Design power supply

-Off the shelf AC/DC converters as low as 1.25”

-Increasing grid height by a single inch would accommodate the whole converter inside of it

-Removes the need for AC/DC on PCB hub

-Most if not all AC/DC supplies have all the necessary certifications

-Different power ratings available in same size format

-Makes it easier with connectors to main hub

-Cost of AC/DC supplies varies from $130 to $300

-If needed we could go up to 900W and have all towers get up to 100W

-And main hub up to 100W

-Efficiency of most AC/DC supplies are >93%

-Active cooling for some built in, and some with passive heatsinks

-The passive ones weigh a lot more, but as the box is not made to be movable no a big issue

-Active ones add the need for air to be moved in and out of the grid

-One downside, voltage would be 24V, so would need a small DC/DC converter in the grid or main hub to go down to 20V.

-Efficiency of a circuit like this can be made up to 95% efficient

**Suitable power supplies:**

VPS800-1S24

-LWH = 127x216x41 mm

-800W

-$300

-Lead time 36 weeks

<https://octopart.com/search?q=VPS800-1S24&currency=USD&specs=0>

VPS1000-1024

-LWH = 127x241x41 mm

-1000W

-$350

-Lead time 36 weeks

<https://octopart.com/search?q=VPS1000-1024&currency=USD&specs=0>

UHP-1000-24

-LWH = 240x115x41 mm

-1000W

-$350

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<https://octopart.com/search?q=UHP-1000-24&currency=USD&specs=0>

RSP-1000-24

-LWH = 295x127x41 mm

-1000W

-$270-$300

-Quite some stock world wide

<https://octopart.com/search?q=RSP-1000-24&currency=USD&specs=0>