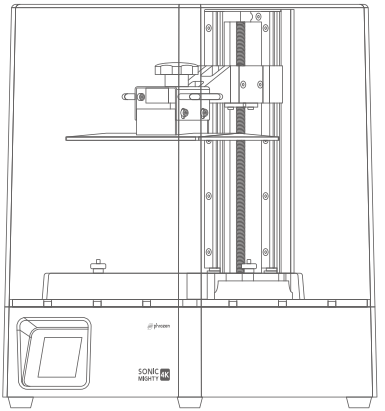


phrozen

User Manual for

Sonic Mighty 4K

Thank you for Choosing Phrozen 3D Printer!

Dear Phrozen User,

Thank you for joining us. For the best experience, please read through the Phrozen manual and follow step-by-step before you start.

Feel free to contact us if you have any questions.
Email | support@phrozen3d.com

Multi-language manuals and related software are available on our official website | https://www.phrozen3dp.com/pages/download

Please follow Phrozen's social media accounts and subscribe to our YouTube channel for all the latest updates.

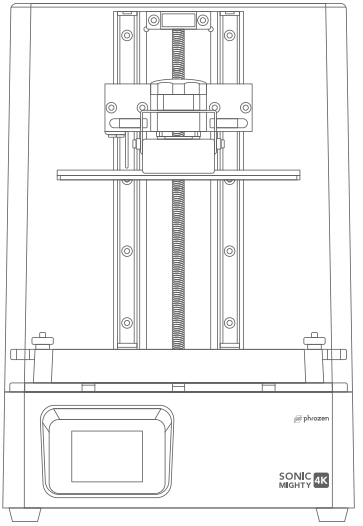
Facebook | Facebook Group | Youtube | Instagram

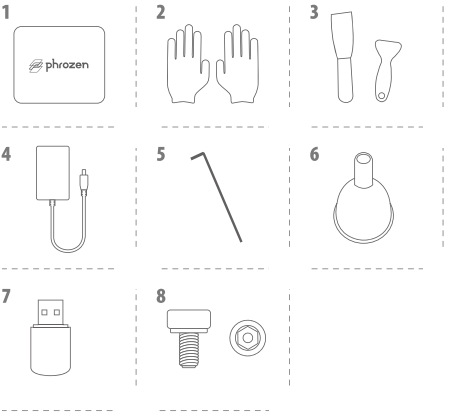
INDEX

01 Key Notes Before We Start !

1. Store your printer in a dry and ventilated environment. Avoid exposure to direct sunlight.
2. Please make sure to calibrate your Z-axis and conduct an LCD test before using your printer for the first time.
3. Before printing each time, make sure to clean the resin vat before pouring in the resin to ensure that you receive the best print quality.
4. Fill the resin vat so that it is 1/2 full.DO NOT OVERFILL.
5. Please wear PPE (Personal Protective Equipment) like mask, goggles, and long sleeves when operating printers and resins.
6. Please clean the model with 95% Alcohol, IPA, or special detergent such as Phrozen Wash.
7. When using the metal scraper to remove your prints from the build plate, proceed with caution as the scraper may injure your hand if used carelessly.
8. DO NOT disassemble the printer.
   This may cause your warranty to expire.

02 What You Have In The Box

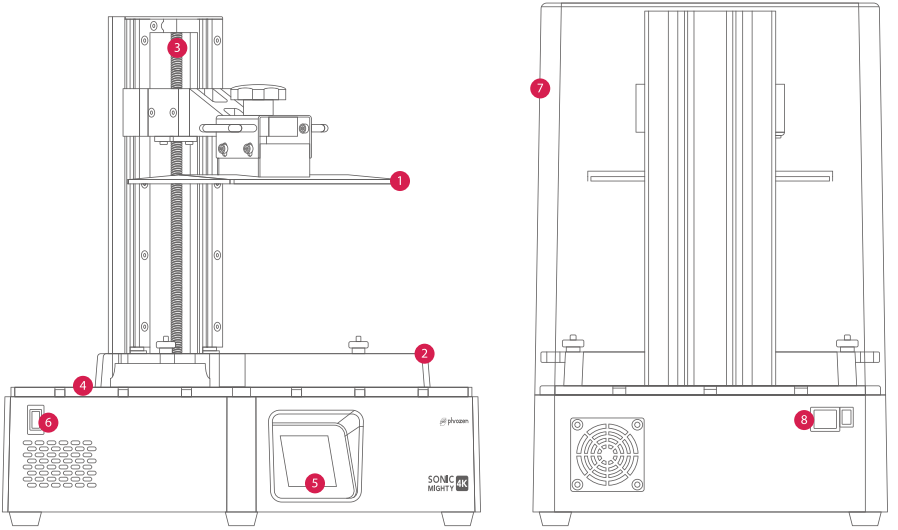




❶ User Manual ❷ Gloves ❸ Scrapers ❹ Adaptor

❺ Allen Wrench ❻ Plastic Funnel ❼ USB ❽ Backup Screws

03 Sonic Mighty 4K Printer Parts



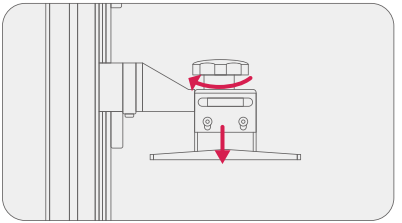
1. Build Platform
2. Resin Vat
3. Z-axis
4. LCD
5. Touch Panel
6. USB Port
7. Plastic Case
8. Power Switch

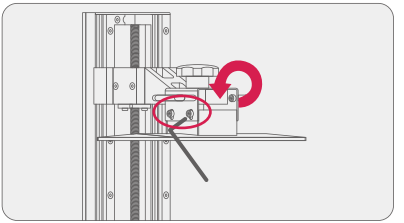
04 Sonic Mighty 4k Technical Specs

Operation	System	Phrozen OS
	Operation	2.8 inch Touch Panel
	Slicer Software	CHITUBOX V1.7.0
	Connectivity	USB
Printing Specification	Technology	Resin 3D Printer - LCD Type
	Light Source	405nm ParaLED® Matrix 2.0
	XY Resolution	0.052 mm
	Layer Thickness	0.01 - 0.30 mm
	Printing Speed	80 mm / hr
	Power Requirement	AC100-240V~50/60Hz
Hardware Specification	Printer Size	L28 x W28 x H44 cm
	Printing Volume	L20 x W12.5 x H22 cm
	Printer Weight	8 kg

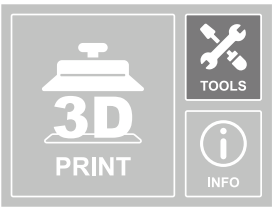
05 Z-axis Calibration

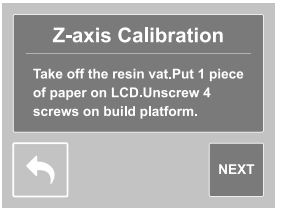
1. Plug in the power cord, turn on the power switch, and fasten the build platform onto the printer.
2. Use an Allen wrench to loosen the four screws by turning it counterclockwise on the build platform's sides.



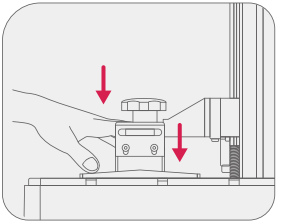


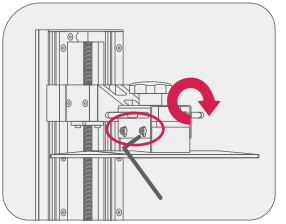
3. Click TOOLS , then click Z CALIB. Remove the resin vat and place a piece of A4 paper on the LCD. Then click NEXT.

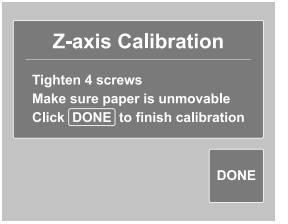




4. After the build platform touches the paper, use an Allen wrench to tighten the four screws by turning it clockwise on the build platform's sides. Then click DONE.

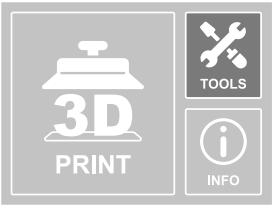


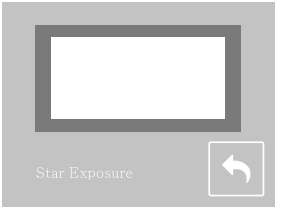




06 LCD Test

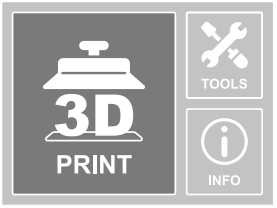
3. Click TOOLS and then click LCD TEST. The LCD will light up.
4. If the LCD shows a complete image (as shown in the picture on the right), the printer's LED lights and LCD are functioning correctly.

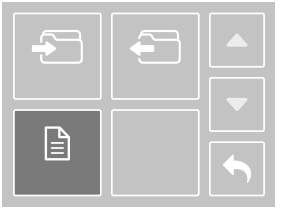




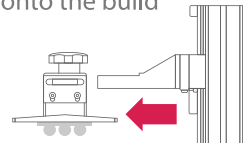
07 Test Printing

1. Wear PPE (Personal Protective Equipment) .
2. Fasten the resin vat onto the 3D printer.
3. Shake the resin for 1 minute and pour it into the resin vat so that it is 1/2 full.
4. Save a sliced 3D file onto your USB before plugging it into the printer.
5. The file will appear on the printer's touch panel. Select it, then click GO to start printing.
6. When printing starts, close the case and wait until the process is complete.

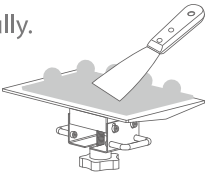




7. Once the printing process is complete, make sure your print is stuck firmly onto the build platform.



8. Use the metal scraper to remove your print from the build platform carefully.



08 Post Processing

❶ How to wash models after printing?

- Use 95% alcohol, IPA, or detergent such as Phrozen Wash to clean your prints.
- We recommend using Phrozen Ultrasonic cleaner to clean the finer details of your model.

❷ How to cure models after printing?

- Use a UV curing lamp to cure your prints. Curing time typically depends on the intensity and wavelength of the UV light provided by your lamp. Phrozen Cure takes an average of 30 minutes to cure your prints.

❸ Safety Guide

- Keep resin away from direct sunlight exposure.
- DO NOT dispose of liquid resin. Wait until the resin is fully cured, then dispose of it as general plastic waste.
- Wear PPE(Personal Protective Equipment) like goggles, gloves...etc.
- Resin should not have direct contact with the eyes and skin. DO NOT swallow resin.
- Stop using UV resin if it causes allergies.

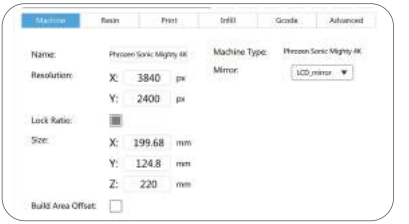
09 Prepare Your File

❶ Install CHITUBOX

Install CHITUBOX V1.7.0(or above version) in the USB. Run CHITUBOX after installation.

❷ Find CHITUBOX Setting

Click Setting and add a new printer. Select "Phrozen Sonic Mighty 4K" as your default printer.



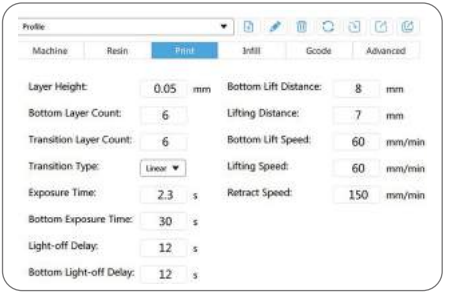
❸ Add Resin Density

For resin density, type in 1.1g/ ml.

This can help you estimate your printing cost.

❹ Print Parameter

Layer Height	We recommend setting a range of 0.03 -0.10 mm. The thinner your layers are, the more delicate your prints will be. Though it will take a longer time for your model to complete the printing process.
Bottom Layer Count	We recommend setting 4 to 6 layers. Add more layers for better adhesion to the build platform.
Exposure Time	For LCD resins, set the exposure time from 1-3 seconds. Please note that the thicker your layers are, the longer the exposure time will be.
Bottom Exposure Time	For LCD Resins, set the bottom exposure time from 20-40 seconds. Please note that the thicker your layers are, the longer the bottom exposure time will be.
Other Setting	Using Aqua-Gray 4K as an example, the settings are as follows:



Please visit Phrozen's official website to find out the profile settings for other resins:
https://www.phrozen3dp.com/pages/download

❺ Infill / Gcode

Please use default settings.

❻ Advanced

If you turn on the anti-aliasing function in CHITUBOX, your prints could be smoother but it may disrupt the dimensional accuracy of some prints.

❼ Load & Edit Model

Open a test 3D file(.stl) from your USB.

The left menu | Change the dimension, angle, and position of your 3D file.

The menu on top | Hollow out your model and create escape holes.

If there is space between the model and the build plate, you can add supports.

❽ Other Operations

Left Button Long Press | Drag the 3D file to the proper position

Scroll Wheel | Zoom in/out

Right-click Long Press | View the 3D file from different angles

❾ Save your model

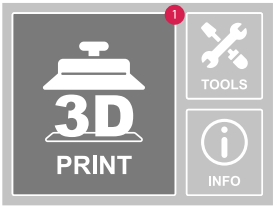
After setting up the print parameters, click "Slice." Once this is done, click "Save." You will receive a sliced.CTB file. Move the file from your laptop onto your USB and plug the USB into your 3D printer.

10 LED Light Setting

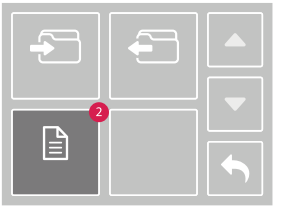
When using Phrozen resins, it is not necessary to adjust LED light intensity. However, if you have any special needs or requirements, this is how you can adjust the light intensity on your 3D printer.

LED light intensity can be adjusted from your Printer Settings or CHITUBOX Slicer Software .(Please only use 1 method to adjust the settings)

Via Printer

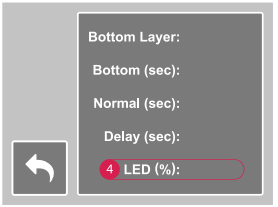


1 Click PRINT



2 Click on your print file

3 Click on Settings



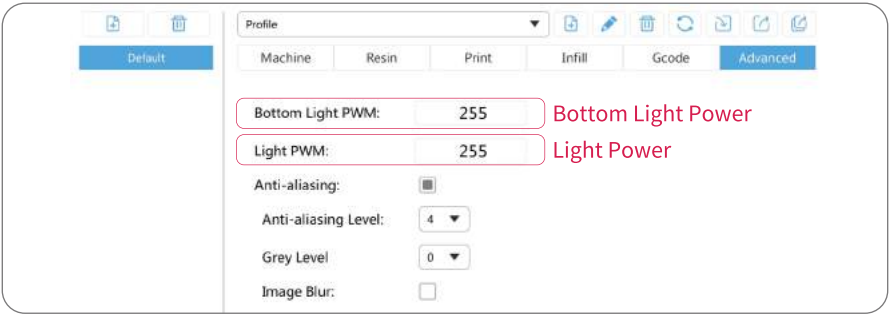
4 Adjust the LED light intensity

Warning

Once you restart your 3D printer, the LED light intensity will be changed back to the default setting, which is 100%.

Via CHITUBOX

- Please set the Bottom Light PWM and Light PWM to adjust the LED light intensity.(Insert a number between 0-255.)
- If the light intensity is to be set at 50%, then type in 128(255x50%≈128)
  If the light intensity is to be set at 25%, then type in 64.(255x25%≈64)



⚠ Warning

The 3D printer and LED light software consist of two separate systems.
If both methods are used simultaneously, this is how the LED light intensity will be affected:
The LED light intensity set on the software and the LED light intensity set on the printer will be multiplied with each other to receive the final LED light intensity.
For Example :

50% Software setting	x	50% Printer setting	=	25% Final LED light intensity

11 FAQ

Check more FAQ

1 Why is my Sonic Mighty 4K not functioning properly?

- Phrozen offers a one year warranty on all our printers and a 3-month warranty for Sonic Mighty 4K's LCD screen. Please note that this warranty does not cover damage caused by human factors.
- If your printer doesn't work, please contact us through support@phrozen3d.com
- If you purchase Sonic Mighty 4K from our distributors, please contact them for a claim of warranty. Order ID is required if you need to claim a warranty.

2 What do I do if my model is not able to stick to the build platform?

- Redo the Z-axis calibration.
- Increase curing time for the base layer.
- Roughen the surface of the build plate by sanding it.

3 Why do my prints stick onto the build plate but fall anyway?

- Check to see if the curing time is in the proper range.
- Check the support settings. You can increase support density and the tip diameter for better results.

4 Why are my models incomplete after printing?

- Check to see if the curing time is in the proper range.
- Check to see if there is debris between the resin vat and LCD.
- Check to see if there are dead pixels on the LCD.

5 Why do my finished prints crack easily?

- Check to see if your prints are cleaned properly, especially the hollow parts.
- You could also increase the curing time.

12 Maintenance

1. **How do I maintain my printer's Z-axis?**
   You can apply general lubricant on the Z-axis screw to make it move smoothly.
2. **Use proper tools to clean the resin vat**
   To protect your FEP film, use a plastic spreader to clean the resin vat instead of a sharp scraper.
3. **Carefully remove the build platform**
   If the build platform bumps against the LCD screen, it may damage it.
4. **How to store resins?**
   Please filter out the excess resin using a funnel and make sure there are no residues. Preserve the resin in an opaque plastic bottle and seal it tight without exposure to sunlight.
5. **How to clean the printer?**
   You can use sanitizing alcohol and tissues to clean the printer, the build platform, and the resin vat.

13 Congratulations !

Dear Phrozen User,

You have just completed your first run of Sonic Mighty 4K.
We hope you had a great experience!
Your 3D printing journey begins now.

Please follow Phrozen's social media accounts and subscribe to our YouTube channel to learn more about printing tips and share information with one another.

If you have any questions,
please feel free to contact us and send us an email at support@phrozen3d.com

Facebook | Facebook Group | Youtube | Instagram