Resin guide:

Here we cover various topics about resins for Phenom, including 3rd party resins and layer height

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“Can Phenom print 3rd parties resin?” is probably the most common question we got.

The answer is: Maybe

Phenom’s exposure control is open via software, so its UV light can solidify 3d printing resin designed for 405nm wavelength. However, printing well is more than about turning resin into solid, there are many other factors at play.

The large surface area of Phenom creates much stronger peel force; this force not only pulls the print from the plate leading to broken supports and unattached base, but it also shears the print in the middle. A good resin to print at this size has deal with all the above factors without releasing too much heat that will degrade LCD panel quickly. In our tests, many resins can perform well on the much smaller 5.5 LCD printers will start to have unpredictable print results when move to much bigger printer. After a lot of failures with many brands of resins and our own, we were able to create Deft for large surface printer with a high peel force.

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Regarding layer height, we highly recommended user stick with 50-60um layer for Phenom and in general, current batch of resin printer. There are couple reasons:

1. Most resins do not have the ability to show details under 30um layer height, let along 20um height. New users often mistaken layer height as the “resolution” of the printer and thus try to print as thin as possible. This practice is especially popular with miniature makers. Printing under 30um often lead to loss of resolution, higher failure rate and excessive time which eats into how many prints you can get from a panel.
2. For current generation of MSLA printers, you should generally stay away from going up to 100um or thicker. The reason is that at 100um the exposure time is extended such that there is a much higher chance to panel temperature going over critical limit and damage the panel.

3. Keeping between 40-60um with reason layer exposure time is a more balanced approach of great layer resolution without excessive print time or quick degradation of the panel.

Here is the resins we have tested:
https://docs.google.com/spreadsheets/d/1Yb60G5SicCMQi2Y65iiokzqHTKIZQBMlsGc4ajrrUAM/edit?usp=sharing