PLUS Silver	85%	89%	85%
80 PLUS Gold	88%	92%	88%
80 PLUS Platinum	90%	94%	91%

What level of certification do HP Common Slot (CS) Power Supplies meet?

HP offers a range of CS Power Supplies that meet various 80PLUS levels of certification, from Silver to Platinum. HP's latest set of CS options, Platinum Plus, meet 80PLUS requirements for Platinum certification. To review 80Plus certification reports for each HP Common Slot Power Supply, please refer to the 80Plus website at: www.80plus.com.

NOTE: Only AC CS Power Supplies operating at between 90V to 264V are tested/certified by the 80PLUS program; 277VAC, 48VDC, and 380VDC power supplies are tested by HP for efficiency ratings.

Standard Features

Enabling Power Discovery Services

HP Power Discovery Services (PDS) combines the HP Intelligent Power Distribution Unit (iPDU) and HP Common Slot Platinum/Platinum Plus power supplies with HP Insight Control software to create an automated, energy-aware network between IT systems and facilities.

HP Power Discovery Services Features and Benefits :

- Captures highly accurate power data across racks and rows of servers in order to identify and eliminate areas of waste
- Extends the life of the data center by reclaiming up to 3x energy capacity of the data center
- Ensures uptime by eliminating human error during power planning and provisioning

Which HP Power Supplies Support IPD?

- HP Common Slot Platinum Plus Power Supplies (including 460W, 750W, 1200W , and 1500W options)
- HP Common Slot Platinum Power Supplies (including 460W, 750W, and 1200W options)

How Is PDS enabled by the Common Slot Platinum/Platinum Plus Power Supply?

HP Common Slot Platinum and Platinum Plus Power Supplies include an embedded power line communication (PLC) feature that allows the power supply to communicate server data (such as server name, UUID, and IP address) to an HP Intelligent Power Distribution Unit (iPDU). This feature is supported on most HP ProLiant G6 and G7 servers that support HP Common Slot Platinum power supplies, as well as on new HP ProLiant Generation 8 servers supporting HP Common Slot Platinum Plus Power Supply options.

NOTE: Standard power cables and jumpers do not support Power Line Communications or Intelligent Power Discovery. Please refer to the HP iPDU Data Sheet for more information on power cord options and part numbers at: http://h18004.www1.hp.com/products/quickspecs/DS_00193/DS_00193.pdf

To learn more on HP Intelligent Power Discovery, please visit the IPD website at: www.hp.com/go/ipd.

Support for Redundant Power Supplies

An HP ProLiant server configured with an HP Common Slot VAC Power Supply (460W, 750W, or 1200W) supports the following three power scenarios:

- Operating with a single supply
- Operating with redundant supplies in load-balanced mode
- Operating with redundant supplies in high-efficiency mode

A single Common Slot Power Supply supporting the entire load of the server can achieve the highest efficiency when operating in the middle range (50%) of its capacity.

For redundant Common Slot Power Supplies operating in load-balanced mode (the default mode when adding redundant power supplies), the load is shared equally between the two (or four) power supplies. In general, the load-balanced mode offers better efficiency for loads requiring more than 60 percent of the primary power supply capacity.

When high-efficiency mode is enabled for redundant supplies (via the server's ROM-based setup utility under System options -> Redundancy options), each power supply in the server is designated as either a primary or secondary supply, and the entire server load is shifted to the primary power supply. This allows the primary power supply to operate at higher efficiency points on the load curve while the secondary power supply operates in idle mode, providing no output power and consuming very little energy (typically two to four watts per supply). The user can also specify that odd or even power supplies will be designated

QuickSpecs

Standard Features

manually or automatically as secondary supplies. This flexibility allows users to balance the load across a rack manually or automatically.

NOTE: HP Common Slot VDC Power Supply options support load-balancing when configured with redundant power supplies. However, neither model supports high-efficiency mode.

Compatibility

HP Common Slot (CS) power supplies are compatible with a wide range HP server and storage solutions. To check for CS power supply compatibility with specific HP ProLiant servers, use the HP ProLiant Options Compatibility Guide located at: www.hpproliantoptions.com. For compatibility with specific HP Integrity servers and HP Storage solutions, please review the appropriate QuickSpec for that product.

Service and Support

Service and Support	**HP Technology Services** HP Technology Services offers you consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, boost availability, and avoid downtime. **Protect your business beyond warranty with HP Care Pack Services** When you buy HP Options, it's also a good time to think about what level of service you may need. HP Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business need. HP Foundation Care services deliver scalable support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for your business needs. New to this portfolio is HP Collaborative Support. If you are running business critical environments, HP offers Proactive Care or Critical Advantage. These services help you deliver high levels of application availability through proactive service management and advanced technical response. Here is the support service recommendation from the Foundation Care and Proactive Care portfolio. For customized support service solution, HP can work with you to tailor a service solution for your unique support requirements using broader services portfolio of Foundation Care and Proactive Care.

Recommended HP Care Pack Services for optimal satisfaction with your HP product

Recommended Services	**3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service** Provides you with rapid remote support and if required an HP authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged. http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf **OR** **3-Year HP 24x7 4 hour Response, HP Collaborative Support** Offers customers a single point of contact for server problem diagnosis, hardware problem resolution, and basic software problem diagnosis, fault isolation, and resolution if available to HP. If the problem is with HP HW, the representative will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged. In case, the issue is with HP or supported third-party software product and cannot be resolved by applying known fixes, HP will contact the third-party vendor and create a problem incident on your behalf. **HP ProLiant Server Hardware Installation** Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

Service and Support

Related HP Care Pack Services to enhance your HP product experience

Related Services

3-Year HP 24x7 4 hour Response, Proactive Care or Critical Advantage
Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your query or issue end to end until resolved, delivering a single point of contact for you
http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-2140ENW.pdf

OR

3-Year HP 6-hour Onsite Call-to-Repair, HP Collaborative Support
Offers customers a single point of contact for server problem diagnosis, hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request to the HP Global Solution Center, and basic software problem diagnosis, fault isolation, and resolution if available to HP. In case, the issue is with HP or supported third-party software product and cannot be resolved by applying known fixes, HP will contact the third-party vendor and create a problem incident on your behalf.

HP Proactive Select Service
Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf

Insight Remote Support
Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more http://www.hp.com/go/insightremotesupport

HP Support Center
Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more http://www.hp.com/go/hpsc

HP's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.
HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

*HP' Support Center Mobile App is subject to local availability

Parts and materials
HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Supplies and consumable parts will not be provided as part of this service; standard warranty terms and conditions apply. Parts and components that have exceeded their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual or the technical product data sheet will not be provided, repaired or replaced as part of this service.

Service and Support

Warranty / Service Coverage	For ProLiant servers and storage systems, this service covers HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

For more information	To learn more on services for HP ESSN Options, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant or www.hp.com/services/bladesystem

Related Options

Common Slot Power Supply Enablement Kits	HP DL160 Gen8 FIO Power Backplane Kit **NOTE:** When configuring the HP DL160 Gen 8 with a Common Slot power supply, this enablement kit must be used for proper installation. The Common Slot power supply and power backplane kit for the DL160 Gen8 must be factory installed and cannot be purchased as separate options.	662959-B21
	HP DL320e Gen8 Factory Integrated RPS Enablement Kit **NOTE:** When configuring the HP DL320e Gen 8 with a Common Slot power supply, this enablement kit must be used for proper installation. The Common Slot power supply and enablement kit for the DL320e Gen8 must be factory installed and cannot be purchased as separate options.	675451-B21
	HP 4U Redundant Power Supply Enablement Kit **NOTE:** When configuring the HP ML310e Gen 8 with a Common Slot power supply, this enablement kit must be used for proper installation. The Common Slot power supply and enablement kit for the Ml310e Gen8 must be factory installed and cannot be purchased as separate options.	675843-B21
	HP Redundant Enablement Kit **NOTE:** When configuring the HP ML350e Gen 8 with a Common Slot power supply, this kit must be used for proper installation. The Common Slot power supply and enablement kit for the ML350e Gen8 must be factory installed and cannot be purchased as separate options.	664046-B21
	HP 4X1200W RPS FIO Enablement Kit **NOTE:** When configuring the HP ML350p Gen 8 with a Common Slot power supply, this kit must be used for proper installation. The Common Slot power supply and enablement kit for the Ml350p Gen8 must be factory installed and cannot be purchased as separate options.	659487-B21
DC Power Cable Kits	HP 1.3M 48V DC Power Cable Kit	A5S97A
	HP 2.5M 48V DC Power Cable Kit	A5S98A
	NOTE: These power cord options are for use with the HP 750W Common Slot -48VDC Hot Plug Power Supply Kit (636673-B21). A5S98A	
	HP T-latch Double Ended WW 277V 18AWG DC 2m Jumper Cord	D4J67A
	NOTE: This power cord option is for use with the HP 1200W Common Slot 380VDC Hot Plug Power Supply Kit (684539-B21).	
VAC C13 to C14 Power Cables	HP C13 - C14 WW 250V 10A Gray 0.7m Jumper Cord	A0K03A
	HP C13 - C14 WW 250V 10A Gray 1.37m Jumper Cord	A0K04A
	HP C13 - C14 WW 250V 10Amp Flint Gray 2.0m Jumper Cord	AF573A
	HP C13 - C14 WW 250V 10A Gray 3.0m Jumper Cord	A0K06A
	HP IEC C13-C14 Cable Option Kit	142257-B28
	HP IEC320-C14 to C13 (10A/4.5ft/1.37m) PDU Cable	142257-006
	HP IEC320-C14 to C13 10A/4.5ft/1.37m/ 15 PDU Cable	142257-007
	HP C13 - C14 WW 250V 10Amp 2.0m Jumper Cord	A0K02A
	HP IEC320-C14 to C13 (10A/8ft/2.5m) PDU Cable	142257-002
	HP C13 Straight - C14 Straight WW 250V 10AMP 3.0m Jumper Cord	142257-003

Related Options

NOTE: Standard power cables and jumpers do not support Power Line Communications or Power Discovery Services.

Power Line Communication (PLC) Power Cables	HP C13 - C14 WW 250V 10Amp IPD 0.76m 1pc Jumper Cord	SG506A
	HP C13 - C14 WW 250V 10Amp IPD 0.76m 5pc Jumper Cord	SG507A
	HP C13 - C14 WW 250V 10Amp IPD 1.37m 1pc Jumper Cord	SG508A
	HP C13 - C14 WW 250V 10Amp IPD 1.37m 5pc Jumper Cord	SG509A
	HP C13 - C14 WW 250V 10Amp IPD 1.83m 1pc Jumper Cord	SG510A
	HP C13 - C14 WW 250V 10Amp IPD 1.83m 5pc Jumper Cord	SG511A
	HP C13 - C14 WW 250V 10Amp IPD 3.0m 1pc Jumper Cord	SG512A
277VAC Power Cables	HP LS-26 to LS-25 277 Volt 15Amp AC 0.76m Jumper Cord	TK801A
	HP LS-26 to LS-25 277 Volt 15Amp AC 1.37M Jumper Cord	TK802A

NOTE: This power cord option is for use with the HP 1200W Common Slot 277VAC Hot Plug Power Supply Kit (717359-B21).

Power Specifications

HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit (656362-B21)	HP Generic Part Number			643931-001			
	HP Spares Part Number			660184-001			
Input Voltage Range (V rms)	100 - 240						
Frequency Range (Nominal) (Hz)	50 - 60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	460	460	460	460	460	460	460
Nominal Input Current (A rms)	5.2	4.3	2.5	2.4	2.3	2.2	2.1
Maximum Rated Input Wattage Rating (Watts)	517	509	496	496	495	495	494
Maximum Rated VA (Volt–Amp)	524	515	503	502	502	501	500
Efficiency (%)	89.0	90.4	92.7	92.8	92.9	93.0	93.1
Power Factor	0.998						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	1764	1736	1694	1692	1689	1687	1686

HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit (656363-B21)	HP Generic Part Number			643932-001			
	HP Spares Part Number			660183-001			
Input Voltage Range (V rms)	100 - 240						
Frequency Range (Nominal) (Hz)	50 - 60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	750	750	750	750	750	750	750
Nominal Input Current (A rms)	8.5	7.0	4.1	3.9	3.7	3.6	3.5
Maximum Rated Input Wattage Rating (Watts)	843	831	811	811	809	808	821
Maximum Rated VA (Volt–Amp)	855	842	822	821	820	819	832
Efficiency (%)	88.9	90.3	92.4	92.5	92.7	92.8	91.3
Power Factor	0.998						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	2878	2834	2769	2766	2762	2758	2803

QuickSpecs

Power Specifications

HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit (656364-B21)	HP Generic Part Number				643933-001		
	HP Spares Part Number				660185-001		
Input Voltage Range (V rms)	100 - 240						
Frequency Range (Nominal) (Hz)	50 - 60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.1	8.4	6.7	6.4	6.1	5.8	5.5
Maximum Rated Input Wattage Rating (Watts)	897	999	1321	1319	1317	1315	1314
Maximum Rated VA (Volt-Amp)	909	1012	1338	1337	1334	1332	1331
Efficiency (%)	89.2	90.1	90.9	91.0	91.1	91.2	91.3
Power Factor	0.998						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	3061	3408	4506	4501	4493	4487	4483

HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit (684532-B21)	HP Generic Part Number				684529-001
	HP Spares Part Number				704604-001
Input Voltage Range (V rms)	100 - 240				
Frequency Range (Nominal) (Hz)	50 - 60				
Nominal Input Voltage (Vrms)	200	208	220	230	240
Maximum Rated Output Wattage Rating	1500	1500	1500	1500	1500
Nominal Input Current (A rms)	8.4	8.1	7.6	7.3	7.0
Maximum Rated Input Wattage Rating (Watts)	1661	1659	1655	1652	1649
Maximum Rated VA (Volt-Amp)	1681	1679	1675	1672	1669
Efficiency (%)	90.3	90.4	90.6	90.8	91.0
Power Factor	0.999	0.999	0.999	0.999	0.999
Leakage Current (mA)	0.50	0.75	0.79	0.83	1.00
Maximum Inrush Current (A peak)	40				
Maximum Inrush Current duration (mS)	0.2				
Maximum British Thermal Unit Rating (BTU-Hr)	5667	5661	5648	5637	5627

Power Specifications

HP 460W Common Slot Platinum Hot Plug Power Supply Kit (593188-B21)	HP's Generic Part Number				591553-001		
	HP's Spares Part Number				599381-001		
Input Voltage Range (V rms)	100 - 240						
Frequency Range (Nominal) (Hz)	50 - 60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	460	460	460	460	460	460	460
Nominal Input Current (A rms)	5.3	4.3	2.5	2.4	2.3	2.2	2.1
Maximum Rated Input Wattage Rating (Watts)	512	505	493	493	492	492	491
Maximum Rated VA (Volt-Amp)	526	518	506	506	505	505	504
Efficiency (%)	89.8	91.2	93.2	93.3	93.5	93.6	93.6
Power Factor	0.985						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	1747	1722	1683	1682	1679	1678	1677

NOTE: The ProLiant DL160 G6 server supports the HP 460W Common Slot Platinum Hot Plug Power Supply Kit with Backplane (PN 605923-B21). This option kit includes both the 460W Common Slot Platinum Power Supply and a new Common Slot power backplane. The table above provides power specifications for this power supply; however, it is recommended that the HP Power Advisor tool be used to estimate power requirements for this server as power efficiency may vary when using this option kit. The HP Power Advisor tool can be downloaded at: www.hp.com/go/hppoweradvisor.

HP 750W Common Slot Platinum Hot Plug Power Supply Kit (593831-B21)	HP's Generic Part Number				591554-001		
	HP's Spares Part Number				599383-001		
Input Voltage Range (V rms)	100 - 240						
Frequency Range (Nominal) (Hz)	50 - 60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	750	750	750	750	750	750	750
Nominal Input Current (A rms)	8.6	7.1	4.2	4.0	3.8	3.6	3.4
Maximum Rated Input Wattage Rating (Watts)	841	828	809	808	807	806	805
Maximum Rated VA (Volt-Amp)	863	850	830	829	828	827	826
Efficiency (%)	89.2	90.6	92.7	92.8	93.0	93.1	93.2
Power Factor	0.985						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	2868	2825	2761	2757	2753	2749	2747

Power Specifications

HP 1200W Common Slot Platinum Hot Plug Power Supply Kit (578322-B21)	HP's Generic Part Number			570451-101			
	HP's Spares Part Number			579229-001			
Input Voltage Range (V rms)	100 - 240						
Frequency Range (Nominal) (Hz)	50 - 60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.3	8.6	6.7	6.5	6.1	5.8	5.6
Maximum Rated Input Wattage Rating (Watts)	889	989	1290	1290	1290	1290	1290
Maximum Rated VA (Volt-Amp)	927	1031	1345	1345	1345	1345	1345
Efficiency (%)	90	91	93	93	93	93	93
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	10						
Maximum British Thermal Unit Rating (BTU-Hr)	3033	3375	4403	4403	4403	4403	4403

HP 460W Common Slot Gold Hot Plug Power Supply Kit (503296-B21)	HP's Generic Part Number			499249-001			
	HP's Spares Part Number			511777-001			
Input Voltage Range (V rms)	100 - 240						
Frequency Range (Nominal) (Hz)	50 - 60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	460	460	460	460	460	460	460
Nominal Input Current (A rms)	5.5	4.5	2.6	2.5	2.4	2.3	2.2
Maximum Rated Input Wattage Rating (Watts)	526	520	505	505	503	503	503
Maximum Rated VA (Volt-Amp)	548	542	527	527	524	524	524
Efficiency (%)	524	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	1794	1773	1725	1725	1715	1715	1715

NOTE: The ProLiant DL160 G6 server supports the HP 460W Common Slot Gold Hot Plug Factory Integrated Power Supply Kit with Backplane (PN 535684-B21). This option kit includes both the 460W Common Slot Gold Power Supply and a new Common Slot power backplane. The table above provides power specifications for this power supply; however, it is recommended that the HP Power Advisor tool be used to estimate power requirements for this server as power efficiency may vary when using this option kit. The HP Power Advisor tool can be downloaded at: www.hp.com/go/hppoweradvisor.

Power Specifications

HP 750W Common Slot Gold Hot Plug Power Supply Kit (512327-B21)	HP's Generic Part Number				506821-001		
	HP's Spares Part Number				511778-001		
Input Voltage Range (V rms)	100 - 240						
Frequency Range (Nominal) (Hz)	50 - 60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	750	750	750	750	750	750	750
Nominal Input Current (A rms)	8.9	7.4	4.3	4.1	3.9	3.7	3.6
Maximum Rated Input Wattage Rating (Watts)	857	847	824	824	820	820	820
Maximum Rated VA (Volt-Amp)	894	884	859	859	854	854	854
Efficiency (%)	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	2925	2892	2812	2812	2797	2797	2797

NOTE: The ProLiant DL160 G6 and DL165 G7 servers support the HP 750W Common Slot Gold Hot Plug Factory Integrated Power Supply Kit with Backplane (PN 535683-B21). This option kit includes both the 750W Common Slot Gold Power Supply and a new Common Slot power backplane. The table above provides power specifications for this power supply; however, it is recommended that the HP Power Advisor tool be used to estimate power requirements for this server as power efficiency may vary when using this option kit. The HP Power Advisor tool can be downloaded at: www.hp.com/go/hppoweradvisor.

HP 1200W Common Slot Silver Hot Plug Power Supply Kit (500172-B21)	HP's Generic Part Number				490594-001		
	HP's Spares Part Number				498152-001		
Input Voltage Range (V rms)	100 - 240						
Frequency Range (Nominal) (Hz)	50 - 60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	6.1	5.9
Maximum Rated Input Wattage Rating (Watts)	930	1034	1348	1348	1348	1348	1348
Maximum Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%)	86	87	89	89	89	89	89
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

QuickSpecs

Power Specifications

HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit (437573-B21)	HP's Generic Part Number		412837-001
	HP's Spares Part Number		437962-001
Input Voltage Range (V rms)	36 - 72		
Frequency Range (Nominal) (Hz)	DC		
Nominal Input Voltage (Vrms)	**36**	**48**	**72**
Maximum Rated Output Wattage Rating	1200	1200	1200
Nominal Input Current (A rms)	38	28	19
Maximum Rated Input Wattage Rating (Watts)	1380	1350	1365
Maximum Rated VA (Volt-Amp)	1380	1380	1365
Efficiency (%)	87	89	88
Power Factor	N/A		
Leakage Current (mA)	N/A		
Maximum Inrush Current (A peak)	20	25	35
Maximum Inrush Current duration (mS)	1	1	3
Maximum British Thermal Unit Rating (BTU-Hr)	4713	4610	4662

HP 750W Common Slot -48VDC Hot Plug Power Supply Kit (636673-B21)	HP's Generic Part Number		619671-401
	HP's Spares Part Number		639173-001
Input Voltage Range (V rms)	36 - 72		
Frequency Range (Nominal) (Hz)	DC		
Nominal Input Voltage (Vrms)	**36**	**48**	**72**
Maximum Rated Output Wattage Rating	750	750	750
Nominal Input Current (A rms)	23	17	12
Maximum Rated Input Wattage Rating (Watts)	840	820	830
Maximum Rated VA (Volt-Amp)	840	820	830
Efficiency (%)	92	94	92
Power Factor	N/A		
Leakage Current (mA)	N/A		
Maximum Inrush Current (A peak)	24		
Maximum Inrush Current duration (mS)	15		
Maximum British Thermal Unit Rating (BTU-Hr)	2865	2796	2830

Power Specifications

HP 1200W Common Slot 380VDC Power Supply Kit (684539-B21)	HP's Generic Part Number	677721-101
	HP's Spares Part Number	704603-001
Input Voltage Range (V rms)	240 - 380	
Frequency Range (Nominal) (Hz)	DC	
Nominal Input Voltage (Vrms)	240	380
Maximum Rated Output Wattage Rating	1200	1200
Nominal Input Current (A rms)	5.6	3.5
Maximum Rated Input Wattage Rating (Watts)	1320	1302
Maximum Rated VA (Volt-Amp)	1335	1317
Efficiency (%)	90.9	92.1
Power Factor	1.000	1.000
Leakage Current (mA)	N/A	
Maximum Inrush Current (A peak)	8	
Maximum Inrush Current duration (mS)	0.2	
Maximum British Thermal Unit Rating (BTU-Hr)	4505	4444

HP 1200W Common Slot 277VAC Hot Plug Power Supply Kit (717359-B21)	HP's Generic Part Number	703247-101					
	HP's Spares Part Number	714349-001					
Input Voltage Range (V rms)	200 - 277						
Frequency Range (Nominal) (Hz)	50-60						
Nominal Input Voltage (Vrms)	200	208	220	230	240	277
Maximum Rated Output Wattage Rating	1200	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	6.7	6.4	6.1	5.8	5.6	4.8
Maximum Rated Input Wattage Rating (Watts)	1328	1327	1324	1322	1320	1314
Maximum Rated VA (Volt-Amp)	1343	1342	1339	1337	1335	1330
Efficiency (%)	90.3	90.4	90.6	90.8	90.9	91.3
Power Factor	1.000	1.000	1.000	1.000	1.000	0.999
Leakage Current (mA)	0.50	0.75	0.79	0.83	0.87	1.00
Maximum Inrush Current (A peak)	8					
Maximum Inrush Current duration (mS)	0.2					
Maximum British Thermal Unit Rating (BTU-Hr)	4532	4526	4518	4511	4504	4484

Technical Specifications

All AC Power Supplies:

Operating Temperature	41° to 122°F (5° to 50°C)
Operating Relative Humidity (%)	5% to 95%, non condensing
Operating Elevation	0 to 5,000ft (1,524m) with no derating;
	Maximum inlet air temperature derated linearly down to 40°C from 5000ft (1,524m) to 10,000ft (3,048m) msl
Storage Temperature	-40° to 185°F (-40 to 85°C)
Storage Relative Humidity (%)	5% to 95%, non condensing
Storage Elevation	0 to 50,000ft (0 to 15,240m)
Input Voltage	Low Line - Rated: 100V; Min 90V to Max 132V
	High Line - Rated: 200 - 240V; Min 180V to Max 264V
	(model 684532-B21 supports High Line only)
	High Line - Rated: 200 - 277VAC; Min 180VAC to Max 305VAC (for model 717359-B21 only - supports High Line only)
Input Frequency	Rated: 50 to 60Hz; Min 47Hz to Max 63Hz
Conformance Standards	CE Mark, UL, CSA, IEC, EN. CNS, KCC, BSMI, CCC, C-tick, TUV, FCC Class B; FCC Class A (models 593188-B21, 593831-B21, 578322-B21, 684532-B21, and 717359-B21 only)
Mechanical Dimensions (WxHxD)	1.5 x 3.4 x 7.5 in (3.81 x 8.63 x 19.05 cm)
Unit Weight	2.5 lb (1.13 kg) for models 656362-B21, 656364-B21, and 717359-B21
	3.0 lb (1.36 kg) for model 684532-B21
	2 lb (0.91 kg) for all other VAC models
Shipping Dimensions (WxHxD)	16.56 x 7.38 x 5.75 in (42.06 x 18.75 x 14.61) for model 684532-B21
	15.5 x 7.25 x 5.5 in (39.37 x 18.44 x 13.97 cm) for models 656362-B21 and 656364-B21 only
	12 x 8 x 4.5 in (30.48 x 20.32 x 11.43 cm) for all other VAC models
Shipping Weight	3.98 lb (1.81 hg) for model 684532-B21
	3.5 lb (1.59 kg) for models 656362-B21, 656364-B21, and 717359-B21 only
	3 lb (1.36 kg) for all other VAC models
Kit Contents	All models except 717359-B21 ship with:
	(1) Power supply unit, (1) IEC C13-C14 jumper cable, installation/safety guide - model 717359-B21 does not include a power cable

All DC Power Supplies:

Operating Temperature	41° to 122°F (5° to 50°C)
Operating Relative Humidity (%)	5% to 95%, non condensing
Operating Elevation	0 to 5,000ft (1,524m) with no derating;
	Maximum inlet air temperature derated linearly down to 40°C from 5000ft (1,524m) to 10,000ft (3,048m) msl
Storage Temperature	-40 to 85°C
Storage Relative Humidity (%)	5% to 95%, non condensing
Storage Elevation	0 to 50,000ft msl
Input Voltage	48VDC to 54VDC (nominal); Min 36VDC to Max 72VDC (models 437573-B21 and 636673-B21)
	240VDC to 380VDC(nominal); Min 180VDC to Max 420VDC (model 684539-B21 only)
Input Frequency	DC input

Technical Specifications

Conformance Standards	CE Mark, UL, CSA, IEC, EN, CNS, KCC, BSMI, CCC, C-tick, TUV, FCC Class A (model 684539-B21 only)
Mechanical Dimensions (WxHxD)	1.5 x 3.4 x 7.5 in (3.81 x 8.63 x 19.05 cm)
Unit Weight	3 lb (1.36 kg) (model 437573-B21)
	2.5 lb (1.13 kg) (model 636673-B21)
Shipping Dimensions (WxHxD)	7.75 X 12.25 X 8.25 in (19.69 x 31.12 x 20.96 cm) (model 437573-B21)
	4.4 X 12.25 X 8 in (11.18 x 31.12 x 20.32 cm) (model 636673-B21)
	15.5 x 7.25 x 5.5 in (39.37 x 18.44 x 13.97 cm) (for model 684539-B21)
Shipping Weight	7 lb (3.18 kg) (model 437573-B21)
	3.2 lb (1.45 kg) (model 636673-B21)
	3.5 lb (1.59 kg) (for model 684539-B21)
Kit Contents	Models 636673-B21and 684539-B21 ship with:
	(1) Power supply unit, installation/safety guide
	Model 437573-B21 ships with:
	(1) Power supply unit, (1) 3M VDC power cable, installation/safety guide

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. |