Summary

XenoCube is a printer built after a owning an I2. However, larger space, auto bed leveling, enclosure, and easier print process was needed but without spending 2k+. Others have shown interests in this, so the files are being made more accessible.

Electronics:

* Nema 17 motors are used, the Y and Z axis all setup with a serial connection, here is a link for serial setup: <http://www.instructables.com/id/Wiring-Your-Z-Stepper-Motors-in-Series/> .
* Osoyoo MKS v1.5 controller board drives the motors and fan.
* The heat bed is a MKS design, 300mm x 300mm x 3mm aluminum to make the induction sensor functional.
* A 4mm induction sensor is used, plug directly into the board. The induction sensor listed in the BOM needed no resister to activate the switch.
* To make the printer a solution to where limited skill is needed to print an object, the printer has a Raspberry PI to host the print server software.
* Optical End stop sensors are used for the X and Y axes.

Software:

* Marlin to drive the board.
* OctoPi to drive the Raspberry Pi
* OctoPrint to drive the printer.
* Cura profile exported to provide online slicing in OctoPrint.

Specs:

* 7 minute heat up
* 6 amp pull on preheat, 5 amp pull during printing, and .25 amp pull on idle.
* Current printing area: 215mmx220mm285mm

Power:

The power stack is, 24v power supply, which powers the lights, heat bed, and 12v inverter. The 5v inverter is powered off of the 12v inverter. The cost and complication of power, could be simplified by either using an ATX with 5v, 12v, 24v output or making a small PCB with 5v, 12v, powered by 24v power supply. I used retail inverters to step down the voltage, making setup easier and more liable. See jpg for picture of power routing.

Hot end / Extruder:

The Hot end for this is a 1.75mm Universal E3D, as this is a very reliable hot end and all metal to allow multiple materials. The universal model allows for Bowden setup making the hot end assembly lighter. The extruder for this is a MK8 extruder, again, all metal design to provide reliability and longevity. The Hot end assembly consumes a good amount of printing real estate, and is going to be redesigned to maximize the printing area.

Parts:

99% of the parts were sourced on Amazon, most people can access Amazon, and so parts could be sourced for a larger audience. Furthermore, some of these parts could be sourced cheaper, ymmv

See excel file BOM for a list of the parts.