Data Center Planning

Flex System PDU Planning
v2.0.1

FLEX SYSTEM ENTERPRISE CHASSIS

The Flex System Enterprise Chassis is a simple, integrated infrastructure platform that supports a mix of compute, storage, and networking resources to meet the demands of your applications. The 14 node, 10U chassis delivers high-speed performance and is designed for simple deployment.

POWER: FLEXIBILITY & EFFICIENCY

The system monitors and manages power usage on all major chassis components so you have total control over power consumption. Available power supply options are -48V DC, HVDC and 80 PLUS Platinum-certified AC power supplies which can be configured in either a single or three-phase power domain.

COOLING: OPTIMIZATION

The chassis design optimizes cooling with cooling zones within the chassis which manages the fan modules based on node configuration within the chassis. The system can increase the speed of certain fan modules to cool potential hot spots, and use lower speeds for other fan modules where appropriate.

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Revision History

1.0.0 – May 30, 2012	Initial Release
2.0.0 – July 1st, 2014	Second Release
2.0.1 – January 17th, 2015	Update to template, structure and contact information

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Jerrod Buterbaugh – System x, Data Center Services
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Table of Contents

Introduction

The Flex System Enterprise Chassis covered in this guide is currently marketed worldwide. The intent of this guide is to provide example configurations to power the Flex System Enterprise Chassis. The guide contains examples of the Flex System Enterprise Chassis connected to various PDUs and circuits.

How to use this guide

The Flex System Enterprise Chassis configuration examples documented in this guide state the supported redundancy in the "Flex Power Management Policies" table. Flex System Enterprise Chassis has configurations with N+N redundancy, where the goal is to provide the support for two power source configurations. To take full advantage of this redundancy and reliability, the chassis must be powered from two independent distribution panels and the Flex Power Management Policy must be set to a policy that is N+N capable. When properly wired and the appropriate power policy set, the Flex SE chassis can remain in operation if one of the two power sources fails.

Power connections to the Flex chassis must be wired to comply with local and/or national electrical codes. Consult your local AHJ (Authority Having Jurisdiction) to ensure compliance.

Important Notice: For an accurate representation of your configurations power please use the Power Configurator tool located at:
http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-PWRCONF

Each example covered in this guide gives System x PDU options information (if available), along with information on Flex power policies.

For additional information such as number/type of PSU, PSU installation order, number/type of nodes supported, cooling zones etc, refer to the ***"Flex System Environmental Planning"*** pdf paper. This reference is also available to download from:
http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-PWRCONF

Flex System PSU information

Use the Power Configurator at the link below to estimate power consumption and heat load for the Flex System Enterprise Chassis configurations.
http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-PWRCONF

Flex System Power Supply Unit (PSU) overview

2100W AC PSU – Rating & Part Number Information		
Power Supply Unit Part Numbers	**PN:** 47C7633	**FC:** A3JH
DC Output Wattage	2100W	
Nominal Input Voltage Range	200-208, 220-240V AC @ 50-60 Hz.	
PSU Max Input Amps @ 200-240V:	11.8A	

2500W AC PSU – Rating & Part Number Information		
Power Supply Unit Part Numbers	**PN:** 43W9049	**FC:** A0UD
DC Output Wattage	2500W	
Nominal Input Voltage Range	200-208, 220-240V AC @ 50-60 Hz.	
PSU Max Input Amps @ 200-240V:	13.8A	

2500W -48 DC PSU – Rating & Part Number Information		
Power Supply Unit Part Numbers	**PN:** 00FJ635	**FC:** A5VC
DC Output Wattage	2500W	
Nominal Input Voltage Range	48V (-48V to -60V)	
PSU Max Input Amps @ 200-240V:	56A	

2500W HVDC PSU – Rating & Part Number Information		
Power Supply Unit Part Numbers	**PN:** 00FJ635	**FC:** A5VC
DC Output Wattage	2500W	
Nominal Input Voltage Range	240-380 V DC (192 V - 400 V input range)	
PSU Max Input Amps @ 200-240V:	11.5A	

Figure 1 displays the AC, HVDC, and -48VDC power supply options for the Flex System Enterprise Chassis.

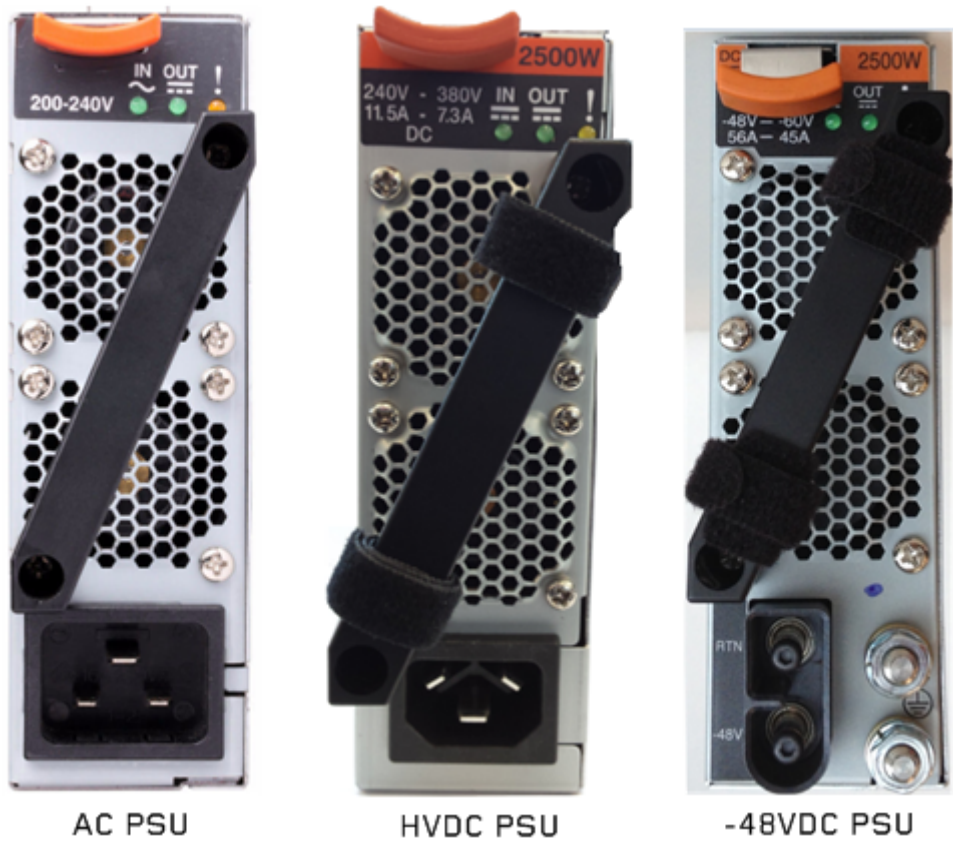


Figure 1: Flex System Enterprise Chassis PSU options

Flex System Power Supply placement

The power supplies in the Flex System Chassis are labeled from bottom to top, right to left, when viewed from the rear of the chassis as seen in Figure 2.

Each power supply in the chassis has a 16A C20 three-pin socket, and can be fed by a C19 power cable from a suitable supply.

Figure 2: Flex System Enterprise Chassis power supply locations

Flex System Enterprise Chassis Power Cabling Example

The Flex System will ship with up to 6 fans of either 2100W or 2500W depending on the model ordered as seen in the following table.

Component	Enterprise Chassis 8271-A1x	Enterprise Chassis 8271-LRx
Chassis Power Supplies 2100W	N/A	Up to 6
Chassis Power Supply 2500W	Up to 6	N/A

3 Phase PDU example

The below Flex System Enterprise chassis cabling example is connected to a 3 phase PDU. Each phase is represented by a different color (example, Red for phase 1, Blue for phase 2 and Green for phase 3).

The colors represented here are used throughout this document in this fashion for the 3 phase PDU examples.

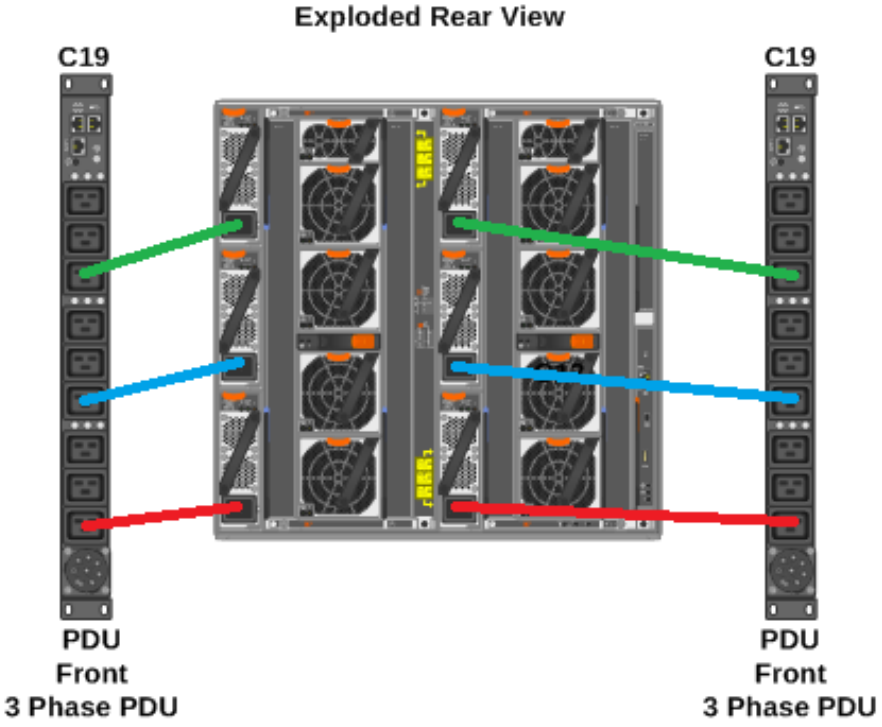


Figure 3: Flex System Enterprise Chassis power cabling view 3 phase PDUs

Single Phase PDU example

The below Flex System Enterprise chassis cabling example is connected to a 6 Single phase PDUs. Each PDU is represented by a different color (example, Red for PDU 1 & 2, Blue for PDU 3 & 4 and Green for PDU 5 & 6).

The colors represented here are used throughout this document in this fashion for the Single phase PDU examples.

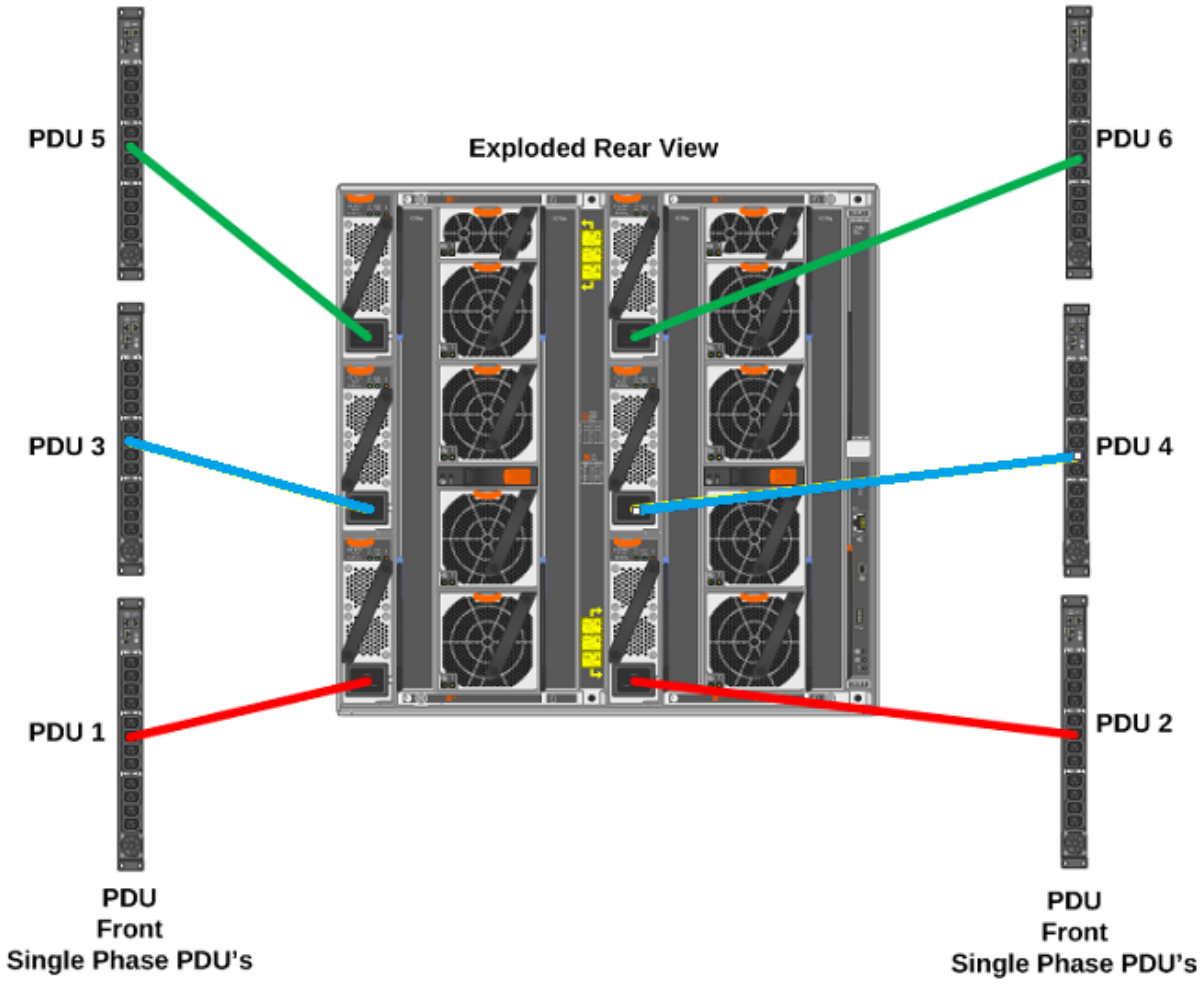


Figure 4: Flex System Enterprise Chassis power cabling view Single phase PDUs

PDU Configuration Examples

This section covers connecting single and multiple Flex System Chassis's to supported PDUs for North America and International (outside of North America). The examples cover Flex System Chassis with 6, 5, 4, 3, and 2 power supplies installed for both 3 Phase and Single Phase PDUs.

For additional information on PDU part numbers, their line cords, and power management policies for N+N, and N+1 support, refer to the ***Flex System Enterprise Chassis Power Requirements Guide.***

PDU to PSU Line Cord

Note: The PDU to PSU line cords for these configurations is listed below:

System X		
Part Number	**FC**	**PSU › PDU Line Cord Description**
39Y7916	6252	2.5m (8.2ft), 16A/100-240V, C19 to IEC 320-C20 Rack Power Cable
N/A	6292	2m (6.5ft), 16A/100-250V, C19 to IEC 320-C20 Rack Power Cable

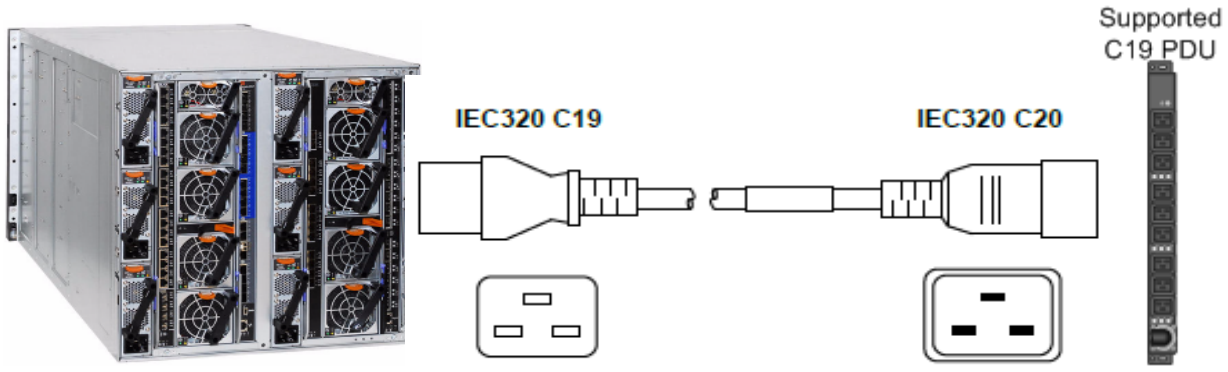


Figure 5: Power cord with C19-C20 connectors

North America 60A@208V – 3 Phase PDU Examples

3 Phase PDU – 60A@208V – 1 Chassis, 5 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 5 PSUs running on: 60A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8923	6061	DPI 60A 3 Phase 6 C19 Ent 1U PDU with IEC309 3P+G (208V) Basic	Attached
71763NU	6051	Ultra Density Enterprise 1U PDU 9 C19/3 C13 3 Phase 60A PDU Basic	Attached
46M4003	5897	1U 9 C19/3 C13 AEM 60A 3 Phase PDU Switched & Monitored	Attached

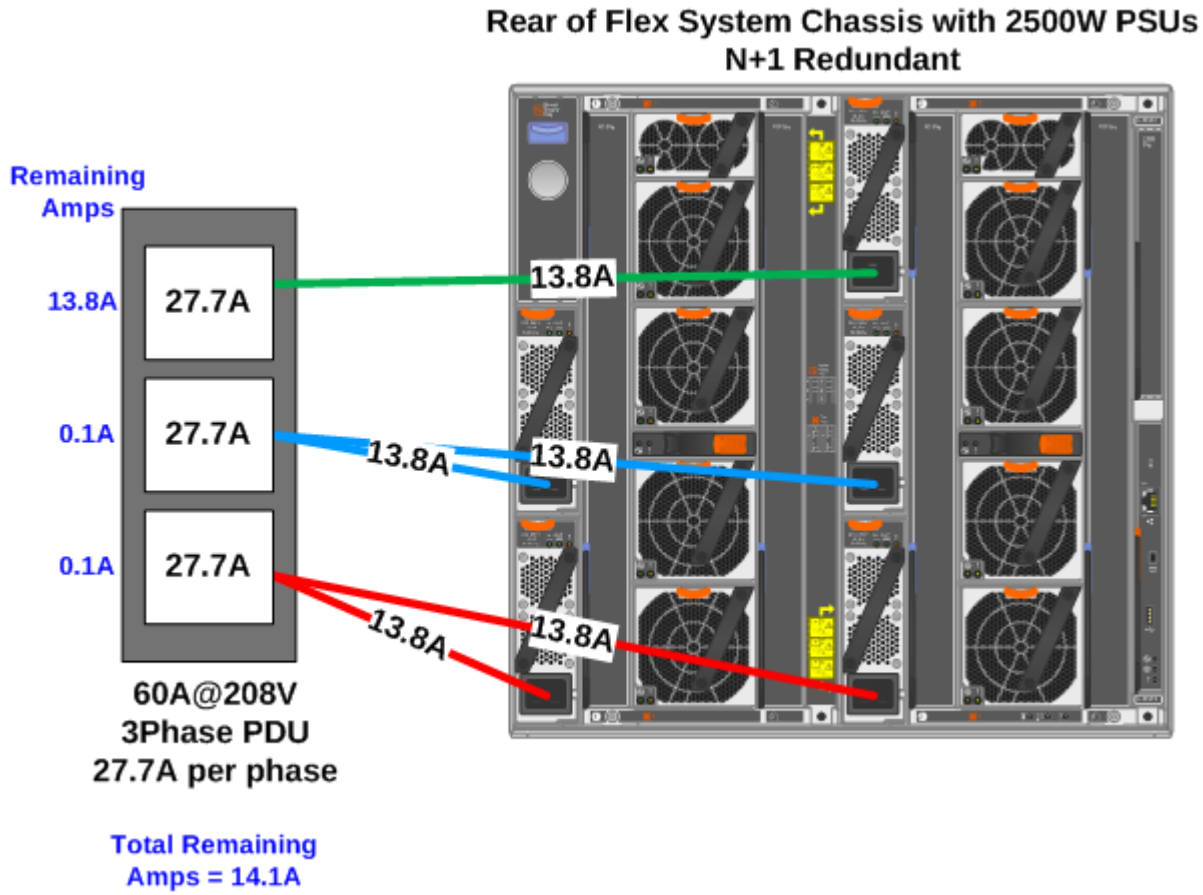


Figure 6: Rear of 1 x Flex Chassis - 60A@208V 3 Phase, N+1 Redundant

3 Phase PDU – 60A@208V – 1 Chassis, 4 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 4 PSUs running on: 60A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8923	6061	DPI 60A 3 Phase 6 C19 Ent 1U PDU with IEC309 3P+G (208V) Basic	Attached
71763NU	6051	Ultra Density Enterprise 1U PDU 9 C19/3 C13 3 Phase 60A PDU Basic	Attached
46M4003	5897	1U 9 C19/3 C13 AEM 60A 3 Phase PDU Switched & Monitored	Attached

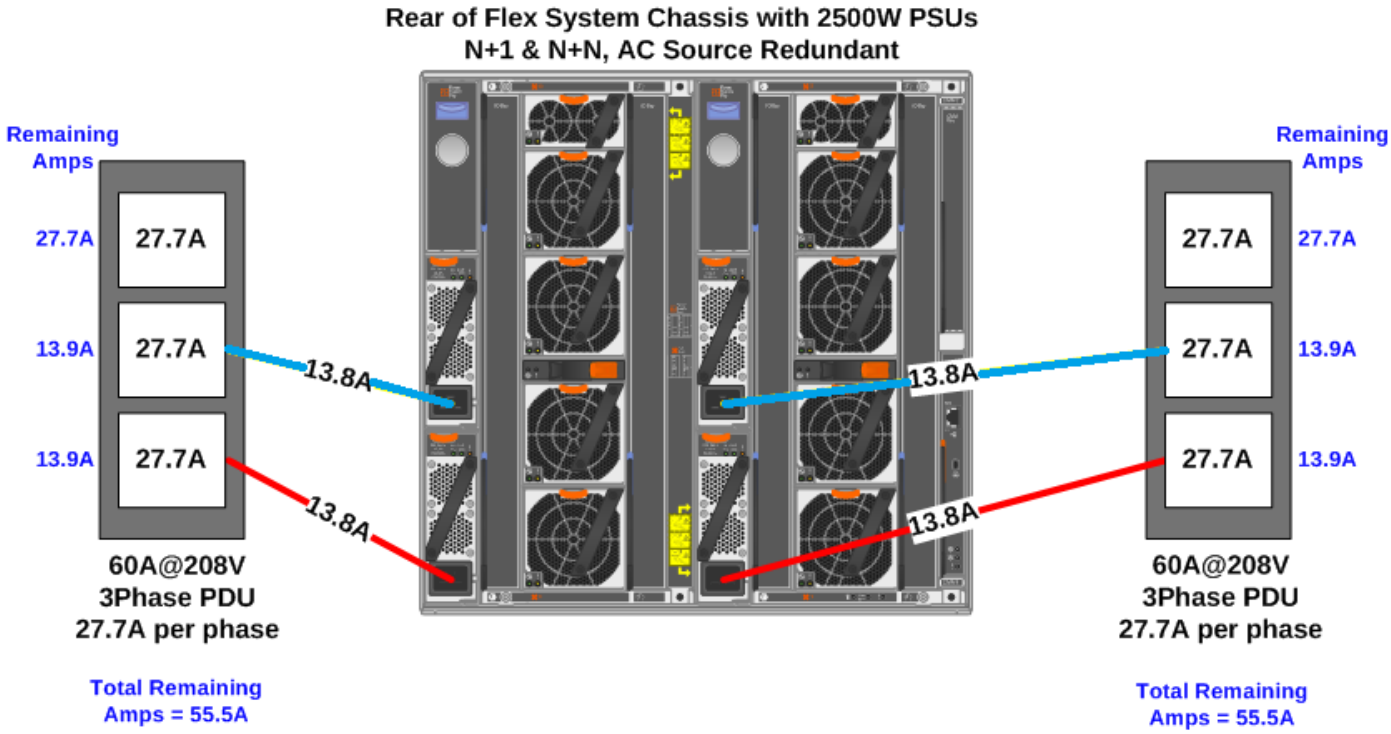


Figure 7: Rear of 1 x Flex Chassis - 60A@208V 3 Phase, N+1 & N+N, AC Source Redundant

3 Phase PDU – 60A@208V – 1 Chassis, 2 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 2 PSUs running on: 60A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8923	6061	DPI 60A 3 Phase 6 C19 Ent 1U PDU with IEC309 3P+G (208V) Basic	Attached
71763NU	6051	Ultra Density Enterprise 1U PDU 9 C19/3 C13 3 Phase 60A PDU Basic	Attached
46M4003	5897	1U 9 C19/3 C13 AEM 60A 3 Phase PDU Switched & Monitored	Attached

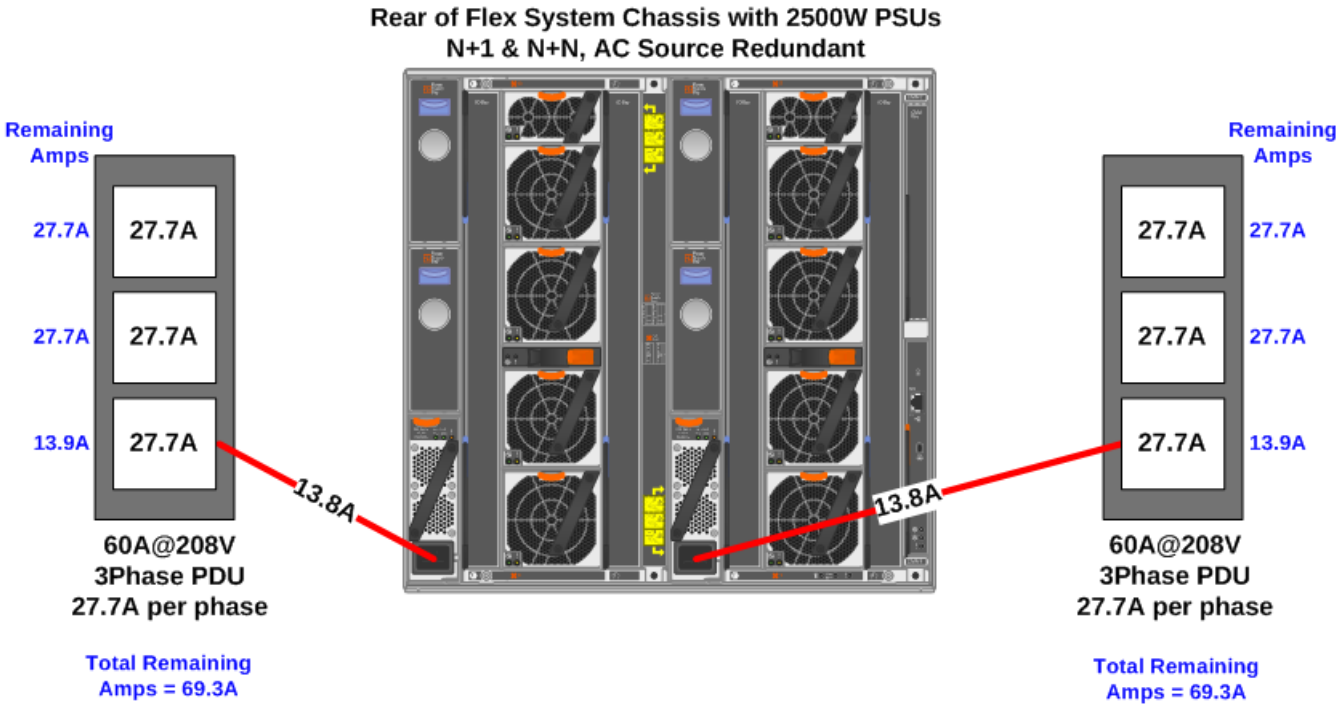


Figure 8: Rear of 1 x Flex Chassis - 60A@208V 3 Phase, N+1 & N+N, AC Source Redundant

3 Phase PDU – 60A@208V – 2 Chassis, 6 PSUs

The following example is for 2 x Flex System Enterprise Chassis's each with 6 PSUs running at: 60A@208V 3 Phase. This example can use the following PDU/line cords;

Part Number	FC	PDU Description	Line Cord
System X			
39Y8923	6061	DPI 60A 3 Phase 6 C19 Ent 1U PDU with IEC309 3P+G (208V) Basic	Attached
71763NU	6051	Ultra Density Enterprise 1U PDU 9 C19/3 C13 3 Phase 60A PDU Basic	Attached
46M4003	5897	1U 9 C19/3 C13 AEM 60A 3 Phase PDU Switched & Monitored	Attached

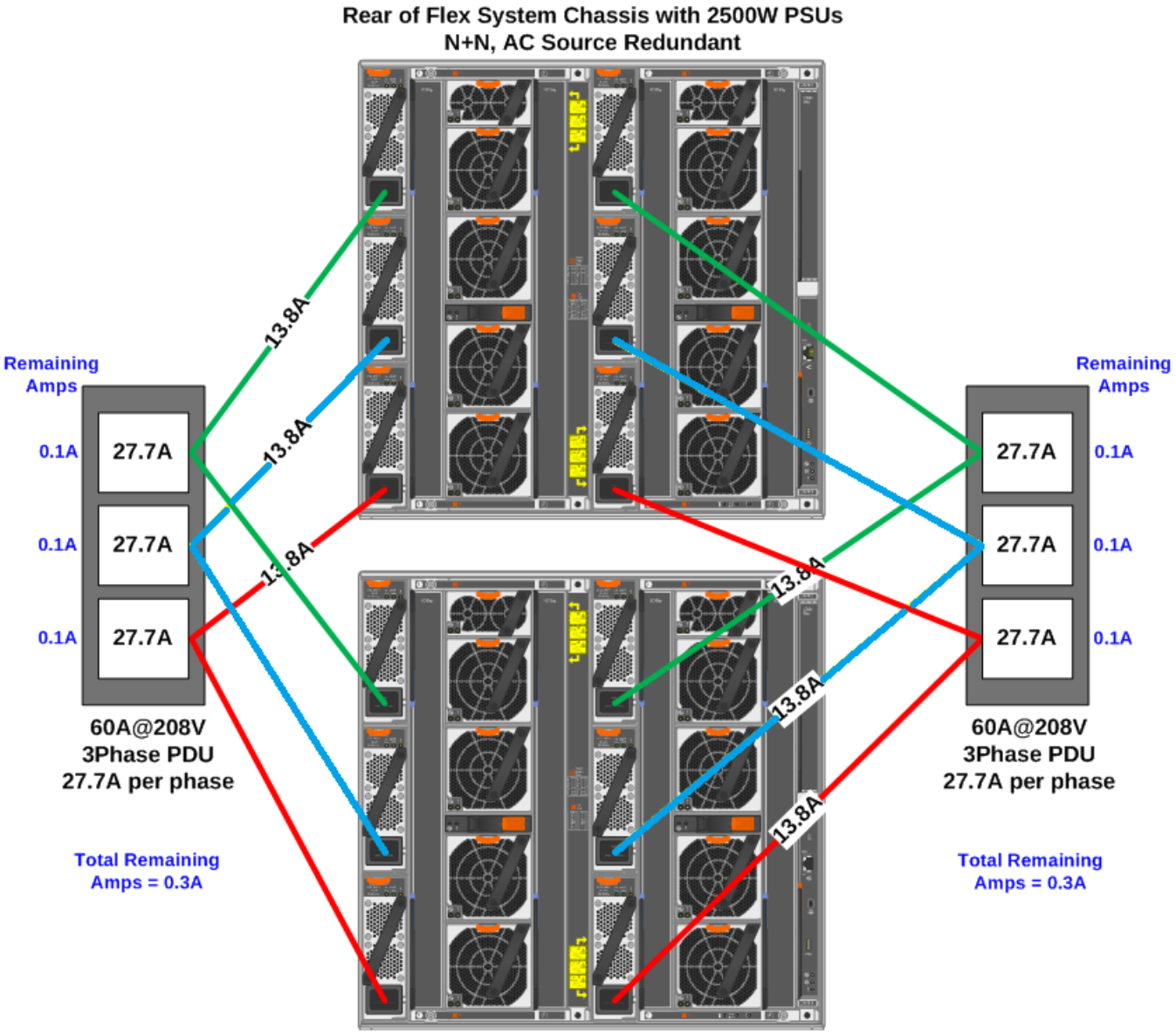


Figure 9: Rear of 2 x Flex Chassis - 60A@208V 3 Phase, N+1 & N+N AC Source Redundant

3 Phase PDU – 60A@208V – 2 Chassis, 3 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 3 PSUs running on: 60A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8923	6061	DPI 60A 3 Phase 6 C19 Ent 1U PDU with IEC309 3P+G (208V) Basic	Attached
71763NU	6051	Ultra Density Enterprise 1U PDU 9 C19/3 C13 3 Phase 60A PDU Basic	Attached
46M4003	5897	1U 9 C19/3 C13 AEM 60A 3 Phase PDU Switched & Monitored	Attached

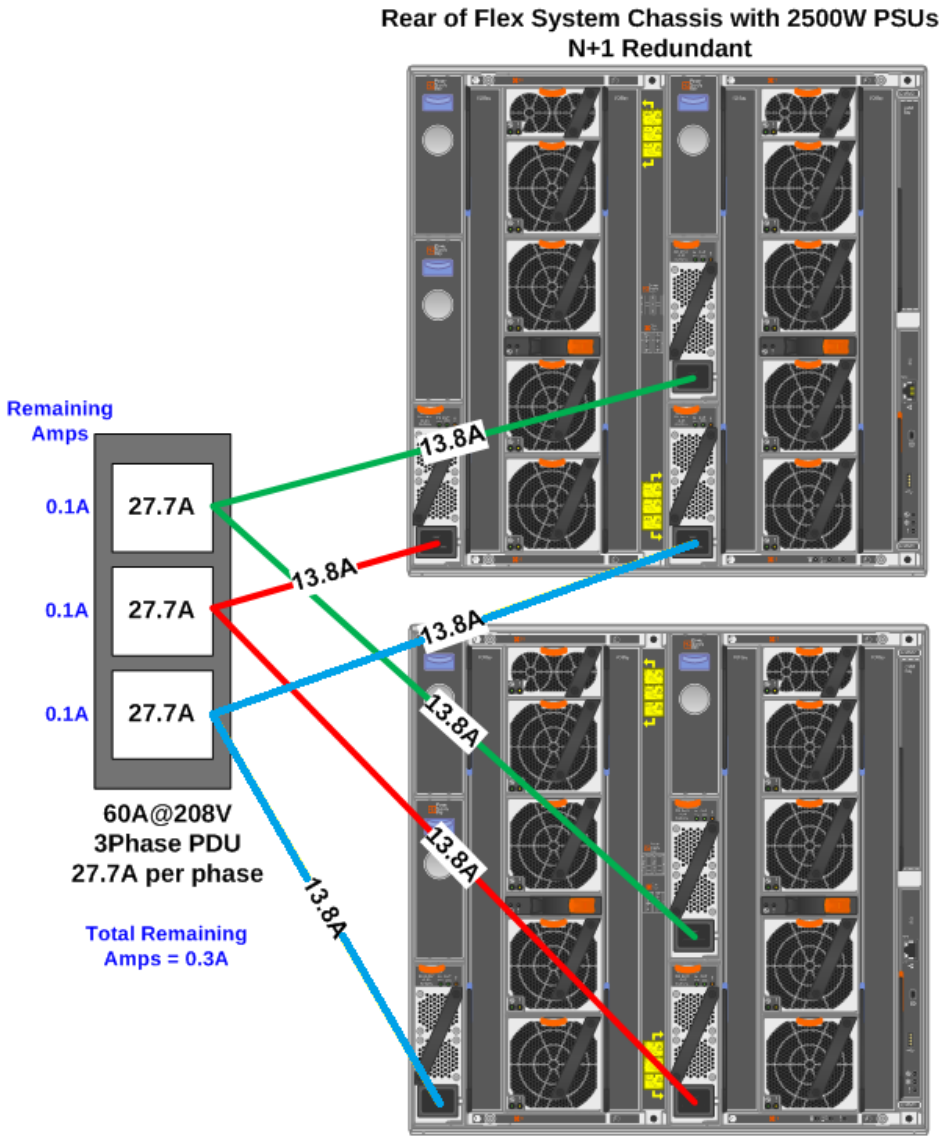


Figure 10: Rear of 2 x Flex Chassis - 60A@208V 3 Phase, N+1 Redundant

3 Phase PDU – 60A@208V – 3 Chassis, 4 PSUs

The following example is for 3 x Flex System Enterprise Chassis with 4 PSUs running on: 60A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8923	6061	DPI 60A 3 Phase 6 C19 Ent 1U PDU with IEC309 3P+G (208V) Basic	Attached
71763NU	6051	Ultra Density Enterprise 1U PDU 9 C19/3 C13 3 Phase 60A PDU Basic	Attached
46M4003	5897	1U 9 C19/3 C13 AEM 60A 3 Phase PDU Switched & Monitored	Attached

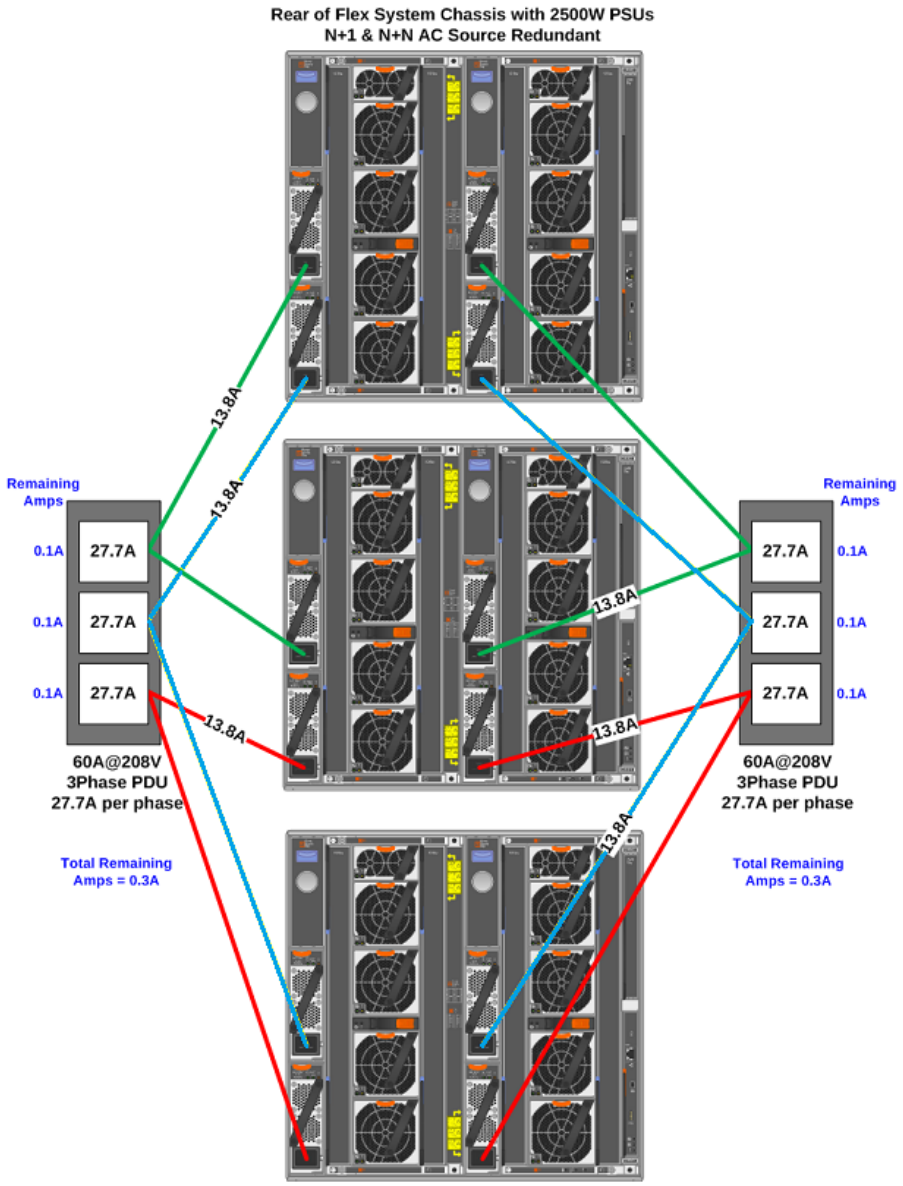


Figure 11: Rear of 3 x Flex Chassis - 60A@208V 3 Phase, N+1 & N+N AC Source Redundant

North America 50A@208V – 3 Phase PDU Examples

3 Phase PDU – 50A@208V – 1 Chassis, 6 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 6 PSUs running on: 50A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4140	5926	0U 12 C19/12 C13 60A 3ph PDU (Line Cord derated 50A)	Attached
46M4134	5931	0U 12 C19 / 12 C13 Switched & Monitored	Attached

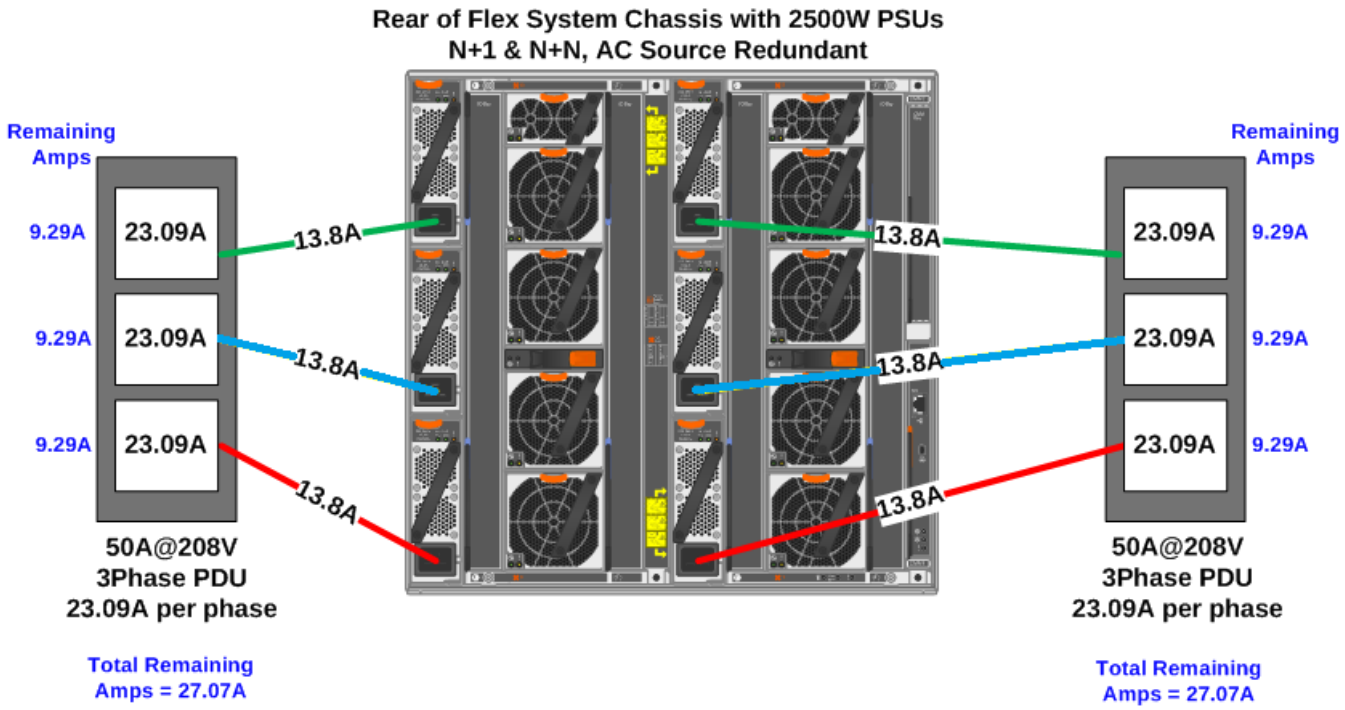


Figure 12: Rear of 1 x Flex Chassis - 50A@208V 3 Phase, N+1 & N+N, AC Source Redundant

3 Phase PDU – 50A@208V – 1 Chassis, 5 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 5 PSUs running on: 50A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4140	5926	0U 12 C19/12 C13 60A 3ph PDU (Line Cord derated 50A)	Attached
46M4134	5931	0U 12 C19 / 12 C13 Switched & Monitored	Attached

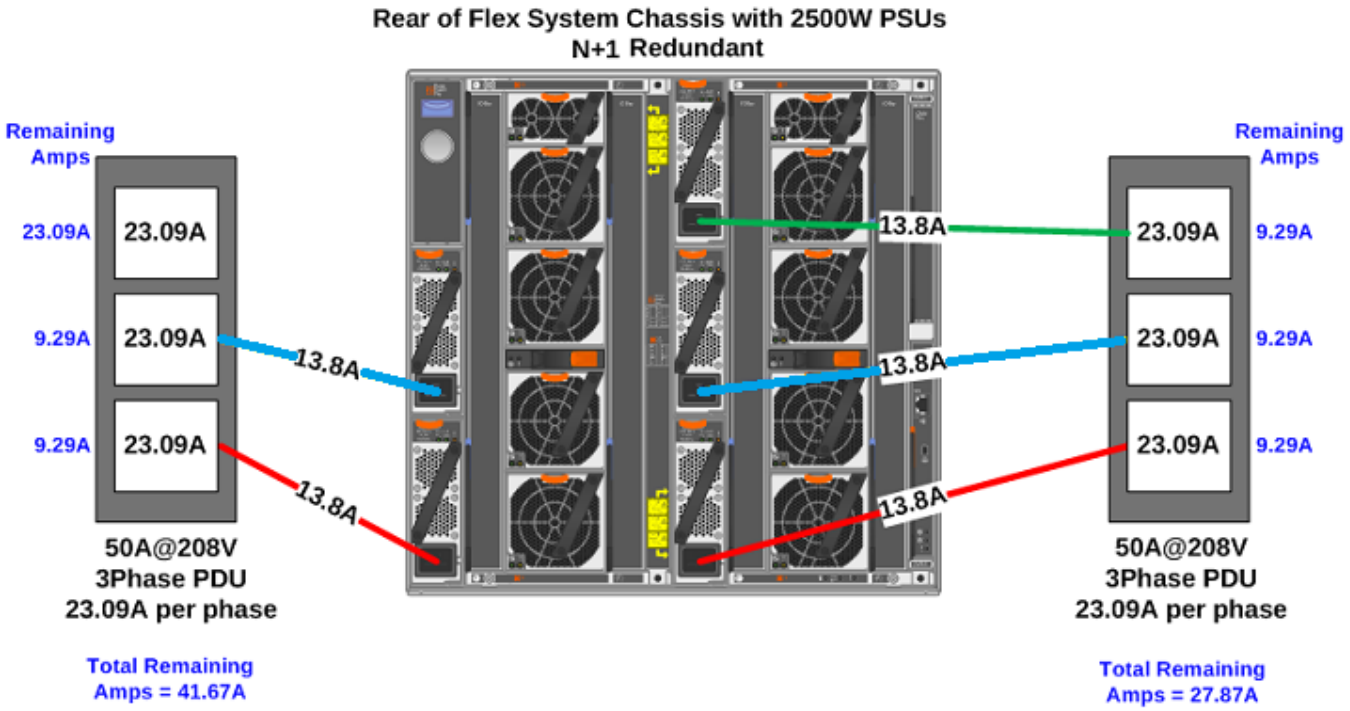


Figure 13: Rear of 1 x Flex Chassis - 50A@208V 3 Phase, N+1 Redundant

3 Phase PDU – 50A@208V – 1 Chassis, 4 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 4 PSUs running on: 50A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4140	5926	0U 12 C19/12 C13 60A 3ph PDU (Line Cord derated 50A)	Attached
46M4134	5931	0U 12 C19 / 12 C13 Switched & Monitored	Attached

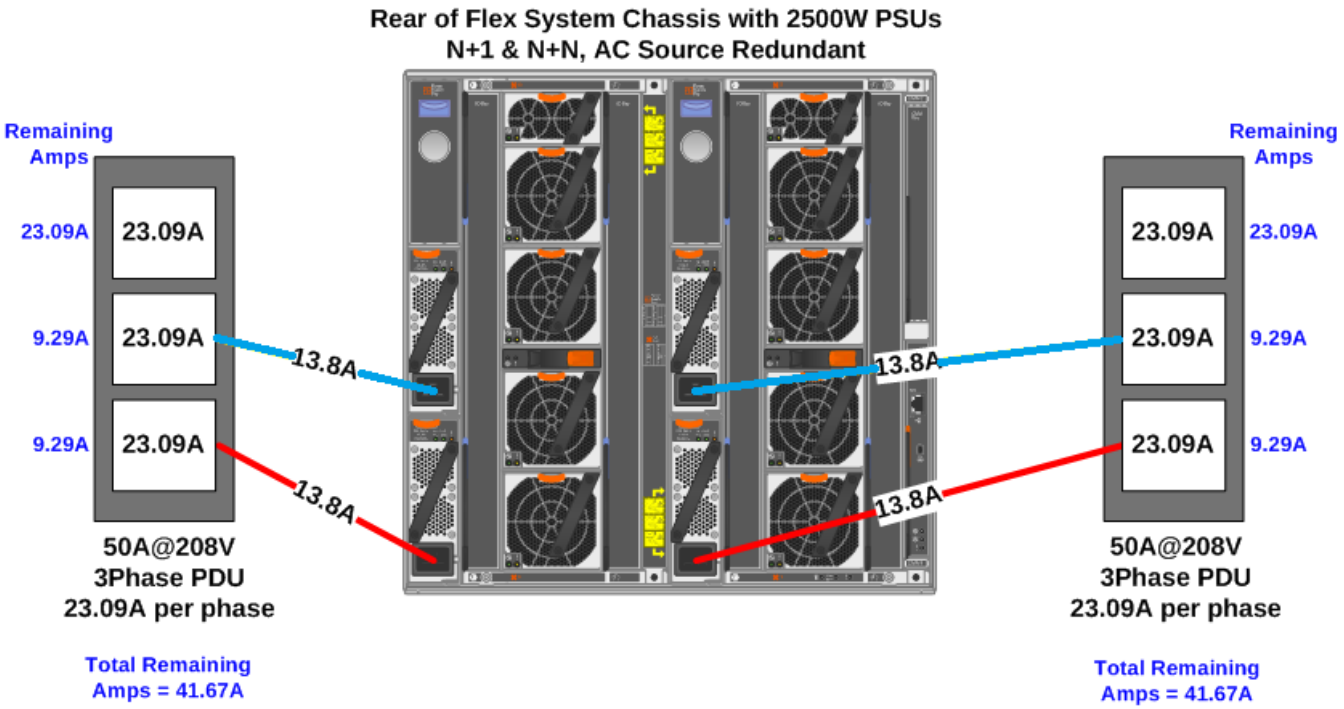


Figure 14: Rear of 1 x Flex Chassis - 50A@208V 3 Phase, N+1 & N+N, AC Source Redundant

3 Phase PDU – 50A@208V – 1 Chassis, 3 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 3 PSUs running on: 50A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4140	5926	0U 12 C19/12 C13 60A 3ph PDU (Line Cord derated 50A)	Attached
46M4134	5931	0U 12 C19 / 12 C13 Switched & Monitored	Attached

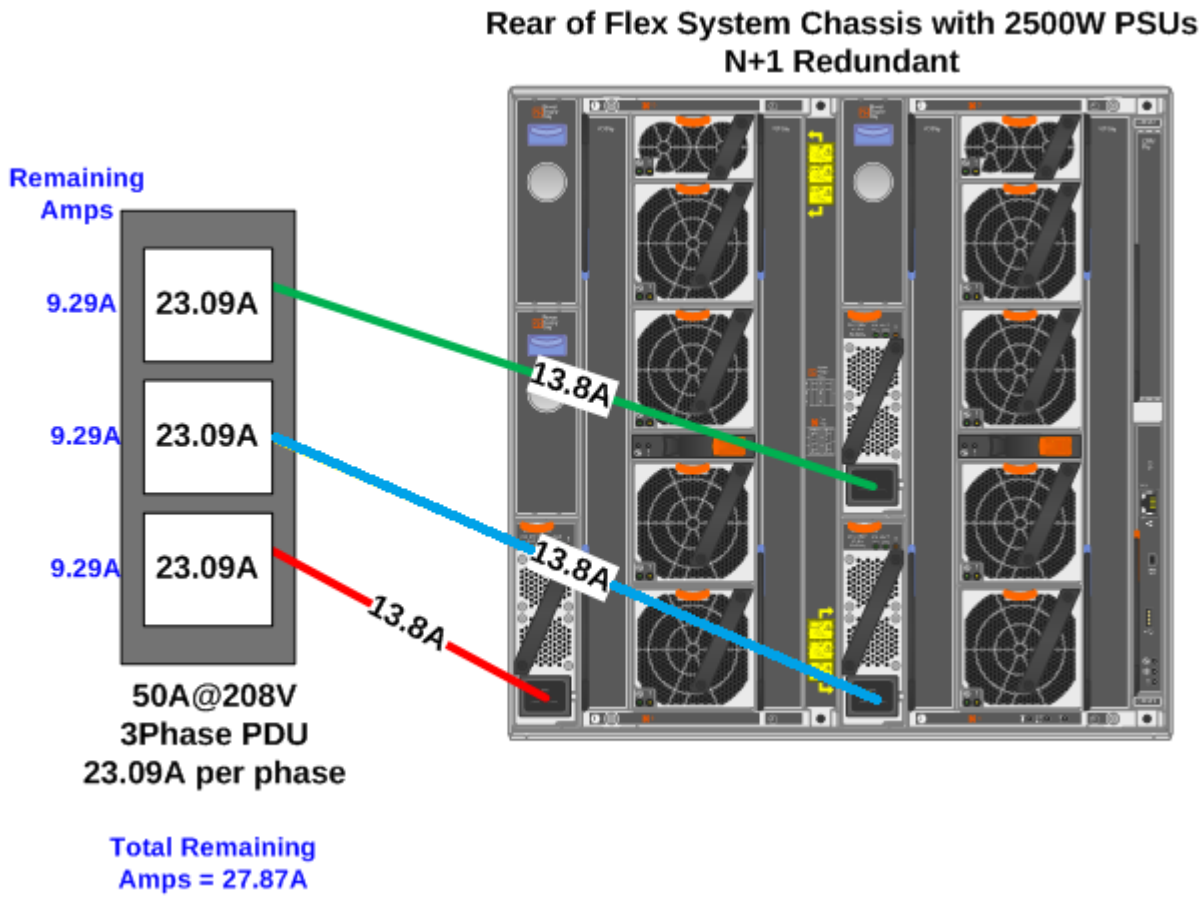


Figure 15: Rear of 1 x Flex Chassis - 50A@208V 3 Phase, N+1 Redundant

3 Phase PDU – 50A@208V – 1 Chassis, 2 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 3 PSUs running on: 50A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4140	5926	0U 12 C19/12 C13 60A 3ph PDU (Line Cord derated 50A)	Attached
46M4134	5931	0U 12 C19 / 12 C13 Switched & Monitored	Attached

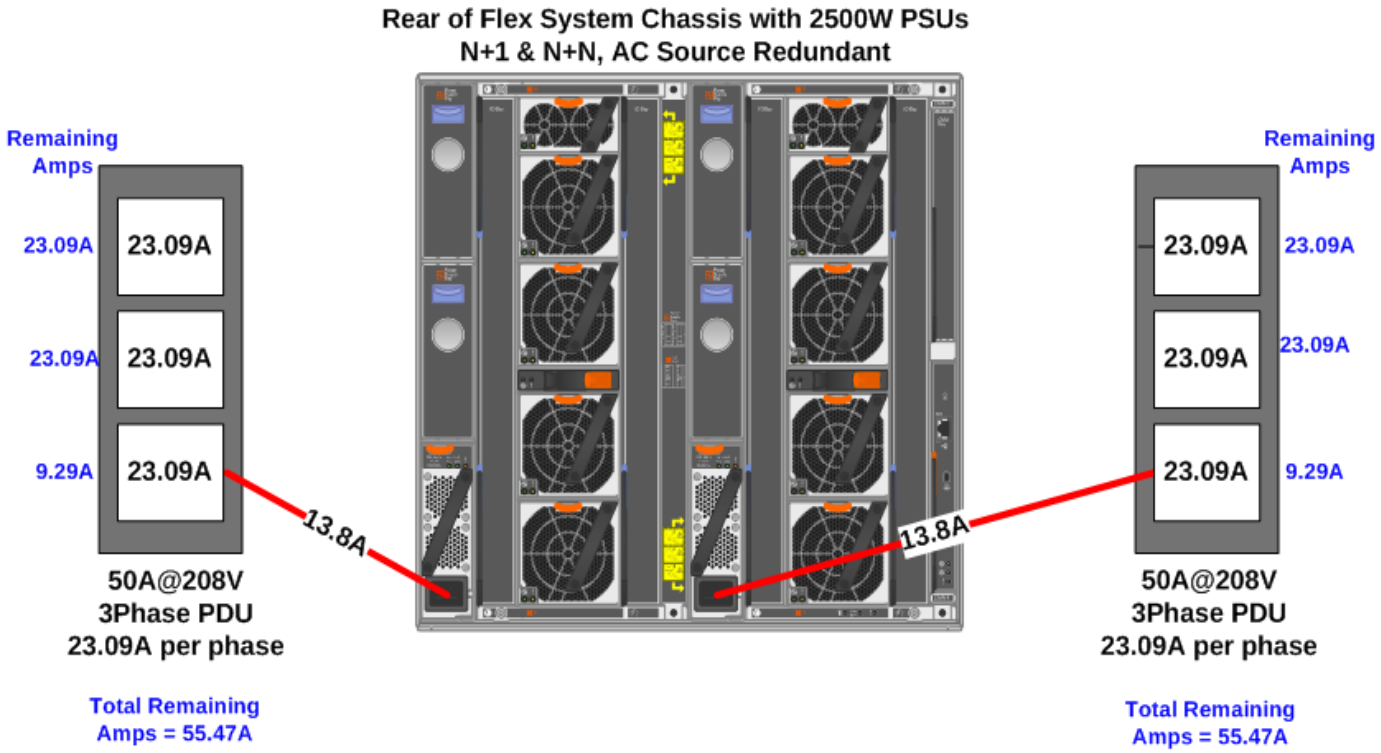


Figure 16: Rear of 1 x Flex Chassis - 50A@208V 3 Phase, N+1 & N+N AC Source Redundant

3 Phase PDU – 50A@208V – 3 Chassis, 4 PSUs

The following example is for 3 x Flex System Enterprise Chassis with 4 PSUs running on: 50A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4140	5926	0U 12 C19/12 C13 60A 3ph PDU (Line Cord derated 50A)	Attached
46M4134	5931	0U 12 C19 / 12 C13 Switched & Monitored	Attached

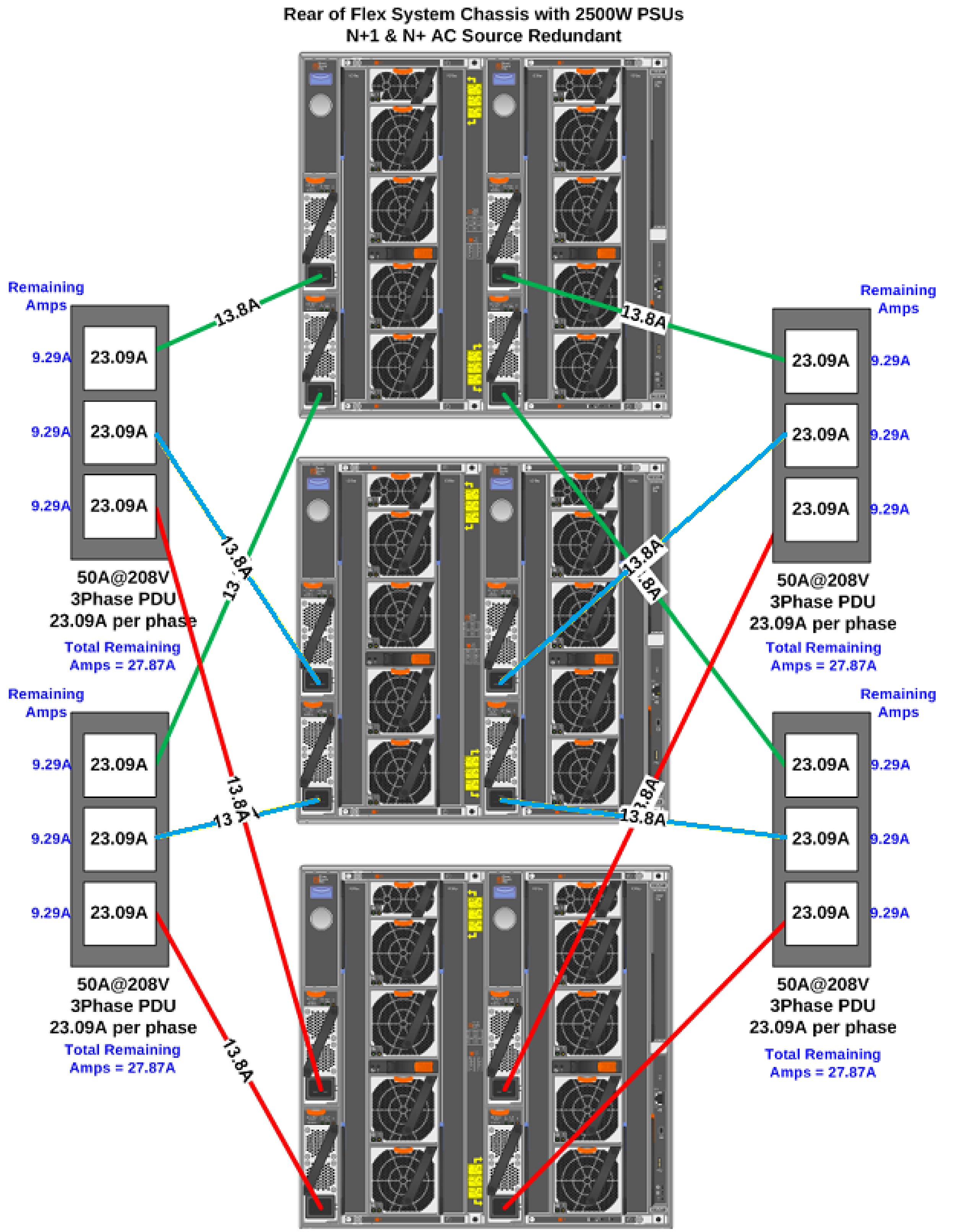


Figure 17: Rear of 3 x Flex Chassis - 50A@208V 3 Phase, N+1 & N+N, AC Source Redundant

North America 30A@208V – 3 Phase PDU Examples

3 Phase PDU – 30A@208V – 1 Chassis, 6 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 6 PSUs running on: 30A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4167	5928	1U 9 C19/3 C13 Switched and Monitored 30A 3 Phase PDU	Attached

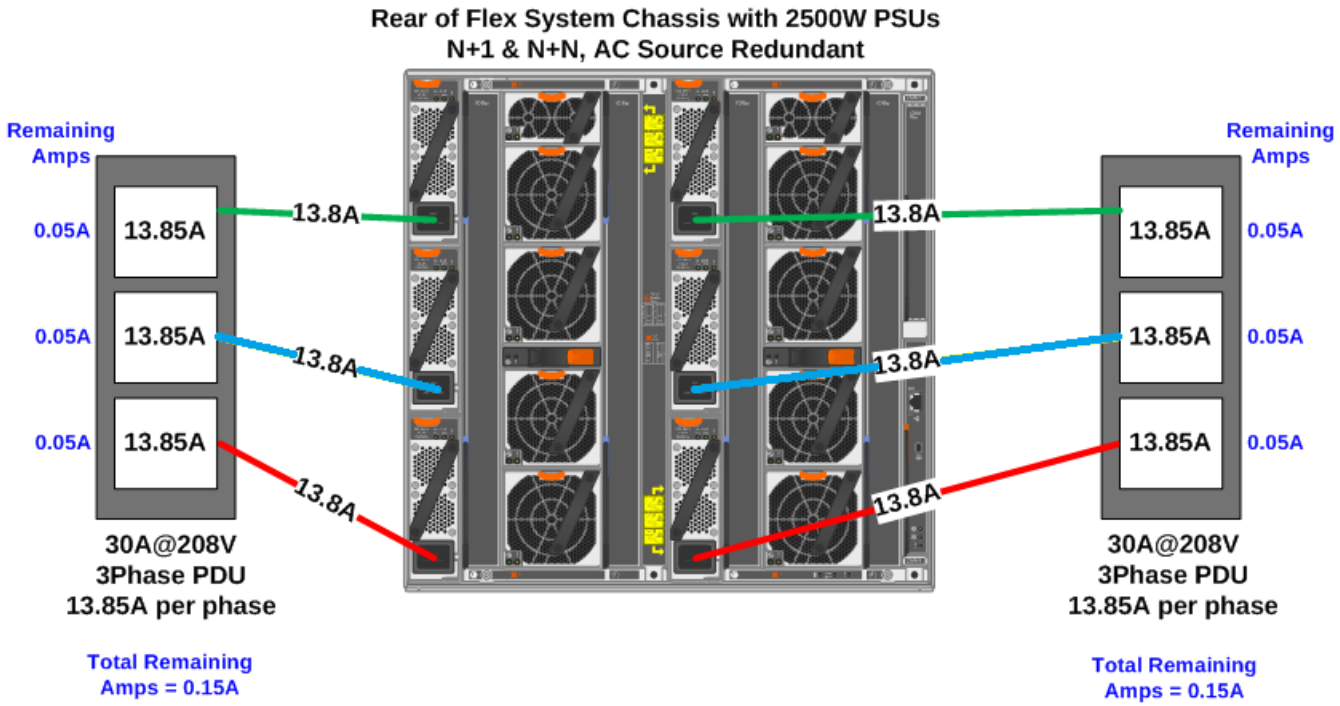


Figure 18: Rear of 1 x Flex Chassis - 30A@208V 3 Phase, N+1 & N+N AC Source Redundant

3 Phase PDU – 30A@208V – 1 Chassis, 5 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 5 PSUs running on: 30A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4167	5928	1U 9 C19/3 C13 Switched and Monitored 30A 3 Phase PDU	Attached

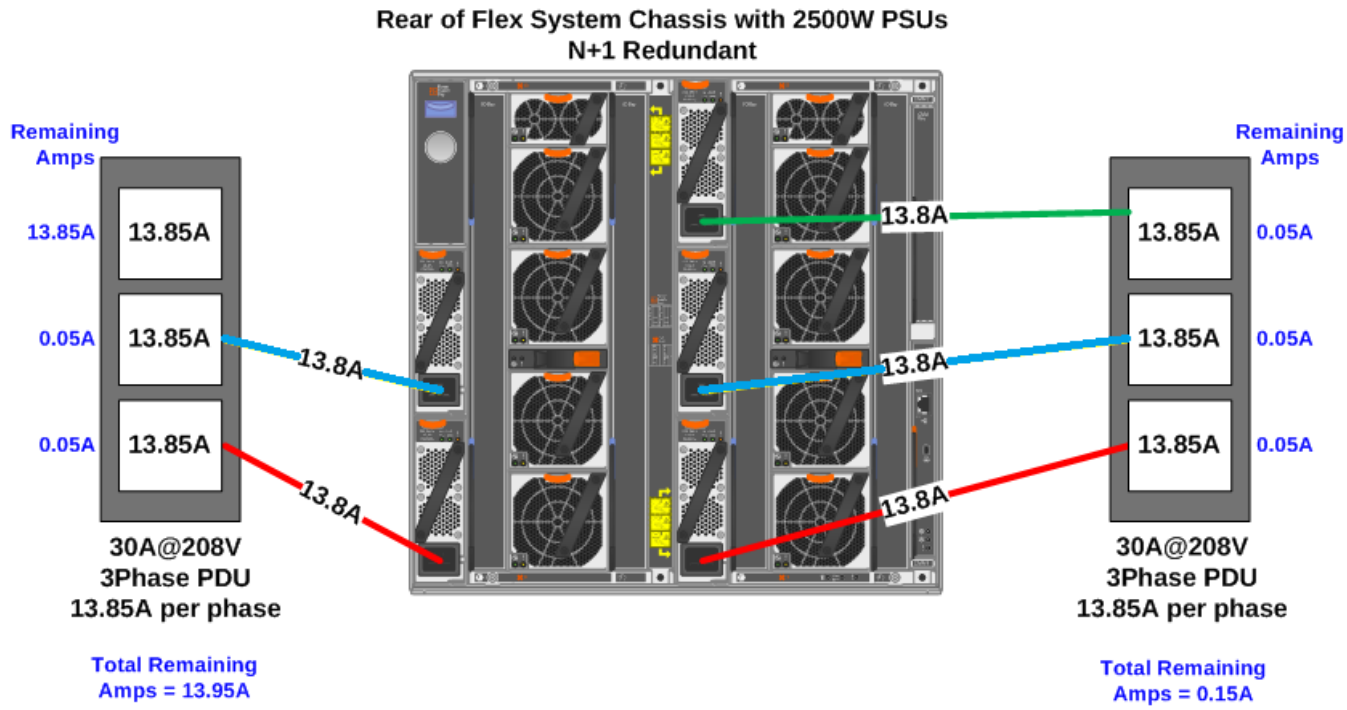


Figure 19: Rear of 1 x Flex Chassis - 30A@208V 3 Phase, N+1 Redundant

3 Phase PDU – 30A@208V – 1 Chassis, 4 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 3 PSUs running on: 30A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4167	5928	1U 9 C19/3 C13 Switched and Monitored 30A 3 Phase PDU	Attached

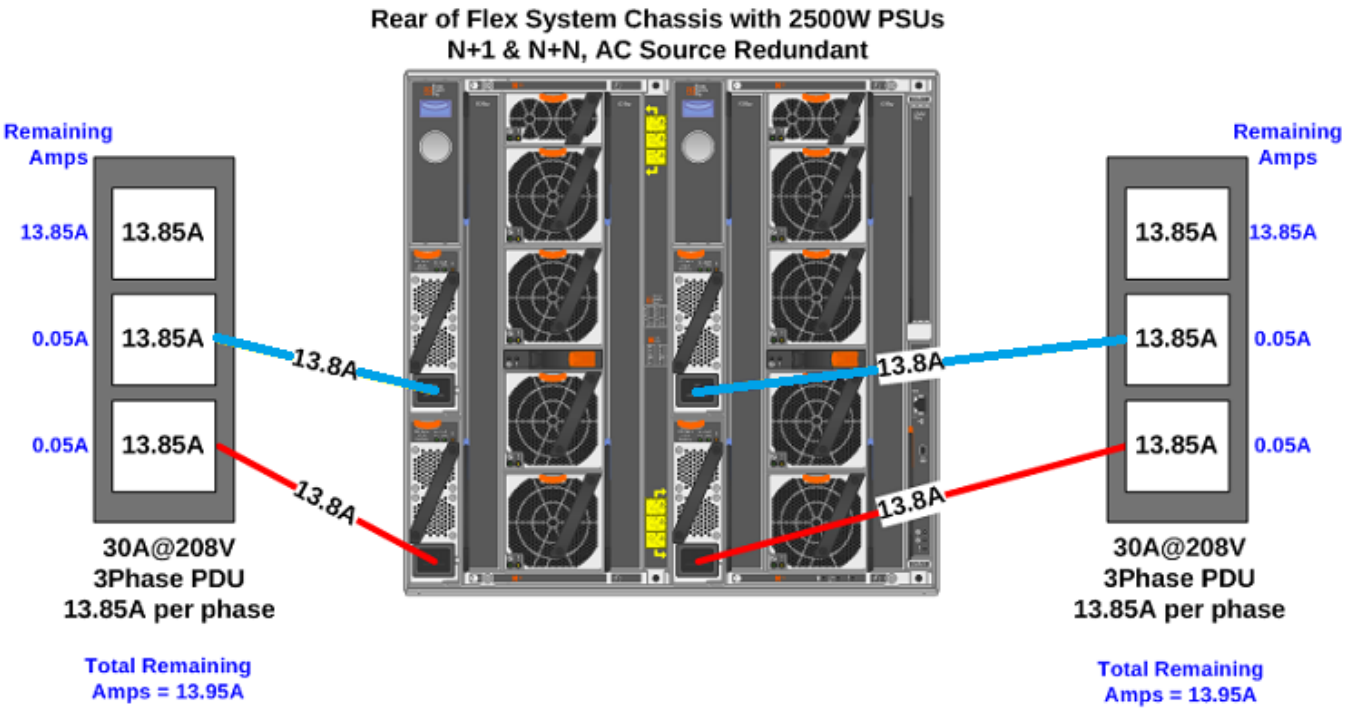


Figure 20: Rear of 1 x Flex Chassis - 30A@208V 3 Phase, N+1 & N+N AC Source Redundant

3 Phase PDU – 30A@208V – 1 Chassis, 3 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 3 PSUs running on: 30A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4167	5928	1U 9 C19/3 C13 Switched and Monitored 30A 3 Phase PDU	Attached

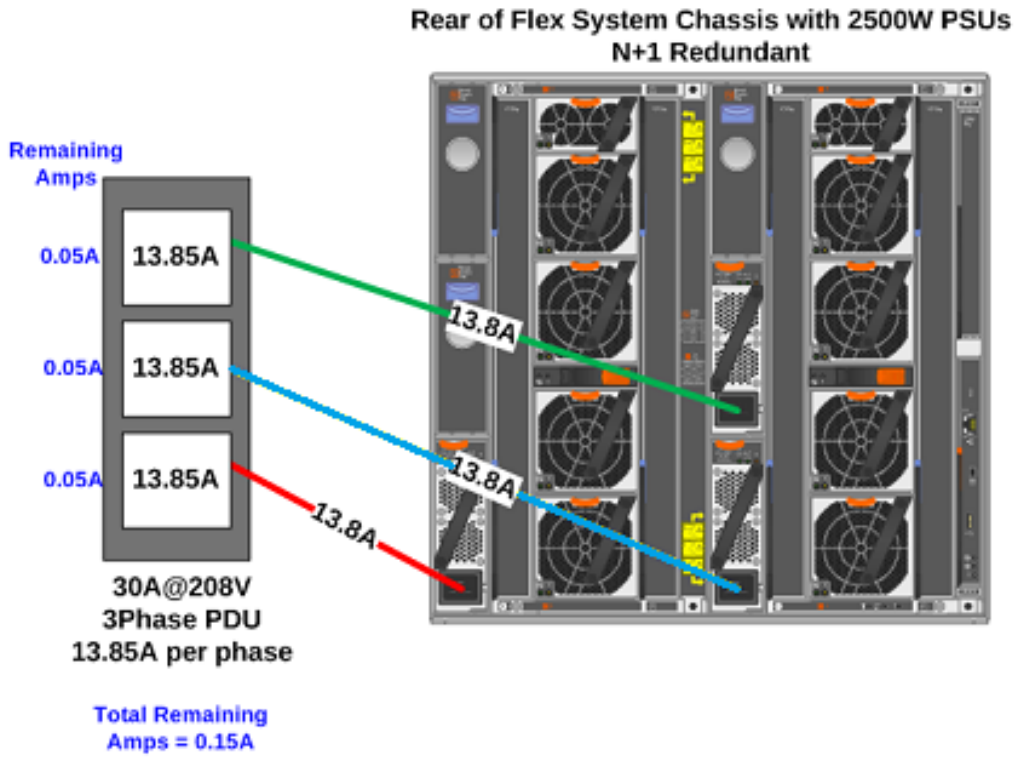


Figure 21: Rear of 1 x Flex Chassis - 30A@208V 3 Phase, N+1 Redundant

3 Phase PDU – 30A@208V – 1 Chassis, 2 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 2 PSUs running on: 30A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4167	5928	1U 9 C19/3 C13 Switched and Monitored 30A 3 Phase PDU	Attached

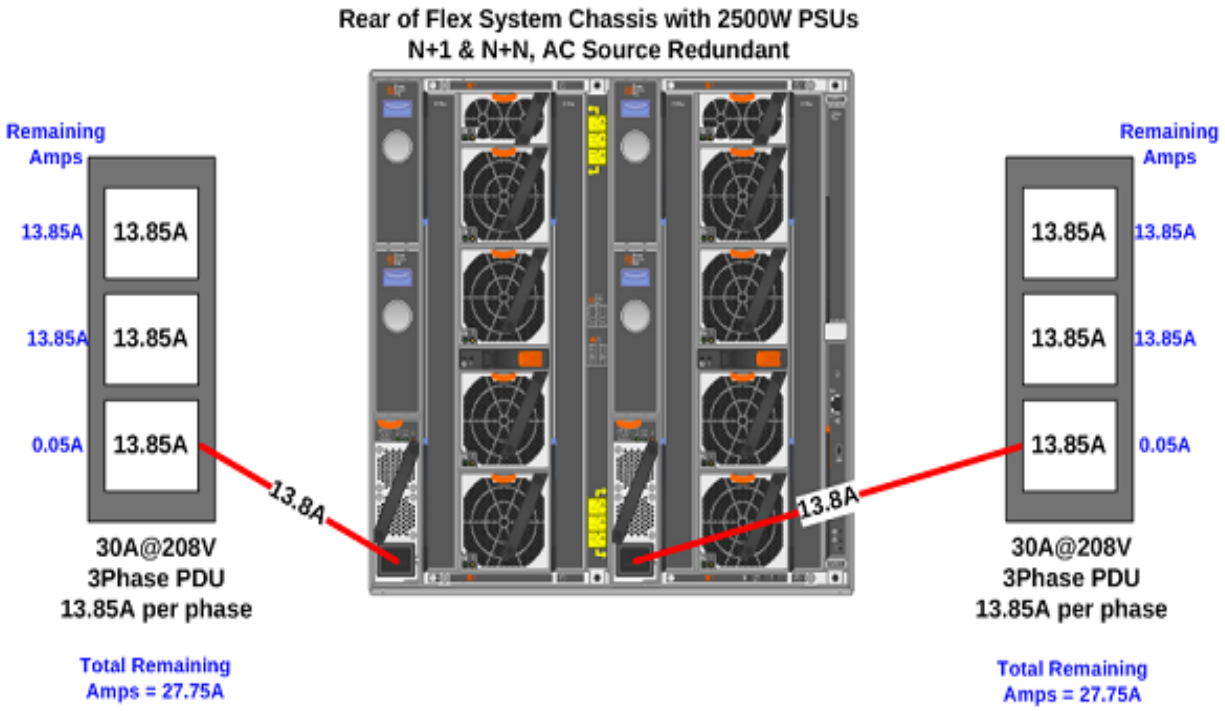


Figure 22: Rear of 1 x Flex Chassis - 30A@208V 3 Phase, N+1 & N+N AC Source Redundant

3 Phase PDU – 30A@208V – 3 Chassis, 4 PSUs

The following example is for 3 x Flex System Enterprise Chassis with 4 PSUs running on: 30A@208V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
46M4167	5928	1U 9 C19/3 C13 Switched and Monitored 30A 3 Phase PDU	Attached

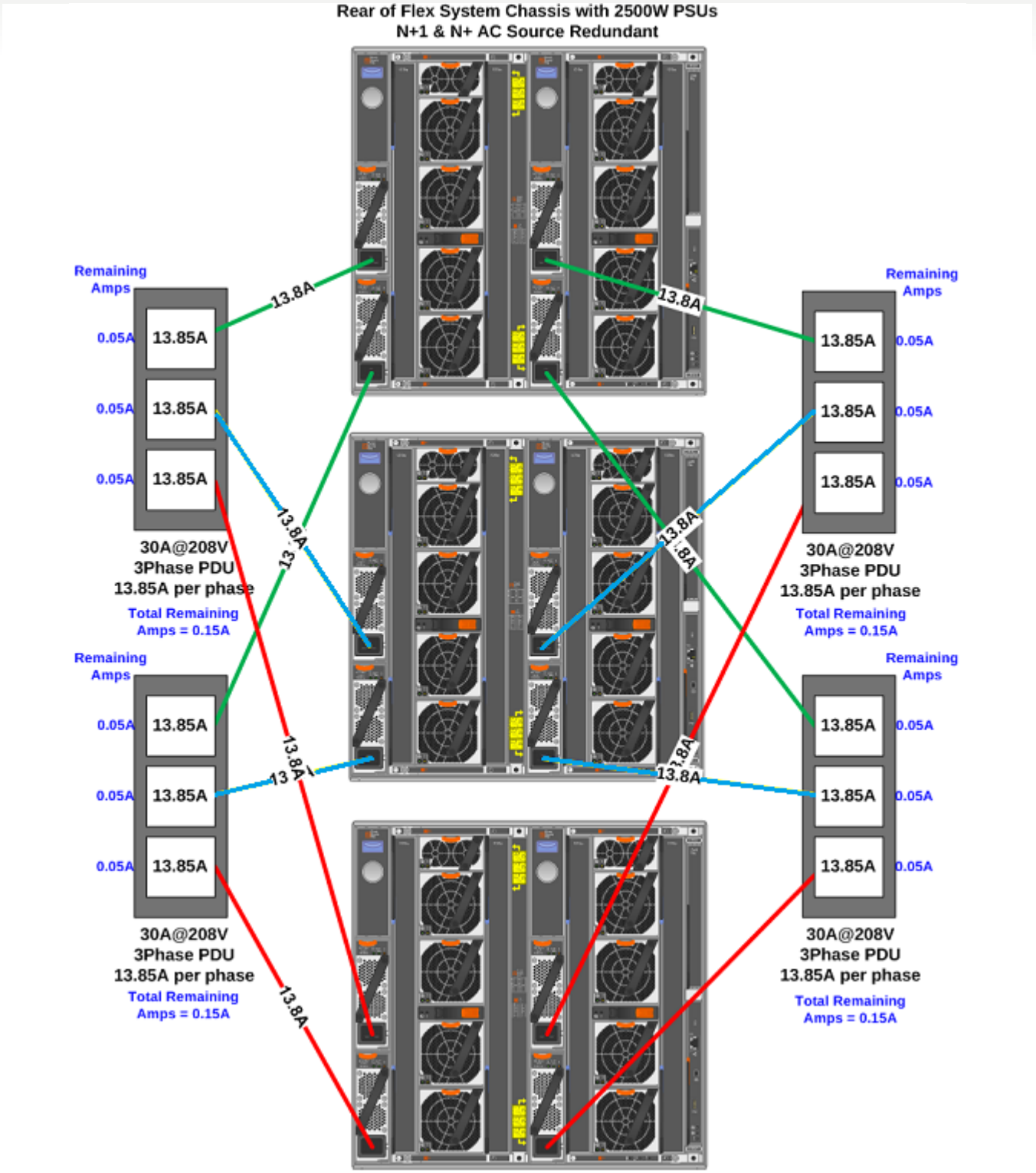


Figure 23: Rear of 3 x Flex Chassis - 30A@208V 3 Phase, N+1 & N+N AC Source Redundant

North America 60A@208V – Single Phase PDU Examples

Single Phase PDU – 60A@200-240V – 1 Chassis, 6 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 6 PSUs running on: 60A@200-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8940	A11U	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6063	6 / C19 Enterprise Basic PDU	40K9615
71762NX	6501	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9615
46M4002	5902	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9615

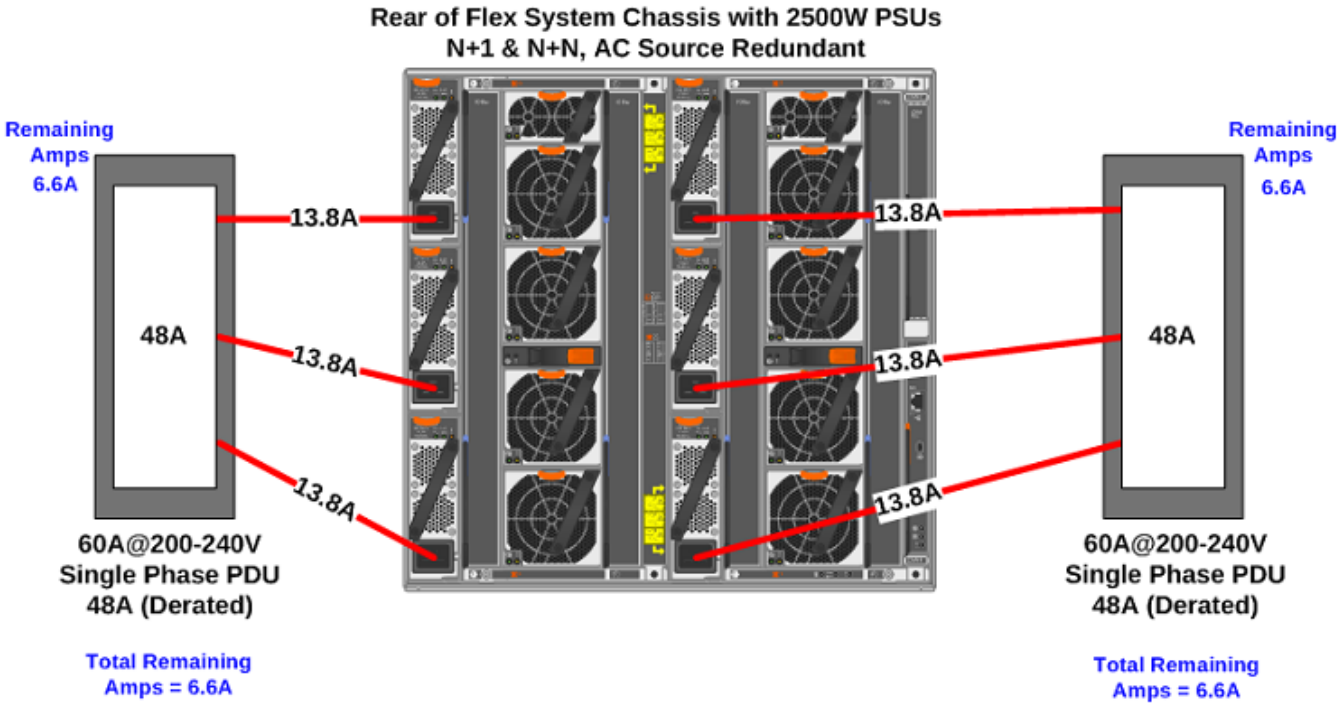


Figure 24: Rear of 1 x Flex Chassis - 60A@200-240V 1ph, N+1, N+N AC Source Redundant

Single Phase PDU – 60A@200-240V – 1 Chassis, 5 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 5 PSUs running on: 60A@200-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8940	A11U	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6063	6 / C19 Enterprise Basic PDU	40K9615
71762NX	6501	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9615
46M4002	5902	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9615

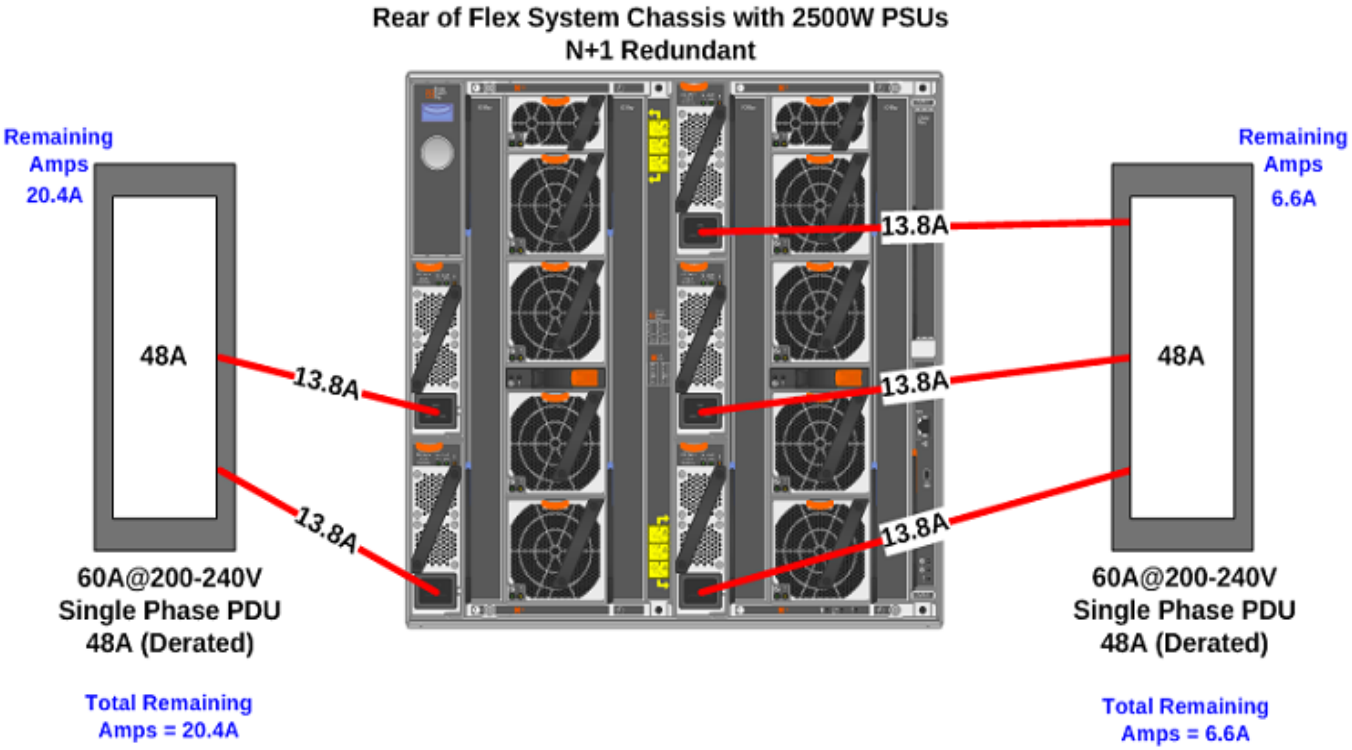


Figure 25: Rear of 1 x Flex Chassis - 60A@200-240V 1ph, N+1 Redundant

Single Phase PDU – 60A@200-240V – 1 Chassis, 4 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 4 PSUs running on: 60A@200-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8940	A11U	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6063	6 / C19 Enterprise Basic PDU	40K9615
71762NX	6501	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9615
46M4002	5902	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9615

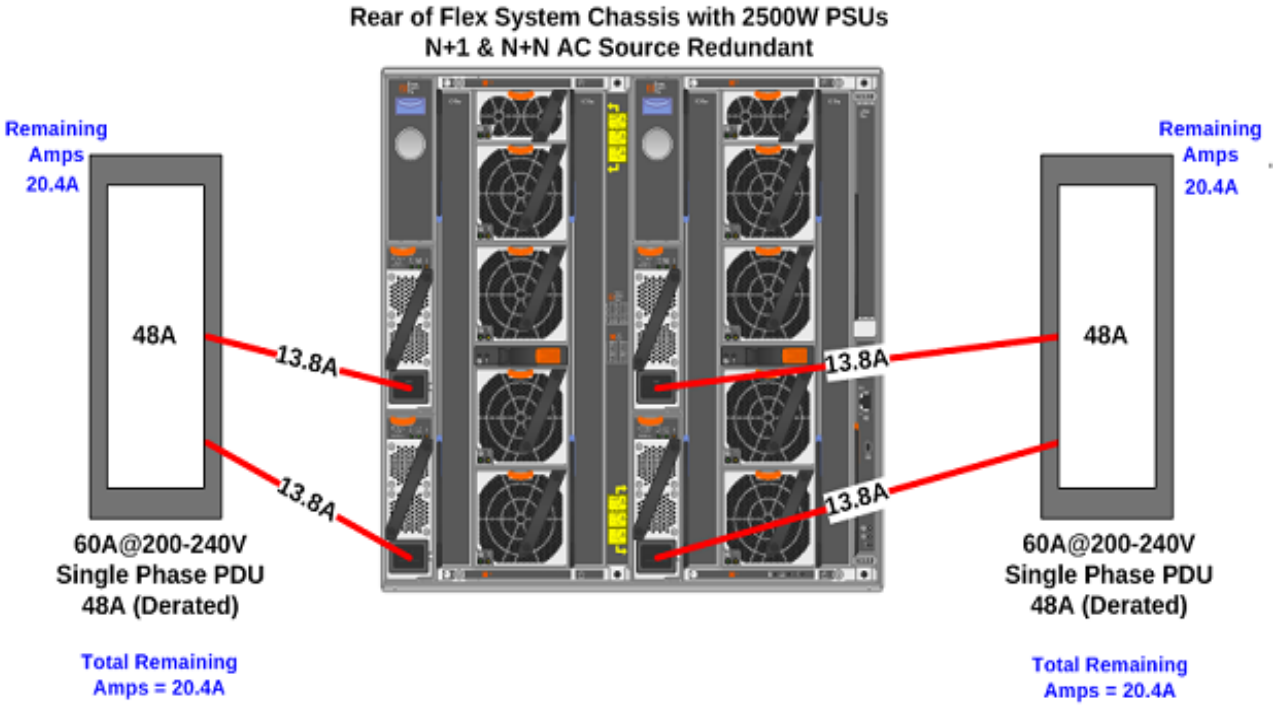


Figure 26: Rear of 1 x Flex Chassis - 60A@200-240V 1ph, N+1 & N+N AC Source Redundant

Single Phase PDU – 60A@200-240V – 1 Chassis, 3 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 3 PSUs running on: 60A@200-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8940	A11U	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6063	6 / C19 Enterprise Basic PDU	40K9615
71762NX	6501	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9615
46M4002	5902	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9615

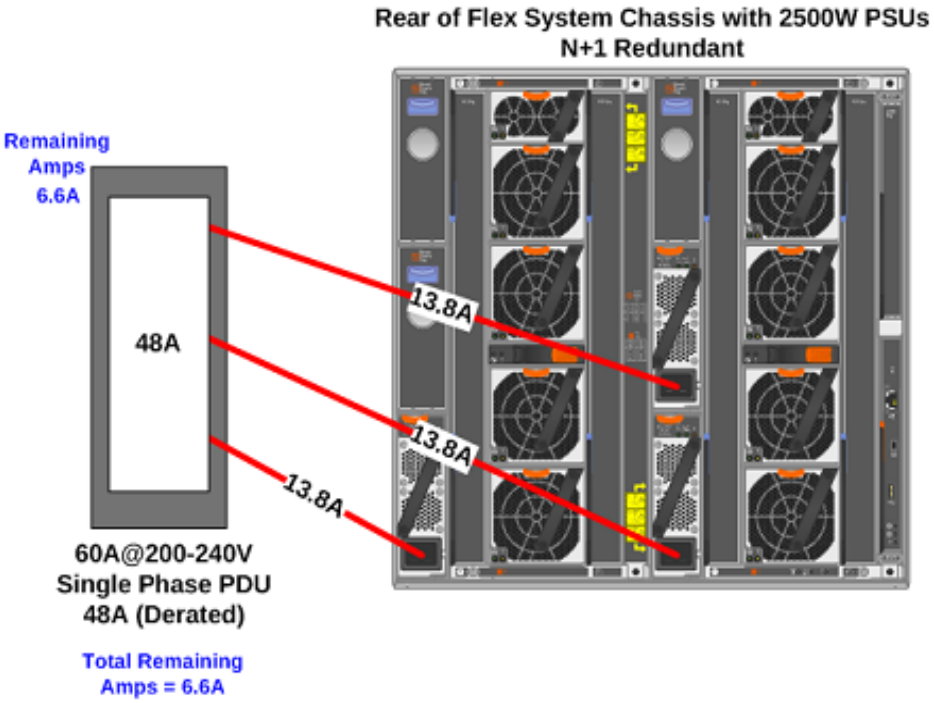


Figure 27: Rear of 1 x Flex Chassis - 60A@200-240V 1ph, N+1 Redundant

Single Phase PDU – 60A@200-240V – 1 Chassis, 2 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 2 PSUs running on: 60A@200-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8940	A11U	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6063	6 / C19 Enterprise Basic PDU	40K9615
71762NX	6501	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9615
46M4002	5902	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9615

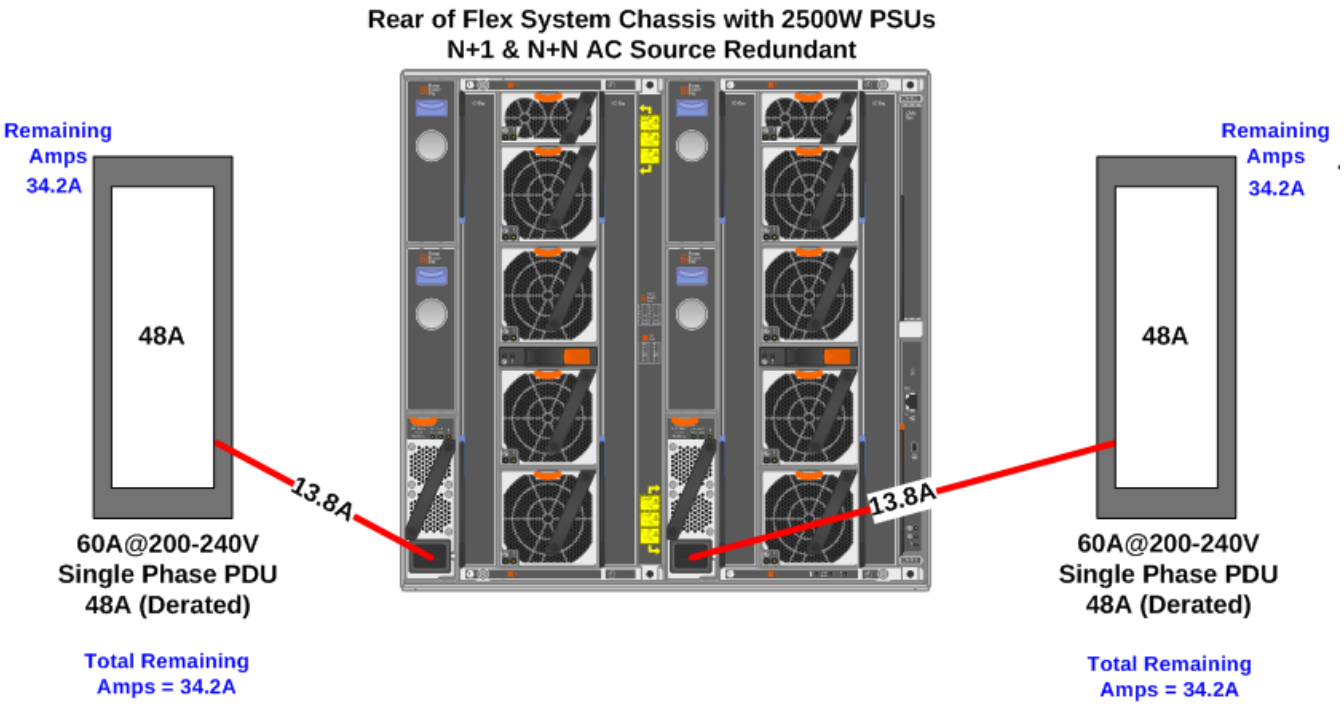


Figure 28: Rear of 1 x Flex Chassis - 60A@200-240V 1ph, N+1 & N+N AC Source Redundant

Single Phase PDU – 60A@200-240V – 3 Chassis, 4 PSUs

The following example is for 3 x Flex System Enterprise Chassis with 4 PSUs running on: 60A@200-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8940	A11U	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6063	6 / C19 Enterprise Basic PDU	40K9615
71762NX	6501	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9615
46M4002	5902	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9615

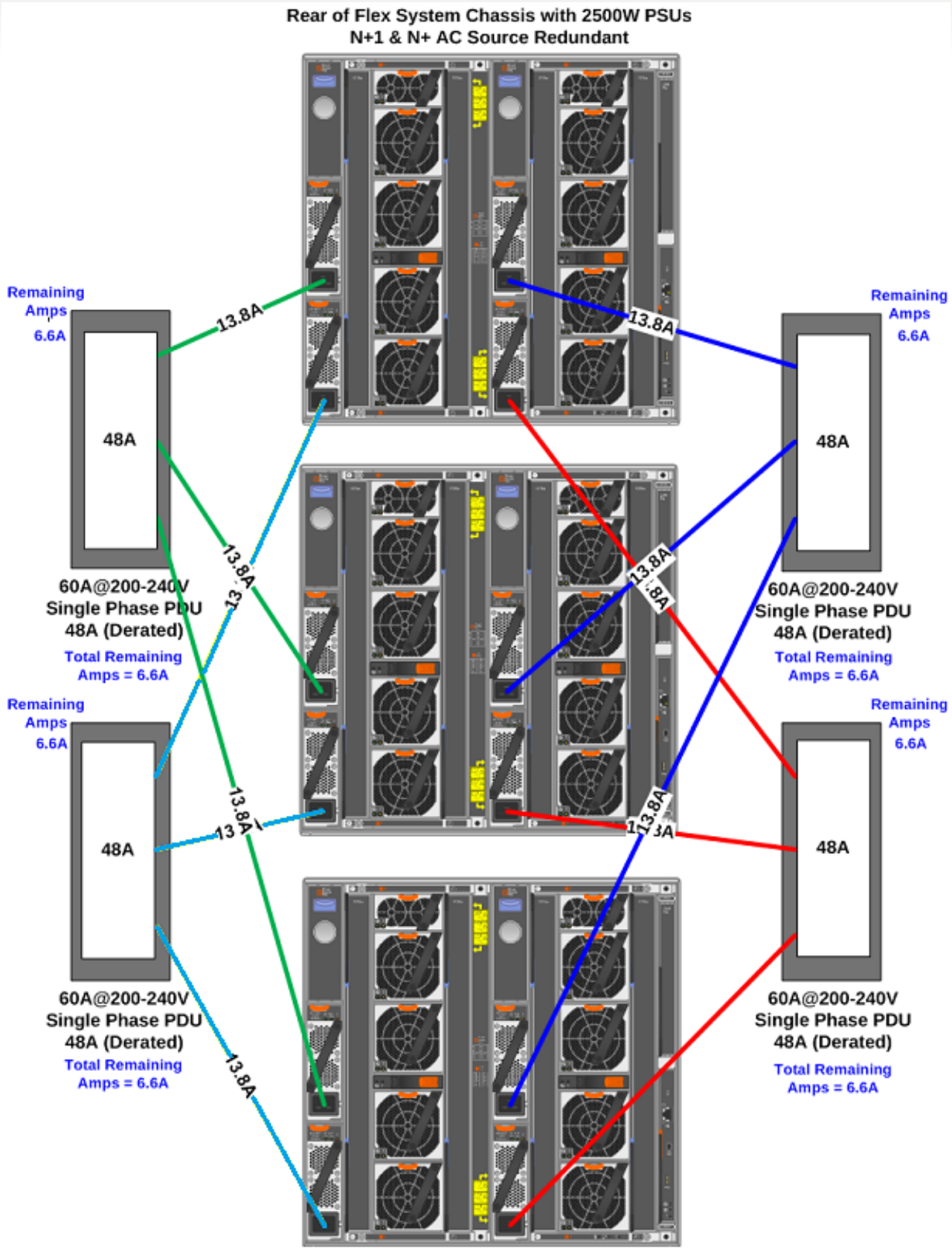


Figure 29: Rear of 3 x Flex Chassis - 60A@200-240V 1ph, N+1 & N+N AC Source Redundant

North America 30A@200-240V – Single Phase PDU Examples

Single Phase PDU – 30A@200-240V – 1 Chassis, 6 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 6 PSUs running on: 30A@200-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8939	A11T	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6062	6 / C19 Enterprise Basic PDU	40K9614
71762NX	6500	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9614
46M4002	5901	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9614

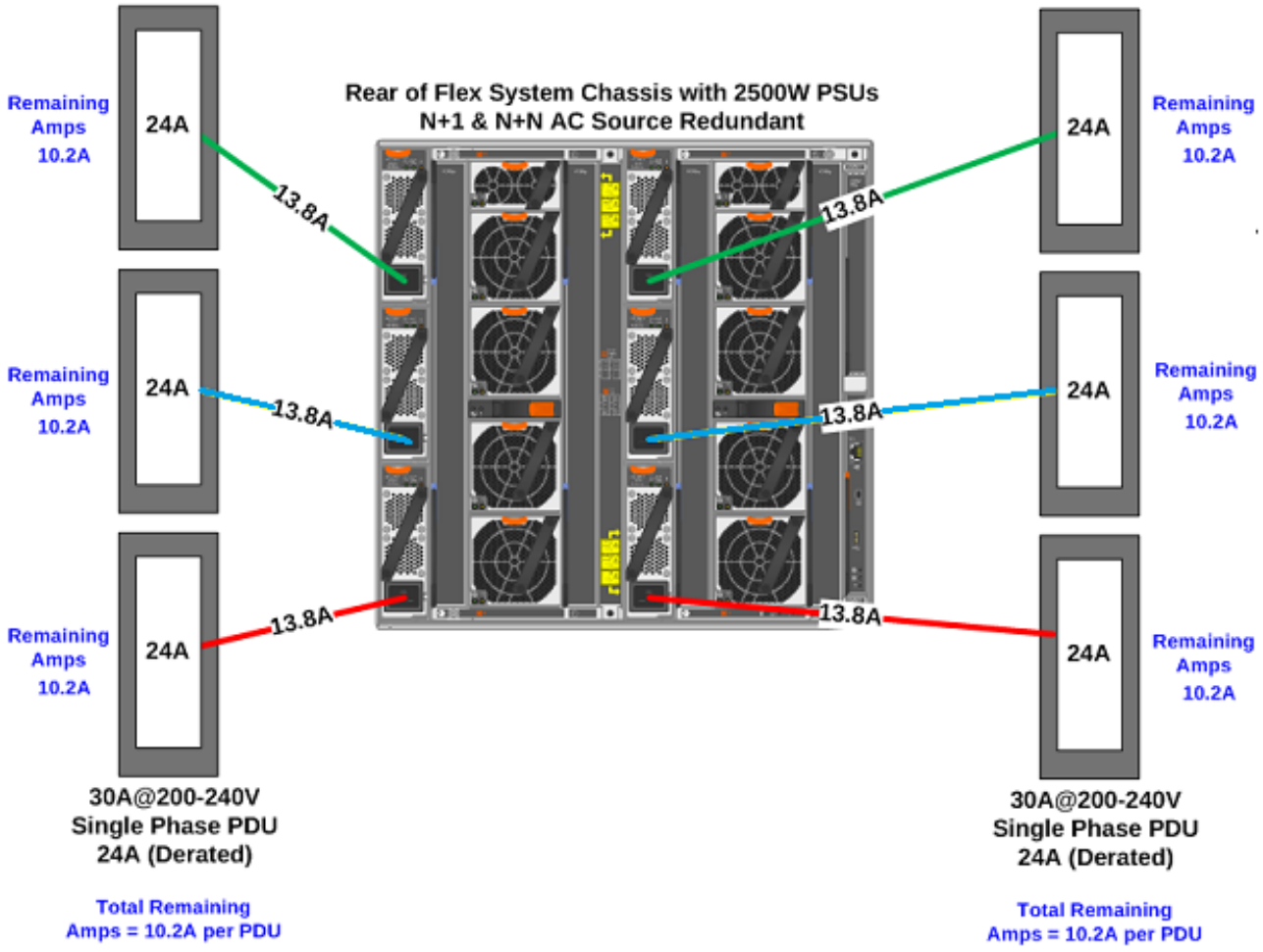


Figure 30: Rear of 1 x Flex Chassis - 30A@200-240V 1ph, N+1 & N+N AC Source Redundant

Single Phase PDU – 30A@200-240V – 1 Chassis, 5 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 5 PSUs running on: 30A@200-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8939	A11T	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6062	6 / C19 Enterprise Basic PDU	40K9614
71762NX	6500	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9614
46M4002	5901	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9614

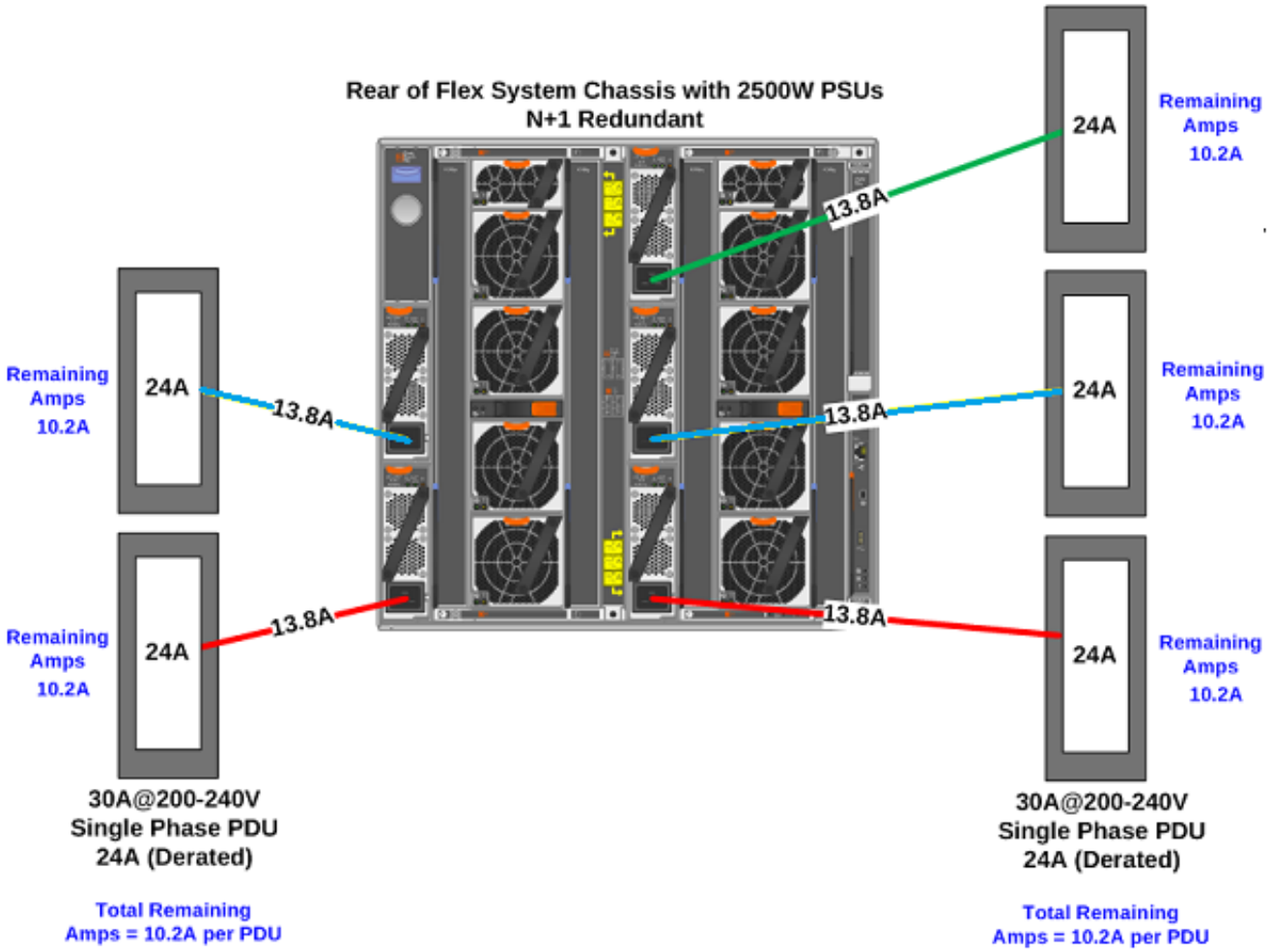


Figure 31: Rear of 1 x Flex Chassis - 30A@200-240V 1ph, N+1 Redundant

Single Phase PDU – 30A@200-240V – 1 Chassis, 4 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 4 PSUs running on: 30A@200-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8939	A11T	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6062	6 / C19 Enterprise Basic PDU	40K9614
71762NX	6500	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9614
46M4002	5901	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9614

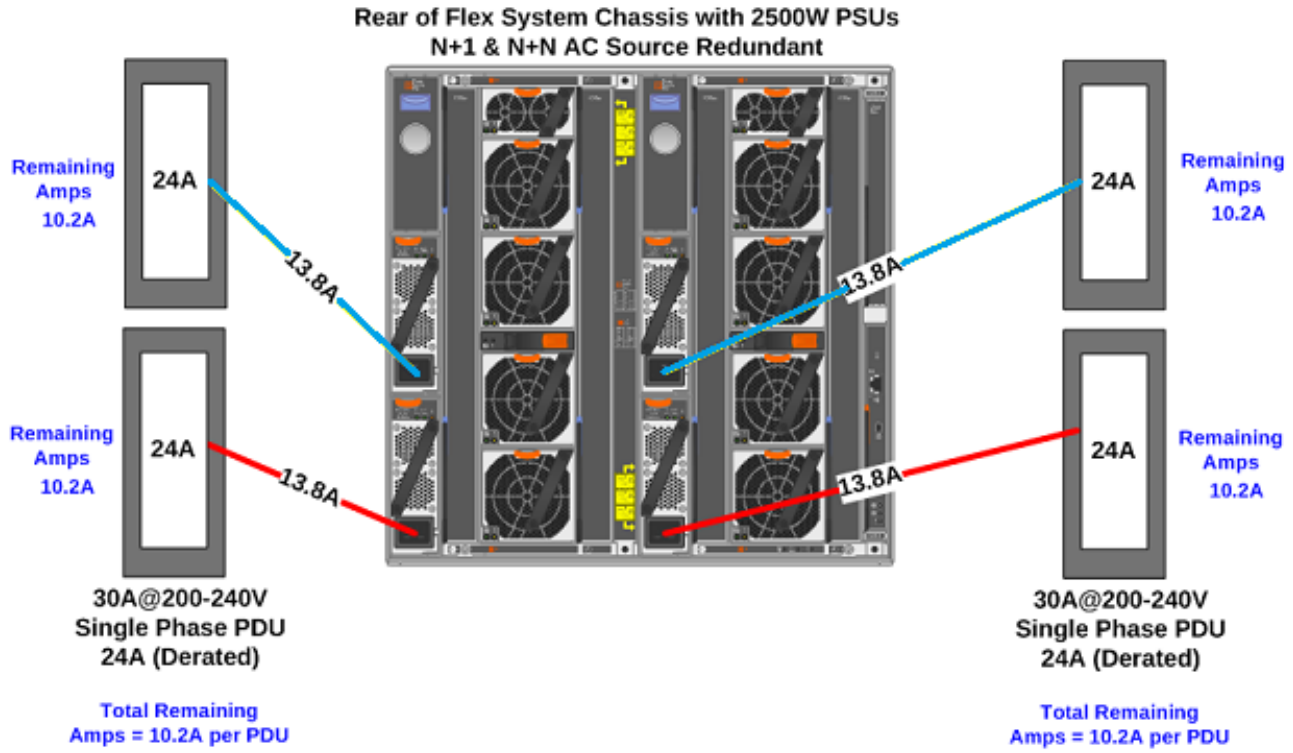


Figure 32: Rear of 1 x Flex Chassis - 30A@200-240V 1ph, N+1 & N+N AC Source Redundant

Single Phase PDU – 30A@200-240V – 1 Chassis, 3 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 4 PSUs running on: 30A@200-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8939	A11T	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6062	6 / C19 Enterprise Basic PDU	40K9614
71762NX	6500	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9614
46M4002	5901	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9614

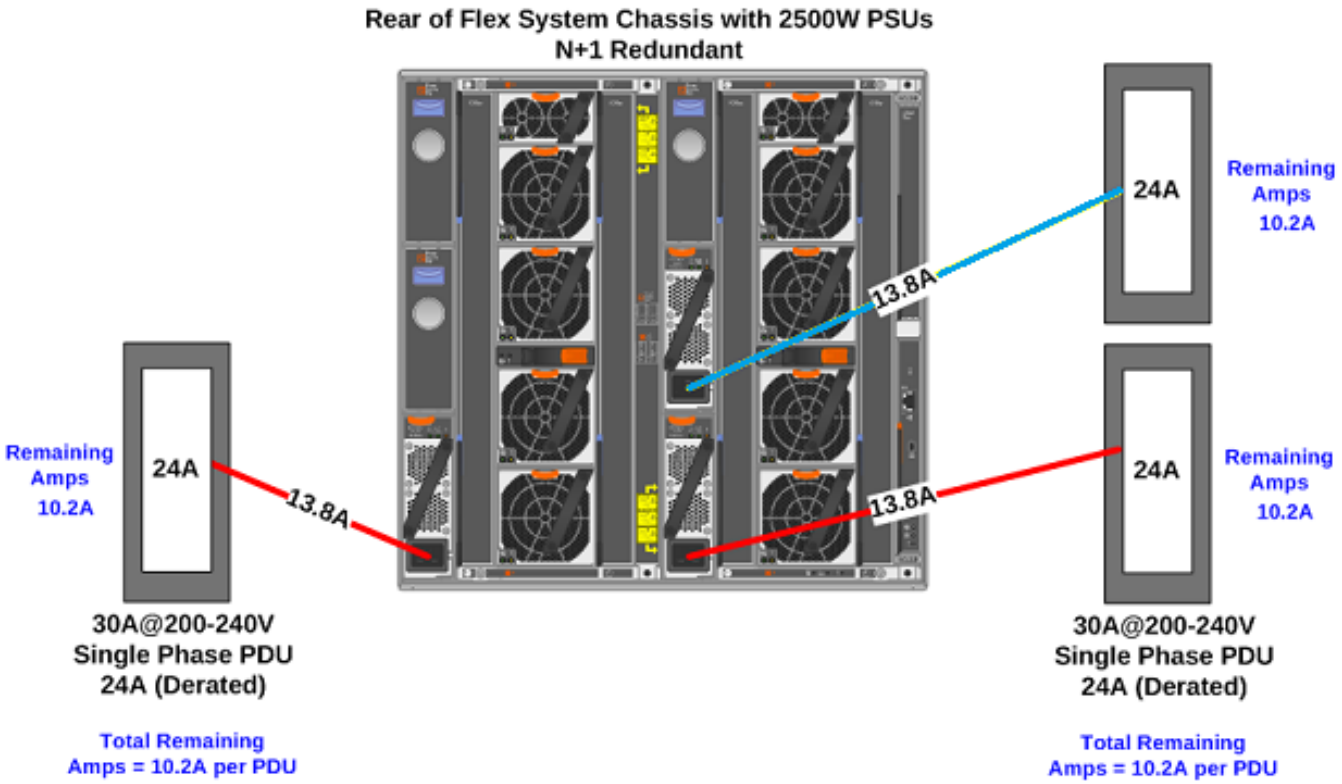


Figure 33: Rear of 1 x Flex Chassis - 30A@200-240V 1ph, N+1 Redundant

Single Phase PDU – 30A@200-240V – 1 Chassis, 2 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 4 PSUs running on: 30A@200-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8939	A11T	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6062	6 / C19 Enterprise Basic PDU	40K9614
71762NX	6500	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9614
46M4002	5901	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9614

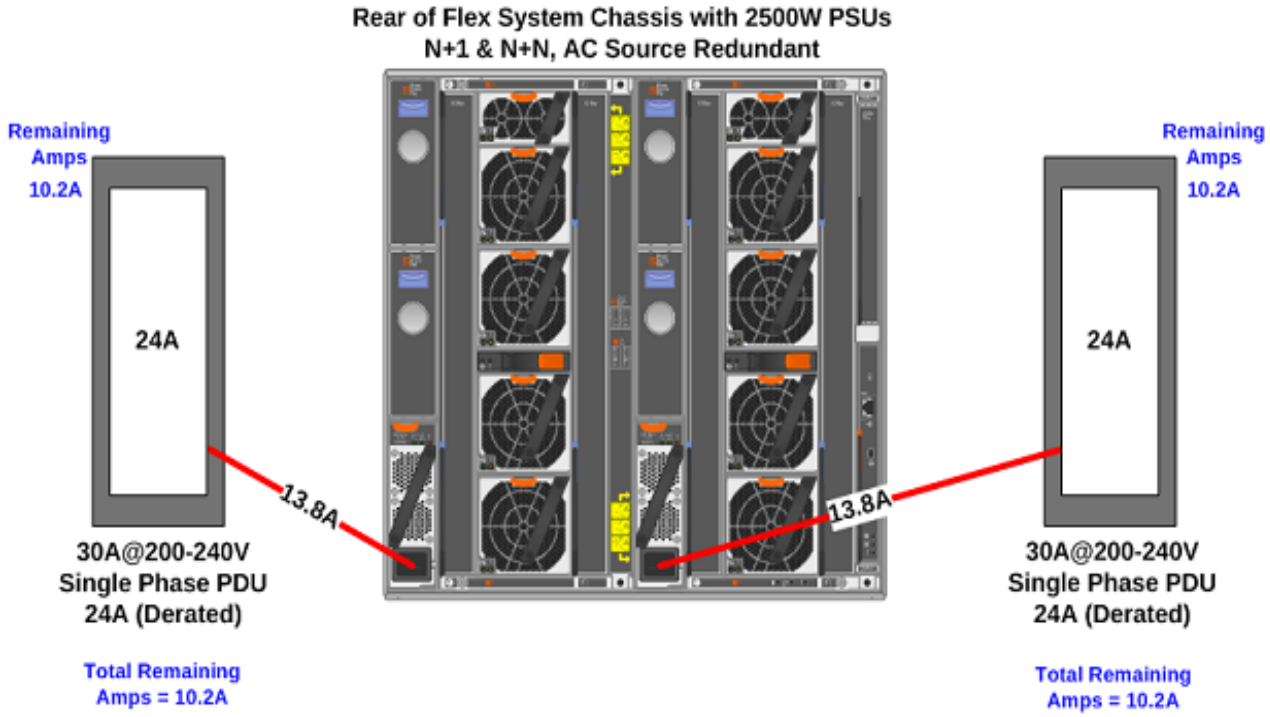


Figure 34: Rear of 1 x Flex Chassis - 30A@200-240V 1ph, N+1 & N+N AC Source Redundant

International 32A@380-415V – 3 Phase PDU Examples

3 Phase PDU – 32A@380-415V – 1 Chassis, 5 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 5 PSUs running on: 32A@380-415V 3 Phase PDUs. Each phase runs at 220-240V. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8939	6066	3 / C19 60 amp Front-end ½U Front End Basic PDU	40K9611
46M4143	5927	12 / C19 12 / C13 32A 3ph 0U PDU	Attached
71762NX	6504	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9611
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5905	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9611

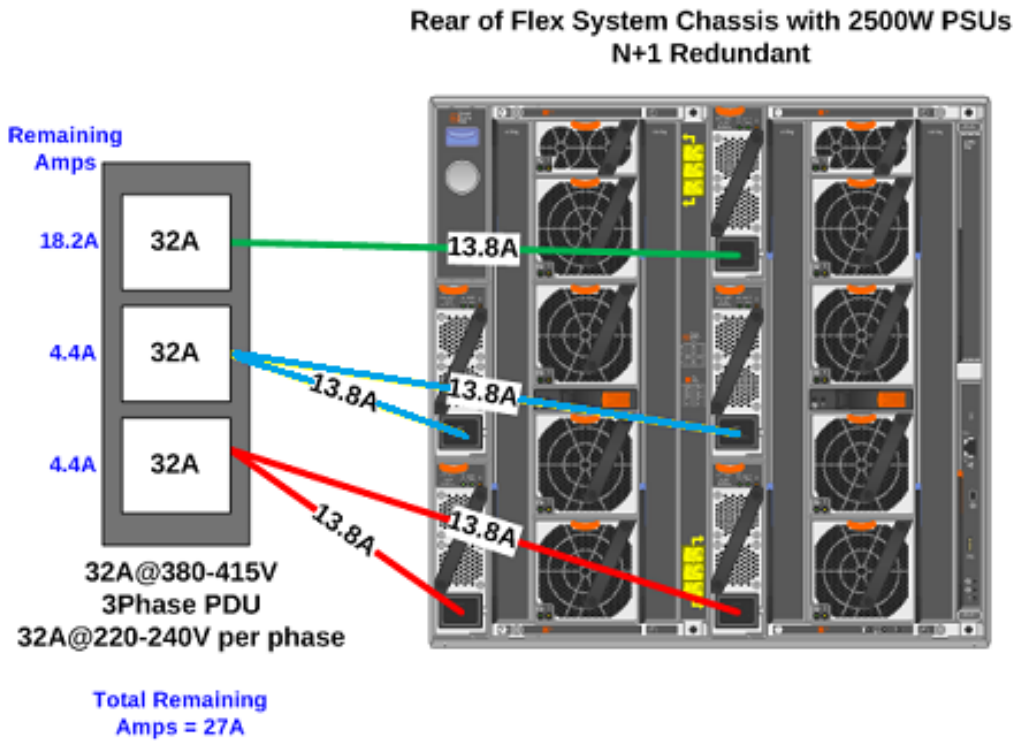


Figure 35: Rear of 1 x Flex Chassis - 32A@380-415V 3ph, N+1 Redundant

3 Phase PDU – 32A@380-415V – 1 Chassis, 4 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 4 PSUs running on: 32A@380-415V 3 Phase PDUs. Each phase runs at 220-240V. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8939	6066	3 / C19 60 amp Front-end ½U Front End Basic PDU	40K9611
46M4143	5927	12 / C19 12 / C13 32A 3ph 0U PDU	Attached
71762NX	6504	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9611
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5905	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9611

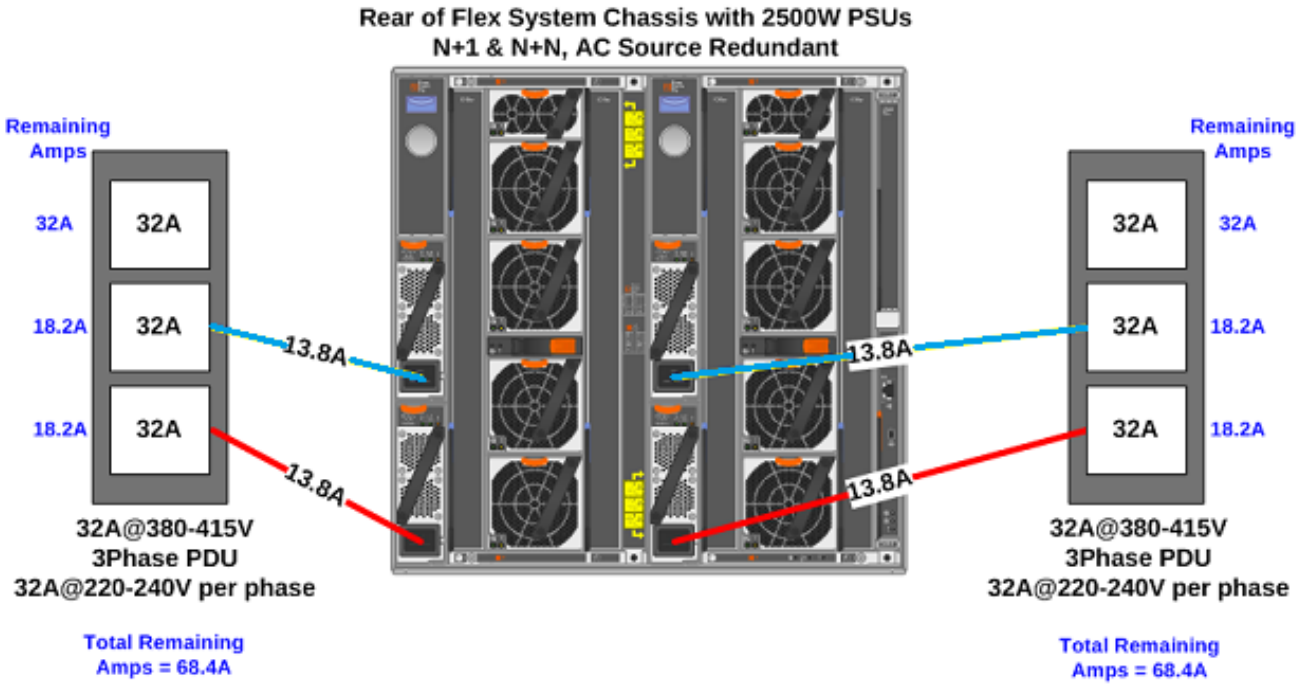


Figure 36: Rear of 1 x Flex Chassis - 32A@380-415V 3ph, N+1 & N+N AC Source Redundant

3 Phase PDU – 32A@380-415V – 1 Chassis, 2 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 2 PSUs running on: 32A@380-415V 3 Phase PDUs. Each phase runs at 220-240V. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8939	6066	3 / C19 60 amp Front-end ½U Front End Basic PDU	40K9611
46M4143	5927	12 / C19 12 / C13 32A 3ph 0U PDU	Attached
71762NX	6504	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9611
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5905	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9611

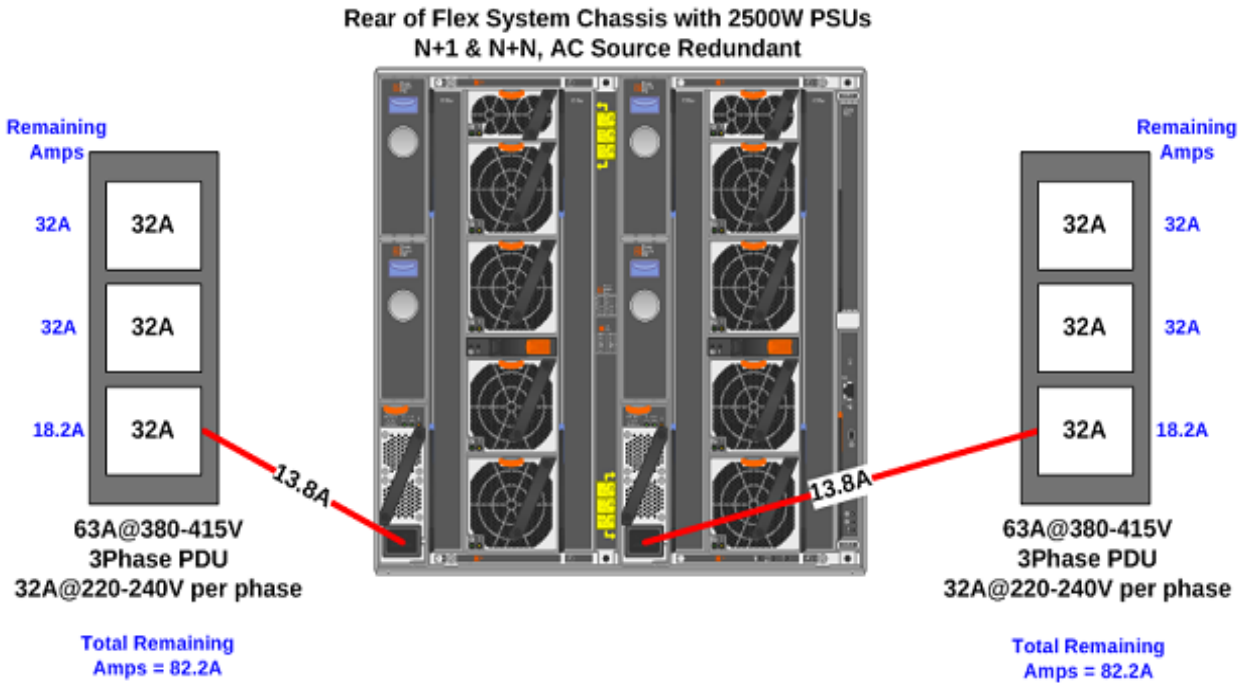


Figure 37: Rear of 1 x Flex Chassis - 32A@380-415V 3ph, N+1 & N+N AC Source Redundant

3 Phase PDU – 32A@380-415V – 2 Chassis, 6 PSUs

The following example is for 2 x Flex System Enterprise Chassis with 6 PSUs running on: 32A@380-415V 3 Phase PDUs. Each phase runs at 220-240V. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8939	6066	3 / C19 60 amp Front-end ½U Front End Basic PDU	40K9611
46M4143	5927	12 / C19 12 / C13 32A 3ph 0U PDU	Attached
71762NX	6504	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9611
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5905	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9611

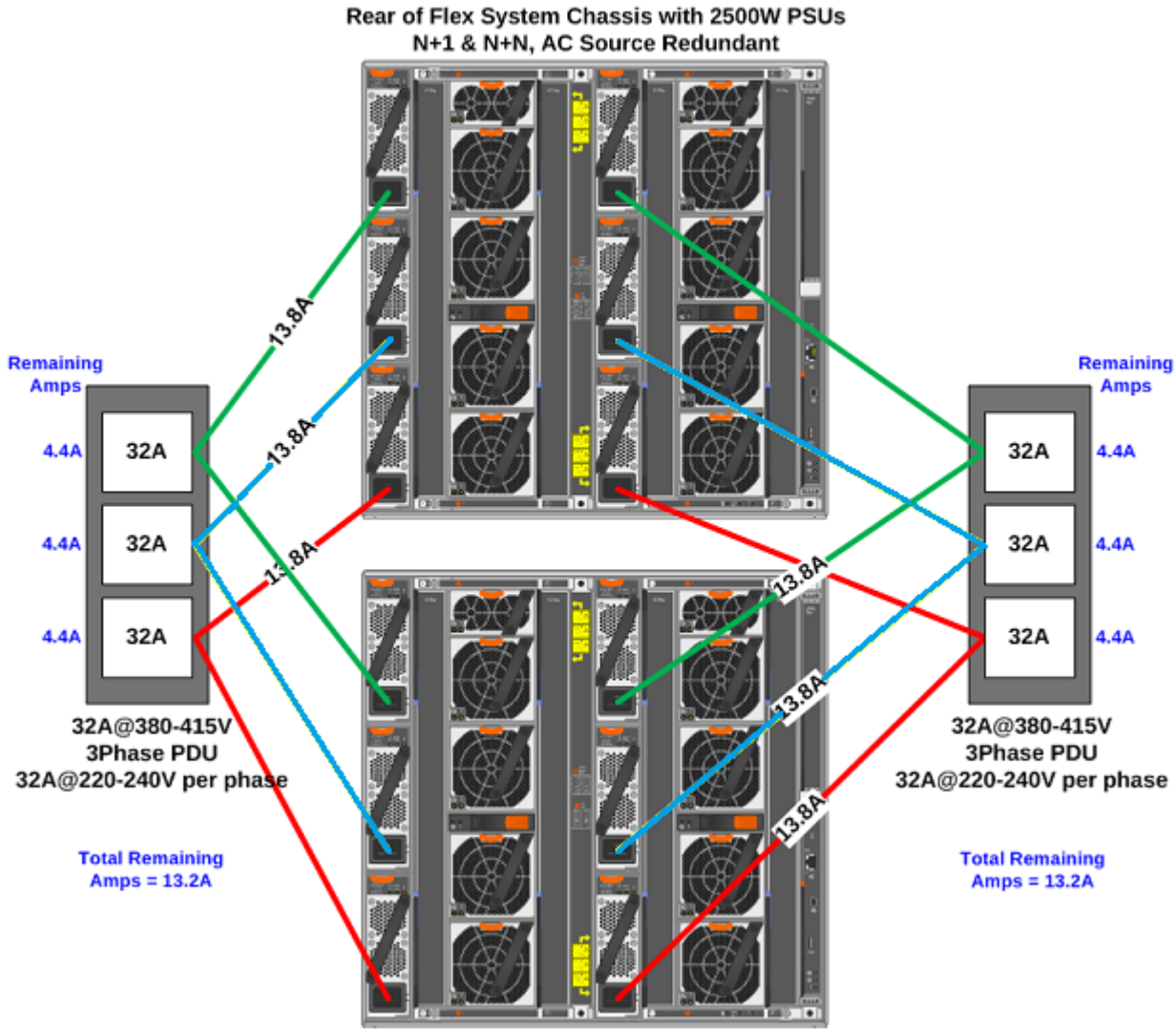


Figure 38: Rear of 2 x Flex Chassis - 32A@380-415V 3ph, N+1 & N+N AC Source Redundant

3Phase PDU – 32A@380-415V – 2 Chassis, 3 PSUs

The following example is for 2 x Flex System Enterprise Chassis with 3 PSUs running on: 32A@380-415V 3 Phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8939	6066	3 / C19 60 amp Front-end ½U Front End Basic PDU	40K9611
46M4143	5927	12 / C19 12 / C13 32A 3ph 0U PDU	Attached
71762NX	6504	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9611
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5905	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9611

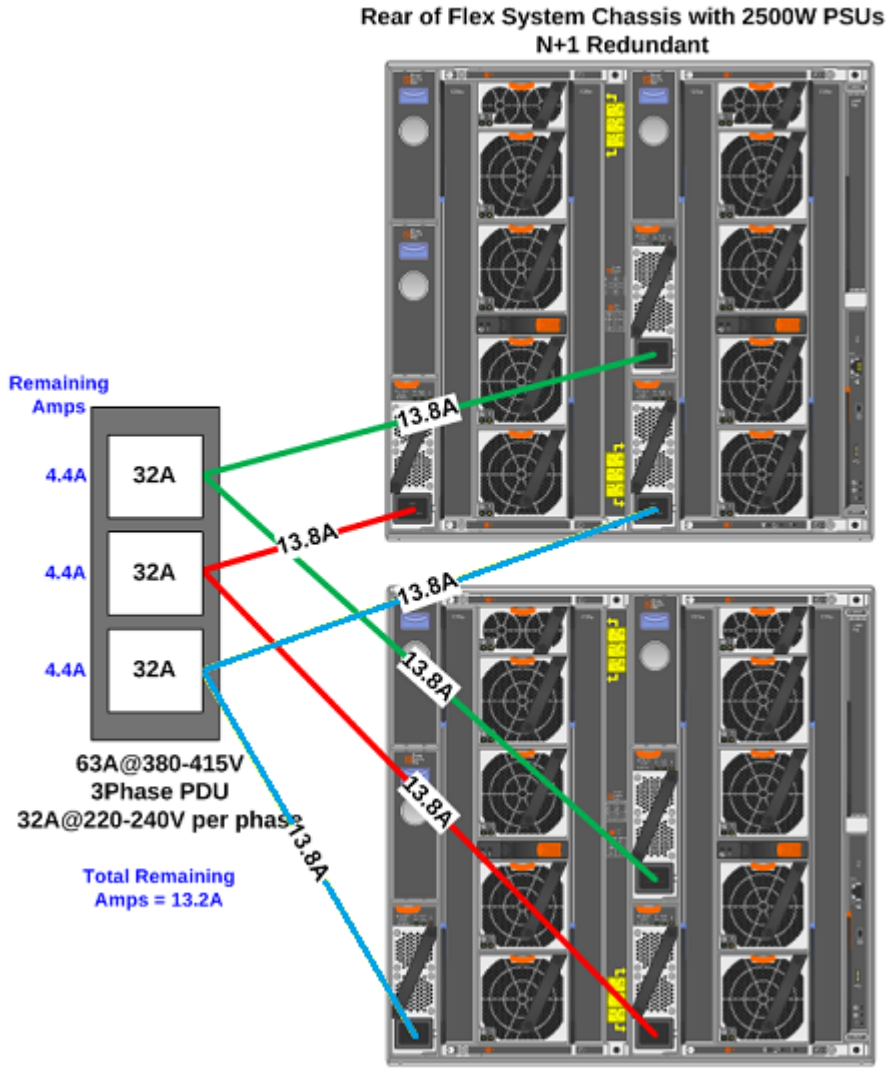


Figure 39: Rear of 2 x Flex Chassis - 32A@380-415V 3ph, N+1 Redundant

3 Phase PDU – 32A@380-415V – 3 Chassis, 4 PSUs

The following example is for 3 x Flex System Enterprise Chassis with 4 PSUs running on: 32A@380-415V 3 Phase PDUs. Each phase runs at 220-240V. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8939	6066	3 / C19 60 amp Front-end ½U Front End Basic PDU	40K9611
46M4143	5927	12 / C19 12 / C13 32A 3ph 0U PDU	Attached
71762NX	6504	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9611
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5905	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9611

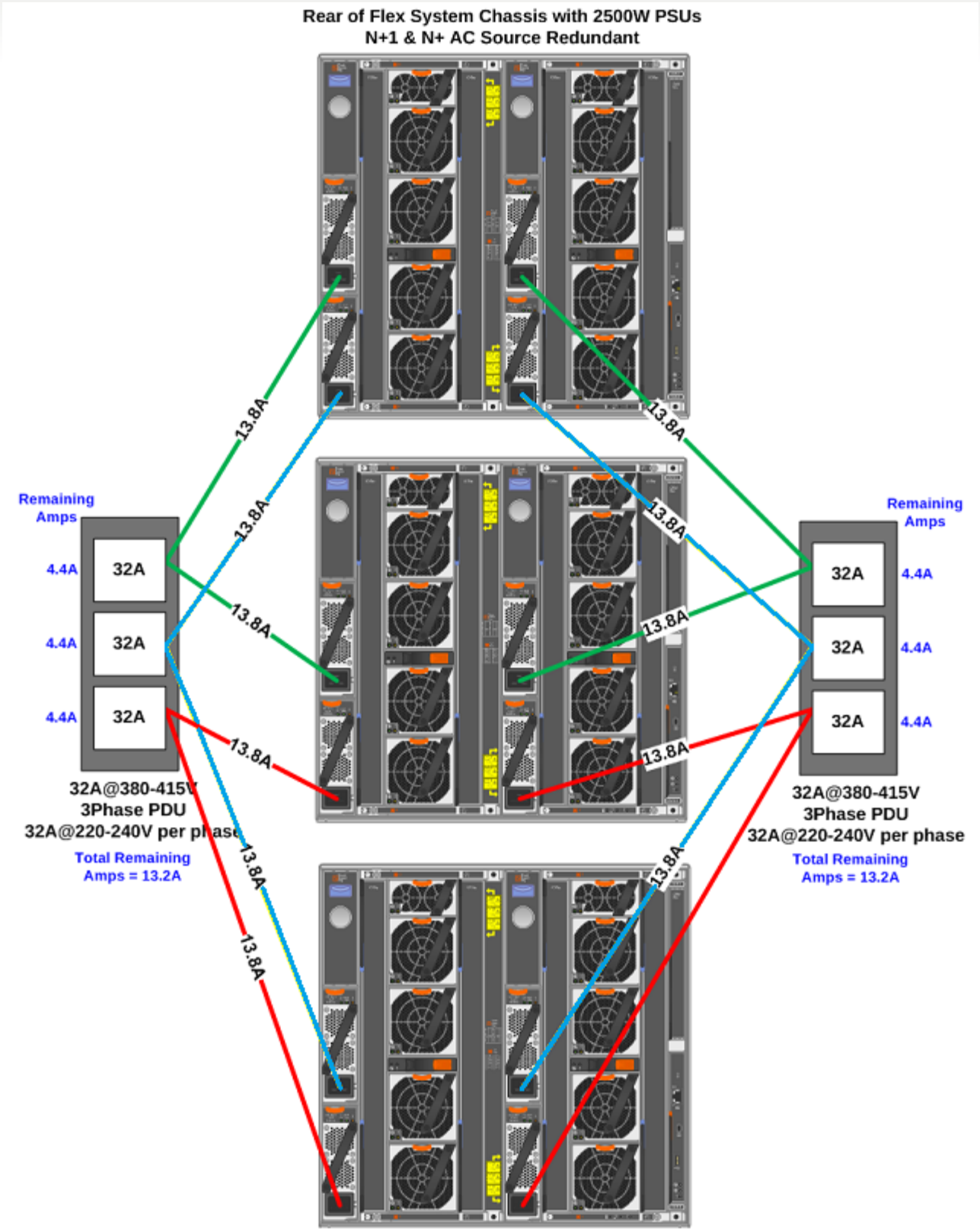


Figure 40: Rear of 3 x Flex Chassis - 32A@380-415V 3ph, N+1 & N+N AC Source Redundant

International 16A@380-415V – 3 Phase PDU Examples

3 Phase PDU – 16A@380-415V – 1 Chassis, 6 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 6 PSUs running on: 16A@380-415V 3 Phase PDUs. Each phase runs at 220-240V. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8948	A3T3	6 /C19 DPI Single Phase C19 Enterprise 1U PDU	47C2495
71762NX	A3TC	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU	47C2495
46M4002	A3T4	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	47C2495

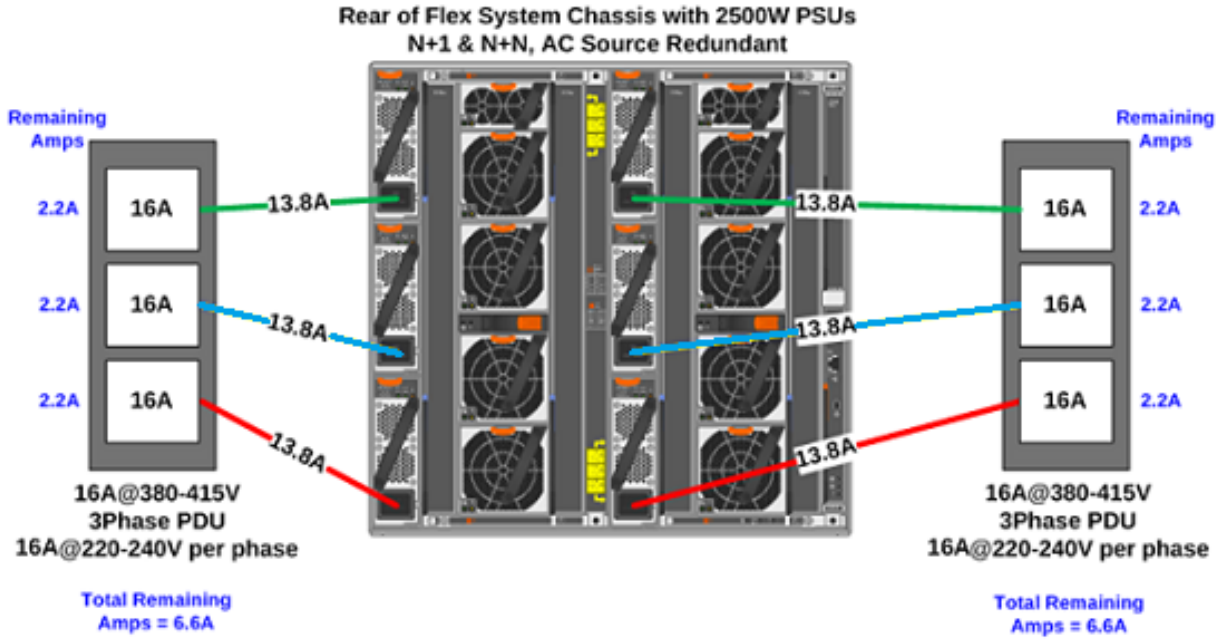


Figure 41: Rear of 1 x Flex Chassis - 16A@380-415V 3ph, N+1 & N+N AC Source Redundant

3 Phase PDU – 16A@380-415V – 1 Chassis, 5 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 5 PSUs running on: 16A@380-415V 3 Phase PDUs. Each phase runs at 220-240V. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8948	A3T3	6 /C19 DPI Single Phase C19 Enterprise 1U PDU	47C2495
71762NX	A3TC	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU	47C2495
46M4002	A3T4	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	47C2495

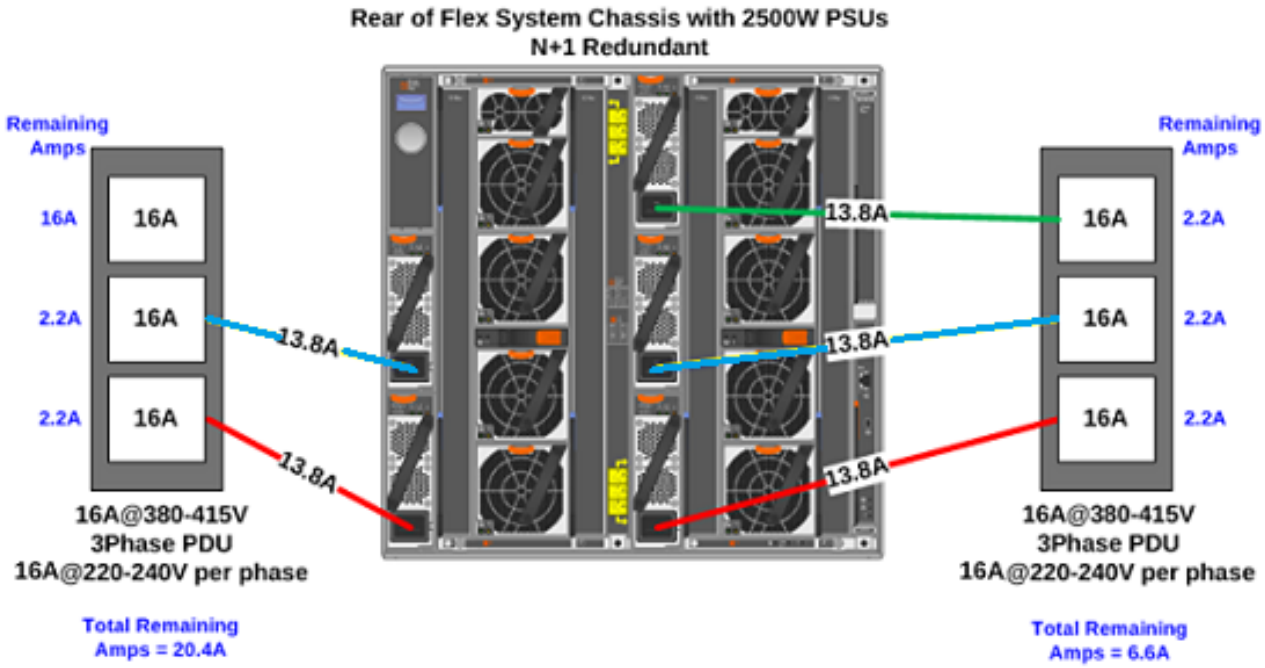


Figure 42: Rear of 1 x Flex Chassis - 16A@380-415V 3ph, N+1 Redundant

3 Phase PDU – 16A@380-415V – 1 Chassis, 4 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 4 PSUs running on: 16A@380-415V 3 Phase PDUs. Each phase runs at 220-240V. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8948	A3T3	6 /C19 DPI Single Phase C19 Enterprise 1U PDU	47C2495
71762NX	A3TC	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU	47C2495
46M4002	A3T4	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	47C2495

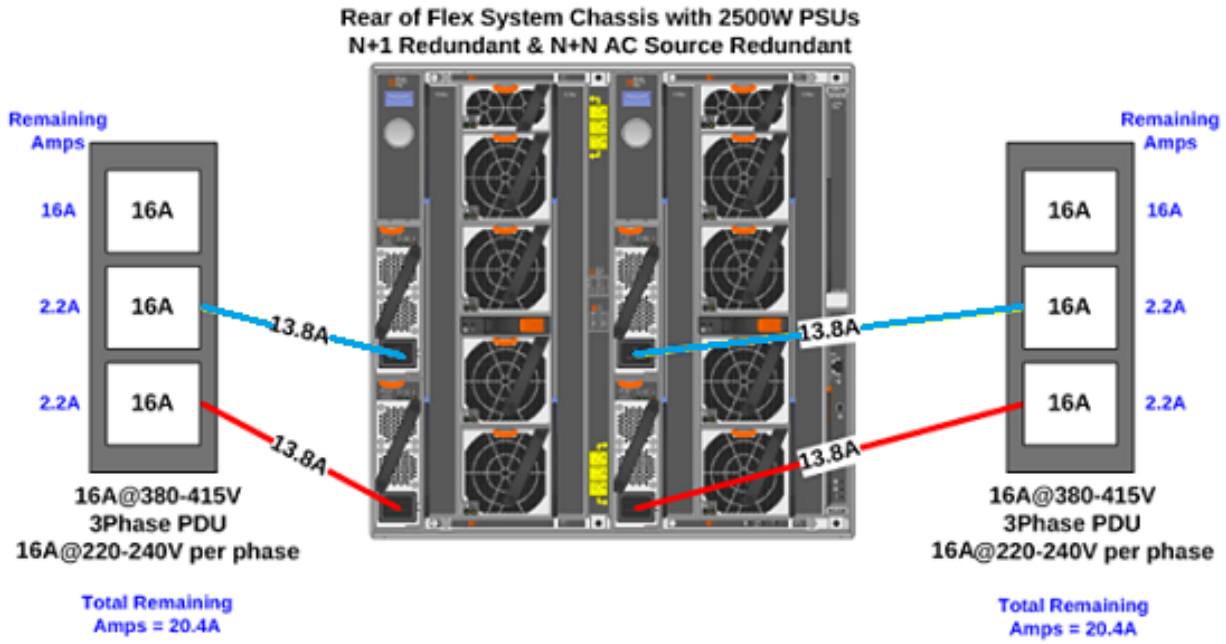


Figure 43: Rear of 1 x Flex Chassis - 16A@380-415V 3ph, N+1 & N+N AC Source Redundant

3 Phase PDU – 16A@380-415V – 1 Chassis, 3 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 3 PSUs running on: 16A@380-415V 3 Phase PDUs. Each phase runs at 220-240V. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8948	A3T3	6 /C19 DPI Single Phase C19 Enterprise 1U PDU	47C2495
71762NX	A3TC	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU	47C2495
46M4002	A3T4	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	47C2495

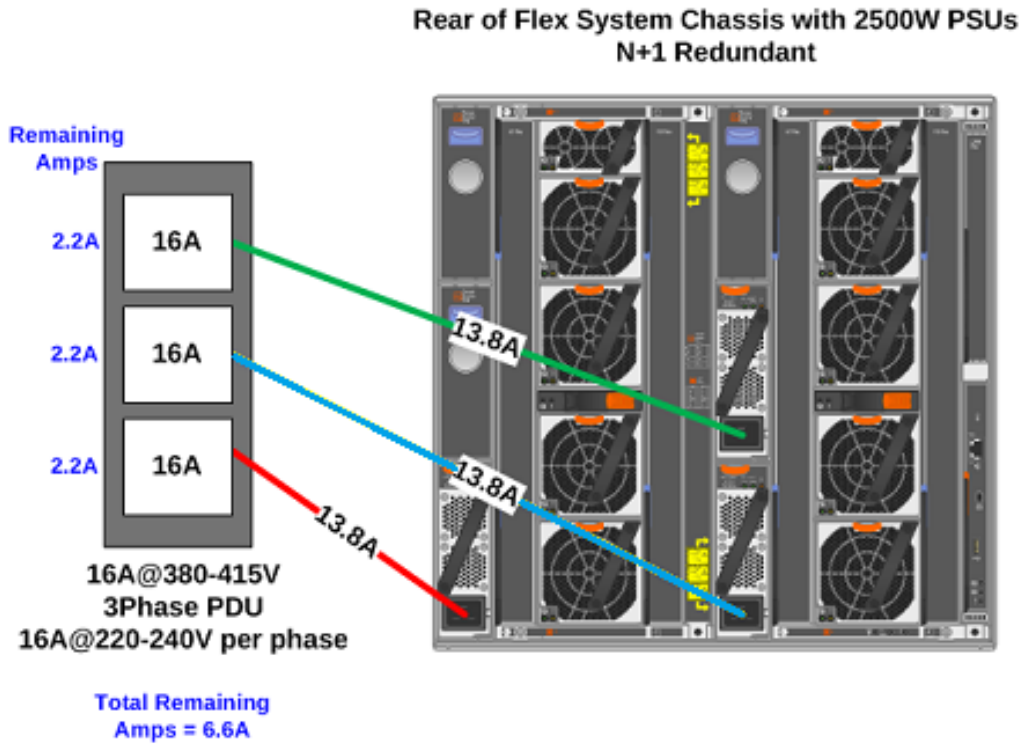


Figure 44: Rear of 1 x Flex Chassis - 16A@380-415V 3ph, N+1 Redundant

3 Phase PDU – 16A@380-415V – 1 Chassis, 2 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 2 PSUs running on: 16A@380-415V 3 Phase PDUs. Each phase runs at 220-240V. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8948	A3T3	6 /C19 DPI Single Phase C19 Enterprise 1U PDU	47C2495
71762NX	A3TC	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU	47C2495
46M4002	A3T4	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	47C2495

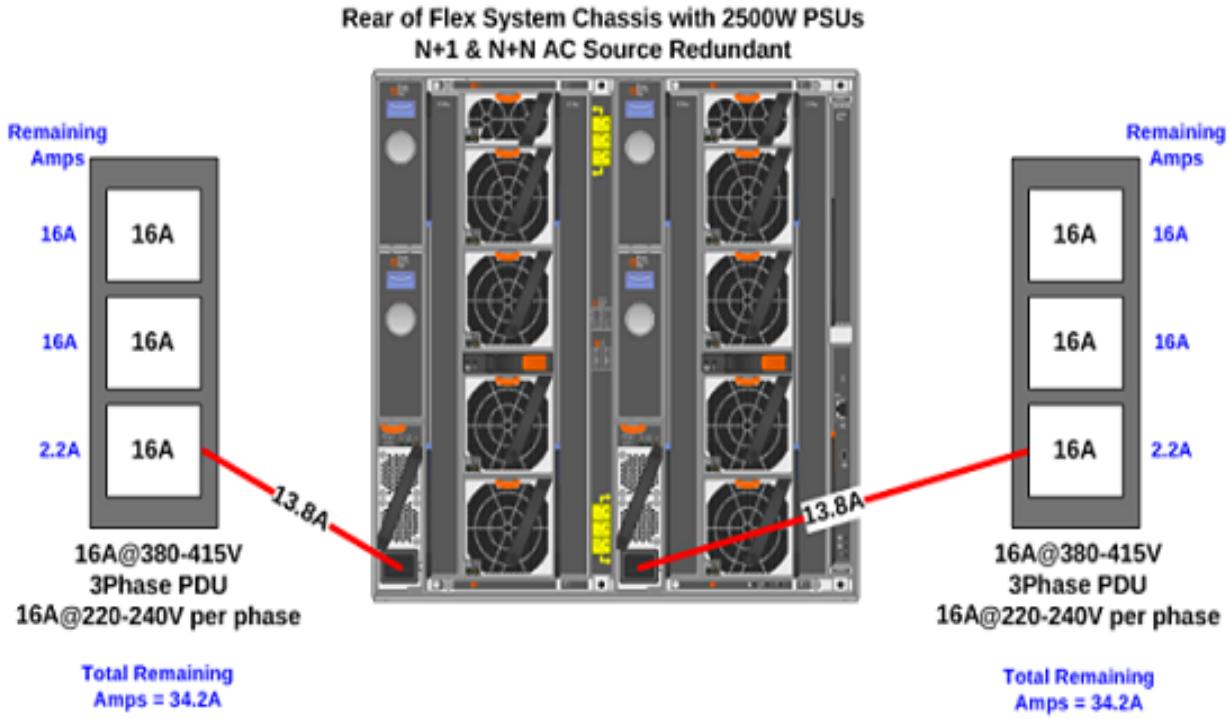


Figure 45: Rear of 1 x Flex Chassis - 16A@380-415V 3ph, N+1 & N+N AC Source Redundant

3 Phase PDU – 16A@380-415V – 3 Chassis, 4 PSUs

The following example is for 3 x Flex System Enterprise Chassis with 4 PSUs running on: 16A@380-415V 3 Phase PDUs. Each phase runs at 220-240V. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8948	A3T3	6 /C19 DPI Single Phase C19 Enterprise 1U PDU	47C2495
71762NX	A3TC	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU	47C2495
46M4002	A3T4	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	47C2495

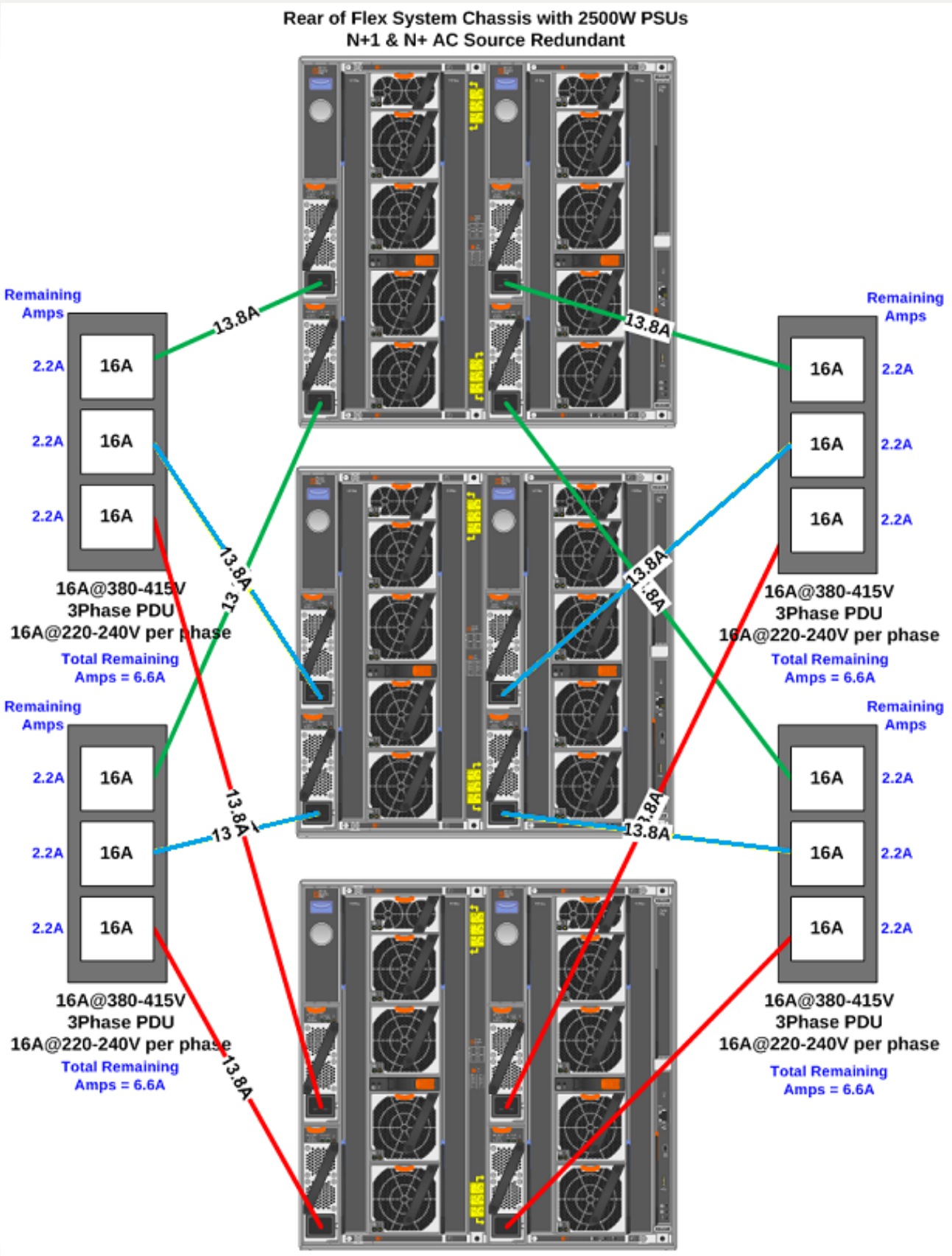


Figure 46: Rear of 3 x Flex Chassis - 16A@380-415V 3ph, N+1 & N+N AC Source Redundant

International 63A@220-240V – Single Phase PDU Examples

Single Phase PDU – 63A@220-240V – 1 Chassis, 6 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 6 PSUs running on: 63A@220-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8935	A11W	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6065	6 / C19 Enterprise Basic PDU	40K9613
71762NX	6503	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9613
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5904	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9613

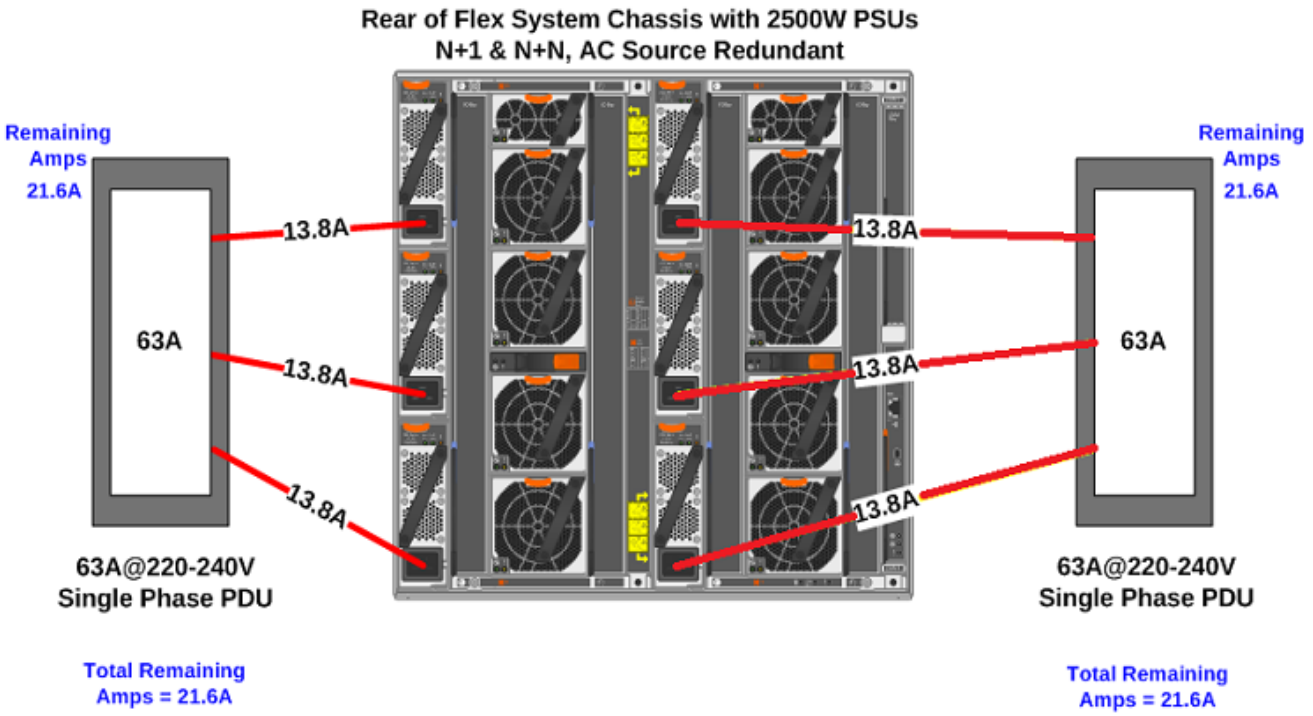


Figure 47: Rear of 1 x Flex Chassis - 16A@380-415V 3ph, N+1 & N+N AC Source Redundant

Single Phase PDU – 63A@220-240V – 1 Chassis, 5 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 5 PSUs running on: 63A@220-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8935	A11W	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6065	6 / C19 Enterprise Basic PDU	40K9613
71762NX	6503	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9613
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5904	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9613

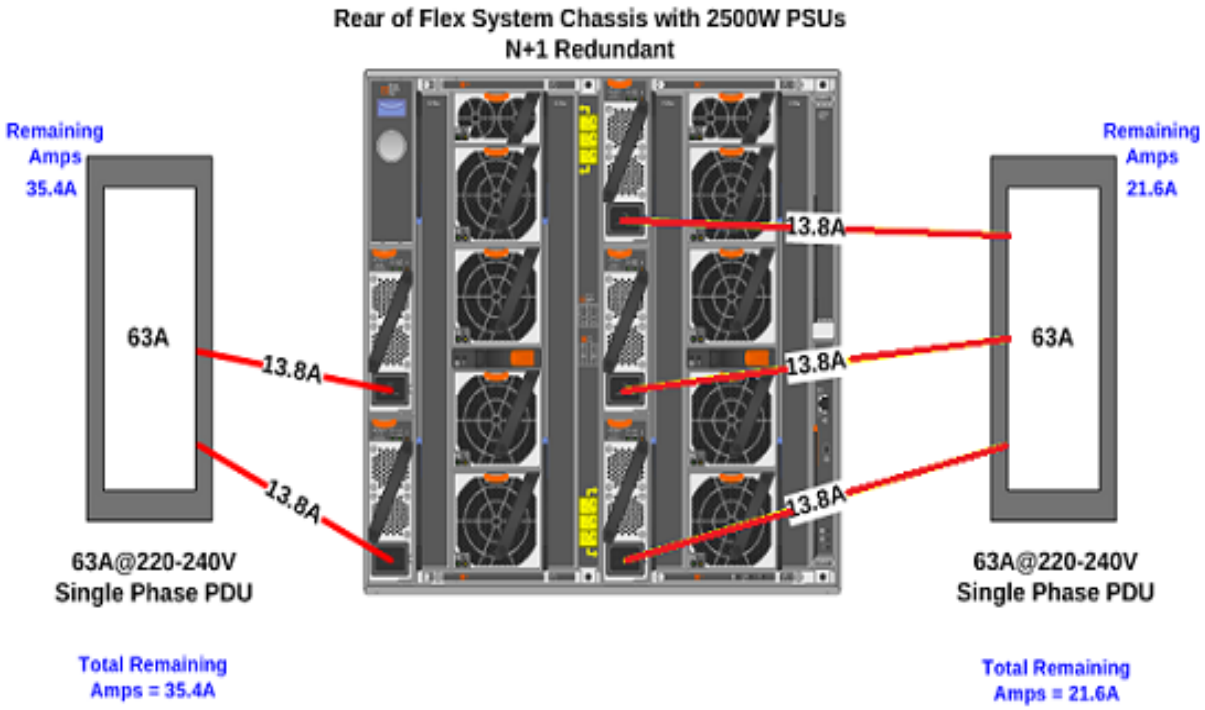


Figure 48: Rear of 1 x Flex Chassis – 63A@220-240V 1ph, N+1 Redundant

Single Phase PDU – 63A@220-240V – 1 Chassis, 4 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 4 PSUs running on: 63A@220-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8935	A11W	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6065	6 / C19 Enterprise Basic PDU	40K9613
71762NX	6503	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9613
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5904	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9613

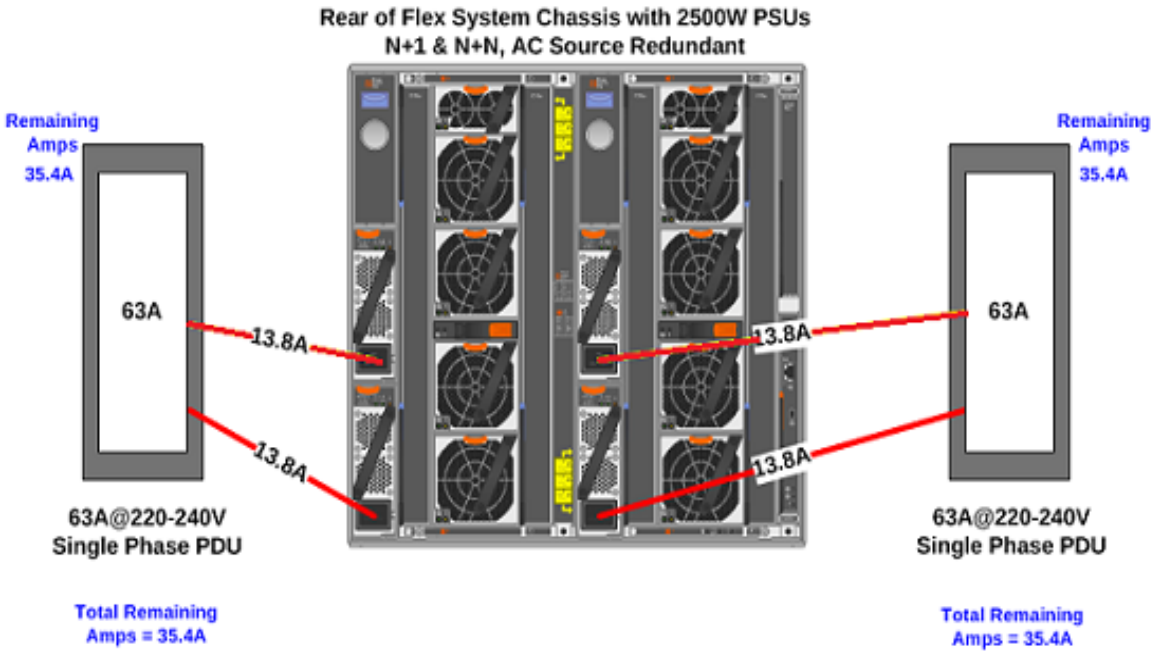


Figure 49: Rear of 1 x Flex Chassis – 63A@220-240V 1ph, N+1 & N+N AC Source Redundant

Single Phase PDU – 63A@220-240V – 1 Chassis, 3 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 3 PSUs running on: 63A@220-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8935	A11W	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6065	6 / C19 Enterprise Basic PDU	40K9613
71762NX	6503	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9613
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5904	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9613

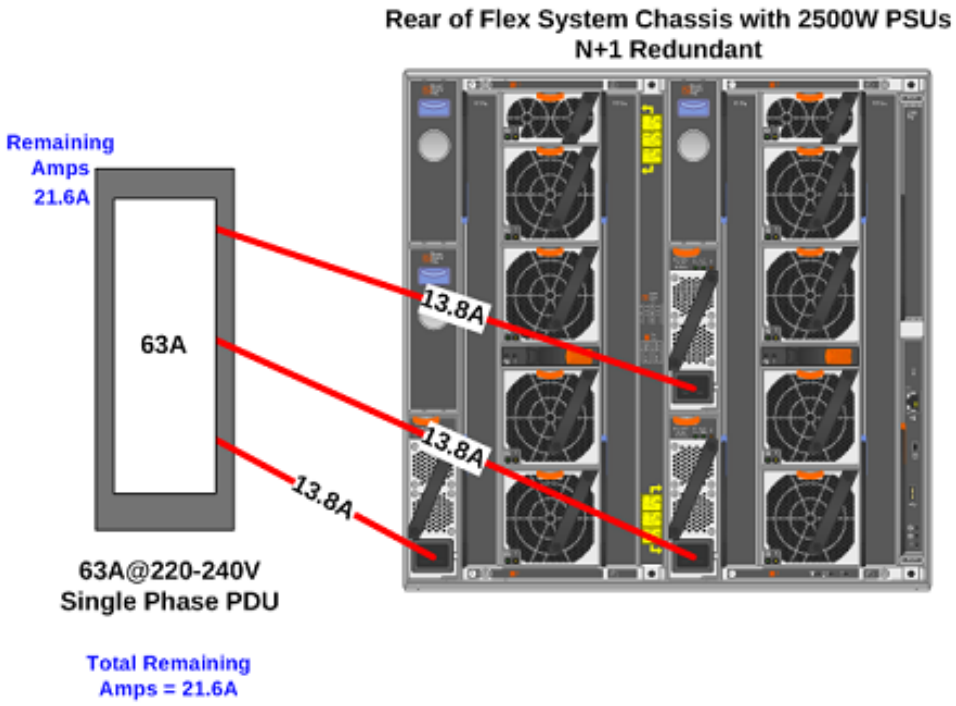


Figure 50: Rear of 1 x Flex Chassis – 63A@220-240V 1ph, N+1 Redundant

Single Phase PDU – 63A@220-240V – 1 Chassis, 2 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 2 PSUs running on: 63A@220-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8935	A11W	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6065	6 / C19 Enterprise Basic PDU	40K9613
71762NX	6503	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9613
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5904	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9613

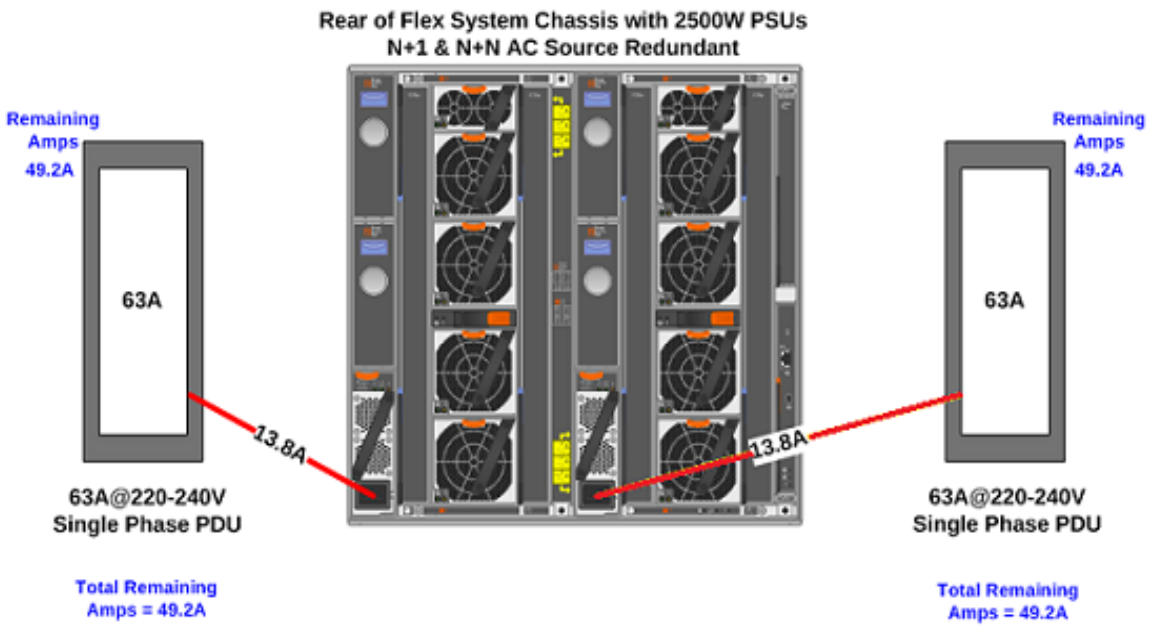


Figure 51: Rear of 1 x Flex Chassis – 63A@220-240V 1ph, N+1 & N+N AC Source Redundant

Single Phase PDU – 63A@220-240V – 2 Chassis, 4 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 5 PSUs running on: 63A@220-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8935	A11W	3 / C19 60 amp Front-end ½ U Front End Basic PDU	Included
39Y8948	6065	6 / C19 Enterprise Basic PDU	40K9613
71762NX	6503	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9613
46M4137	5932	12 / C19 12 / C13 Switched & Monitored 0U PDU	Attached
46M4002	5904	9 / C19 / 3 / C13 Switched & Monitored 1U PDU	40K9613

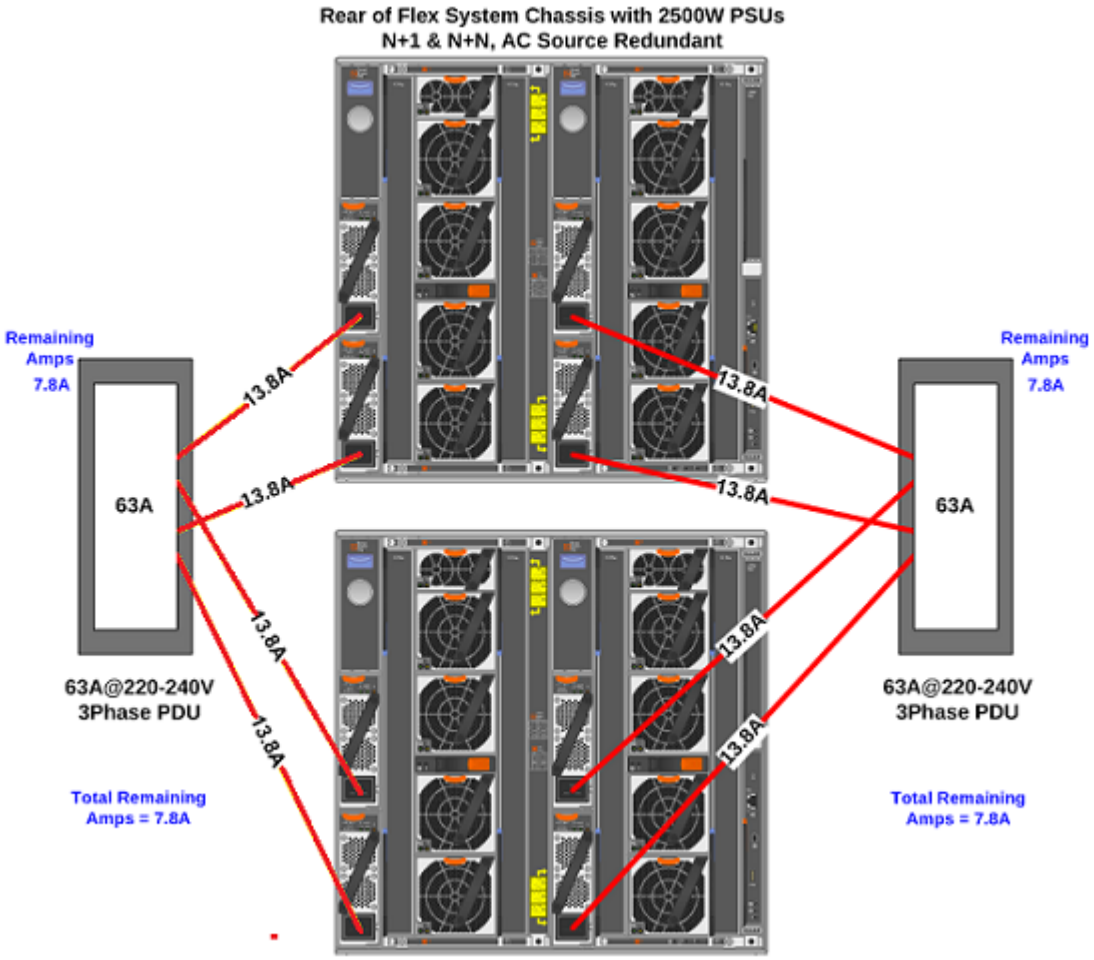


Figure 52: Rear of 2 x Flex Chassis – 63A@220-240V 1ph, N+1 & N+N AC Source Redundant

International 32A@220-240V – Single Phase PDU Examples

Single Phase PDU – 32A@220-240V – 1 Chassis, 6 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 6 PSUs running on: 63A@220-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8934	A11V	3 / C19 DPI 32 amp Front-end ½U PDU	Attached 32A IEC 309 P+N+G
39Y8936	A11Y	3 / C19 Front-end Basic ½U PDU	Attached 30A KSC 8305
39Y8937	A11X	3 / C19 Front-end Basic ½U PDU	Attached 32A AUS/NZ 3112
39Y8948	6064	6 / C19 DPI Enterprise Basic 1U PDU	40K9612 (IEC 309 P+N+G)
39Y8948	6067	6 / C19 DPI Enterprise Basic 1U PDU	40K9617 (AUS/NZ 3112 32A)
39Y8948	6068	6 / C19 DPI Enterprise Basic 1U PDU	40K9618 (KSC 8305 30A)
71762NX	6502	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9612 (IEC 309 P+N+G)
71762NX	6505	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9617 (AUS/NZ 3112 32A)
71762NX	6506	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9618 (KSC 8305 30A)
46M4002	5903	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9612 (IEC 309 P+N+G)
46M4002	5906	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9617 (AUS/NZ 3112 32A)
46M4002	5907	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9618 (KSC 8305 30A)

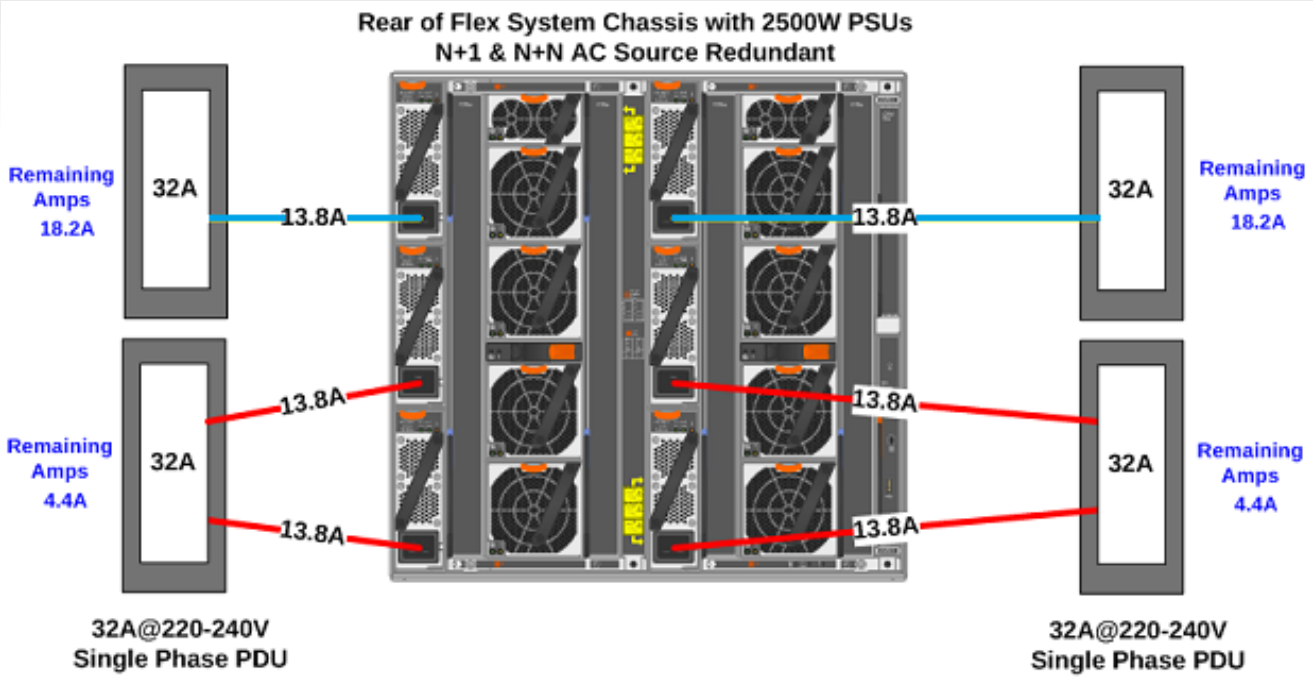


Figure 53: Rear of 1 x Flex Chassis – 32A@220-240V 1ph, N+1 & N+N AC Source Redundant

Single Phase PDU – 32A@220-240V – 1 Chassis, 5 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 5 PSUs running on: 63A@220-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8934	A11V	3 / C19 DPI 32 amp Front-end ½U PDU	Attached 32A IEC 309 P+N+G
39Y8936	A11Y	3 / C19 Front-end Basic ½U PDU	Attached 30A KSC 8305
39Y8937	A11X	3 / C19 Front-end Basic ½U PDU	Attached 32A AUS/NZ 3112
39Y8948	6064	6 / C19 DPI Enterprise Basic 1U PDU	40K9612 (IEC 309 P+N+G)
39Y8948	6067	6 / C19 DPI Enterprise Basic 1U PDU	40K9617 (AUS/NZ 3112 32A)
39Y8948	6068	6 / C19 DPI Enterprise Basic 1U PDU	40K9618 (KSC 8305 30A)
71762NX	6502	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9612 (IEC 309 P+N+G)
71762NX	6505	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9617 (AUS/NZ 3112 32A)
71762NX	6506	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9618 (KSC 8305 30A)
46M4002	5903	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9612 (IEC 309 P+N+G)
46M4002	5906	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9617 (AUS/NZ 3112 32A)
46M4002	5907	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9618 (KSC 8305 30A)

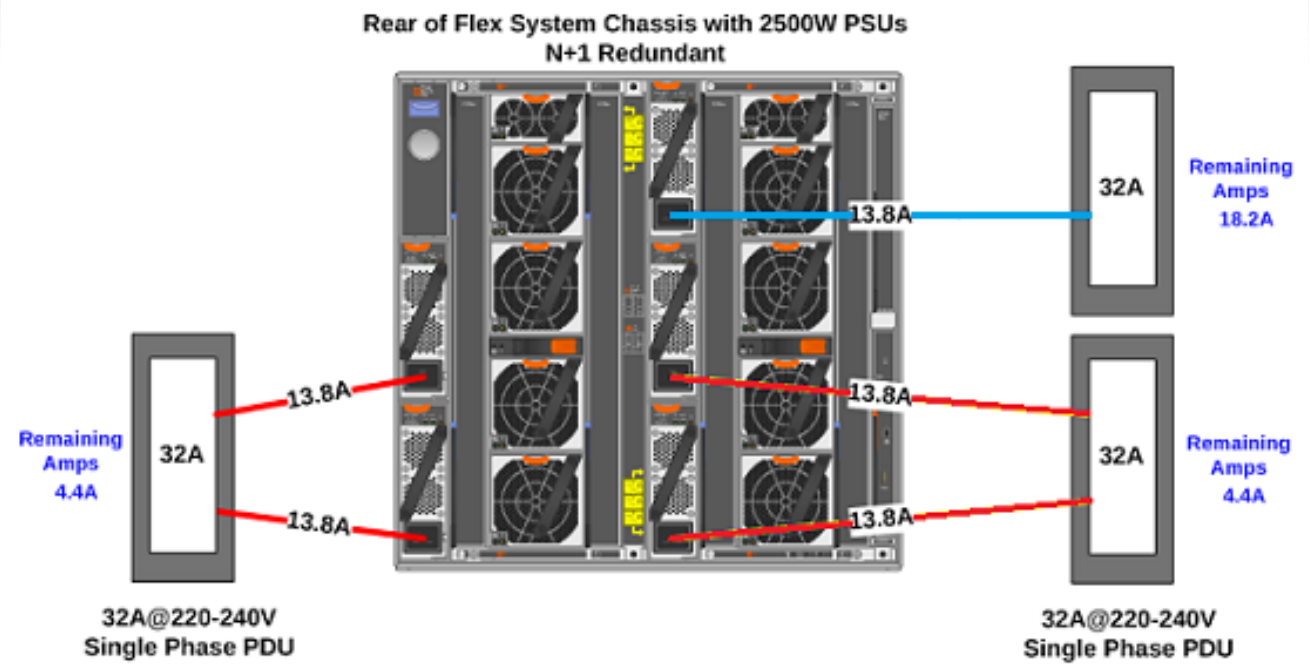


Figure 54: Rear of 1 x Flex Chassis – 32A@220-240V 1ph, N+1 Redundant

Single Phase PDU – 32A@220-240V – 1 Chassis, 4 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 4 PSUs running on: 63A@220-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8934	A11V	3 / C19 DPI 32 amp Front-end ½U PDU	Attached 32A IEC 309 P+N+G
39Y8936	A11Y	3 / C19 Front-end Basic ½U PDU	Attached 30A KSC 8305
39Y8937	A11X	3 / C19 Front-end Basic ½U PDU	Attached 32A AUS/NZ 3112
39Y8948	6064	6 / C19 DPI Enterprise Basic 1U PDU	40K9612 (IEC 309 P+N+G)
39Y8948	6067	6 / C19 DPI Enterprise Basic 1U PDU	40K9617 (AUS/NZ 3112 32A)
39Y8948	6068	6 / C19 DPI Enterprise Basic 1U PDU	40K9618 (KSC 8305 30A)
71762NX	6502	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9612 (IEC 309 P+N+G)
71762NX	6505	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9617 (AUS/NZ 3112 32A)
71762NX	6506	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9618 (KSC 8305 30A)
46M4002	5903	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9612 (IEC 309 P+N+G)
46M4002	5906	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9617 (AUS/NZ 3112 32A)
46M4002	5907	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9618 (KSC 8305 30A)

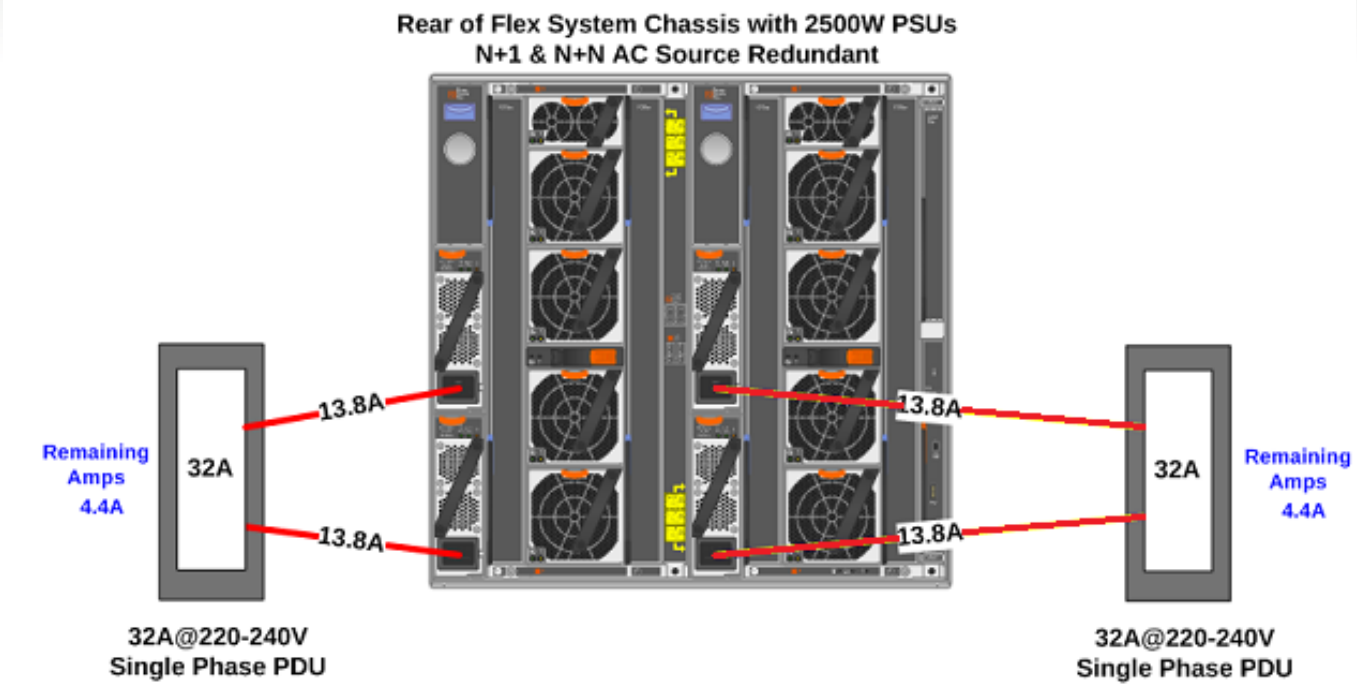


Figure 55: Rear of 1 x Flex Chassis – 32A@220-240V 1ph, N+1 & N+N AC Source Redundant

Single Phase PDU – 32A@220-240V – 1 Chassis, 3 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 3 PSUs running on: 63A@220-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8934	A11V	3 / C19 DPI 32 amp Front-end ½U PDU	Attached 32A IEC 309 P+N+G
39Y8936	A11Y	3 / C19 Front-end Basic ½U PDU	Attached 30A KSC 8305
39Y8937	A11X	3 / C19 Front-end Basic ½U PDU	Attached 32A AUS/NZ 3112
39Y8948	6064	6 / C19 DPI Enterprise Basic 1U PDU	40K9612 (IEC 309 P+N+G)
39Y8948	6067	6 / C19 DPI Enterprise Basic 1U PDU	40K9617 (AUS/NZ 3112 32A)
39Y8948	6068	6 / C19 DPI Enterprise Basic 1U PDU	40K9618 (KSC 8305 30A)
71762NX	6502	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9612 (IEC 309 P+N+G)
71762NX	6505	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9617 (AUS/NZ 3112 32A)
71762NX	6506	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9618 (KSC 8305 30A)
46M4002	5903	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9612 (IEC 309 P+N+G)
46M4002	5906	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9617 (AUS/NZ 3112 32A)
46M4002	5907	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9618 (KSC 8305 30A)

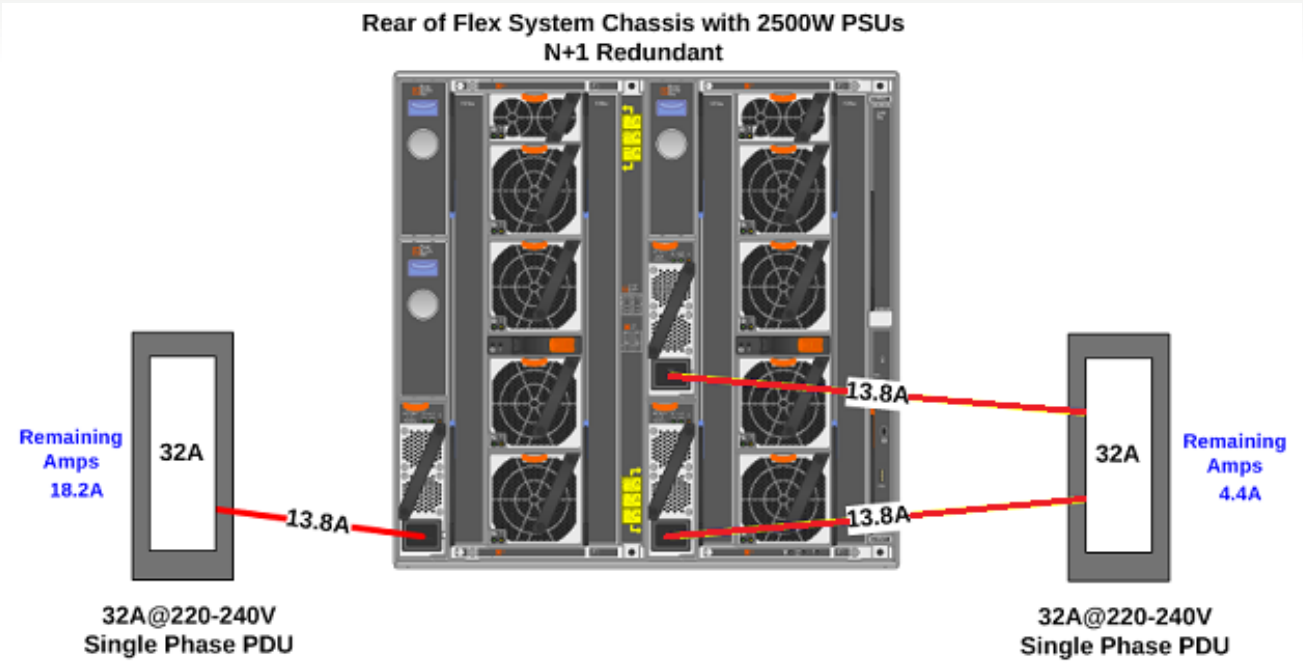


Figure 56: Rear of 1 x Flex Chassis – 32A@220-240V 1ph, N+1 Redundant

Single Phase PDU – 32A@220-240V – 1 Chassis, 2 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 3 PSUs running on: 63A@220-240V 1phase PDUs. The following examples can use the below PDUs:

Part Number	FC	PDU Description	Line Cord
System X			
39Y8934	A11V	3 / C19 DPI 32 amp Front-end ½U PDU	Attached 32A IEC 309 P+N+G
39Y8936	A11Y	3 / C19 Front-end Basic ½U PDU	Attached 30A KSC 8305
39Y8937	A11X	3 / C19 Front-end Basic ½U PDU	Attached 32A AUS/NZ 3112
39Y8948	6064	6 / C19 DPI Enterprise Basic 1U PDU	40K9612 (IEC 309 P+N+G)
39Y8948	6067	6 / C19 DPI Enterprise Basic 1U PDU	40K9617 (AUS/NZ 3112 32A)
39Y8948	6068	6 / C19 DPI Enterprise Basic 1U PDU	40K9618 (KSC 8305 30A)
71762NX	6502	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9612 (IEC 309 P+N+G)
71762NX	6505	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9617 (AUS/NZ 3112 32A)
71762NX	6506	9 / C19 3 / C13 Ultra Density Enterprise 1U PDU C19 PDU	40K9618 (KSC 8305 30A)
46M4002	5903	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9612 (IEC 309 P+N+G)
46M4002	5906	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9617 (AUS/NZ 3112 32A)
46M4002	5907	9 / C19 3 / C13 Active Energy Manager (AEM) 1U DPI PDU	40K9618 (KSC 8305 30A)

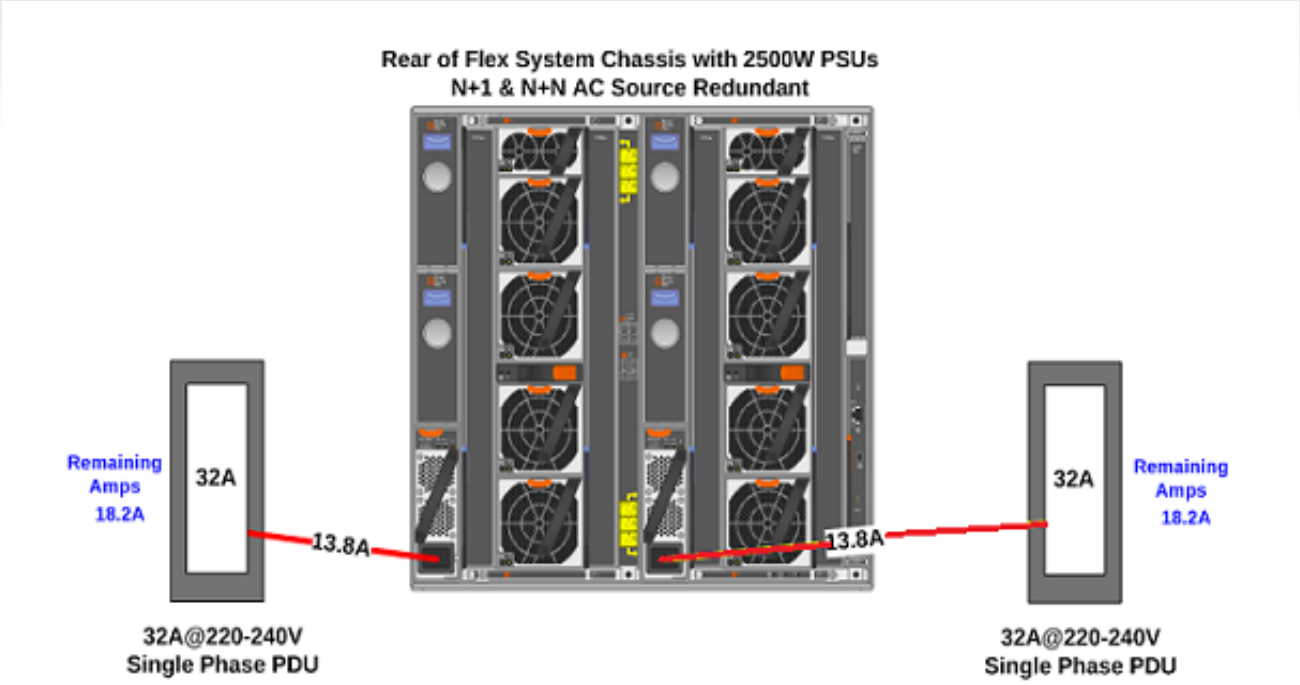


Figure 57: Rear of 1 x Flex Chassis – 32A@220-240V 1ph, N+1 & N+N AC Source Redundant

International HVDC 90A@240-380V – Single Phase PDU Examples

Note: The PSU to PDU line cord for the HVDC PSU in the Flex System Enterprise Chassis ships standard with the PSU.

Single Phase HVDC PDU – 90A@240-380 dc V – 1 Chassis, 6 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 6 PSUs running on: 90A@240-238 dc V 1phase PDUs. The following example can use the below PDU:

Part Number	FC	PDU Description	Line Cord
System X			
44T0966	A11V	1U Higher Voltage (HV) DC PDU	Attached 4.3m (14.1ft) pig-tail termination

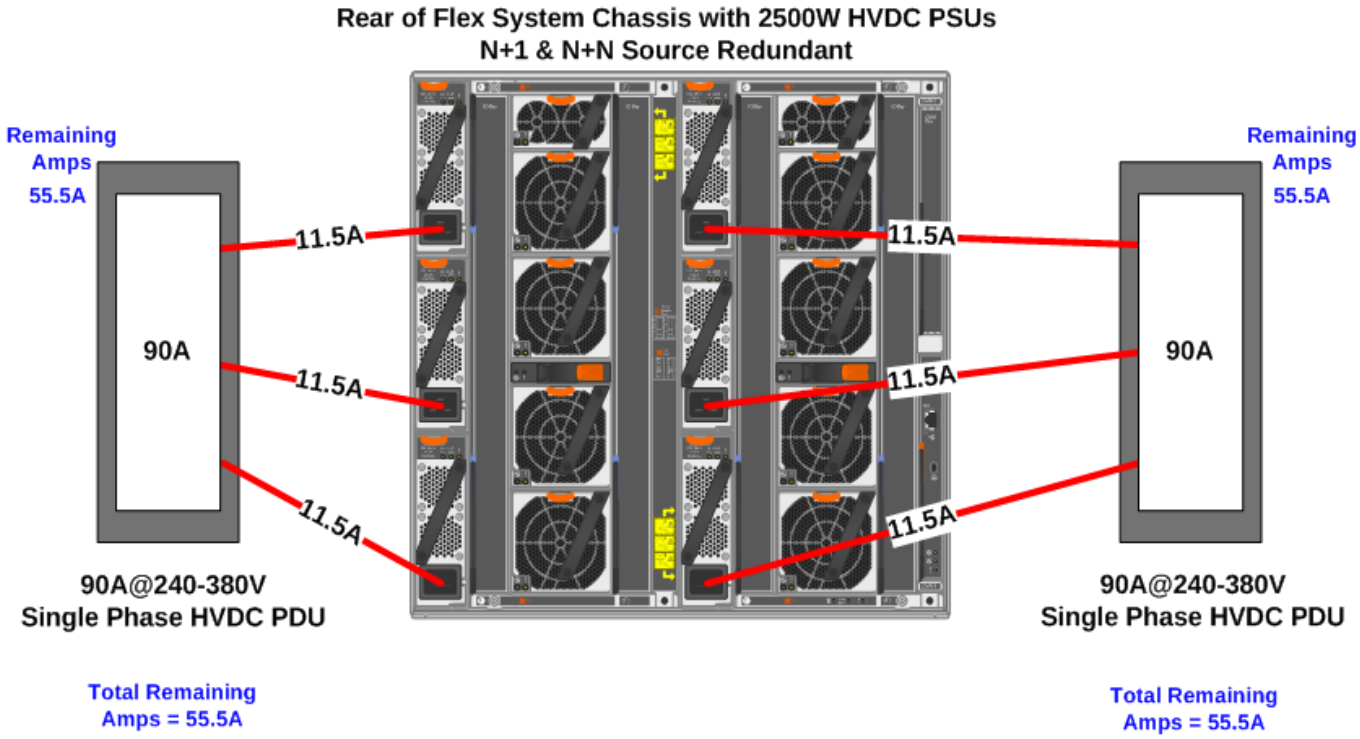


Figure 58: Rear of 1 x Flex Chassis – 90A@240-380V 1ph, N+1 & N+N Source Redundant

Single Phase HVDC PDU – 90A@240-380 dc V – 1 Chassis, 6 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 6 PSUs running on: 90A@240-238 dc V 1phase PDUs. The following example can use the below PDU:

Part Number	FC	PDU Description	Line Cord
System X			
44T0966	A11V	1U Higher Voltage (HV) DC PDU	Attached 4.3m (14.1ft) pig-tail termination line cord

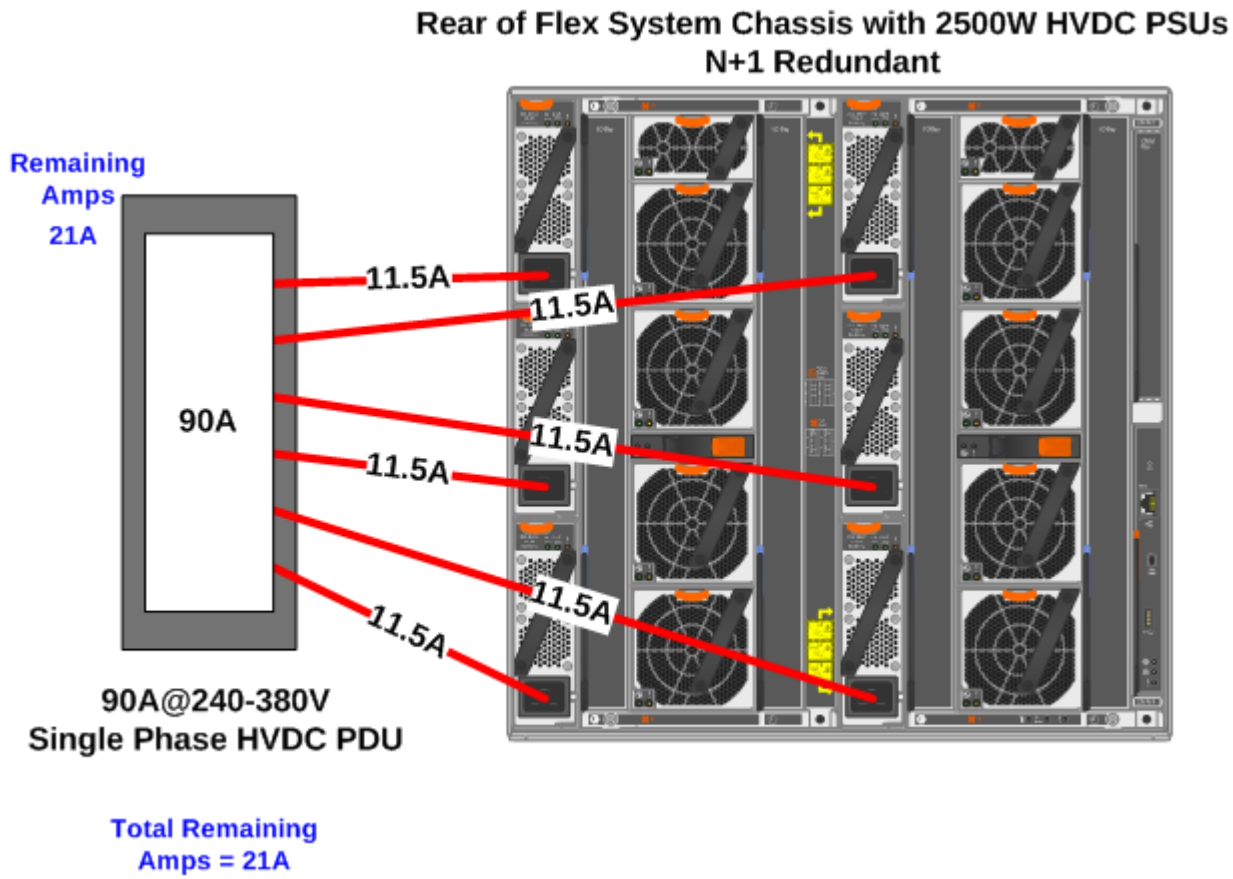


Figure 59: Rear of 1 x Flex Chassis – 90A@240-380V 1ph, N+1 Redundant

Single Phase HVDC PDU – 90A@240-380 dc V – 1 Chassis, 5 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 5 PSUs running on: 90A@240-238 dc V 1phase PDUs. The following example can use the below PDU:

Part Number	FC	PDU Description	Line Cord
System X			
44T0966	A11V	1U Higher Voltage (HV) DC PDU	Attached 4.3m (14.1ft) pig-tail termination line cord

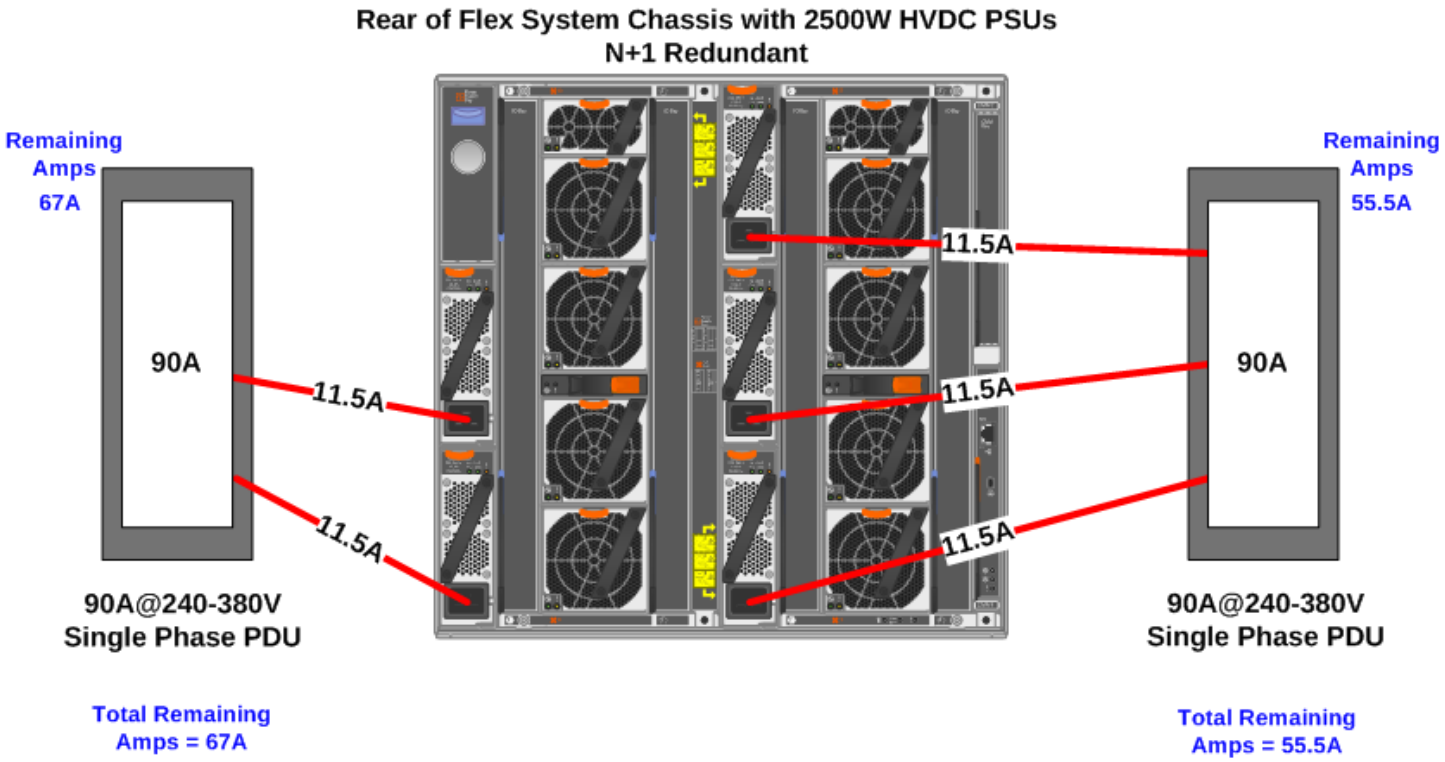


Figure 60: Rear of 1 x Flex Chassis – 90A@240-380V 1ph, N+1 Redundant

Single Phase HVDC PDU – 90A@240-380 dc V – 2 Chassis, 2 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 2 PSUs running on: 90A@240-238 dc V 1phase PDUs. The following example can use the below PDU:

Part Number	FC	PDU Description	Line Cord
System X			
44T0966	A11V	1U Higher Voltage (HV) DC PDU	Attached 4.3m (14.1ft) pig-tail termination line cord

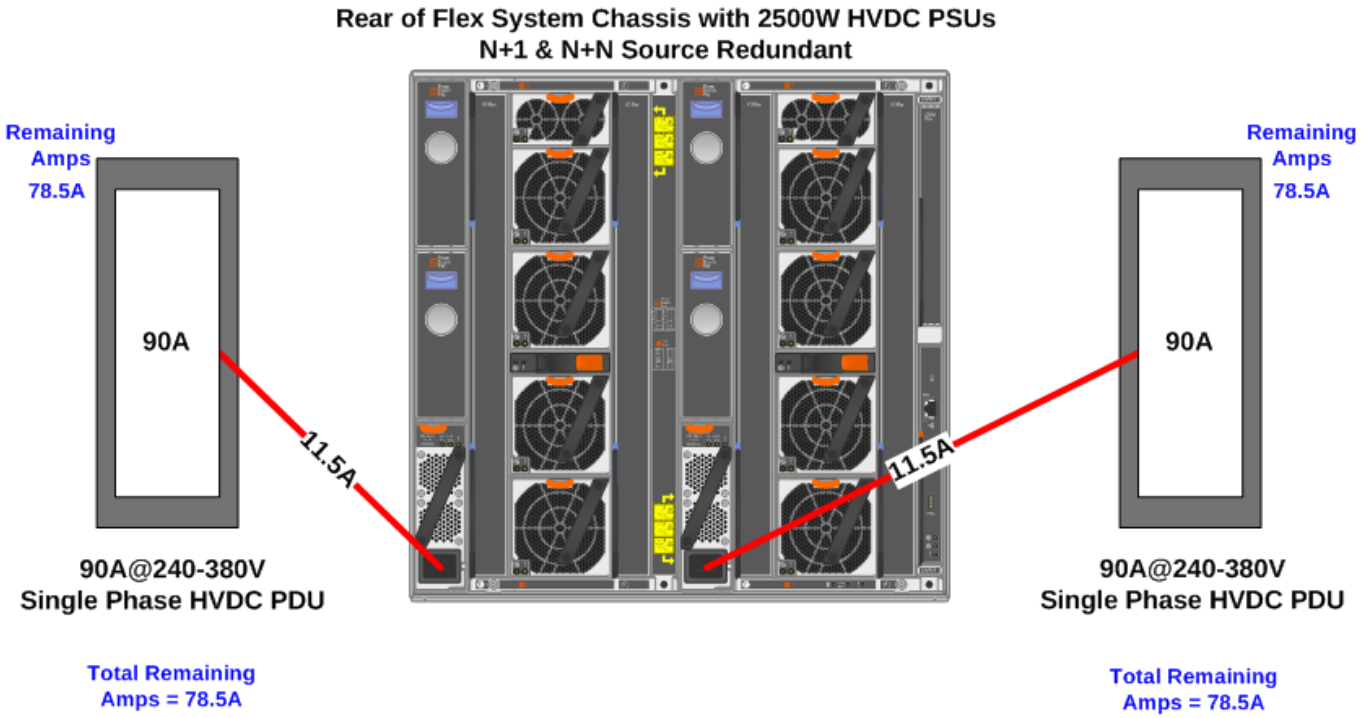


Figure 61: Rear of 1 x Flex Chassis – 90A@240-380V 1ph, N+1 & N+N Source Redundant

Single Phase HVDC PDU – 90A@240-380 dc V – 2 Chassis, 6 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 6 PSUs running on: 90A@240-238 dc V 1phase PDUs. The following example can use the below PDU:

Part Number	FC	PDU Description	Line Cord
System X			
44T0966	A11V	1U Higher Voltage (HV) DC PDU	Attached 4.3m (14.1ft) pig-tail termination line cord

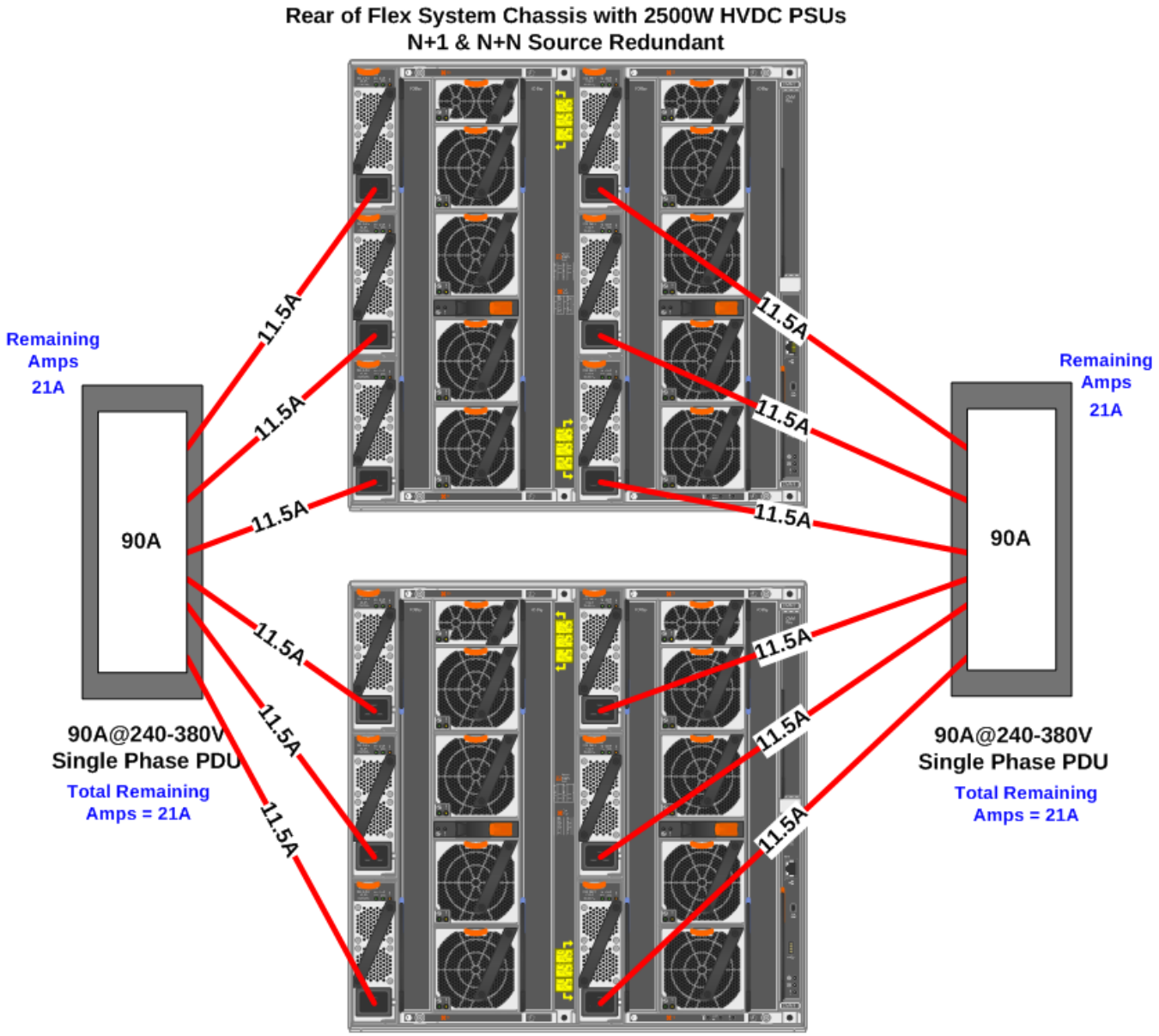


Figure 62: Rear of 1 x Flex Chassis – 90A@240-380V 1ph, N+1 & N+N Source Redundant

Single Phase HVDC PDU – 90A@240-380 dc V – 2 Chassis, 4 PSUs

The following example is for 1 x Flex System Enterprise Chassis with 4 PSUs running on: 90A@240-238 dc V 1phase PDUs. The following example can use the below PDU:

Part Number	FC	PDU Description	Line Cord
System X			
44T0966	A11V	1U Higher Voltage (HV) DC PDU	Attached 4.3m (14.1ft) pig-tail termination line cord

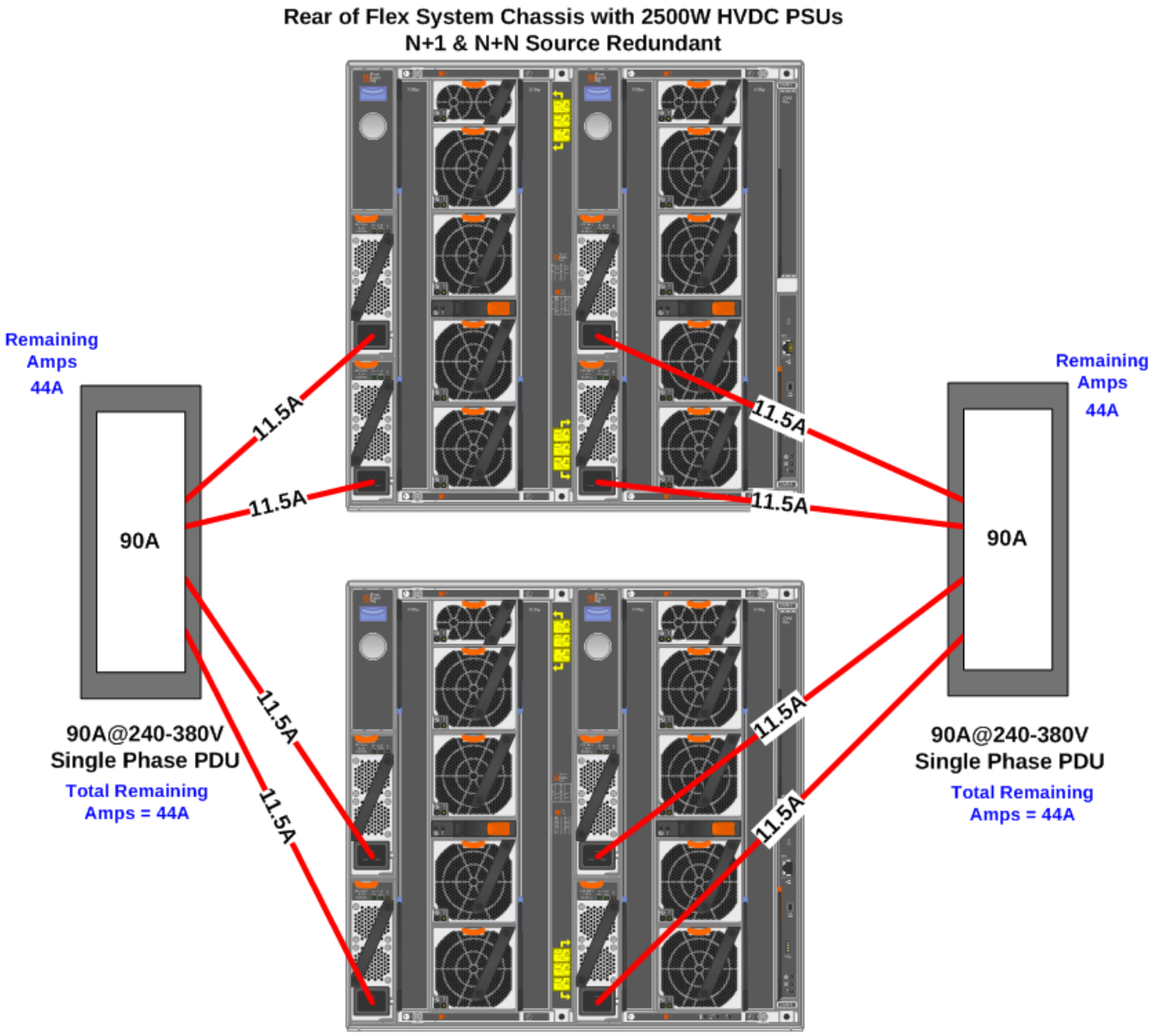


Figure 63: Rear of 1 x Flex Chassis – 90A@240-380V 1ph, N+1 & N+N Source Redundant

Power Policies for all PDU Configurations

The power policy employed for the Flex System will be influenced by the number of PSUs installed and the number of PSUs that can fail with the system remaining operational.

The following tables are a guide to the number of PSUs required for each policy.

Important Notice: Use the latest version of the Power Configurator to make an exact determination of the number of PSUs required for the number and type of nodes installed in the system and the level of redundancy supported for your configuration.

Power policies for 6 PSU installations

The following power policies are available for 6 PSU configurations. Refer to the ***Flex System Enterprise Chassis Power Requirements Guide*** for information the number of supported nodes and fans for your particular configuration. Available at:
http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-PWRCONF

Power Management Policies	Redundancy	PSU Failure Limit
AC Power Source Redundancy	N+N (N=3)	3
AC Power Source Redundancy w/ Throttling	N+N (N=3)	3
Power Module Redundancy	N+1 (N=5)	1
Power Module Redundancy w/ Throttling	N+1 (N=5)	1
Basic Power Management	None	0

Power policies for 5 PSU installations

The following power policies are available for 5 PSU configurations. Refer to the ***Flex System Enterprise Chassis Power Requirements Guide*** for information the number of supported nodes and fans for your particular configuration. Available at:

http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-PWRCONF

Power Management Policies	Redundancy	PSU Failure Limit
AC Power Source Redundancy	Not Supported	Not Supported
AC Power Source Redundancy w/ Throttling	Not Supported	Not Supported
Power Module Redundancy	N+1 (N=4)	1
Power Module Redundancy w/ Throttling	N+1 (N=4)	1
Basic Power Management	None	0

Power policies for 4 PSU installations

The following power policies are available for 4 PSU configurations. Refer to the ***Flex System Enterprise Chassis Power Requirements Guide*** for information the number of supported nodes and fans for your particular configuration. Available at:

http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-PWRCONF

Power Management Policies	Redundancy	PSU Failure Limit
AC Power Source Redundancy	N+N (N=2)	2
AC Power Source Redundancy w/ Throttling	N+N (N=2)	2
Power Module Redundancy	N+1 (N=3)	1
Power Module Redundancy w/ Throttling	N+1 (N=3)	1
Basic Power Management	None	0

Power policies for 3 PSU installations

The following power policies are available for 3 PSU configurations. Refer to the ***Flex System Enterprise Chassis Power Requirements Guide*** for information the number of supported nodes and fans for your particular configuration. Available at:

http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-PWRCONF

Power Management Policies	Redundancy	PSU Failure Limit
AC Power Source Redundancy	Not Supported	Not Supported
AC Power Source Redundancy w/ Throttling	Not Supported	Not Supported
Power Module Redundancy	N+1 (N=2)	1
Power Module Redundancy w/ Throttling	N+1 (N=2)	1
Basic Power Management	None	0

Power policies for 2 PSU installations

The following power policies are available for 3 PSU configurations. Refer to the ***Flex System Enterprise Chassis Power Requirements Guide*** for information the number of supported nodes and fans for your particular configuration. Available at:

http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-PWRCONF

Power Management Policies	Redundancy	PSU Failure Limit
AC Power Source Redundancy	N+1 (N=1)	1
AC Power Source Redundancy w/ Throttling	N+1 (N=1)	1
Power Module Redundancy	N+1 (N=1)	1
Power Module Redundancy w/ Throttling	N+1 (N=1)	1
Basic Power Management	None	0

Reference Material

The following information should be used as a reference throughout this guide.

Flex System PDU and line cord selection

The following section discusses the compatible PDUs and their input line cords for both North America and International. Some PDUs have attached line cords while others require a line cord to be ordered separately based on your requirement of Three-phase power or Single-phase power.

PDU and line cord selection – System X

Refer to the following table for line cord and phase options for North American and International PDUs. The PDUs are grouped together by type (eg: Switched and monitored PDUs, Enterprise PDUs etc and by geography eg: North American or International).

Part Number	Description	Line cord part number	Phase (ph)	Voltage (V)	Line cord rating (Derated)	Line cord plug	Number / Type of outlet
Switched and Monitored PDUs - North America							
46M4002	1U 9 C19/3 C13 Active Energy Manager (AEM) DPI PDU	40K9614	1ph	200V-240V	30A (24A)	NEMA L6 30P	9 / C19 3 / C13
		40K9615	1ph	200V-240V	60A (48A)	IEC 309 2P+G	
46M4003	1U 9 C19/3 C13 AEM 60A 3 Phase PDU	Attached	3ph Δ	208V	60A (27.7A/ph)	IEC 309 3P+G	9 / C19 3 / C13
46M4167	1U 9 C19/3 C13 Switched and Monitored 30A 3 Phase PDU	Attached	3ph Δ	208V	30A (13.85A/ph)	NEMA L21-30P	9 / C19 3 / C13
46M4134	0U 12 C19/12, C13 Switched and Monitored 50A 3 Phase PDU*	Attached	3ph Δ	208V	50A (23.09A/ph)	CS8365L	12 / C19 12 / C13

Part Number	Description	Line cord part number	Phase (ph)	Voltage (V)	Line cord rating (Derated)	Line cord plug	Number / Type of outlet
Switched and Monitored PDUs - International							
46M4137	0U 12 C19/12 C13 Switched and Monitored 32A 3 Phase PDU*	Attached	3ph Y	380V-415V	32A (32A/ph)	IEC 309 3P+N+G	12 / C19 12 / C13
46M4002	1U 9 C19/3 C13 Active Energy Manager DPI PDU	40K9612	1ph	220V-240V	32A	IEC 309 P+N+G	9 / C19 3 / C13
		40K9613	1ph	220V-240V	63A	IEC 309 P+N+G	
		40K9617	1ph	230V-240V	32A	AUS/NZ 3112	
		40K9618	1ph	220V	30A	KSC 8305	
		40K9611	3ph Y	380V-415V	32A (32A/ph)	IEC 309 3P+N+G	
		47C2495	3ph Y	380V-415V	16A (16A/ph)	IEC 309 3P+N+G	

Part Number	Description	Line cord part number	Phase (ph)	Voltage (V)	Line cord rating (Derated)	Line cord plug	Number / Type of outlet
Enterprise PDUs - North America							
71762NX	Ultra Density Enterprise 1U PDU C19 PDU	40K9614	1ph	200V-240V	30A (24A)	NEMA L6-30P	9 / C19 3 / C13
		40K9615	1ph	200V-240V	60A (48A)	IEC 309 2P+G	
71763MU	Ultra Density Enterprise 1U PDU C19 3 Phase 60A PDU+ Monitored	Attached	3ph	208V	60A (27.7A/ph)	IEC 309 2P+G	9 / C19 3 / C13
71763NU	Ultra Density Enterprise 1U PDU C19 3 Phase 60A PDU Basic	Attached	3ph Δ	208V	60A (27.7A/ph)	IEC 309 2P+G	9 / C19 3 / C13
39Y8948	DPI Single Phase C19 Enterprise 1U PDU without line cord	40K9614	1ph	200V-240V	30A (24A)	NEMA L6-30P	6 / C19
		40K9615	1ph	200V-240V	60A (48A)	IEC 309 2P+G	
39Y8923	DPI 60A Three Phase C19 Enterprise 1U PDU with IEC309 3P+G (208 V) fixed line cord	Attached	3ph Δ	208V	60A (27.7A/ph)	IEC 309 3P+G	6 / C19

Part Number	Description	Line cord part number	Phase (ph)	Voltage (V)	Line cord rating (Derated)	Line cord plug	Number / Type of outlet
Enterprise PDUs - International							
71762NX	Ultra Density Enterprise 1U PDU C19 PDU (WW)	40K9612	1ph	220V-240V	32A	IEC 309 P+N+G	9 / C19 3 / C13
		40K9613	1ph	220V-240V	63A	IEC 309 P+N+G	
		40K9617	1ph	230V-240V	32A	AUS/NZ 3112	
		40K9618	1ph	220V	30A	KSC 8305	
		40K9611	3ph Y	380V-415V	32A (32A/ph)	IEC 309 3P+N+G	
		47C2495	3ph Y	380V-415V	16A (16A/ph)	IEC 309 3P+N+G	
71762MX	Ultra Density Enterprise PDU C19 1U PDU+ (WW)	40K9612	1ph	220V-240V	32A	IEC 309 P+N+G	9 / C19 3 / C13
		40K9613	1ph	220V-240V	63A	IEC 309 P+N+G	
		40K9617	1ph	230V-240V	32A	AUS/NZ 3112	
		40K9618	1ph	220V	30A	KSC 8305	
		40K9611	3ph Y	380V-415V	32A (32A/ph)	IEC 309 3P+N+G	
		47C2495	3ph Y	380V-415V	16A (16A/ph)	IEC 309 3P+N+G	
39Y8948	DPI Single Phase C19 Enterprise 1U PDU without line cord	40K9612	1ph	220V-240V	32A	IEC 309 P+N+G	6 / C19
		40K9613	1ph	220V-240V	63A	IEC 309 P+N+G	
		40K9617	1ph	230V-240V	32A	AUS/NZ 3112	
		40K9618	1ph	220V	30A	KSC 8305	
		40K9611	3ph Y	380V-415V	32A (32A/ph)	IEC 309 3P+N+G	
		47C2495	3ph Y	380V-415V	16A (16A/ph)	IEC 309 3P+N+G	

Part Number	Description	Line cord part number	Phase (ph)	Voltage (V)	Line cord rating (Derated)	Line cord plug	Number / Type of outlet
Front-end PDUs - North America							
39Y8939	30 amp/240V Front-end ½ U PDU	Included	1ph	200V-240V	30A (24A)	NEMA L6-30P	3 / C19
39Y8940	60 amp Front-end ½ U PDU	Included	1ph	200V-240V	60A (48A)	IEC 309 2P+G	3 / C19
Front-end PDUs - International							
39Y8934	DPI 32 amp Front-end ½ U PDU	Included	1ph	200V-240V	32A	IEC 309 P+N+G	3 / C19
39Y8935	DPI 63 amp Front-end ½ U PDU	Included	1ph	200V-240V	63A	IEC 309 P+N+G	3 / C19

Part Number	Description	Line cord part number	Phase (ph)	Voltage (V)	Line cord rating (Derated)	Line cord plug	Number / Type of outlet
0U Basic PDUs - North America							
46M4140	0U 12 C19/12 C13 60A 3ph PDU*	Attached	3ph ∆	208V	50A (23.09A/ph)	CS8365L	12 / C19 12 / C13
0U Basic PDUs - International							
46M4143	0U 12 C19/12 C13 32A 3ph PDU*	Attached	3ph Y	380V-415V	32A (32A/ph)	IEC 309 3P+N+G	12 / C19 12 / C13
1U Basic HVDC PDU - International							
44T0966*^	1U Higher Voltage (HV) DC PDU	Attached	1ph	240V-380V	90A	IEC 309 P+N+G	6 / RF-203P

* Flex System PSU to PDU HVDC line cord ships standard with the HVDC PSU P/N 00AM765.
^ The high-voltage DC cord that comes with the PDU must be connected to a properly wired and grounded high-voltage dc power source (between 240V dc and 380V dc with 90A capacity), by a licensed electrician.

See the “ System x PDU Guide – North America” for more information on ’s System x North American PDUs.

http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-PWRCONF

See the “ System x PDU Guide – International” for more information on ’s System x International PDUs.

http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-PWRCONF

Flex System power cords

The following section lists the power cords for the Flex System Enterprise Chassis. This section only applies to System X orders. The topics covered include:

- **System X Worldwide power cords (PSU to PDU):** Discusses the power cords used world-wide for connecting the Flex System Chassis PSUs to supported PDUs.
- **System X North American power cords (PSU to no PDU):** Discusses the power cords used in North America for connecting the Flex System Chassis PSU directly to an outlet (NEMA 6-15R, NEMA L6-20R, and NEMA L15-30R outlets).
- **System X International power cords (PSU to no PDU):** Discusses the power cords used Internationally (outside of North America) for connecting the Flex System Chassis PSU directly to an outlet (IEC309 3P+N+G and PDL/Clipsal outlets).
-

System X Worldwide power cords (PSU to PDU)

These power cords are used worldwide to connect Flex System PSUs to supported PDUs when ordered as part of an System x order.

The PSUs installed in the Flex System Chassis have C20 inlets so will require power cords with C19-C20 plugs to attach to a supported PDU, see Figure 64. One of these power cords needs to be ordered for each PSU that is installed in each Flex System Enterprise Chassis and is connected to a PDU.

Part Number	Feature Code	Description
39Y7916	6252	2.5m (8.2ft), 16A/100-240V, C19 to IEC 320-C20 Rack Power Cable
N/A	6292	2m (6.5ft), 16A/100-250V, C19 to IEC 320-C20 Rack Power Cable

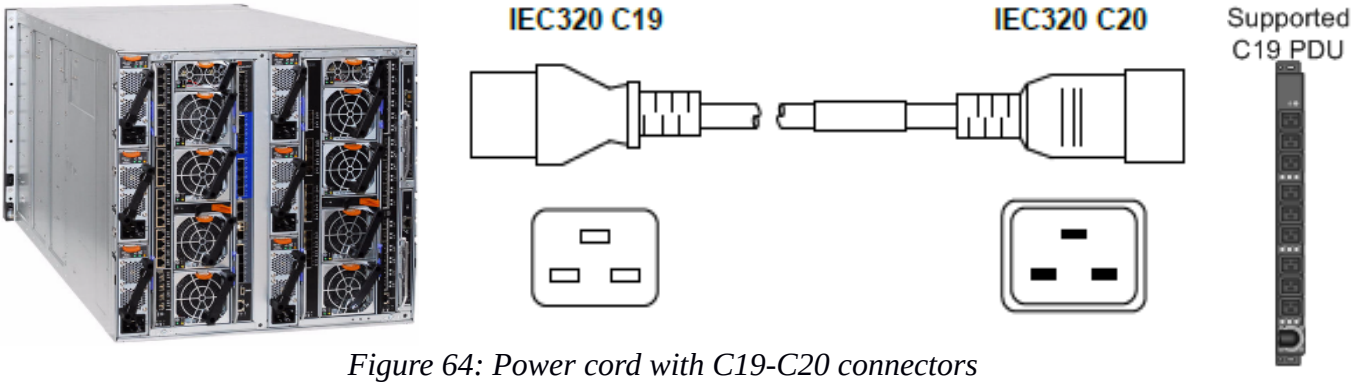


Figure 64: Power cord with C19-C20 connectors

Note: One line cord ships standard with each HVDC PSU for the Flex System Enterprise Chassis.

System X North American power cords (PSU to no PDU)

These power cords are only used in North America or countries on a similar type power grid to connect Flex System PSUs directly to NEMA 6-15R, NEMA L6-20R, and NEMA L15-30R outlets when ordered as part of an System x order.

Part Number	Feature Code	Description
00D7195	6566	2.5m (8.2ft), 15A/208V, C19 to NEMA 6-15P Line Cord (Figure 65)
00D7196	6537	1.8m (6ft), 15A/208V, C19 to NEMA 6-15P Line Cord (Figure 65)
00D7197	A1NV	4.3m (14ft), 15A/250V, C19 to NEMA 6-15P Line Cord (Figure 65)
40K9772	6275	4.3m (14ft), 16A/208V, C19 to NEMA L6-20P Line Cord (Figure 66)
00D7192	A2Y3	4.3m (14ft) 30A @ 208V 3 Phase Delta Line Cord NEMA L15-30P - (3P+Gnd) to 3x IEC 320 C19* (Figure 67)

*The NEMA L15-30P (3P-Gnd) to 3X IEC 320 C19 cable is only for use for chassis with 6x PSUs installed. See below for details.

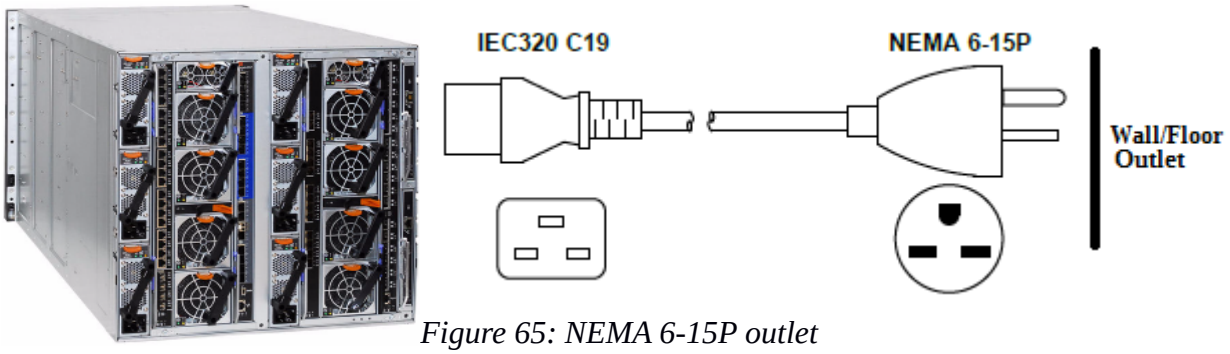


Figure 65: NEMA 6-15P outlet

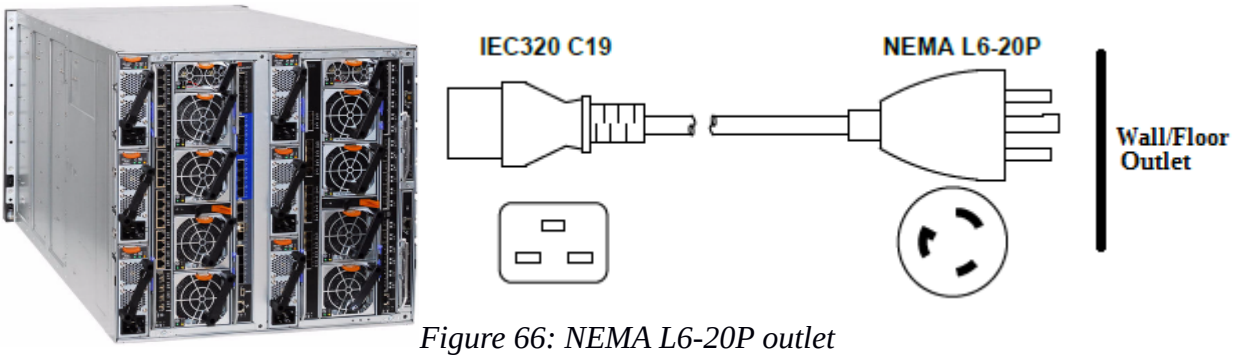


Figure 66: NEMA L6-20P outlet

*The 00D7192 (FC A2Y3) cord is a NEMA L15-30P - (3P+Gnd) to 3X IEC 320 C19 4.3m (14ft) 30A @208V 3 Phase Delta line cord seen in Figure 67.

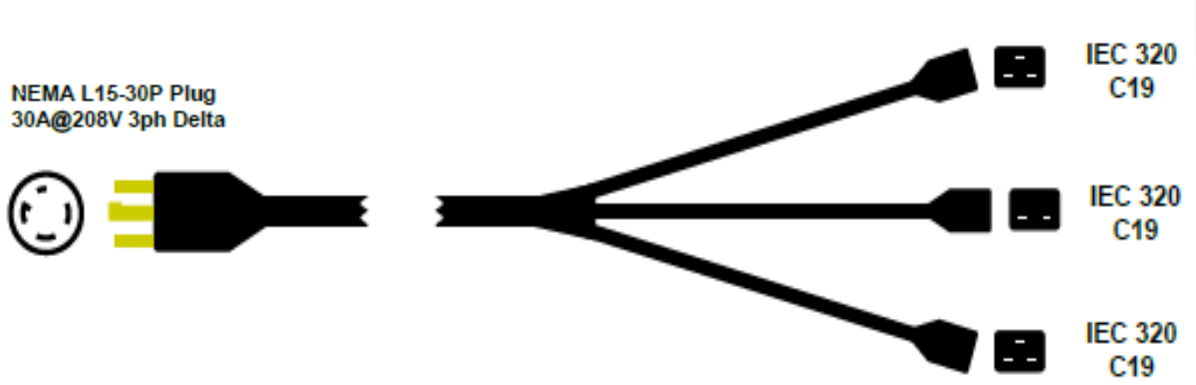


Figure 67: Line cord PN 00D7192 - NEMA L15-30P - (3P+Gnd) to 3x IEC 320 C19

The 30A@208V 3ph Delta Line Cord NEMA L15-30P - (3P+Gnd) to 3x IEC 320 C19 line cord should only be used for Flex System Chassis's that have 6x PSUs installed as seen in Figure 68.

Figure 68: Line cord 00D7192 for use with Flex System with 6x PSUs installed

System X International power cords (PSU to no PDU)

These power cords are used internationally to connect Flex System PSUs directly to IEC309 3P+N+G and PDL/Clipsal outlets when ordered as part of an System X order.

Part Number	Feature Code	Description
00D7193	A2Y4	4.3m (14ft) 32A@380-415V 3 Phase Wye Line Cord IEC309 3P+N+G to 3X IEC 320 C19* (Figure Error: Reference source not found)
00D7194	A2Y5	4.3m (14ft) 32A@415V 3 Phase Wye Line Cord – Australia & New Zealand PDL/Clipsal 32A (3P+N+Gnd) to 3X IEC 320 C19*^ (Figure 3)

*These line cords can only be used for chassis's with 6x PSUs installed. See below for details.
^This line cord is only for use in Australia or New Zealand.

Figure Error: Reference source not found is the 00D7193 line cord which is an IEC309 3P+N+G to 3x IEC 320 C19 outlets.

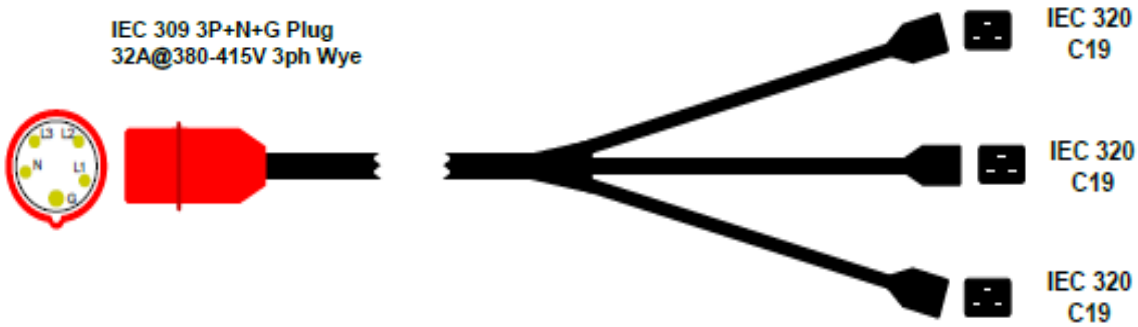


Figure 69: Line cord PN 00D7193 - IEC309 3P+N+G to 3X IEC 320 C19 outlets

The 00D7193 line cord can only be used in conjunction with a Flex System Enterprise Chassis that has 6 PSUs installed as seen in the following figure.

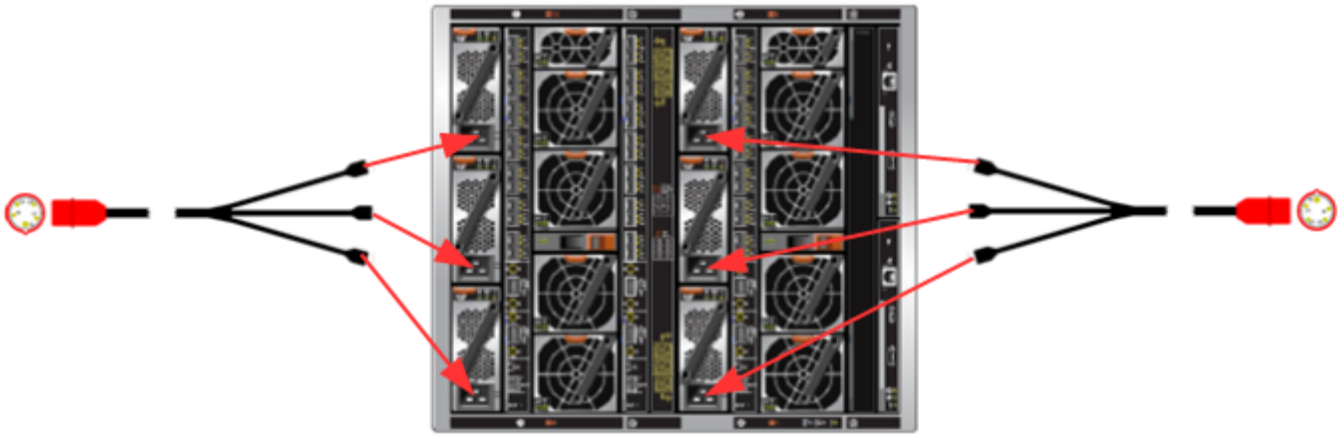


Figure 70: Line cord 00D7193 for use with Flex System with 6x PSUs installed

The following figure is the 00D7194 line cord which is an 32A (3P+N+Gnd) to 3X IEC 320 C19 outlets.

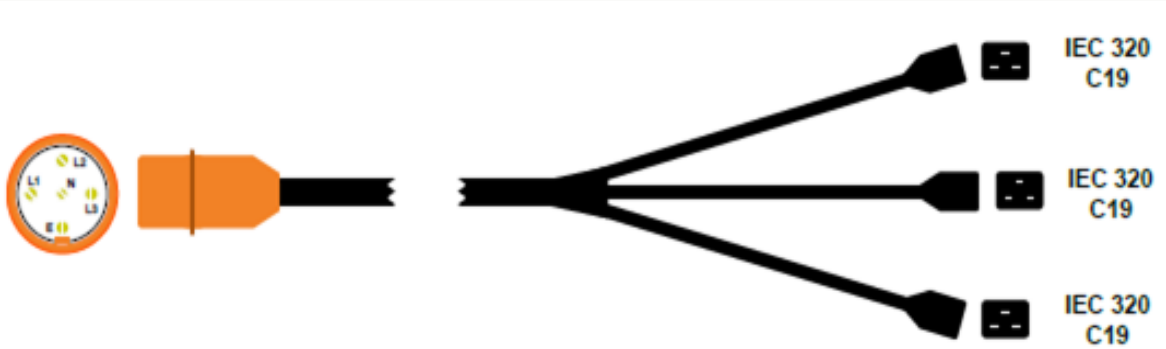


Figure 71: Line cord PN 00D7194 - PDL/Clipsal 32A (3P+N+Gnd) to 3X IEC 320 C19 outlets

The 00D7194 line cord can only be used in conjunction with a Flex System Enterprise Chassis that has 6 PSUs installed as seen in the below figure. This line cord can only be used in Australia and New Zealand.

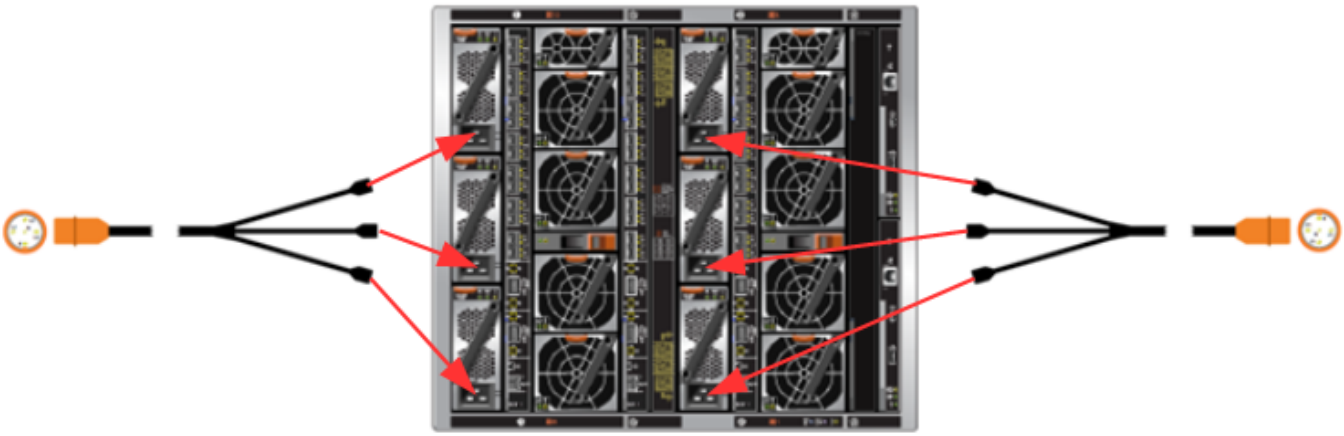


Figure 72: Line cord 00D7194 for use with Flex System with 6x PSUs installed

PDU Line Cord Plug Types – additional information

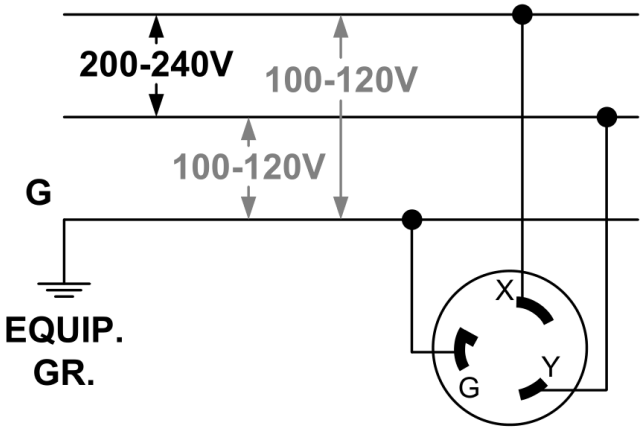
This section provides additional information on the input line cords used with each PDU. For a complete selection of PDUs refer to the: *Reference Material* section.

System x North American PDUs Line Cords

The following input line cords are for North American PDUs.

NEMA L6-30

NEMA L6-30P (4.3m) 30A (24A Derated) @ 200V-240V Single Phase



NEMA L6-30

Compatible with:

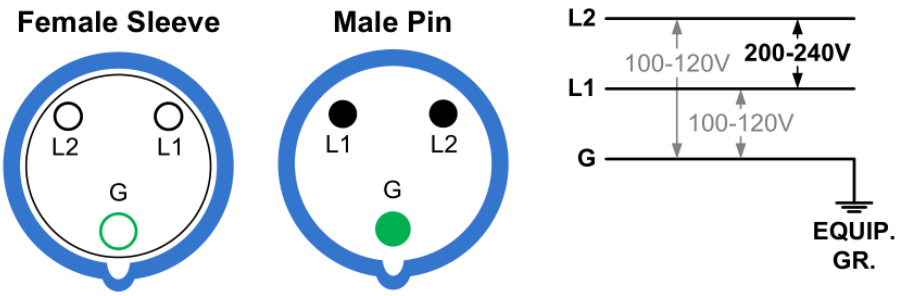
PDU Name	PDU Part Number	Line Cord Part Number	PDU + Line Cord FC	Number / Type of Outlet	Form Factor
Front End *Basic*	39Y8939	Comes with PDU	A11T	3 / C19 Front	½ U
Enterprise – C13 *Basic*	39Y8941	40K9614	6012	12 / C13 Front	1U
Enterprise *Basic*	39Y8948	40K9614	6062	6 / C19 Front	1U
Ultra Density Enterprise *Basic*	71762NX	40K9614	6500	9 / C19 Front 3 / C13 Back	1U
0U 24 C13 *Basic*	46M4128	Attached	5924	24 / C13 Front	0U
Enterprise PDU+ - C13 *Monitored*	39M2816	40K9614	6032	12 / C13 Front	1U
1U 12 C13 *Switched & Monitored*	46M4004	40K9614	5908	12 / C13 Front	1U
1U 9 C19 / 3 C13 *Switched & Monitored*	46M4002	40K9614	5901	9 / C19 Front 3 / C13 Back	1U
0U 24 C13U *Switched & Monitored*	46M4116	Attached	5929	24 / C13 Front	0U

IEC 309 2P+G – 60A@200-240V 1ph

IEC 309 2P+G (4.3m) - 60A (48A Derated) @ 200V-240V Single Phase Plug (Type 360P6W)

Only a receptacle or a connector is needed to mate with the plug on the PDU input line cord. See section "IEC 309 Pin & Sleeve Plug Decode" on page 109 in this document for further details on IEC309.

Matching receptacle listing 360R6W IP-67 HUBBELL, Hubbell receptacle P/N HBL360R6W
Matching connector listing 360C6W IP-67 HUBBELL, Hubbell connector P/N HBL360C6W



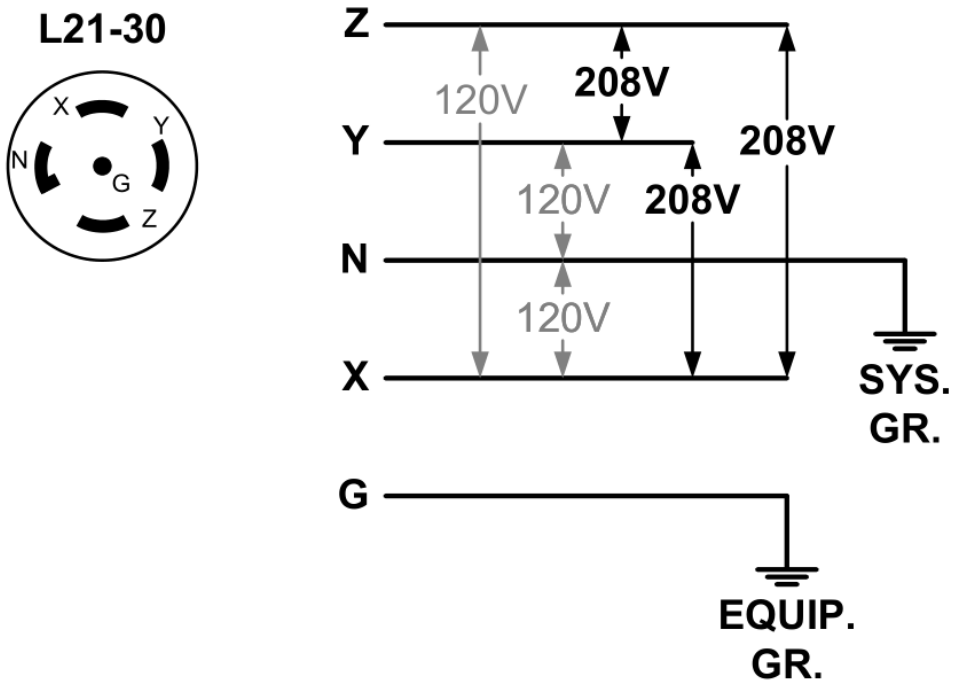
This plug may have a short guide pin

Compatible with:

PDU Name	PDU Part Number	Line Cord Part Number	PDU + Line Cord FC	Number / Type of Outlet	Form Factor
Front End *Basic*	39Y8940	Comes with PDU	A11U	3 / C19 Front	½ U
Enterprise – C13 *Basic*	39Y8941	40K9615	6013	12 / C13 Front	1U
Enterprise *Basic*	39Y8948	40K9615	6063	6 / C19 Front	1U
Ultra Density Enterprise *Basic*	71762NX	40K9615	6501	9 / C19 Front 3 / C13 Back	1U
Enterprise PDU+ - C13 *Monitored*	39M2816	40K9615	6033	12 / C13 Front	1U
1U 12 C13 *Switched & Monitored*	46M4004	40K9615	5909	12 / C13 Front	1U
1U 9 C19 / 3 C13 *Switched & Monitored*	46M4002	40K9615	5902	9 / C19 Front 3 / C13 Back	1U

NEMA L21-30

Attached 3.0 meter line cord with NEMA L21-30P Plug
30A (13.85A / Phase Derated) @ 200V-240V Three Phase Delta
41.55A Total Derated Circuit Capacity



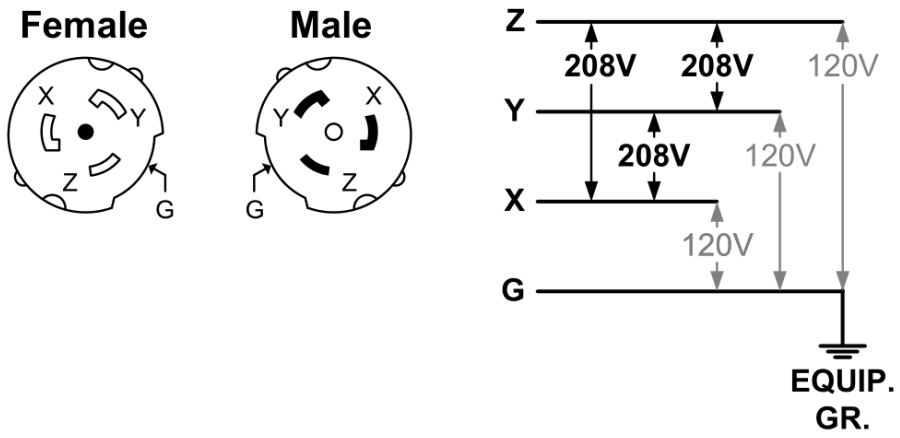
Compatible with:

PDU Name	PDU Part Number	Line Cord Part Number	PDU + Line Cord FC	Number / Type of Outlet	Form Factor
0U 24 C13 *Basic*	46M4125	Attached	5923	24 / C13 Front	0U
1U 9 C19 / 3 C13 *Switched & Monitored*	46M4167	Attached	5928	9 / C19 Front 3 / C13 Back	1U

CS8365L – 50A@208V 3ph

Attached 3.0 meter line cord with CS8365L Plug
50A (23.09A / Phase Derated) 200V-240V Three Phase Delta
69.27A Total Derated Circuit Capacity

Only a receptacle or a connector is needed to mate with the plug on the PDU input line cord.
Matching receptacle listing CS8369
Matching connector listing CS8364



Compatible with:

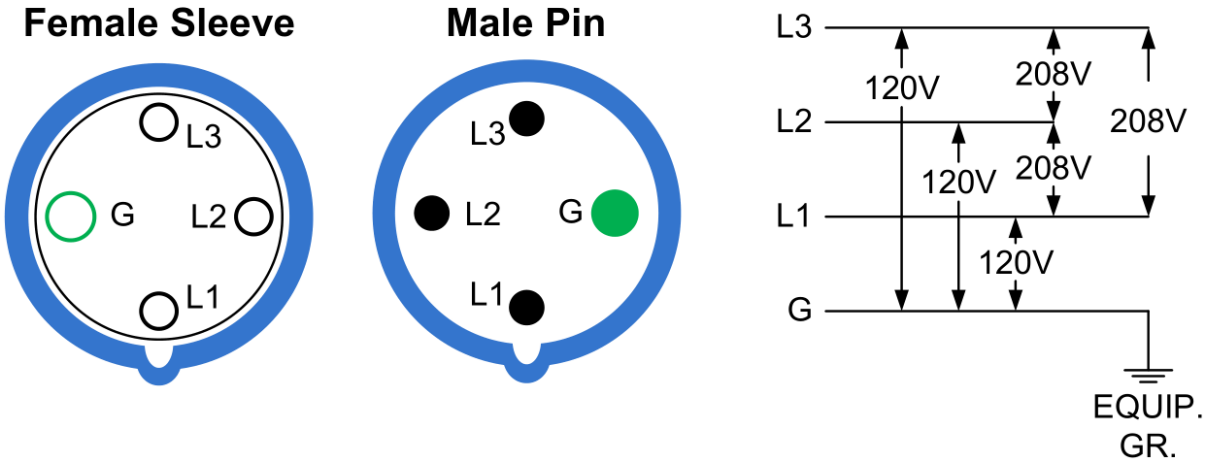
PDU Name	PDU Part Number	Line Cord Part Number	PDU + Line Cord FC	Number / Type of Outlet	Form Factor
0U 12 C19 / 12 C13 *Basic*	46M4140	Attached	5926	12 / C19 Front 12 / C13 Back	0U
0U 12 C19 / 12 C13 *Switched & Monitored*	46M4134	Attached	5931	12 / C19 Front 12 / C13 Back	0U

IEC309 3P+G – 60A@208V 3ph

Attached 14-foot (4.3 meter) line cord with IEC-309 60A, 3P4W Plug (Type 460P9W)
60A (27.7A / Phase Derated) 200V-240V Three Phase Delta
83.1A Total Derated Circuit Capacity

Only a receptacle or a connector is needed to mate with the plug on the PDU input line cord. See section "IEC 309 Pin & Sleeve Plug Decode" on page 109 in this document for further details on IEC309.

Matching receptacle listing 460R9W IP-67 HUBBELL, Hubbell receptacle P/N HBL460R9W
Matching connector listing 460C9W IP-67 HUBBELL, Hubbell connector P/N HBL460C9W



Compatible with:

PDU Name	PDU Part Number	Line Cord Part Number	PDU + Line Cord FC	Number / Type of Outlet	Form Factor
Enterprise *Basic*	39Y8923	Attached	6061	6 / C19 Front	1U
Ultra Density Enterprise *Basic*	71763NU	Attached	6051	9 / C19 Front 3 / C13 Back	1U
1U 12 C13 *Switched & Monitored*	46M4005	Attached	5895	12 / C13 Front	1U
1U 9 C19 / 3 C13 *Switched & Monitored*	46M4003	Attached	5897	9 / C19 Front 3 / C13 Back	1U

System x International PDUs Line Cords

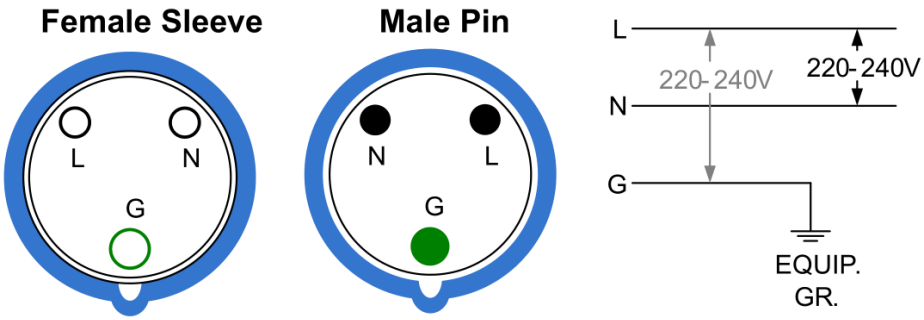
The following input line cords are for International PDUs (outside of North America).

IEC 309 P+N+G – 32A@220-240V 1ph

IEC 309 P+N+G (4.3m) - 32A / 220-240V Single Phase

Only a receptacle or a connector is needed to mate with the plug on the PDU input line cord. See section "IEC 309 Pin & Sleeve Plug Decode" on page 109 in this document for further details on IEC309.

Matching receptacle listing 332R6W IP-67 HUBBELL, Hubbell receptacle P/N HBL332R6W
Matching connector listing 332C6W IP-67 HUBBELL, Hubbell connector P/N HBL332C6

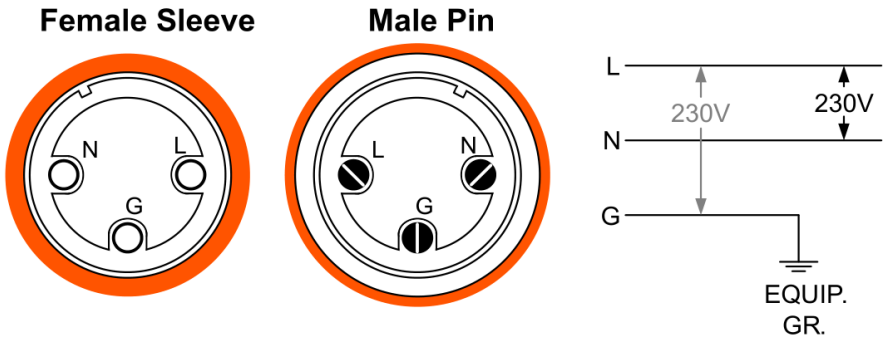


Compatible with:

PDU Name	PDU Part Number	Line Cord Part Number	PDU + Line Cord FC	Number / Type of Outlet	Form Factor
Front End *Basic*	39Y8934	Comes with PDU	A11V	3 / C19 Front	½ U
Enterprise C13 *Basic*	39Y8941	40K9612	6014	12 / C13 Front	1U
DPI Enterprise *Basic*	39Y8948	40K9612	6064	6 / C19 Front	1U
DPI Ultra Density Enterprise *Basic*	71762NX	40K9612	6502	9 / C19 Front 3 / C13 Back	1U
0U 24 C13 *Basic*	46M4131	Attached	5925	24 / C13 Front	0U
Enterprise + - C13 *Monitored*	39M2816	40K9612	6034	12 / C13 Front	1U
1U 12 C13 *Switched & Monitored*	46M4004	40K9612	5910	12 / C13 Front	1U
1U 9 C19 / 3 C13 *Switched & Monitored*	46M4002	40K9612	5903	9 / C19 Front 3 / C13 Back	1U
0U 24 C13U *Switched & Monitored*	46M4119	Attached	5930	24 / C13 Front	0

AUS/NZ 3112 32A – 32A@230V 1ph

P+N+G (PDL P/N 56P332) Australia/New Zealand connector

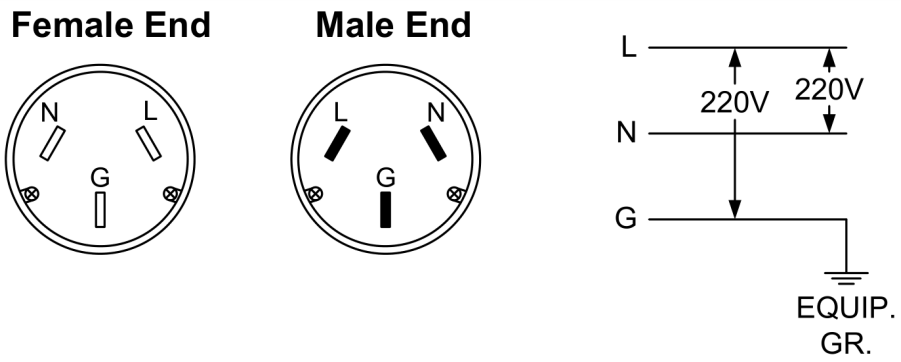


Compatible with:

PDU Name	PDU Part Number	Line Cord Part Number	PDU + Line Cord FC	Number / Type of Outlet	Form Factor
Front End *Basic*	39Y8936	Comes with PDU	A11Y	3 / C19 Front	½ U
Enterprise C13 *Basic*	39Y8941	40K9617	6017	12 / C13 Front	1U
DPI Enterprise *Basic*	39Y8948	40K9617	6067	6 / C19 Front	1U
DPI Ultra Density Enterprise *Basic*	71762NX	40K9617	6505	9 / C19 Front 3 / C13 Back	1U
Enterprise + - C13 *Monitored*	39M2816	40K9617	6037	12 / C13 Front	1U
1U 12 C13 *Switched & Monitored*	46M4004	40K9617	5913	12 / C13 Front	1U
1U 9 C19 / 3 C13 *Switched & Monitored*	46M4002	40K9617	5906	9 / C19 Front 3 / C13 Back	1U

KSC 8305 30A – 30A@220V 1ph

P+N+G (Shin Ju P/N SJ-P3302) Korea connector



Compatible with:

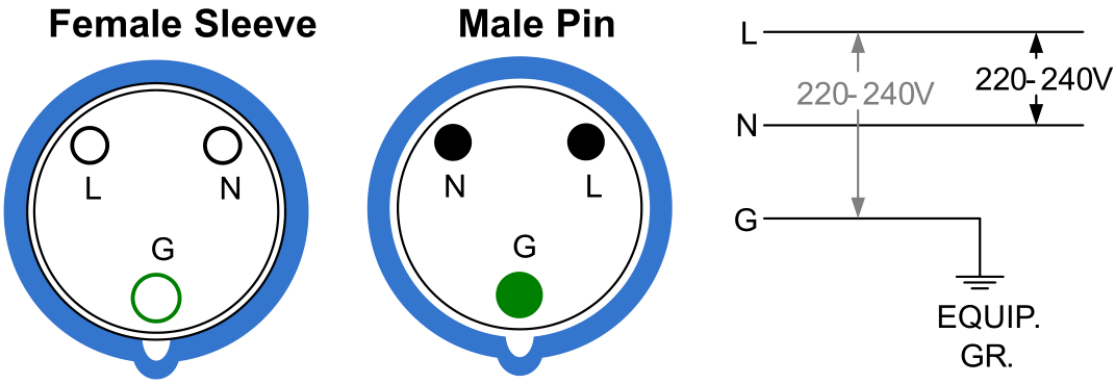
PDU Name	PDU Part Number	Line Cord Part Number	PDU + Line Cord FC	Number / Type of Outlet	Form Factor
Front End *Basic*	39Y8937	Comes with PDU	A11X	3 / C19 Front	½ U
Enterprise C13 *Basic*	39Y8941	40K9618	6018	12 / C13 Front	1U
DPI Enterprise *Basic*	39Y8948	40K9618	6068	6 / C19 Front	1U
DPI Ultra Density Enterprise *Basic*	71762NX	40K9618	6506	9 / C19 Front 3 / C13 Back	1U
Enterprise + - C13 *Monitored*	39M2816	40K9618	6038	12 / C13 Front	1U
1U 12 C13 *Switched & Monitored*	46M4004	40K9618	5914	12 / C13 Front	1U
1U 9 C19 / 3 C13 *Switched & Monitored*	46M4002	40K9618	5907	9 / C19 Front 3 / C13 Back	1U

IEC 309 P+N+G – 63A@220-240V 1ph

IEC 309 P+N+G (4.3m) - 63A / 220-240V Single Phase

Only a receptacle or a connector is needed to mate with the plug on the PDU input line cord. See section "IEC 309 Pin & Sleeve Plug Decode" on page 109 in this document for further details on IEC309.

Matching receptacle listing 363R6W IP-67 HUBBELL, Hubbell receptacle P/N HBL363R6W



Matching connector listing 363C6W IP-67 HUBBELL, Hubbell connector P/N HBL363C6W

Compatible with:

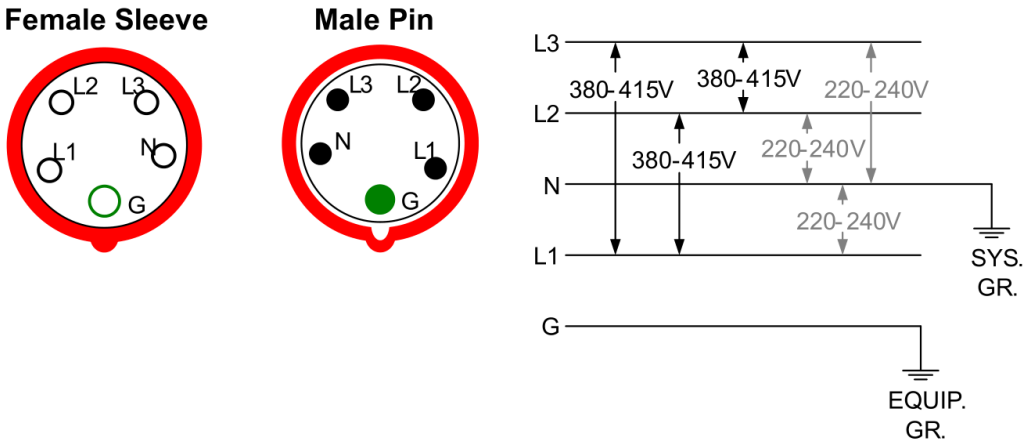
PDU Name	PDU Part Number	Line Cord Part Number	PDU + Line Cord FC	Number / Type of Outlet	Form Factor
Front End *Basic*	39Y8935	Comes with PDU	A11W	3 / C19 Front	½ U
Enterprise C13 *Basic*	39Y8941	40K9613	6015	12 / C13 Front	1U
DPI Enterprise *Basic*	39Y8948	40K9613	6065	6 / C19 Front	1U
DPI Ultra Density Enterprise *Basic*	71762NX	40K9613	6503	9 / C19 Front 3 / C13 Back	1U
Enterprise + - C13 *Monitored*	39M2816	40K9613	6035	12 / C13 Front	1U
1U 12 C13 *Switched & Monitored*	46M4004	40K9613	5911	12 / C13 Front	1U
1U 9 C19 / 3 C13 *Switched & Monitored*	46M4002	40K9613	5904	9 / C19 Front 3 / C13 Back	1U

IEC309 3P+N+G – 16A@380-415V 3ph

IEC-309 3P+N+G 3.0 meter 16A, 3P5W plug (Type 516P6W)
32A (32A / Phase) 380-415V Three Phase Wye
48A Total Circuit Capacity

Only a receptacle or a connector is needed to mate with the plug on the PDU input line cord. See section "IEC 309 Pin & Sleeve Plug Decode" on page 109 in this document for further details on IEC309.

Matching receptacle listing 516R6W IP-67 HUBBELL, Hubbell receptacle P/N HBL516R6W
Matching connector listing 516C6W IP-67 HUBBELL, Hubbell connector P/N HBL516C6W



Compatible with:

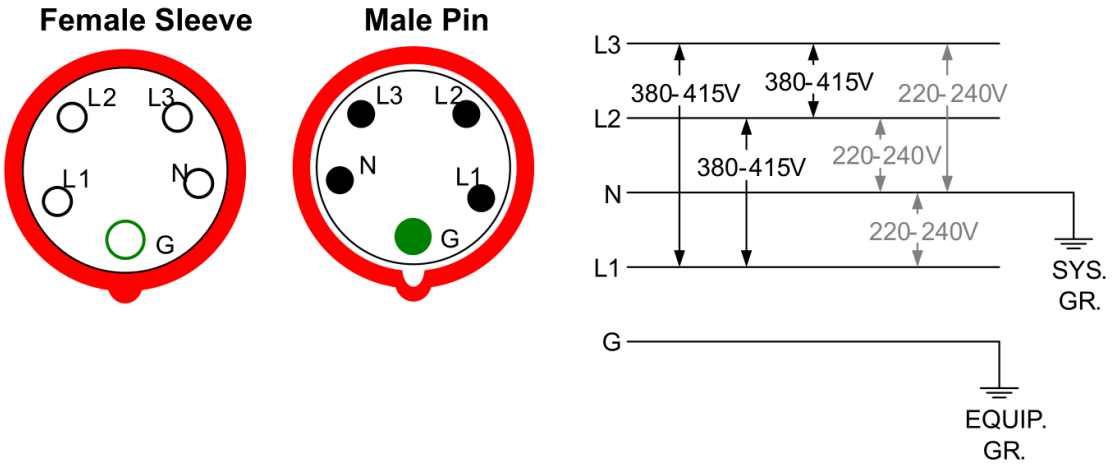
PDU Name	PDU Part Number	Line Cord Part Number	PDU + Line Cord FC	Number / Type of Outlet	Form Factor
Enterprise C13 *Basic*	39Y8941	47C2495	A3T1	12 / C13 Front	1U
DPI Enterprise *Basic*	39Y8948	47C2495	A3T3	6 / C19 Front	1U
DPI Ultra Density Enterprise *Basic*	71762NX	47C2495	A3TC	9 / C19 Front 3 / C13 Back	1U
Enterprise + - C13 *Monitored*	39M2816	47C2495	A3T2	12 / C13 Front	1U
1U 12 C13 *Switched & Monitored*	46M4004	47C2495	A3T5	12 / C13 Front	1U
1U 9 C19 / 3 C13 *Switched & Monitored*	46M4002	47C2495	A3T4	9 / C19 Front 3 / C13 Back	1U
0U 24 C13 Basic	46M4122	Attached	5922	24 / C13 Front	0U

IEC 309 3P+N+G – 32A@380-415V 3ph

IEC-309 3P+N+G (4.3m) 32A, 3P5W plug (Type 532P6W)
32A (32A / Phase) 380-415V Three Phase Wye
96A Total Circuit Capacity

Only a receptacle or a connector is needed to mate with the plug on the PDU input line cord. See section "IEC 309 Pin & Sleeve Plug Decode" on page 109 in this document for further details on IEC309.

Matching receptacle listing 532R6W IP-67 HUBBELL, Hubbell receptacle P/N HBL532R6W
Matching connector listing 532C6W IP-67 HUBBELL, Hubbell connector P/N HBL532C6W



Compatible with:

PDU Name	PDU Part Number	Line Cord Part Number	PDU + Line Cord FC	Number / Type of Outlet	Form Factor
Enterprise C13 *Basic*	39Y8941	40K9611	6016	12 / C13 Front	1U
DPI Enterprise *Basic*	39Y8948	40K9611	6066	6 / C19 Front	1U
DPI Ultra Density Enterprise *Basic*	71762NX	40K9611	6504	9 / C19 Front 3 / C13 Back	1U
0U 12 C19 / 12 C13 *Basic*	46M4143	Attached	5927	12 / C19 Front 12 / C13 Back	0U
Enterprise + - C13 *Monitored*	39M2816	40K9611	6036	12 / C13 Front	1U
1U 12 C13 *Switched & Monitored*	46M4004	40K9611	5912	12 / C13 Front	1U
1U 9 C19 / 3 C13 *Switched & Monitored*	46M4002	40K9611	5905	9 / C19 Front 3 / C13 Back	1U
0U 12 C19 / 12 C13 *Switched & Monitored*	46M4137	Attached	5932	12 / C19 Front 12 / C13 Back	0U

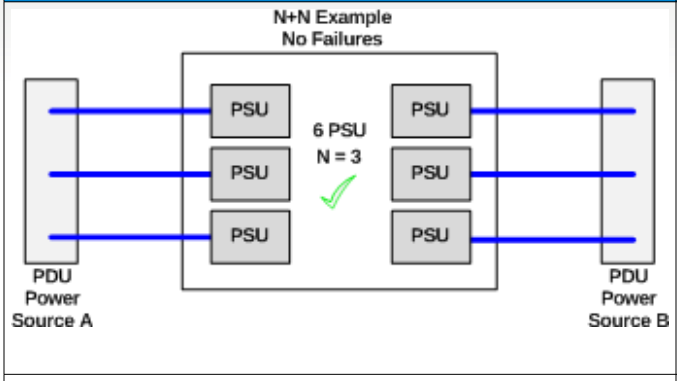
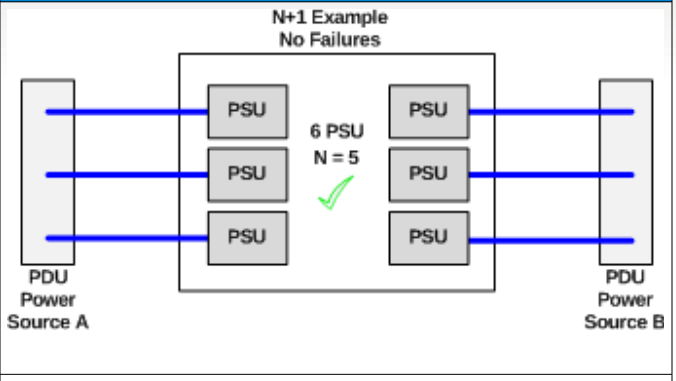
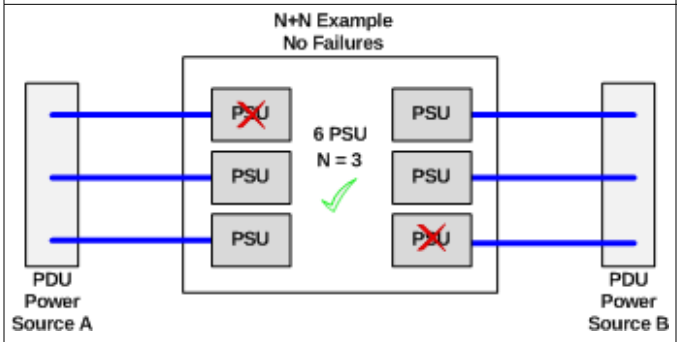
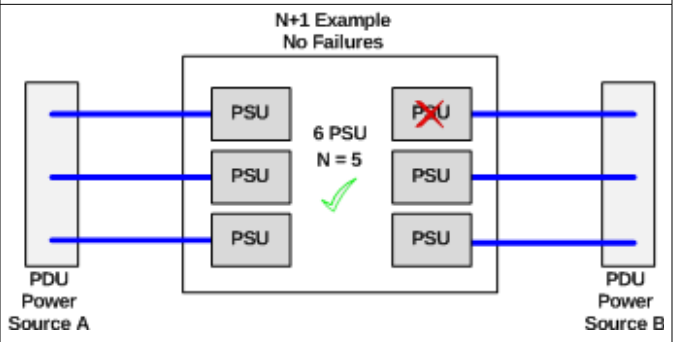
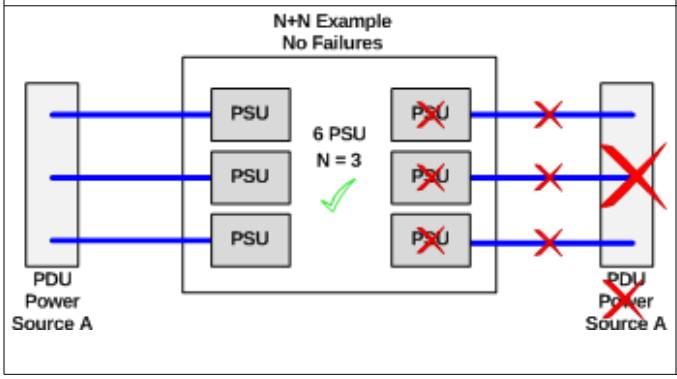
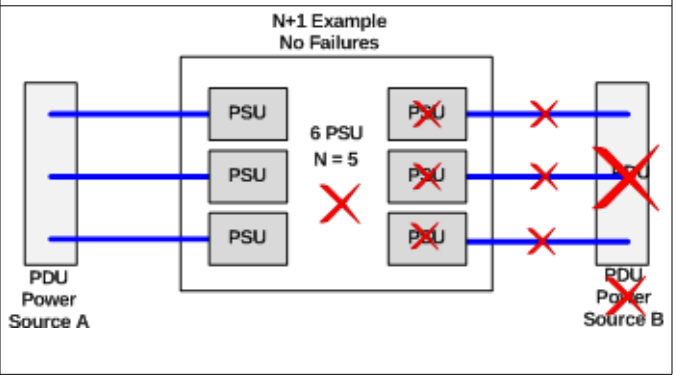
What is N+N and N+1 redundancy

N+N PSU redundancy is where N is the minimum number of PSUs need to keep the system operational, plus N number of PSUs again for redundancy. Essentially, the number of PSUs are double of what is necessary to keep the system operational. N+N is needed when a system needs to be power source redundant (See example "N+N and N+1 Examples" diagram below).

N+1 PSU redundancy is where N is the minimum number of PSUs need to keep the system operational, plus one PSU for redundancy. N+1 is used when a system needs only to tolerate a single PSU failure and stay operational (See example "N+N and N+1 Examples" diagram below). Think of N+1 as having one PSU as a hot spare.

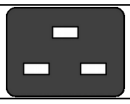
N+N and N+1 Examples

Notice in the N+1 diagrams below that there are two sources. Typically, N+1devices would be connected to one power source since N+1devices do not derive any benefit from two power sources. It is shown here with two power sources to demonstrate this lack of benefit for N+1 devices.

N+N Examples	N+1 Examples
	
	
	

IEC 320 Connectors

The following table displays the plug types for different hardware such as monitors, switches, servers, high-end servers, power distribution units (PDUs), and uninterpretable power supplies (UPSs).

Name	Connector	AMP Rating	Use
C5 – Female C6 – Male		2.5A	Laptop Power Supplies And Other Portable Power Supplies
C7 – Female C8 – Male		2.5A	Laptop Power Supplies And Other Portable Power Supplies
C13 – Female C14 – Male		10A	Desktop Computers, Monitors, Switches, And Servers
C15 – Female C16 – Male		10A	Used In Hot Conditions Since It Is Rated To 120^0 C (248^0F), Unlike C13/C14 Which Is Rated To 70^0 C (158^0 F)
C19 – Female C20 – Male		16A	Blade Chassis, Flex System, High-power Servers, UPSs, PDUs, And Other High Current Equipment

Note: IEC 320 has changed to IEC 60320

Rong Fend RF-203P Connector

The following table displays the plug type for the HVDC PDU.

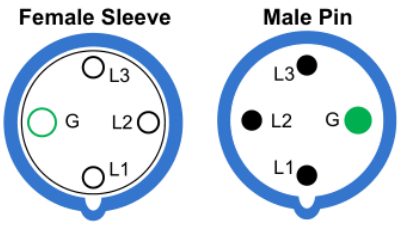
Name	Connector	AMP Rating	Use
RF-203P		10/15A	For systems requiring DC power from a DC power source.

IEC 309 Pin & Sleeve Plug Decode

4	60	R	9	W
Pin Configuration	**Amperage**	**Device Type**	**Polarization**	**Environmental Rating**
3 - 2 Pole + G 4 - 3 Pole + G 5 – 3 Pole + N + G	20 30 32 60 63 100	P - Plug C - Connector R - Receptacle B - Inlet	Clock Position Of Female Sleeve	W-WATERTIGHT (SCREW CAP & LOCKING RING)

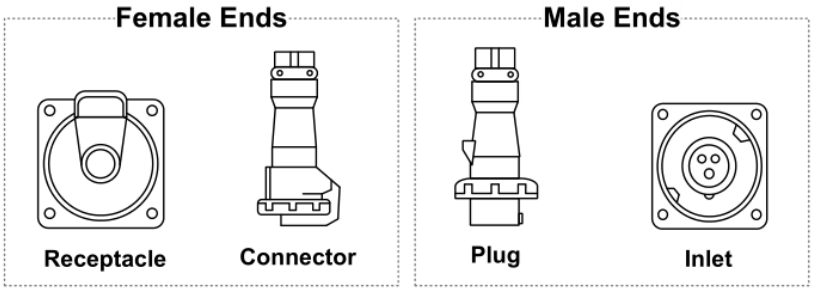
Color	Voltage Rating
Yellow	100V - 130V
Orange	125V/250V
Blue	200V - 250V
Gray	277V
Red	380V - 480V
Black	500V - 690V

- Example
  - IEC309 3P+G Plug
  - 60amp/250V three-phase
  - Hubbell Connector listing 460C9W IP-67
  - P/N HBL460C9W



Pin Configuration Significance

3 Pins = 1ph
4 Pins = 3ph Δ
5 Pins = 3ph Y



Ingress Protection (IP) Decode

Code Letters	First Number	Second Number
Ingress Protection	**Protection Against Ingress of Solid Foreign Objects**	**Protection Against Ingress of Water with Harmful Effects**
IP	0 – No Protection 1 ≥ 50mm Diameter 2 ≥ 12.5mm Diameter 3 ≥ 2.5mm Diameter 4 ≥ 1.0mm Diameter 5 – Dust-Protected 6 – Dust-Tight	0 – No Protection 1 – Vertically Dripping 2 – Dripping At 15° Of Tilt 3 – Spraying Up To 60° Of Tilt 4 – Splashing 5 – Jetting 6 – Power Jetting 7 – Temporary Immersion 8 – Continuous Immersion

First Number: degree of protection for persons against access of hazardous parts inside the enclosure and/or against foreign objects.

Second Number: degree of protection of equipment inside enclosures against damage from ingress of water.

Ingress Protection (IP) is defined in IEC 60529 Standard.

Example: IP67 = Ingress Protection / Dust-Tight / Temporary Immersion

60A Three Phase Delta Power Calculations

$$E_{LL} = E_{AC} = E_{BA} = E_{CB} = 208V$$

$$I_L = 60A$$

$$P_{Total} = \sqrt{3} \times E_{LL} \times I_L \times pf$$

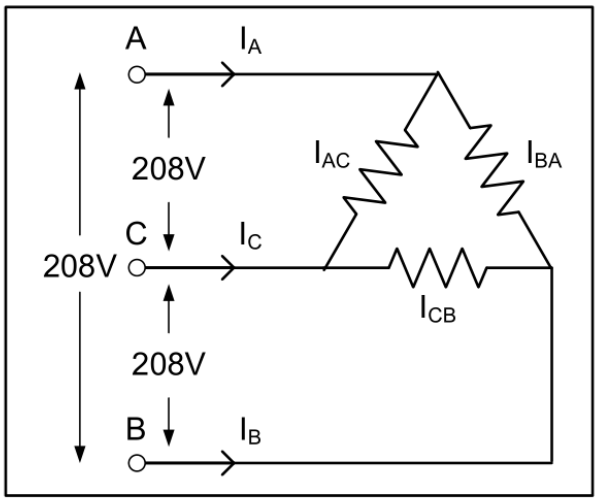
$$= \sqrt{3} \times 208 \times 60 \times 1$$

$$= 21616W$$

$$P_{Derated} = P_{Total} \times 0.8$$

$$= 21616W \times 0.8$$

$$= 17293W$$



$$I_\Phi = I_{AC} = I_{BA} = I_{CB} = \frac{I_L}{\sqrt{3}} = \frac{60}{\sqrt{3}} = 34.64A$$

$$I_{Derated} = I_\Phi \times 0.8 = 34.64 \times 0.8 = 27.7A$$

Variables Defined

I_Φ	=	Phase Current
I_L	=	Line Current
E_{LL}	=	Line to Line Voltage
pf	=	Power Factor
P	=	Power In Watts

50A Three Phase Delta Power Calculations

$$E_{LL} = 208V$$

$$I_L = 50A$$

$$P_{Total} = \sqrt{3} \times E_{LL} \times I_L \times PF$$

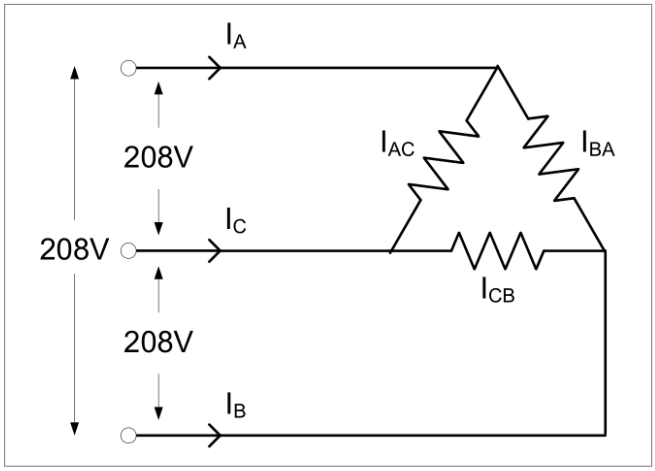
$$= \sqrt{3} \times 208 \times 50 \times 1$$

$$= 18013W$$

$$P_{Derated} = P_{Total} \times 0.8$$

$$= 18013W \times 0.8$$

$$= 14410W$$



$$I_{AC} = I_{BA} = I_{CB} = \frac{I_L}{\sqrt{3}} = \frac{50}{\sqrt{3}} = 28.86A$$

$$I_{Derated} = I \times 0.8 = 28.86 \times 0.8 = 23.09A$$

Variables Defined

I_Φ	=	Phase Current
I_L	=	Line Current
E_{LL}	=	Line to Line Voltage
PF	=	Power Factor
P	=	Power In Watts

30A Three Phase Delta Power Calculations

$$E_{LL} = E_{AC} = E_{BA} = E_{CB} = 208V$$

$$I_L = 30A$$

$$P_{Total} = \sqrt{3} \times E_{LL} \times I_L \times PF$$

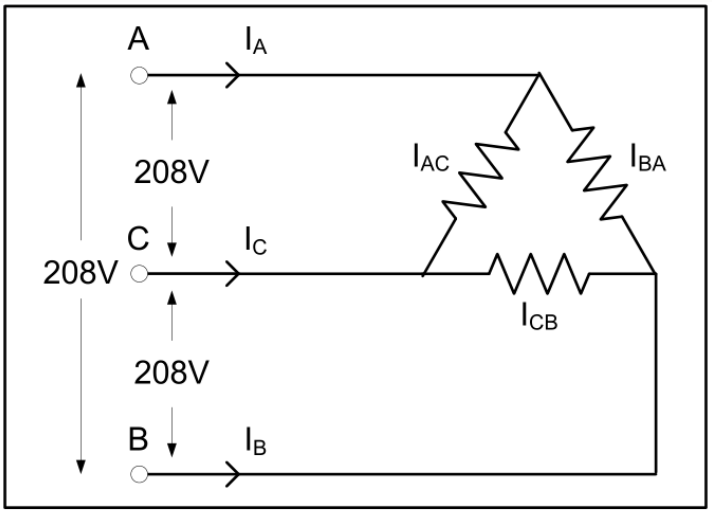
$$= \sqrt{3} \times 208 \times 30 \times 1$$

$$= 10808W$$

$$P_{Derated} = P_{Total} \times 0.8$$

$$= 10808W \times 0.8$$

$$= 8646W$$



$$I_\Phi = I_{AC} = I_{BA} = I_{CB} = \frac{I_L}{\sqrt{3}} = \frac{30}{\sqrt{3}} = 17.32A$$

$$I_{Derated} = I_\Phi \times 0.8 = 17.32 \times 0.8 = 13.85A$$

Variables Defined

I_Φ	=	Phase Current
I_L	=	Line Current
E_{LL}	=	Line to Line Voltage
PF	=	Power Factor
P	=	Power In Watts

32A Three Phase Delta Power Calculations

$$I_A = I_B = I_C = I_L = I_\Phi = 32A$$

$$P_\Phi = E_{\Phi Y} \times I_{\Phi Y} \times pf \quad (W)$$

$$P_{TOTAL} = 3 \times P_\Phi$$

$$= 3 \times E_L/\sqrt{3} \times I_\Phi \times pf$$

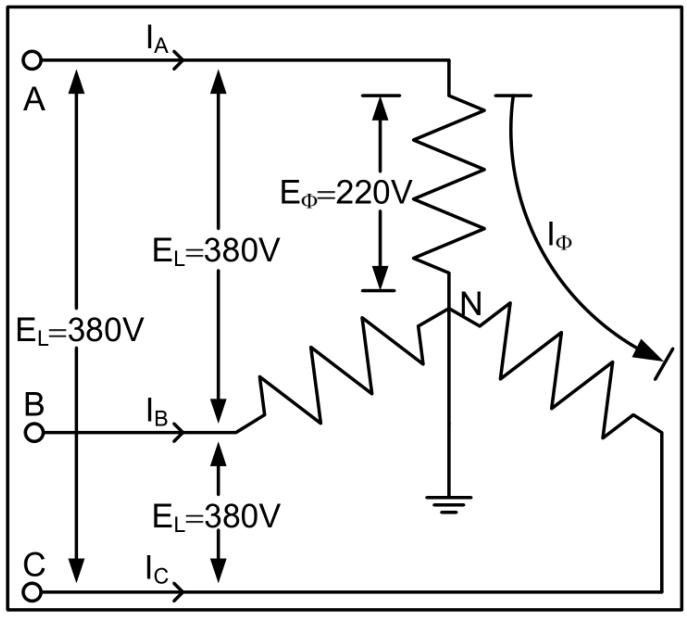
$$= \sqrt{3} \times E_L \times I_L \times pf$$

$$= \sqrt{3} \times 380V \times 32A \times 1$$

$$= 21061W$$

$$E_{AN} = E_{BN} = E_{CN} = E_\Phi$$

$$= \frac{E_L}{\sqrt{3}} = \frac{380}{\sqrt{3}} = 220V$$



16A Three Phase Delta Power Calculations

$I_A = I_B = I_C = I_L = I_\Phi = 16A$

$P_\Phi = E_{\Phi Y} \times I_{\Phi Y} \times pf \quad (W)$

$P_{TOTAL} = 3 \times P_\Phi$

$= 3 \times E_L/\sqrt{3} \times I_\Phi \times pf$

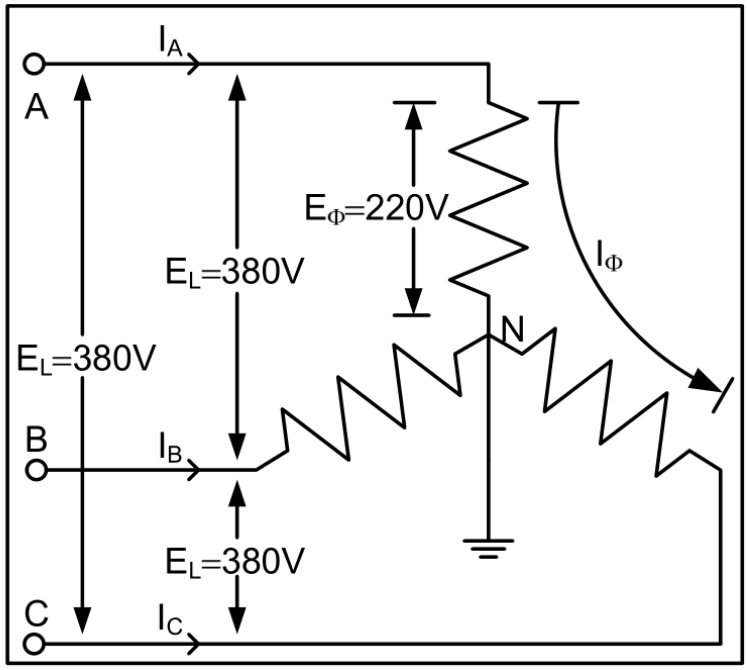
$= \sqrt{3} \times E_L \times I_L \times pf$

$= \sqrt{3} \times 380V \times 16A \times 1$

$= 10530W$

$E_{AN} = E_{BN} = E_{CN} = E_\Phi$

$= \frac{E_L}{\sqrt{3}} = \frac{380}{\sqrt{3}} = 220V$



Flex System Documents

System x Power Configurator
http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-PWRCONF

Flex System Product Guide
http://www.redbooks.ibm.com/abstracts/sg247984.html?Open

Flex System Higher Voltage DC Solutions
http://www.redbooks.ibm.com/abstracts/redp5180.html?Open

Helpful Links

Flex System & PureFlex System Product Manuals
http://publib.boulder.ibm.com/infocenter/flexsys/information/index.jsp?topic%2Fcom.ibm.acc.common.nav.doc%2Fic-homepage.html

Flex System & PureFlex System at a Glance Guides
http://www.redbooks.ibm.com/portals/flexsystem?Open

Flex System Interoperability Guide
http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/redpfsig.html?Open

Other resources related to power and cooling
http://www.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-POWINF

Hubbell - Twist Lock Plug/Outlet Catalog (Includes NEMA Outlets)
http://www.hubbellcatalog.com/wiring/catalogpages/section-b.pdf

Hubbell - Pin & Sleeve Plug/Outlet Catalog (Includes IEC309 Outlets)
http://www.hubbellcatalog.com/wiring/catalogpages/section-E.pdf

System x® Configuration and Options Guide
http://www.ibm.com/systems/xbc/cog/

System x BladeCenter and System x Reference Sheets
http://www.redbooks.ibm.com/abstracts/redpxref.html

Official System x Visio Stencils
http://www.visiocafe.com/lenovo.htm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