COMMON PRINTER SETTINGS FOR ALPHASENSE PRODUCTS

All AlphaSense resin products are fully compatible with SLA, LCD and DLP types of printers. Our resins have been validated by the following printers, including

- FormLab Form 1+, Form 2 and Form 3,
- Anycubic Photon,
- Elegoo Mars,
- Phrozen Shuffle Xl,
- Wanhao D7, D8,
- Micromake 2017 L2,
- X-cube LCD,
- Longer Orange,
- Sparkmaker,
- B9 Creator
- Envisiontec

General Guidelines:

1. Before each use, shake the resin bottle. If the resin has been left in the vat for a few hours, it needs to be mixed/agitated to prevent some resin ingredients from sinking to the bottom of the vat and causing printing failures.
2. Use a resin tank with high quality FEP (FEP 100 OR 127 HD are recommended) to avoid the problem of the cured resin being stuck to poor quality FEP films.
3. Before printing, the printer needs to be properly leveled and calibrated. Many common printing failures are often caused by poorly calibrated build plates, thus leaving a gap too wide to effectively grow layers upon.
4. Printing surfaces, including the build plate and FEP film of the resin vat need to be thoroughly cleaned. Some LCD printers, such as Elegoo Mars and Anycubic have electroplated build plate. Those electroplated surfaces are known to cause adhesion problems. A fine grit sand paper (e.g. P150) should be used to roughen the surface before printing. The build plate and FEP film needs to be cleaned with Isopropyl alcohol before printing.
5. Poor adhesion between the photopolymer and the build plate is a known issue for LCD types of printers, such as Anycubic photon, Elegoo Mars, Phrozen Shuffle, Wanhao, and Longer Orange etc. It is highly recommended to use priming solutions (i.e. AlphaSense's Power Bond) to enhance the adhesion. Power bond can be applied to the build platform using the eye dropper on the bottle. Apply 2-3 drops of the power bond priming layer and use a spatula to spread the priming solution evenly on the build plate. The layer can be cured using either UV lamps or sun light.
6. When the resin is used at very low temperatures (i.e. room temperature lower than 15°C), it needs to be preheated before printing.

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Specific Printer Settings:

Note: The printer settings below are **BASELINE** settings, which can help users quickly find optimum printing parameters. Final/optimum printer settings, however, are model/geometry dependent: models with large cross sections can be cured with less time, while those with smaller cross sections/intricate structures need to be cured with longer exposure.

Wanhao D7 and Anycubic Photon

Number of bottom layers: 8

Bottom layer exposure time: 80 seconds

Normal Layer Thickness: 0.05 mm

Normal layer exposure time: 12 to 18 seconds

Z lift: 5 mm

Z lift speed: 40 mm/min

Antialiasing: Off

Anycubic Photon S

Layer thickness: 0.05 mm

Normal Exposure Time: 8 Seconds

Bottom Layers: 5

Bottom Exposure Time: 60 seconds

Other Parameters: Original default values.

Phrozen Shuffle

Number of Burn-in layers: 5-10

Layer thickness: 50 u

Cure time: 70 seconds

Wait Before Print: 4 seconds

Wait After Print: 1 second

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Lift After Print: 5 mm

Wait After Lift: 0.1 second

Normal layer thickness: 50 u

Normal layer Cure Time: 12-15 seconds

Wait Before Print: 1.5 Second

Wait After Print: 0.1 second

Lift after print: 5 mm

Wait after lift: 0.1 second

Motor speed 120 u/sec

Phrozen Shuffle 4K

Number of Burn-in layers: 5-10

Layer thickness: 30 u

Cure time: 60 seconds

Wait Before Print: 5 seconds

Wait After Print: 0.5 second

Lift After Print: 7 mm

Wait After Lift: 0.1 second

Normal layer thickness: 30 u

Normal layer Cure Time: 9.5 seconds

Wait Before Print: 1 Second

Wait After Print: 0.1 second

Lift after print: 5 mm

Wait after lift: 0.1 second

Motor speed 150 u/sec

SparkMaker FHD

Number of Burn-in layers: 8

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Layer thickness: 50 u

Cure time: 100 seconds

Wait Before Print: 5 seconds

Wait After Print: 0.5 second

Lift After Print: 5 mm

Wait After Lift: 0.1 second

Normal layer thickness: 50 u

Normal layer Cure Time: 18 seconds

Wait Before Print: 1.5 Second

Wait After Print: 0.1 second

Lift after print: 5 mm

Wait after lift: 0.1 second

Motor speed 100 u/sec

ELEGOO MARS

Layer thickness: 0.05 mm

Normal exposure time: 18 seconds

Off Time: 1.5 Sec

Bottom exposure time: 90 seconds

Bottom Layers off time: 5 seconds

Bottom layers: 7

Z Lift distance: 5 mm

Supports: preset medium

Motor Speed 100 u/Sec

AlphaSense Power Bond Priming solution is highly recommended for Elegoo Mars Printers.

Zortrax Inkspire

Layer Thickness: 50

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Layer Exposure: 10 seconds

Bottom Layer Exposure: 50 seconds

Exposure off time: 1.5 second

Bottom layer: 6

Additional Supports exposure: 1 second

Z lift distance: 5

Platform speed 90

Motor speed: 90 mm/M

AlphaSense Power Bond Priming solution is highly recommended for Zortrax Inkspire.

Formlabs Form2

use the castable V2 print profile

Formlabs Form3

use the gray V3 or castable wax print profile - DWS DC 400/600.

Similarly, in order to improve the adhesion to the build plate, the following approaches should be adopted: sand the build plate, heat up the resin, use raft under the support layer, and apply priming solutions to the build plate.