Specs for PAM

**Linear Motion Hardware & Driving:**

The lead screws and motors will have to be able to handle a full load of cured resin and the build table that weights {Put Weight Here}. The drivers will also have to be able to do steps that are smaller than the desired print layer height of 1 µm.

**Framing:**

The frame of the printer will be made out of materials that are accessible to average printer hobbyist. Aside from using off the shelf materials, the frame will have to be strong enough to support the force of weight of the entire vat, build table, projectors, and other hardware of the printer. The frame also has to be able to mount common projector shapes and to allow for the projectors to be calibrated so that the lens is perpendicular to the build table. To be hobbyist friendly, the chassis should be less than 320mm x 320mm x by 550 mm.

**Enclosure:**

The enclosure has to fully prevent penetration of light from the outside of the chassis from the vat with photo-cured resin in it. The enclosure must allow easy accessibility to the frame and components inside for easy maintenance.

**Vat:**

The vat must be able to with stand the weight of the resin if it is filled to the top. The user will also have to be able to see the build table that sits in the resin. This leads to at least one side of the vat to be transparent. Because the resin can be cured to the vat if a mishap happens, the vat will have to be easily removed to be cleaned. It will have to be bigger than the build table because the table will be lowered into it. This mean it has to be bigger than {Put some dimensions here}.

**Build Table:**

The build table should be lightweight to decrease the amount of weight that has to be held by the stepper motor, build table supports, and frame. It will have to be the size of the desired print area of {Dimensions Here}. It will also have to meet the criteria of being accessible to the hobbyist community.

**Resin:**

Resins will need to cost less than $50.00 a litter to be cost affordable to hobbyist. To ensure quality printing, the shrinkage of cured resin should be less than 5%. A general DLP projector has to be able to cure the resin. For this process to happen the resin needs to be curable with 2000 Lumens or less. All resins should have a shelf life over we­eks to allow users to print several items from a signal batch before it is ruin. The viscosity should be under 90cP at 25­­­­­­­0 C.

**Projector:**

To maximize the print quality of the objects, the projector should be a 1080p resolution or higher. The hardware would have to support for VGA, DVI, or HDMI inputs to be the most flexible to the community. To be the most flexible the projector will also need to be able to support RS232.