

BASELINE POWER AND BTU

8/25/12
VERSION 1.0

AZNet II – Arizona Network

This document is intended to provide baseline power needs and BTU output for AZNET II LAN refresh. Also within this document are the baselines for data routers that are part of the refresh project. The items listed are meant to be a baseline reference guide for allocation of power and proper BTU planning.

All LAN and Router devices will be listed above 70% capacity for higher planning loads. Not all deployments will meet this examples but have the potential to.

Standard 24 Port LAN Switch, will apply for most deployments:

| Power Consumption/Heat Dissipation Summary | | | | | |
|--|--|--|---------------------------------|--------------------------------------|---------------------------------|
| Product | Percentage of PoE Power used | Total PoE Output Power Available (W) | Total PoE Output Power Used (W) | Total PoE Output Power Remaining (W) | Total Heat Dissipation (BTU/Hr) |
| 24PS-L(370W) | 71.35 %  | 370.00 | 264.00 | 106.00 | 1154.27 |
| Operating temperature up to 10,000 ft (3000 m) | | | 32° to 104°F** | | |
| Operating relative humidity | | | 10% to 90% noncondensing | | |
| Dimensions (H x W x D) | | | 1.75 x 17.5 x 15.2 1 RU | | |
| AC/DC input voltage and current | | <u>Voltage (Autoranging)</u> 100 to 240 VAC | <u>Current</u> 5 to 2 A | <u>Frequency</u> 50 to 60Hz | |

Standard 48 Port LAN Switch, will apply for most deployments:

| Power Consumption/Heat Dissipation Summary | | | | | |
|--|--|--|---------------------------------|--------------------------------------|---------------------------------|
| Product | Percentage of PoE Power used | Total PoE Output Power Available (W) | Total PoE Output Power Used (W) | Total PoE Output Power Remaining (W) | Total Heat Dissipation (BTU/Hr) |
| 48FPS-L(740W) | 72.97 %  | 740.00 | 540.00 | 200.00 | 2274.39 |
| Operating temperature up to 10,000 ft (3000 m) | | | 32° to 104°F** | | |
| Operating relative humidity | | | 10% to 90% noncondensing | | |
| Dimensions (H x W x D) | | | 1.75 x 17.5 x 15.2 1 RU | | |
| AC/DC input voltage and current | | <u>Voltage (Autoranging)</u> 100 to 240 VAC | <u>Current</u> 9 to 4 A | <u>Frequency</u> 50 to 60Hz | |

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24 Port LAN Switch, limited deployment where higher power output is needed:

| Power Consumption/Heat Dissipation Summary | | | | | |
|--|--|--|---------------------------------|--------------------------------------|---------------------------------|
| Product | Percentage of PoE Power used | Total PoE Output Power Available (W) | Total PoE Output Power Used (W) | Total PoE Output Power Remaining (W) | Total Heat Dissipation (BTU/Hr) |
| 24P-S(715W) | 61.28 %  | 470.00 | 288.00 | 182.00 | 1320.58 |
| Operating temperature up to 10,000 ft (3000 m) | | | 32° to 104°F** | | |
| Operating relative humidity | | | 10% to 90% noncondensing | | |
| Dimensions (H x W x D) | | | 1.75 x 17.5 x 19.5 1 RU | | |
| AC/DC input voltage and current | | <u>Voltage (Autoranging)</u> 100 to 240 VAC | <u>Current</u> 10 to 5 A | <u>Frequency</u> 50 to 60Hz | |

48 Port LAN Switch, limited deployment where higher power output is needed:

| Power Consumption/Heat Dissipation Summary | | | | | |
|--|--|--|---------------------------------|--------------------------------------|---------------------------------|
| Product | Percentage of PoE Power used | Total PoE Output Power Available (W) | Total PoE Output Power Used (W) | Total PoE Output Power Remaining (W) | Total Heat Dissipation (BTU/Hr) |
| 48PF-S(1100W) | 71.64 %  | 804.00 | 576.00 | 228.00 | 2455.04 |
| Operating temperature up to 10,000 ft (3000 m) | | | 32° to 104°F** | | |
| Operating relative humidity | | | 10% to 90% noncondensing | | |
| Dimensions (H x W x D) | | | 1.75 x 17.5 x 19.5 1 RU | | |
| AC/DC input voltage and current | | <u>Voltage (Autoranging)</u> 100 to 240 VAC | <u>Current</u> 12 to 6 A | <u>Frequency</u> 50 to 60Hz | |

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High density closet LAN Switch, deployment will require site survey and validation.

Power Consumption/Heat Dissipation Summary

| Slot | Line Card | Optional Uplink Module | Power over Ethernet Capabilities |
|------|-----------|------------------------|----------------------------------|
| 1 | 48-RJ45V | --- | IEEE PoE |
| 2 | 48-RJ45V | --- | IEEE PoE |
| 3 | 48-RJ45V | --- | IEEE PoE |
| 4 | 48-RJ45V | --- | IEEE PoE |
| 5 | SUP | --- | --- |
| 6 | SUP | --- | --- |
| 7 | 48-RJ45V | --- | IEEE PoE |
| 8 | 48-RJ45V | --- | IEEE PoE |
| 9 | 24-SFP | --- | --- |
| 10 | 24-SFP | --- | --- |

| Minimum Power Supply | Percentage of Power Used |
|----------------------|--------------------------|
|----------------------|--------------------------|

Combined PWR 4200W with dual 220V inputs on each power supply.

Data: 60.10% 

PoE: 58.72% 

| First Alternative Power Supply | Percentage of Power Used |
|--------------------------------|--------------------------|
|--------------------------------|--------------------------|

Combined PWR 4200W with three 220 volt inputs.

Data: 60.10% 

PoE: 77.46% 

| Total Output Current | Total Output Power | Total Typical Output Power | Total Heat Dissipation |
|--|--|----------------------------|------------------------|
| 180.20 Amps | 4962.69 Watts | 3970.15 Watts | 10823.87 BTU/Hr |
| Operating temperature up to 10,000 ft (3000 m) | 32° to 104°F** | | |
| Operating relative humidity | 10% to 90% noncondensing | | |
| Dimensions (H x W x D) | 24.35 x 17.31 x 12.50 in. 14 RU | | |
| Input current (rated) | Two 12A at 100 VAC or Two 12A at 200 VAC | | |
| Input voltage | 100 to 240 VAC (±10% for full range) | | |

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Small to Medium Router:

| | | |
|--|---|---|
| Site Size | 0 to 24 Users | 25 to 100 Users |
| AC Input Voltage | 100 to 240 VAC auto ranging | 100 to 240 VAC auto ranging |
| AC Input Current Range AC Power Supply (Maximum) | 3.4 to 1.4A 7.6A with POE Power Supply | 3.4 to 1.4A 7.6A with POE Power Supply |
| Typical Power (Watts) | 60 | 70 |
| Maximum Power with AC Power Supply (Watts) | 320 | 340 |
| Maximum Power with PoE Power Supply (Platform Only) (Watts) | 370 | 405 |
| Dimensions (H x W x D) | 3.5 x 17.25 x 18.5 in | 3.5 x 17.25 x 18.5 in |
| Rack Height | 2RU | 2RU |
| Temperature | 32 to 104°F (0 to 40°C) | 32 to 104°F (0 to 40°C) |
| Relative Humidity | 10 to 85% | 5 to 85% |
| Heat Dissipation | 1092 BTU/hr | 1092 BTU/hr |

Medium to Large Router:

| | |
|-------------------------------|-------------------------------------|
| 100 to 250 users | |
| Input voltage | 100 to 240 VAC, autoranging |
| Input current | 0.4 to 3.5 A |
| Heat Dissipation | 1370 BTU/hr |
| Dimensions (H x W x D) | 5.22 x 17.25 x 18.75 in 3 RU height |
| Typical Power (Watts) | 85 to 400 W |
| Temperature | 32 to 104°F (0 to 40°C) |
| Relative Humidity | 10 to 85% |

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Multi Tenant building and/or Data Center Router. DC option available, site survey required

Power Consumption/Heat Dissipation Summary

| Minimum Power Supply | Percentage of Power Used |
|--|---|
| Single/Redundant WS-CAC-6000W with a Single 220V input | 55.57%  |
| First Alternative Power Supply | Percentage of Power Used |
| Single/Redundant WS-CAC-3000W | 89.30%  |

| Total Output Current | Total Output Power | Total Heat Dissipation |
|-------------------------------|---|------------------------|
| 58.92 Amps | 2475.64 Watts | 9942.31 BTU/Hr |
| Input voltage | 200-240 Volts AC | |
| Input current | 16A , (each input, dual per power supply) | |
| Dimensions (H x W x D) | 36.75 x 17.25 x 20.70 in 21 RU height | |
| Temperature | 32 to 104°F (0 to 40°C) | |
| Relative Humidity | 10 to 85% | |