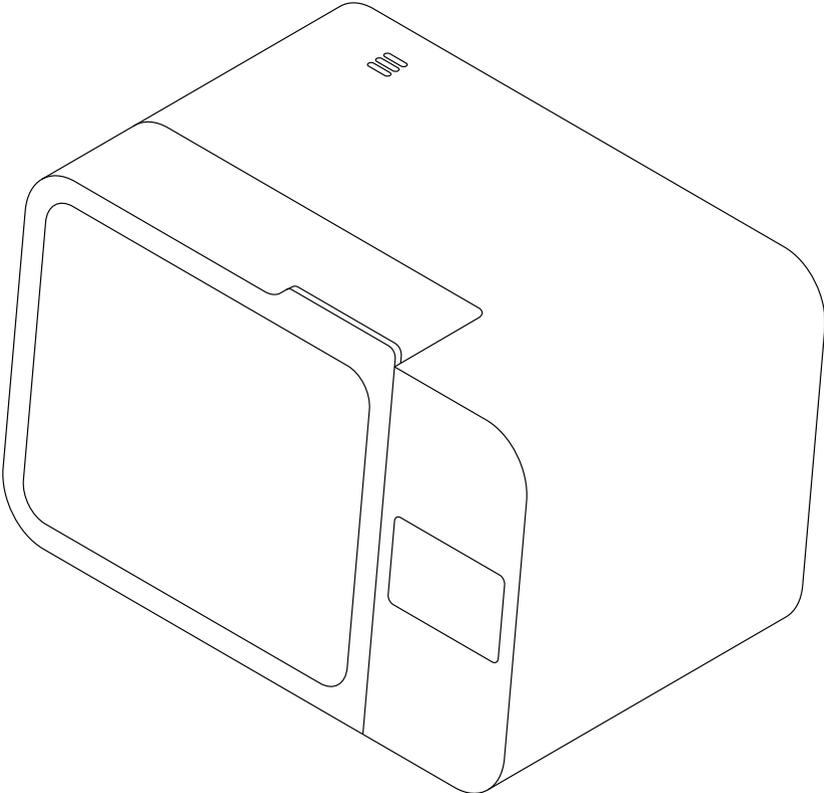


Manual | Form Cure L



Installation and Usage Instructions

Form Cure L

Large-format desktop stereolithography
post-cure chamber

Original English instructions

Read this manual carefully and keep it for future reference.

November 2021

REV 01

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1 Table of Contents

1	Preface	6
1.1	Read and retain instructions	6
1.2	Obtaining documentation and information	6
2	Introduction	8
2.1	Intended use	8
2.2	Technical specifications	9
2.3	Product components	10
2.4	User interface	10
3	Safety	12
3.1	Component and subsystem safety	12
3.2	Personal protective equipment (PPE)	14
3.3	Specification of tools to be used	15
3.4	Sensitive components	15
3.5	Emergency and exceptional situations	15
4	Preparation and setup	17
4.1	Location and environs	17
4.2	Power and networking	17
4.3	Unboxing the machine	17
4.4	Accessing the serial name	18
4.5	Installing the machine	18
4.6	Setting up a network connection	19
4.7	Updating firmware	20
4.8	Transporting the machine	20
5	Usage	22
5.1	Operational environment	22
5.2	Post-curing printed parts	22
5.3	Considerations for specific geometries	24
5.4	Time and temperature settings	25
5.5	Managing the machine	25
6	Maintenance	26
6.1	Tools and supplies	26

6.2	Inspection and maintenance	27
6.3	Tasks between uses	27
6.4	Periodic maintenance	27
6.5	Intermittent maintenance	28
7	Troubleshooting	29
7.1	Collecting diagnostic logs	29
7.2	Performing a factory reset	29
7.3	Troubleshooting errors or abnormal activity	29
8	Disassembly and repair	32
8.1	Tasks	32
9	Recycling and disposal	33
9.1	Disposal of resin	33
9.2	Recycling of resin	33
9.3	Disposal of solvent	33
9.4	Recycling of solvent	34
9.5	Disposal of electronic components	34
9.6	Disposal of packaging waste	34
10	Index	35
11	Glossary	36
12	Product compliance	37



Read and understand this manual and its safety instructions before using the Form Cure L. Failure to do so can result in serious injury or death.

DISCLAIMER

Formlabs has made every effort to make these instructions as clear, complete, and correct as possible. The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation, and testing of the products with respect to the relevant specific application or use thereof. Neither Formlabs nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information that is contained herein. Notify us if you have any suggestions for improvements or amendments or have found errors in this publication.

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DOCUMENT REVISIONS

Date	Version	Document changes
Nov 2021	REV 01	Initial publication

1 Preface

Congratulations on purchasing the Form Cure L. On behalf of the Formlabs team, we thank you for your purchase.

The Form Cure L is a large-format stereolithography (SLA) post-cure chamber. Post-curing printed parts in the Form Cure L strengthens them with heat and 375 nm and 405 nm light and brings them to their optimal mechanical properties. Post-curing is also a required step in workflows using Formlabs dental or medical resins to make biocompatible parts.

This manual explains how to set up, use, and properly maintain the Form Cure L and provides design guidance for optimizing print results.

The manual is intended for anyone who is installing, operating, maintaining, or otherwise interacting with the Form Cure L. Supervise young or inexperienced users to ensure enjoyable and safe operation.

1.1 Read and retain instructions

Read and understand this manual and its safety instructions before using the Form Cure L. Failure to do so can result in serious injury or death. Keep all safety information and instructions for future reference and provide them to subsequent users of the product. Follow all instructions to avoid fire, explosions, electric shocks, or other hazards that may result in damage to property and/or severe or fatal injuries. The Form Cure L shall only be used by persons who have fully read and understand the contents of this manual. Ensure that each person who uses the Form Cure L has read these warnings and instructions and follows them. Formlabs is not liable for cases of material damage or personal injury caused by incorrect handling or non-compliance with the safety instructions. In such cases, the warranty will be voided.

1.2 Obtaining documentation and information

Visit **formlabs.com** to:

- Access your **Formlabs store** (formlabs.com/store) and **Dashboard** accounts (formlabs.com/dashboard).
- Find **authorized resellers** in your region (formlabs.com/company/partners).
- Access the **Terms of Service** (formlabs.com/terms-of-service) and the **Privacy Policy** (formlabs.com/privacy-policy).

Visit **support.formlabs.com** to:

- Access the latest version of all Formlabs product documentation.
- Contact [Formlabs Support](#) to request documentation, manuals, repair guides, and technical information.
- Submit any comments and positive or negative feedback. We value comments from our customers.
- Request additional training.

1.2.1 Support and service

Retain a record of the original purchase to request warranty services. Service options depend on the status of the specific product's warranty. Include the serial name of the product when contacting [Formlabs Support](#) or a [certified service provider](#) for product support. For products purchased from authorized resellers, contact the original service provider for assistance before

contacting Formlabs Support. Instead of a serial number, Formlabs products have a serial name, which is a unique identifier to track the history of manufacturing, sales, and repair, and to distinguish usage when connected to a network. The serial name is on the back panel of the machine in the format **AdjectiveAnimal**.

Service providers of Formlabs products also provide support and service. To the extent that Formlabs or a certified service provider offers other or extended warranties, the terms of the separate offer may apply.

For any support or service requests, including product information, technical assistance, or assistance with instructions, contact [Formlabs Support](#):

support.formlabs.com

USA

Formlabs, Inc.
35 Medford St.
Somerville, MA, USA, 02143

Germany

Formlabs GmbH
Nalepastrasse 18
12459 Berlin, Germany

1.2.2 **Warranty**

This product is protected under warranty. Formlabs offers a warranty for all Formlabs-branded hardware. Unless otherwise expressly stated, the **Terms of Service**, including the **Warranty**, constitute the entire agreement between you and Formlabs with respect to the **Service** and any product you purchase from Formlabs and supersedes all prior or contemporaneous communications, proposals, and agreements, whether electronic, oral, or written, between you and Formlabs.

Read the warranty for more details on the Formlabs warranty for your region:

US

formlabs.com/support/terms-of-service

EU (EN)

formlabs.com/eu/terms-of-service

EU (DE)

formlabs.com/de/support/terms-of-service/eu

EU (FR)

formlabs.com/fr/support/terms-of-service/eu

EU (ES)

formlabs.com/es/terms-of-service/eu

EU (IT)

formlabs.com/it/terms-of-service/eu

2 Introduction

2.1 Intended use

The Form Cure L post-cures 3D printed parts with a combination of heat and light. The final performance characteristics of cured photopolymer resin may vary according to your compliance with the instructions for use, application, operating conditions, material combined with, end use, or other factors.



NOTICE

In some cases, the additive manufacturing process may inherently result in variable performance characteristics between manufacturing runs or within a specific part. Such variances may not be apparent and may result in unexpected defects in additively fabricated parts.



WARNING

You shall independently verify the suitability of additive manufacturing, stereolithography (SLA), the Form Cure L, and any specific designs or materials employed for the application and intended purpose before use. In no event shall Formlabs be liable for any loss, death, or bodily injury that you suffer, or that you cause to any third party, in connection with your use of Formlabs products. To the fullest extent legally permitted Formlabs EXPRESSLY DISCLAIMS ANY IMPLIED OR EXPLICIT WARRANTY OF FITNESS for a particular usage, the particular nature and circumstances of said usage being unforeseen and unforeseeable to Formlabs.



WARNING

Formlabs is not a manufacturer of medical devices. Formlabs provides tools and materials that may be used in many applications, but makes no claims as to the safety or effectiveness of any specific devices made using Formlabs products. Certain Formlabs products, such as those commonly known in the industry as “biocompatible” materials, have been engineered to comply with relevant industry standards. The specific standards and most relevant technical specifications may be identified within the technical data sheets and have been tested according to relevant testing protocols for those standards and specifications. Biocompatible materials are a speciality product, developed for use by medical professionals, and should be used in accordance with the instructions for use.



WARNING

Do not modify. The Form Cure L is intended for use as-is. Modifying the machine without explicit approval and directions from Formlabs or a certified service provider will void your warranty, and could potentially damage the machine and cause bodily harm.

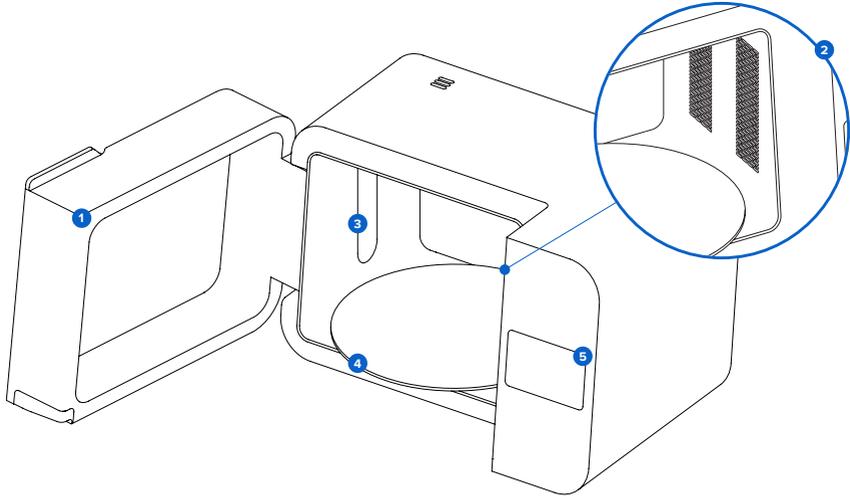
2.2 Technical specifications

Parameter	Unit
Unit	Form Cure L
Installation surface	Benchtop unit
Minimum dimensions for convenient access (W × D × H)	90 × 85 × 55 cm 35.5 × 33.5 × 21.7 in
Product dimensions (W × D × H)	69 × 54 × 44.5 cm 27.2 × 21.3 × 17.5 in
Product weight	24 kg 53 lb
Turntable diameter	39.5 cm 15.6 in
Curing volume	Cylinder 39.5 cm in diameter and 32 cm tall Cylinder 15.6 in in diameter and 12.6 in tall
Operating environment	18–28 °C 64–82 °F
Power requirements	Input (NA): 100–120 VAC, 50–60 Hz, 15 A max Input (EU): 220–240 VAC, 50–60 Hz, 8 A max
Maximum post-cure temperature	80 °C 176 °F
Light source	45 multi-directional LEDs (15 375 nm-LEDs, 15 405 nm-LEDs, 15 white LEDs)
UV LED electrical power	70 W
UV LED radiant power (total)	36 W
UV LED radiant power by wavelength	16 W at 375 nm (15 LEDs) 20 W at 405 nm (15 LEDs)
Connectivity	Wi-Fi: 2.4 GHz Ethernet: 100 Mbit USB: 2.0
Wi-Fi connectivity	Protocol: IEEE 802.11 b/g/n Frequency: 2.4 GHz Supported security: WPA/WPA2
Ethernet connectivity	RJ-45 Ethernet (10BASE-T/100BASE-TX) LAN port Connect with a shielded Ethernet cable (not included): minimum Cat5, or Cat5e or Cat6.
USB connectivity	USB (rev 2.0) B port with a USB A-B cable
Sound emission	Does not exceed 79.5 dB(A).
Unit control	Interactive touchscreen
Alerts	Touchscreen alerts

2.3 Product components

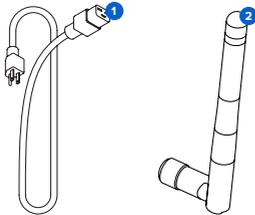
For detailed guidance and visual assistance, visit support.formlabs.com.

2.3.1 Form Cure L



- ❶ **Door:** Double walls insulate the post-cure chamber and the internal surfaces reflect light.
- ❷ **Heaters:** Two 500 W heating modules heat the post-cure chamber up to 80 °C (176 °F).
- ❸ **LEDs:** An array of 375 nm and 405 nm LEDs help to post-cure parts. Secondary white LEDs illuminate the turntable when the cover is open and during heating.
- ❹ **Turntable:** Rotating plate ensures balanced post-curing across all exposed surfaces.
- ❺ **Touchscreen:** The LCD capacitive touch user interface displays post-cure cycle information, settings, and error messages.

2.3.2 Additional package components



- ❶ **Power cable:** Provides power to the Form Cure L.
- ❷ **Wi-Fi antenna:** Allows the machine to connect to a network via Wi-Fi.

2.4 User interface

For detailed guidance and visual assistance, visit support.formlabs.com.

The Form Cure L display is a touchscreen interface. The touchscreen displays post-cure information (time, temperature, and selected material), settings, and error messages. The touchscreen serves as the user interface for the machine.

The home screen displays the preheating time and temperature, post-cure time and temperature, current resin, device status, and serial name.

The following screens and options are accessible via the home screen on the Form Cure L display:

Settings	Connectivity Update Firmware Connect to Dashboard Onboarding Machine Sounds Turntable Spinning Reboot
Select Preheat Time and Temperature	Select a preheat time and temperature.
Select Post-Curing Time and Temperature	Select a post-curing time and temperature.
Select Resin Version	Select a resin version.
Recently Used	Select or create a custom resin profile.
Start	Start a post-cure cycle.

3 Safety



Read and understand this manual and its safety instructions before using the Form Cure L. Failure to do so can result in serious injury or death.



Supervise young or inexperienced users to ensure enjoyable and safe operation. These instructions contain warnings and safety information, as explained below:



DANGER indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.



WARNING indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.



CAUTION indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.



NOTICE indicates information considered important, but not hazard-related.



DANGER: Isopropyl alcohol is a flammable chemical.



ENVIRONMENTAL HAZARD: Uncured photopolymer resin is classified as hazardous to aquatic life.



CAUTION: Do not touch hot surfaces.



MANDATORY ACTION: Refer to instruction manual/booklet.



MANDATORY ACTION: Grounding required.



MANDATORY ACTION: Disconnect before carrying out maintenance or repair.



MANDATORY ACTION: Wear eye protection.



MANDATORY ACTION: Wear thermal-insulating silicone gloves when handling hot build chambers.

3.1 Component and subsystem safety

3.1.1

General

The Form Cure L is a professional appliance that includes electronic components. As with any such appliance:

- Do not operate the device with a damaged cord or plug.
- Ensure reliable grounding before connecting the device to power.

- Always disconnect power before cleaning.
- Only use well-maintained equipment.
- Operate on a clear and level surface.



Do not touch hot surfaces. The Form Cure L contains two 500 W heaters to help ensure parts are strong after post-curing. While the heater and fan designs limit overheating and the heater is insulated to contain heat, surfaces of the Form Cure L and printed parts may be hot during and after use.



Like any heating appliance, a fire may occur if the Form Cure L maintains extended contact with flammable materials, such as walls or curtains. Keep the Form Cure L away from walls and curtains. Keep the area surrounding the turntable clean, and only post-cure parts that have been completely dried. Accumulation of cured material creates the possibility of malfunction.

The Form Cure L uses heat as well as 375 nm and 405 nm light to post-cure 3D printed parts. The cover includes an interlock system that is designed to automatically pause heating and extinguish the cure lights when the cover is open.

3.1.2 Resin



Resin and solvents may cause skin irritation or an allergic skin reaction. Wear gloves when handling liquid resin, liquid solvent, or resin-coated surfaces. Wash skin with plenty of soap and water. Do not use alcohol or other solvents to remove resin from skin.



Consult the safety data sheet (SDS) as the primary source of information to understand safety and handling of Formlabs resins. Respect Formlabs resin like any household chemical. Follow standard chemical safety procedures and Formlabs resin handling instructions. In general, Formlabs resin is not approved for use with food, drink, or medical applications on the human body. Refer to the safety data sheet (SDS) for each specific resin as well as support.formlabs.com for more detail.

3.1.3 Optical radiation

This equipment has been tested and found to be exempt from classification pursuant to IEC 62471.

3.1.4 Radio interference

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to CFR Title 47, Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense.

Changes or modifications to this product not authorized by Formlabs could void the electromagnetic compatibility (EMC) and wireless compliance and negate your authority to operate the product.

This product has demonstrated EMC compliance under conditions that included the use of compliant peripheral devices and shielded cables between system components. It is important that you use compliant peripheral devices and shielded cables between system components to reduce the possibility of causing interference to radios, televisions, and other electronic devices.

3.1.5 Isopropyl alcohol



Isopropyl alcohol is a flammable chemical. Keep away from ignition sources, including open flames, sparks or concentrated sources of heat. Allow any printed part cleaned with isopropyl alcohol to dry completely before post-curing.



Formlabs does not manufacture isopropyl alcohol. Consult the chemical manufacturer or supplier for detailed safety information. Carefully follow the safety instructions provided with the isopropyl alcohol that you purchase. Isopropyl alcohol can be flammable, even explosive, and should be kept away from heat, fire, or sparks. Any containers holding isopropyl alcohol should be kept closed or covered when not in use. We also recommend that you wear protective gloves and have good ventilation when working with isopropyl alcohol.

3.1.6 Tripropylene glycol monomethyl ether (TPM)



Formlabs does not manufacture tripropylene glycol monomethyl ether. Consult the chemical manufacturer or supplier for detailed safety information. Carefully follow the safety instructions provided with the tripropylene glycol monomethyl ether you purchase. We also recommend that you wear protective gloves when working with tripropylene glycol monomethyl ether.

3.2 Personal protective equipment (PPE)

Safe operation of the Form Cure L can be achieved by using the following equipment:

- Non-reactive nitrile gloves
- Safety glasses



Resin and solvents may cause skin irritation or an allergic skin reaction. Wear gloves when handling liquid resin, liquid solvent, or resin-coated surfaces. Wash skin with plenty of soap and water.



Some methods of support removal may cause small pieces of supports to break away. Beware of flying debris. Wear eye protection and gloves to protect the skin and eyes.

3.3 Specification of tools to be used

The Form Cure L shall only be used with supplied accessories and additional tools recommended by Formlabs or a certified service provider. Third-party accessories and materials may cause damage. Refer to sections **3.2 Personal protective equipment (PPE)** and **6.1 Tools and supplies for more information**.

Purchase additional supplies:

- Apron
- General purpose cleaner (e.g., glass cleaner)
- Low-fiber paper towels
- Non-reactive nitrile gloves
- Safety glasses
- Shoe covers

3.4 Sensitive components

The Form Cure L has multiple components that are vulnerable to permanent damage if not periodically inspected and properly maintained. Using any tools, cleaning agents, or methods not mentioned in this manual may result in permanent damage to these components.

• **LED modules**

The Form Cure L uses three LED modules to expose printed parts to a mix of 375 nm and 405 nm light during post-curing. Refer to section **6.4.2 Maintaining the light diffusers** for more information.

• **Heater modules**

The Form Cure L uses two heater modules to heat the post-cure chamber and printed parts during post-curing. Refer to section **8 Disassembly and repair** for more information.

• **Turntable**

The Form Cure L uses a glass turntable that rotates throughout the post-cure cycle, ensuring that printed parts are evenly exposed to light and heat. Refer to section **6.3.1 Maintaining the turntable** for more information.

3.5 Emergency and exceptional situations

Formlabs has made every effort to provide updated safety data sheets (SDS) for every resin product, in accordance with the latest government guidelines. Always consult the safety data sheet (SDS) as the primary source of information to understand safety and handling of Formlabs materials and required accessories. Visit formlabs.com/sds to download safety data sheets for Formlabs materials.

3.5.1 **Chemical spills**

Prepare for a possible chemical spill of flammable materials, such as isopropyl alcohol. Your spill response procedure should contain the following:

- A listing of personal protective equipment (PPE), safety equipment, and cleanup materials required for spill cleanup and an explanation of their proper use.
- Appropriate evacuation zones and procedures.
- Availability of fire suppression equipment.
- Disposal of containers for spill cleanup materials.
- The first aid procedures that might be required.

3.5.2 Fire



Do not use water to extinguish an electrical fire. Dousing an electrical fire with water increases the risk of electrocution, and may cause the fire to spread by allowing electricity to conduct across additional flammable surfaces.

If a localized fire develops either inside or outside of the machine, immediately take the following actions.

If the fire is inside the device:

1. Immediately disconnect the machine from its power source.
2. If the door of the Form Cure L is open, close its door if possible.
 - If a part inside the Form Cure L is on fire, do not close its door. Place a fire blanket over the unit.
3. Use an ABC fire extinguisher to cover the affected area generously.

If the fire is too large to control:

4. Immediately leave the area and close the door of the room behind you.
5. Evacuate the building according to your organization's emergency protocols.
6. Call emergency services once you have reached a safe distance from the fire.

3.5.3 Isopropyl alcohol (IPA)



When handling isopropyl alcohol, always consult the safety data sheet (SDS) from the isopropyl alcohol supplier as the primary source of information. Handle isopropyl alcohol with gloves in a well-ventilated area. Keep away from heat, sparks, and open flame. Isopropyl alcohol evaporates rapidly, so keep the wash bucket and bottles closed whenever possible.

3.5.4 Resin



Never ingest resin in liquid or solid form. If swallowed, immediately call a poison center or medical professional. Contact Chemtrec at +1 800 424 9300 for global 24-hour emergency assistance.



Promptly clean and inspect the device after a resin spill to minimize any cosmetic or functional damage to the machine. If you have experienced an accidental resin spill, document the problem with photos and clean the device as best as possible. Contact [Formlabs Support](#) or a [certified service provider](#) as soon as possible.

4 Preparation and setup

4.1 Location and environs

Prepare a space to install and operate the Form Cure L and house the necessary accessories and consumables.

To prepare the workspace:

- Ensure that the workspace meets the following requirements:
 - Dry, indoor location
 - Maximum altitude of 2000 m (6561.7 ft)
 - Low ambient humidity
 - Mains supply voltage fluctuations $\leq 10\%$
 - Pollution degree of intended environment: 2
- Operate the device in a well-ventilated room with a temperature of 18–28 °C (64–82 °F).
- Position the device so that it is easy to operate the power switch of the unit.
- Dedicate a power outlet and circuit to the device capable of delivering 1 A of current.

4.2 Power and networking

For detailed guidance and visual assistance, visit support.formlabs.com.



The Form Cure L requires reliable grounding. The power cable used with the device must be grounded. Do not use an inadequately-rated power cable with the Form Cure L.

For remotely monitoring the device, ensure it maintains a constant connection to a secured network. Refer to section **4.6 Setting up a network connection** for more information.

4.3 Unboxing the machine

For detailed guidance and visual assistance, visit support.formlabs.com.

Prior to unboxing, ensure that the suitable workspace has been prepared according to section

4.1 Location and environs.

4.3.1 Receiving

Shipping dimensions	Shipping weight	Product dimensions	Product weight
84.8 × 59.2 × 55.2 cm 33.4 × 23.3 × 21.7 in	32 kg 70 lb	69 × 54 × 44.5 cm 27.2 × 21.3 × 17.5 in	24 kg 53 lb

4.3.2 Unboxing

The custom packaging the Form Cure L arrives with is specially designed to protect the machine during shipping. During unboxing, inspect the product for any damage or missing items. In the case of damage or missing items, contact [Formlabs Support](#) or a [certified service provider](#).

To unbox the machine:

1. Position the packaging near the designated location, leaving enough room for two people to comfortably maneuver throughout the area. Stand the packaging upright to ensure it is level.

2. Lift the outer cardboard box off of the lower carrier tray.
3. Remove the foam inserts from the top of the machine.
4. Use the provided handles on the carrying slings to lift the machine out of its carrier tray.
5. Carefully move the machine onto its workspace.



If you need to readjust the Form Cure L, use the carrying slings to pick the machine back up. Do not pick up the Form Cure L without the carrying slings.

6. Tilt each side of the machine up slightly to remove the carrying slings.
 7. Open the door.
 8. Remove the turntable from the upper packing foam. Place the turntable on its mount.
 9. Close the door.
- Keep the original packaging for transportation or shipping.

4.4 Accessing the serial name

The serial name is a unique identifier used to track the history of manufacturing, sales, and repair. The serial name for the Form Cure L is located on the back of the unit in the format **AdjectiveAnimal** and is accessible via the touchscreen.

To access the serial name on the touchscreen:

1. If you are currently viewing a submenu on the touchscreen, tap the < arrow until you return to the home screen. The home screen lists your current post-cure settings and the device status.
2. The serial name is listed in the top-left corner.

4.5 Installing the machine

For detailed guidance and visual assistance, visit support.formlabs.com.

After selecting a location, connect the device to a power source and install the Wi-Fi antenna before turning on the device.

4.5.1 Connecting the cables

Plug the included power cable into the power port on the back of the unit and connect the power cable to a dedicated circuit.

For Ethernet, connect the machine to your LAN. Refer to section **4.6 Setting up a network connection** for more information.

4.5.2 Installing the Wi-Fi antenna

Install the Wi-Fi antenna to connect the machine to a wireless network.

To install the Wi-Fi antenna, screw the Wi-Fi antenna onto the jack on the back of the unit.

4.5.3 Turning on

To turn on the machine:

1. Plug the included power cable into the power port on the back of the unit and connect the power cable to a dedicated circuit.
2. Flip the breaker switch on the back of the unit to the **ON** position to turn on the machine.
3. As the Form Cure L initializes, the Formlabs logo with a progress bar appears on the touchscreen, followed by the onboarding process. Follow the on-screen prompts to finish setting up the machine.

To turn off the machine, refer to section **5.5.2 Turning off**.

4.6 Setting up a network connection

Connect the machine to a secure network via Wi-Fi or Ethernet, providing it internet access for remote monitoring and receiving firmware updates. The device can connect directly to a computer with a USB cable.

For a Windows operating system, after installing PreForm, check to ensure that Bonjour is properly installed. Bonjour is third-party software that is required to connect over Wi-Fi or Ethernet. Visit support.apple.com for assistance with Bonjour. The USB connection can still be used while the device is connected to a LAN.

When the device is connected to a LAN, its current status can be monitored with Dashboard: formlabs.com/dashboard.

4.6.1 Connecting with Wi-Fi

The device has built-in Wi-Fi (IEEE 802.11 b/g/n) that supports WPA/WPA2 security. Use the touchscreen to configure a wireless network connection.

To connect with Wi-Fi:

1. Tap the wrench icon on the home screen. The **Settings** screen appears.
2. Tap **Connectivity > Wi-Fi**. The **Wi-Fi** screen appears.
3. Toggle **Use Wi-Fi** to **ON**. The toggle turns blue.
4. Tap the desired wireless network.
5. If prompted, enter your network password and tap the checkmark to confirm.

4.6.2 Connecting with Ethernet

The rear of the unit is equipped with a RJ-45 Ethernet (10BASE-T/100BASE-TX) 100 Mbit LAN Port. Use a shielded Ethernet cable (not included): minimum Cat5, or Cat5e or Cat6.

To connect with Ethernet:

1. Plug one end of the Ethernet cable into the Ethernet port on the back of the unit.
2. Connect the other end of the Ethernet cable to your LAN.

4.6.3 Connecting with a manual IP configuration

When connected to an active Ethernet connection or available wireless network, the device can be configured with a static IP address. Use the touchscreen to configure a manual IP connection.

To connect with Wi-Fi or Ethernet using a manual IP configuration:

1. With an established Ethernet or available Wi-Fi connection, tap the wrench icon on the home screen. The **Settings** screen appears.
2. Tap **Connectivity**. The **Connectivity** screen appears.
 - For Wi-Fi networks, tap **Wi-Fi**, then the desired wireless network. A new screen appears. Tap the **Manual IP** button in the lower-left corner. The **Manual IP Settings** screen appears.
 - For Ethernet connections, tap **Ethernet**. The **Manual IP Settings** screen appears.
3. Toggle **Use Manual IP** to **ON**. The toggle turns blue.
4. Enter the appropriate **IP Address**, **Subnet Mask**, **Default Gateway**, and **Name Server**.

4.6.4 Connecting with USB

Use the included USB cable for connecting a computer directly to the machine.

To connect with USB:

1. Plug one end of the USB cable into the USB port on the back of the unit.
2. Connect the other end of the USB cable to a computer's USB port.

4.7 Updating firmware

For detailed guidance and visual assistance, visit support.formlabs.com.

Formlabs regularly releases updated firmware to fix bugs and improve functionality. Download the latest firmware version for your Formlabs device with PreForm, then upload and install the firmware file on the machine. Refer to the [firmware downloads and release notes](#) to learn more about the improvements that come with each version's release.

To update the firmware via PreForm:

1. Open PreForm.
2. Connect the machine to the computer via USB or connect the device to an Ethernet network.
3. Click **File > Devices**. The **Device List** window appears.
4. Click the machine's serial name. The **Device Details** window opens.
5. Click **Update** in the upper-right corner of the **Device Details** window. The **Firmware Update** window opens.
6. Follow the on-screen instructions to download the latest firmware and then upload the file to the machine. To upload firmware, the device must be connected to the computer via USB or the machine must be connected to an Ethernet network.
7. The machine may automatically recognize that you have sent a firmware update. Tap **Continue** on the touchscreen to finish the installation.
8. If you are not prompted to **Continue**, continue the firmware update manually. Tap **Settings > System > Firmware Update**.
9. After the firmware update installs, confirm the system restart on the touchscreen or wait 30 seconds for an automatic restart.

4.8 Transporting the machine

For detailed guidance and visual assistance, visit support.formlabs.com.

Refer to section **4.3.1 Receiving** for product weight and dimensions. Keep the packaging for transportation or shipping.

The complete packaging kit consists of:

- 1 outer carton, cardboard
- 1 upper insert, foam
- 1 carrier tray, cardboard
- 2 carrying slings, cardboard
- 1 carrier tray insert, foam

4.8.1 Preparing for transportation

Before repackaging, remove the glass turntable and place it in the accessories box. Ensure the post-cure chamber as well as the outer shells are clean and dry.



The Form Cure L is a heavy object. A two person lift is required to prevent injury and avoid damage to the machine. Always use the included cardboard slings when moving the device.



Do not ship the machine without removing and fully securing the turntable. The turntable is made of glass and can break during transit.

To prepare the machine:

1. Always remove the turntable and any printed parts before moving or packaging the machine.
2. Wipe residual liquid resin and solvent from the post-curing chamber and other internal components.



Do not ship the machine with any liquid resin or solvent inside. Liquids left inside the machine can leak during transit, which may result in additional fees, void the warranty, or present a safety hazard.

Do not ship the Form Cure L with any loose items stored inside the machine. Loose items can shift during transit and damage sensitive components, which may result in additional fees or void the warranty.



When shipping a machine to Formlabs or a certified service provider for replacement or repair, the power cable and other accessories should not be shipped and will not be returned after service. Original packaging is required for warranty service. Contact Formlabs Support or a certified service provider for unique guidance on shipping requirements.

4.8.2 Packaging



Thoroughly read and follow the instructions to properly package the machine. Skipping any of the following steps may result in shipping damage and void the warranty.

To package the machine:

1. If you have previously collapsed the machine's outer cardboard carton, start by reassembling and securely taping the box.
2. Tilt one side of the machine up and slide a carrying sling underneath. Repeat with a second sling under the other side of the machine.
3. Place the foam carrier tray insert into the cardboard carrier tray.
4. Use the provided handles on the carrying slings to lift the machine into its carrier tray.



Lifting hazard: The Form Cure L is a heavy object. A two-person lift is required to prevent injury and avoid damage to the machine.

5. Place the two foam inserts on the top edges of the machine.
6. Lower the outer box onto the printer.
7. Seal each edge of the opening with adhesive packing tape.

5 Usage

5.1 Operational environment

- **Ventilation:** No specific requirements
- **Temperature:** 18–28 °C (64–82 °F)
- **Power:**
 - Dedicated power outlet and circuit capable of delivering 8 A of current (for 220–240 VAC circuits) or 15 A (for 100–120 VAC circuits)
 - Easy access to the power switch of the device
- **Location:** Dry, indoor
- **Altitude:** Maximum 2000 m (6561.7 ft)
- **Humidity:** Low ambient humidity
- **Mains supply voltage fluctuations:** ≤ 10%
- **Pollution degree of intended environment:** 2

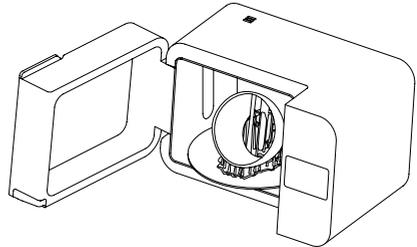
5.2 Post-curing printed parts

Many resin types require post-curing to achieve their optimal mechanical properties or as a step in producing a biocompatible printed part. The Form Cure L helps ensure consistent post-curing by rotating printed parts during the post-cure cycle and exposing the part to light from all directions. For detailed guidance and visual assistance, visit support.formlabs.com.

5.2.1 Inserting washed and dried printed parts

Fully dry all printed parts after washing. Check all internal and external surfaces, because curing non-dried parts may trap solvent inside the part, prevent parts from strengthening, and affect quality. Once parts are dry:

- Open the door.
- Distribute parts on the round turntable. Place parts with the most even spacing possible to allow light and heat to reach all areas.
- Gently close the door.



CAUTION



The Form Cure L contains two heaters that heat inserted parts during post-curing. Take care when inserting and removing parts from the Form Cure L, because the turntable may be hot.

5.2.2 Setting the time and temperature

The Form Cure L has presets for each resin type that you can select through the touchscreen. When Formlabs releases new resins, new resin formulations, or new layer thicknesses, update the firmware on your Form Cure L for the new presets.

To set the post-cure time and temperature based on resin type:

1. Tap **Cure**. The **Resin Profile** menu appears.
2. Select the appropriate material profile on the touchscreen. If the resin has multiple versions or post-curing profiles, tap the desired version or profile.

3. Tap **Done** to confirm your selection.
4. Tap **Start**.

Depending on the size of your printed parts and their geometry, you may need to adjust the recommended post-cure settings.

To manually set the post-cure time and temperature:

1. Tap **Cure**. The **Resin Profile** menu appears.
2. Tap **Custom**. The **Custom Cure** screen appears.
3. Select the desired time and temperature on the touchscreen.
4. Tap **Done** to confirm your selection.
5. Tap **Start**.

The Form Cure L heats to the selected temperature first. The LEDs activate and the timer starts once the heaters have reached the target temperature. Once a post-cure cycle has started, use the touchscreen or open the cover to pause the post-curing cycle.

To adjust the post-cure settings:

1. Adjust the time or temperature on the touchscreen.
2. Tap **Start**.



The printed part must be in the Form Cure L while it preheats. If the part is not placed inside the device until preheating is complete, the part may crack.

5.2.3 Collecting printed parts

When the post-curing cycle completes, the LEDs and heaters turn off. Open the door and remove parts.



The Form Cure L contains two heaters that heat inserted parts during post-curing. Take care when inserting and removing parts from the Form Cure L, because the turntable may be hot.

5.2.4 Additional finishing steps

After post-curing, use the flush cutters that come in your Finish Kit to carefully cut the supports attached to the part(s). Supports can also be removed before post-curing, but parts may warp under exposure to light and heat without structural support.



Some methods of support removal may cause small pieces of supports to break away. Beware of flying debris. Wear eye protection and gloves to protect the skin and eyes.

In addition to removing supports, use sanding, polishing, priming, or painting to improve presentation, or use other equipment to create molds from printed parts.

5.3 Considerations for specific geometries

For detailed guidance and visual assistance, visit support.formlabs.com.

Consider the specific geometry of each part when starting the cycle. Modify the post-cure process for parts that are large or long, have dense support structures, or have thick or thin features.

5.3.1 **Dense supports**

Some parts require denser or thicker support structures. These can inadvertently block light from reaching some part surfaces during post-curing. The Form Cure L helps ensure even post-curing by rotating the part during the cycle and exposing the part to light from all directions, including underneath the turntable. Remove some supports, only as needed, to ensure that light can easily reach all part surfaces. Leave some supports in place whenever possible to prevent features from warping during post-curing.

5.3.2 **Large or long parts**

Most parts should be post-cured before removing support structures to preserve their shape and prevent warping. While some parts may fit on the turntable more easily without supports, long or tall prints may require special arrangements to stand on the turntable without support. Consider the part dimensions when designing the support structures or planning the post-cure steps.



The Form Cure L turntable has a diameter of 39.5 cm (15.6 in). The curing envelope is a cylinder the diameter of the turntable and 32 cm (12.6 in) tall. This is the maximum single part size that can be post-cured in the Form Cure L.

5.3.3 **Large or thick parts**

Large or thick parts may require a longer post-cure time or higher temperatures because the part takes longer to heat. Light alone cannot post-cure beyond the surface of the part, which is one advantage of the Form Cure L heating functionality. When post-curing thick geometries, warm the part before post-curing and allow extra time for the Form Cure L to preheat to the target temperature before starting the post-cure lights and timer.

5.3.4 **Thin features**

Warping during post-curing may occur if a part is especially thin, inadequately supported, or unevenly exposed to light. The Form Cure L helps prevent warping by rotating the part during the cure cycle and by exposing the part to light from all directions, including underneath the turntable. Use support settings or manual editing to design sufficient supports so that thin features do not warp during post-curing. In the case of a thin, flat, sheet-like object, placing the part directly on the turntable may offer the best support during post-curing.

5.4 **Time and temperature settings**

For the best results, use the recommended time and temperature settings tested specifically for use with the Form Cure L. For detailed guidance and visual assistance, visit support.formlabs.com. Each material's print settings are designed and refined to print parts successfully at optimal speeds. Additional post-curing further improves the functional properties of the materials. Post-curing exposes parts to light and heat and strengthens crosslinks in the polymer structure, improving strength, stiffness, and temperature resistance. Due to the increased number of bonds, the material becomes more tightly packed and will shrink slightly. Each material's print settings are designed to account for the expected shrinkage during printing and post-curing. Although using a higher temperature for post-curing results in a shorter post-cure cycle, a higher temperature setting may also cause some materials to warp, depending on the part geometry and features. When choosing to modify the recommended post-cure settings, the

material must be able to withstand the temperature and maintain a stable material structure. Formlabs resins are designed for printing and post-curing with 375 nm and 405 nm light.

5.5 **Managing the machine**

Between post-cure cycles, perform maintenance, track the machine's history or turn the machine off. For detailed guidance and visual assistance, visit **support.formlabs.com**.

5.5.1 **Registering to Dashboard**

Dashboard (formlabs.com/dashboard) allows individuals and teams to remotely monitor Formlabs devices, track material usage, and explore past and future Formlabs purchases. Register your Formlabs SLA printers to Dashboard through the touchscreen and use the reported metrics to plan or schedule your usage of the Form Cure L.

5.5.2 **Turning off**

The Form Cure L is designed to remain powered on when not in use. Flip the breaker switch on the back of the unit to the **OFF** position to turn off the machine completely and conserve power. When moving or storing the machine, unplug the unit from its power source in addition to flipping the breaker switch

6 Maintenance

To maintain the most efficient and long-lasting machine, ensure regular conservation. Formlabs provides instructions to advise in installing, operating, and maintaining the machine. The Form Cure L shall only be maintained by a qualified and trained person. Unauthorized disassembly or repair procedures may damage the machine.

There are two groups of maintenance procedures: regular, which should be done after every use, and intermittent maintenance, which only needs to be done occasionally. Please keep a log detailing when each intermittent maintenance procedure was last performed.

For detailed guidance and visual assistance, visit support.formlabs.com.



Tampering with or disassembling the device prior to disconnecting the power cable and waiting at least five minutes can subject users to potentially fatal electrical hazards. When removing the exterior paneling, disconnect the machine from its power source before maintenance.



Wear personal protective equipment (PPE) when performing maintenance tasks. Use tools only as described.



- Formlabs provides instructions to advise skilled and unskilled persons in installing, operating, and maintaining the Form Cure L. The Form Cure L shall only be maintained by a qualified and trained person.
- Do not open the Form Cure L and/or investigate internal components unless under the guidance of Formlabs Support or a certified service provider. Contact [Formlabs Support](https://support.formlabs.com) or a certified service provider for any additional guidance.
- Unauthorized disassembly or repair procedures may damage the machine and void the warranty.

6.1 Tools and supplies

Only use tools, chemicals, or procedures to maintain the Form Cure L that are outlined in this manual, by prompts on the touchscreen, and on support.formlabs.com.

Do not use any tools, chemicals, or unapproved procedures with the Form Cure L unless otherwise instructed to do so by Formlabs or a certified service provider.

- **General purpose cleaner (e.g., glass cleaner) and/or soapy water**
 - For cleaning the outer shells and display.
- **Isopropyl alcohol (IPA), 90% or higher**
 - For cleaning the work surface and tools.
- **Low-fiber paper towels**
 - For cleaning the work surface and tools.
 - For wiping residue grease, resin, or solvent.
- **Non-abrasive microfiber cloth**
 - For cleaning the outer shells and display.

6.2 Inspection and maintenance

6.2.1 Before each use

Inspect	Refer to	Section
Installation environment	Location and environs	4.1
Turntable	Maintaining the turntable	6.3.1
Parts to be post-cured	Considerations for specific geometries Drying parts and keeping equipment clean	5.3 6.3.2

6.2.2 Periodic maintenance

Inspect	Refer to	Section
Interior surfaces	Maintaining interior surfaces	6.4.1
Light diffusers	Maintaining the light diffusers	6.4.2
Door	Maintaining the door	6.4.3
Touchscreen	Maintaining the touchscreen	6.4.4

6.3 Tasks between uses

Over time, debris or contaminants may collect in the Form Cure L or on its internal surfaces, particularly if printed parts are not fully dried before post-curing. In order to preserve the reliability of the Form Cure L, it is important to regularly inspect and clean its various components and assemblies.

6.3.1 Maintaining the turntable

The Form Cure L relies on the turntable's rotation to expose part surfaces to even amounts of light and heat. The turntable must have sufficient clearance to continue rotating.

To maintain the turntable:

- Periodically lift the turntable to inspect underneath it for small pieces of cured resin. Remove particles of cured resin from above and below the turntable to ensure the turntable can rotate without interruption.
- Clean the turntable and the surface underneath as needed.
- Use isopropyl alcohol to clean the turntable or the base if necessary, and allow isopropyl alcohol to fully evaporate before starting a post-cure cycle.

6.3.2 Drying parts and keeping equipment clean

Completely wash and dry all parts before post-curing in the Form Cure L. Do not operate the Form Cure L with uncured resin, partially cured resin, or other liquids on the turntable.

6.4 Periodic maintenance

The Form Cure L requires regular maintenance and care. The standard cycle for the following procedures is every one to three months of use.

Task	Frequency	Refer to	Section
Interior surfaces	Monthly	Maintaining interior surfaces	6.4.1
Light diffusers	Monthly	Maintaining the light diffusers	6.4.2
Door	Every three months	Maintaining the door	6.4.3
Touchscreen	Every three months	Maintaining the touchscreen	6.4.4

6.4.1 **Maintaining interior surfaces**

The internal surfaces of the Form Cure L are covered in a reflective coating that reflects the light from the LEDs and ensures that parts post-cure evenly. If the reflective coating is damaged or covered, parts may not post-cure properly.

Visually inspect the internal surfaces of the Form Cure L for traces of resin, cracks, or other damage.

Resin will harden during post-curing. Cured resin blocks light and must be removed. If parts are washed but not fully dry before post-curing, certain washing solvents, such as tripropylene monomethyl ether, may evaporate and form deposits on the interior surfaces of the Form Cure L. These deposits cloud the reflective coating and prevent parts from post-curing properly. Clean the reflective coating as needed. Use isopropyl alcohol to clean the reflective coating and allow isopropyl alcohol to fully evaporate before starting a post-cure cycle.

6.4.2 **Maintaining the light diffusers**

The primary 375 nm and 405 nm LEDs and secondary white LEDs in the Form Cure L are covered by frosted light diffusing panels. These light diffusers spread the light from the LEDs and ensure that parts post-cure evenly. If the light diffusers are damaged or covered, parts may not post-cure properly.

Visually inspect the light diffusers for traces of resin, cracks, or other damage. Resin will harden during the post-curing.

Cured resin blocks light and must be removed. If parts are washed but not fully dry before post-curing, certain part washing solvents, such as tripropylene monomethyl ether, may evaporate and form deposits on the interior surfaces of the Form Cure L.

These deposits will coat the light diffusers and prevent parts from post-curing properly. Clean the light diffusers as needed. Use isopropyl alcohol to clean the light diffusers and allow isopropyl alcohol to fully evaporate before starting a post-cure cycle.

6.4.3 **Maintaining the door**

Visually inspect the door for traces of resin, cracks, or other damage. Clean the door with a non-abrasive microfiber cloth and soapy water or a general purpose cleaner, such as glass cleaner.

6.4.4 **Maintaining the touchscreen**

Visually inspect the touchscreen for any traces of resin. Check that the touchscreen responds to inputs. Clean the touchscreen with a non-abrasive microfiber cloth and a general purpose cleaner, such as glass cleaner.

6.5 **Intermittent maintenance**

Task	Frequency	Refer to	Section
Update the firmware	When indicated by Formlabs	Updating firmware	4.7

7 Troubleshooting

For detailed guidance and visual assistance, visit support.formlabs.com.

7.1 Collecting diagnostic logs

The Form Cure L maintains diagnostic logs to provide detailed information about the machine that may expedite issue investigation. After experiencing any error or unusual behavior on the Form Cure L, include the diagnostic logs with other relevant observations and details when contacting [Formlabs Support](#) or a [certified service provider](#). The options for sharing diagnostic logs vary depending on the machine's connection type.

7.2 Performing a factory reset



A factory reset erases diagnostic information and custom settings, including networked connections. Do not perform a factory reset before contacting [Formlabs Support](#) or a [certified service provider](#). The stored diagnostic information may be helpful to Formlabs Support or a certified service provider to assist with troubleshooting.

7.3 Troubleshooting errors or abnormal activity

In the case of errors or abnormal activity with the Form Cure L, reference the following errors, causes, and proposed solutions. Complete the initial troubleshooting steps and carefully document all results. Contact [Formlabs Support](#) or a [certified service provider](#) for additional guidance.

7.3.1 Resolving abnormal functions

Error	Cause	Solution
The display does not turn on.	<ul style="list-style-type: none">Power failure or a faulty electrical connection	<ul style="list-style-type: none">Disconnect and reconnect the power.Plug the power cable into a different outlet.
The touchscreen is unresponsive.	<ul style="list-style-type: none">Faulty or damaged touchscreen	<ul style="list-style-type: none">Disconnect and reconnect the power.Replace the touchscreen.
The door does not fully close.	<ul style="list-style-type: none">The turntable is not mounted properlyThe printed parts inserted into the Form Cure L are blocking the door	<ul style="list-style-type: none">Remove and reseal the turntable on its mount.Adjust the position and orientation of the printed parts on the turntable.
The 375 nm and 405 nm LEDs and secondary white LEDs do not turn on.	<ul style="list-style-type: none">Power failure or a faulty electrical connection	<ul style="list-style-type: none">Disconnect and reconnect the power.Plug the power cable into a different outlet.
The 375 nm and 405 nm LEDs do not turn on.	<ul style="list-style-type: none">The Form Cure L has not reached its target temperaturePower failure or a faulty electrical connection	<ul style="list-style-type: none">Wait for the machine to reach its target temperature.Disconnect and reconnect the power.Plug the power cable into a different outlet.

Error	Cause	Solution
The heaters do not reach the target temperature.	<ul style="list-style-type: none"> Abnormal display behavior Environmental conditions Faulty or damaged heater 	<ul style="list-style-type: none"> Disconnect and reconnect the power. Ensure that the operating environment is in the recommended temperature range. Check that the heater fan is spinning. Check and compare the internal temperature readings from both heater modules.
The turntable does not turn.	<ul style="list-style-type: none"> Turntable is obstructed Turntable is not fully seated Turntable gear has separated from the turntable Faulty or damaged motor assembly 	<ul style="list-style-type: none"> Ensure that no cured resin or printed parts are blocking the turntable. Reorient large prints as necessary. Reseat the turntable on its mount. Check that the gear on the bottom of the turntable is firmly adhered to the turntable. Check that the rollers underneath the turntable turn smoothly. Replace the motor assembly.
Parts are undercured or do not have desired mechanical properties.	<ul style="list-style-type: none"> Expired resin Part was washed but not fully dried before post-curing 	<ul style="list-style-type: none"> Check the expected lifetime of the resin used for the print. Fully dry all solvent off of parts before post-curing.
Post-cured parts have tacky or sticky surfaces.	<ul style="list-style-type: none"> Part was not washed before post-curing Part was washed but not fully dried before post-curing 	<ul style="list-style-type: none"> Wash liquid resin off of printed parts before postcuring. Fully dry all solvent off of parts before post-curing.

7.3.2

Resolving errors

If errors persist after following these steps, contact [Formlabs Support](#) or a [certified service provider](#) for additional guidance.

Error	Cause	Solution
The device is currently active.	The Form Cure L attempted to start a post-curing cycle while a cycle was already in progress.	Disconnect and reconnect the power.
The device state is currently invalid.	Firmware error	Disconnect and reconnect the power.
The device's duty cycle is currently invalid.	Firmware error	Disconnect and reconnect the power.
The call to DBus failed.	Firmware error	Disconnect and reconnect the power.
The reply to the DBus was invalid.	Firmware error	Disconnect and reconnect the power.
The fan control failed.	Firmware error	Disconnect and reconnect the power.
The timer has expired.	The Form Cure L is not receiving temperature data.	Disconnect and reconnect the power.

Error	Cause	Solution
Temperature fault occurred.	The Form Cure L thermistor reported an error.	<ul style="list-style-type: none"> • Disconnect and reconnect the power. • Disconnect the power. Remove the Form Cure L top shell and check that the thermistor wiring is secure. Contact Formlabs Support or a certified service provider for more information.
The LED brightness encountered an error.	The Form Cure L encountered an error while setting the brightness of the LEDs.	<ul style="list-style-type: none"> • Disconnect and reconnect the power. • Disconnect the power. Unscrew each of the three LED modules (accessible from within the post-cure chamber) and check that their wiring is secure. Contact Formlabs Support or a certified service provider for more information.
The set limit failed.	The Form Cure L encountered an error while setting the current temperature limit.	<ul style="list-style-type: none"> • Disconnect and reconnect the power. • Disconnect the power. Unscrew each of the three LED modules (accessible from within the post-cure chamber) and check that their wiring is secure. Contact Formlabs Support or a certified service provider for more information.
The set duty cycle failed.	The Form Cure L encountered an error while setting the brightness of the LEDs.	<ul style="list-style-type: none"> • Disconnect and reconnect the power. • Disconnect the power. Unscrew each of the three LED modules (accessible from within the post-cure chamber) and check that their wiring is secure. Contact Formlabs Support or a certified service provider for more information.
The door is open. Please close.	The door is open while the Form Cure L is trying to begin a cycle.	Close the Form Cure L door.
The device failed to reach the required temperature.	The Form Cure L did not reach its target temperature within 30 minutes.	Disconnect the power. Remove the Form Cure L top shell and check that the thermistor and heater module wiring is secure. Contact Formlabs Support or a certified service provider for more information.
An error occurred with the device's turntable.	The turntable was unable to move properly due to an issue with the motor driver or the motor command.	Disconnect and reconnect the power.
An unknown error occurred	Other/unspecified cause	Disconnect and reconnect the power.

8 Disassembly and repair



All steps that involve opening the machine and/or investigating internal components should be done by skilled persons under the guidance of Formlabs Support or a certified service provider. Any damage resulting from attempting disassembly and/or repair without prior authorization from Formlabs Support or a certified service provider is not covered by warranty. When removing the exterior paneling, disconnect the machine from its power source before maintenance.

8.1 Tasks

Contact [Formlabs Support](#) or a [certified service provider](#) to receive repair instructions and authorization, including how to disassemble or remove the exterior paneling.

Task	Frequency
Replacing the LED modules	The LEDs have stopped functioning or behave erratically.
Replacing the heaters	The heater modules have stopped functioning or behave erratically.

Any other maintenance or repair tasks not listed in section **6 Maintenance** requires servicing the machine. Contact [Formlabs Support](#) or a [certified service provider](#) to request service or an RMA (short for “return to manufacturer authorization”).

9 Recycling and disposal

For detailed guidance and visual assistance, visit support.formlabs.com.

9.1 Disposal of resin

9.1.1 Liquid resin



WARNING

Resin and solvents may cause skin irritation or an allergic skin reaction. Wear gloves when handling liquid resin, liquid solvent, or resin-coated surfaces. Wash skin with plenty of soap and water.



ENVIRONMENTAL HAZARD: Uncured photopolymer resin is classified as hazardous to aquatic life.

Disposal with a chemical waste stream

To dispose of liquid resin that has not been cured or dissolved in a solvent, add it to your chemical waste stream in accordance with all applicable regulations.

Disposal without a chemical waste stream

To dispose of liquid resin:

1. Put on a pair of disposable nitrile gloves.
2. Pour a small amount of resin into a labeled, transparent, resin-safe container.
3. Leave the container exposed to sunlight to cure for 1–10 days. Expose resin to 375 nm and 405 nm light and heat for the most effective curing. The liquid resin cures to solid material when exposed to light and heat.
4. Dispose of the fully cured resin and container as household waste.

9.1.2 Cured resin or cleaned parts

Cleaned parts and cured resin cannot be recycled. Discard cleaned parts and cured (hardened) resin as household waste.

9.2 Recycling of resin

9.2.1 Liquid resin

Liquid resin that has not been cured or dissolved in solvent cannot be recycled. Refer to section 9.1 Disposal of resin for more information.

9.2.2 Cured resin or cleaned parts

Cleaned parts and cured resin cannot be recycled. Discard cleaned parts and cured (hardened) resin as household waste.

9.3 Disposal of solvent

Safe and appropriate disposal methods of used solvent vary by location.

To safely dispose of used solvent:

1. Consult the safety data sheet (SDS) from the solvent supplier as the primary source of information.
2. Research the approved methods of disposal for your area. This will most likely involve hiring a waste disposal service. For smaller amounts, check with a hazardous disposal service to

see if they have any suggestions for removal.

3. Inform your waste disposal service that your bottle contains solvent with small amounts of methacrylated monomers and oligomers (unpolymerized plastic resin) and trace amounts of photoinitiator. Have a copy of the Formlabs powder safety data sheet (SDS) on hand in case the disposal service attendant needs more information.

9.4 Recycling of solvent

For large volumes of solvent, consider using a solvent recycling system, which offers a cost effective and more environmentally responsible alternative to paying for waste solvent disposal services. Solvent recycling systems use distillation and fractionation processes to remove solutes from waste solvents, making it possible to reuse the solvent. The recycled solvent may still have small amounts of contaminants in it. Recycling solvent reduces waste disposal costs, emissions that are required to produce solvents, and the cost of purchasing solvent.

9.5 Disposal of electronic components



The symbol on the product, the accessories, or packaging indicates that this device shall not be treated as nor disposed of with household waste. When you decide to dispose of this product, do so in accordance with environmental laws and guidelines. Dispose of the device via a collection point for the recycling of waste electrical and electronic equipment. By disposing of the device in the proper manner, you help avoid possible hazards for the environment and public health that could otherwise be caused by improper treatment of waste equipment. The recycling of materials contributes to the conservation of natural resources. Therefore do not dispose of your old electrical and electronic equipment with the unsorted municipal waste.

9.6 Disposal of packaging waste

The packaging is made of cardboard and plastic-based materials. Dispose of packaging through waste and recycling facilities. By disposing of the packaging waste in the proper manner, you help avoid possible hazards for the environment and public health.



NOTICE

The original packaging is designed to be kept and reused for transporting or shipping the machine for service. Save the complete packaging including any inserts for your convenience.

10 Index

- C**
- clean** 13, 16, 20, 27, 28, 35
 - cleaning 13, 16, 20, 27, 28, 35
- comply** 8, 13, 35
 - compliance 8, 13, 35
- D**
- display** 10, 11, 26, 29, 30, 35, 36
- disposal** 5, 33, 34, 35
- door** 16, 18, 22, 23, 27, 28, 29, 31, 35, 36
- E**
- environment** 4, 9, 13, 17, 22, 27, 30, 34, 35
- error** 10, 29, 30, 31, 35
- Ethernet** 9, 18, 19, 20, 35, 36
- F**
- firmware** 4, 19, 20, 22, 28, 35
- H**
- humidity** 17, 22, 35
- I**
- install** 17, 18, 20, 35
 - installation 17, 18, 20, 35
- interlock magnet** 35
- isopropyl alcohol** 14, 15, 16, 27, 28, 35
 - IPA 14, 15, 16, 27, 28, 35
- L**
- LEDs** 9, 10, 23, 28, 29, 31, 32, 35, 36
 - diffusers 15, 27, 28, 35, 36
- level** 12
- M**
- maintenance** 5, 12, 25, 26, 27, 28, 32, 35
- motor** 30, 31, 35, 37
- O**
- operation** 6, 12, 14, 35
- P**
- power** 9, 10, 12, 13, 16, 17, 18, 21, 22, 25, 26, 29, 30, 31, 32, 35, 37
- R**
- resin** 5, 8, 10, 11, 12, 13, 14, 15, 16, 21, 22, 26, 27, 28, 30, 33, 34, 35
- resin profile** 11, 35
- S**
- safety** 4, 5, 6, 8, 12, 13, 14, 15, 16, 21, 33, 34, 35, 36, 37
- Safety Data Sheet** 35
 - SDS 35
- shipping** 17, 18, 20, 21, 34, 35
 - package 10, 21, 35
 - packaging 10, 21, 35
 - transport 10, 21, 35
 - transporting 10, 21, 35
 - unboxing 10, 21, 35
- solvent** 5, 13, 14, 21, 22, 26, 30, 33, 34, 35
- specifications** 4, 8, 9, 35
- T**
- technical data** 8, 35
- temperature** 4, 9, 10, 11, 17, 22, 23, 24, 25, 29, 30, 31, 35, 36
 - heat 4, 9, 10, 11, 17, 22, 23, 24, 25, 29, 30, 31, 35, 36
- touchscreen** 9, 10, 18, 19, 20, 22, 23, 25, 26, 27, 28, 29, 35
- tripropylene glycol monomethyl ether** 14, 36
 - TPM 14, 36
- turntable** 10, 13, 15, 18, 20, 21, 22, 23, 24, 27, 29, 30, 31, 36, 37
- U**
- USB** 9, 19, 20, 36, 37
- V**
- ventilation** 14, 36
- W**
- warranty** 6, 7, 8, 21, 26, 32, 36
- Wi-Fi** 9, 10, 18, 19, 36, 37

11 Glossary

Term	Meaning
Display	The display shows status, time, temperature, and options for configuring the Form Cure L.
Display ribbon cable	A flat, flexible cable connects the display assembly to the motherboard.
Door	The hinged door allows access to the Form Cure L turntable. Double walls insulate the cure chamber and internal surfaces reflect light.
Ethernet port	The Form Cure L can connect to a network via Ethernet. The port is connected to the motherboard and can be accessed from the back of the machine.
Fans	There are seven fans in the Form Cure L. Two fans blow hot air from the heater modules into the post-cure chamber. One fan exhausts air from the post-cure chamber. Four fans bring in outside air to cool the LEDs and other electronics.
Heater	Two 500 W heater modules heat the chamber up to 176 °F / 80 °C.
Interlock magnets	The interlock sensor detects these magnets to determine when the cover is closed. This safety mechanism disables the heater, LEDs, and turntable when the cover is open.
LEDs	45 multi-directional LEDs (15 375 nm-LEDs, 15 405 nm-LEDs, 15 white LEDs) help to post-cure parts and illuminate the turntable. The LEDs are contained in three LED modules: one on the top of the post-cure chamber, one on the left, and one beneath the turntable.
Light diffusers	Diffusers on each LED module ensure that the parts in the post-cure chamber are evenly bathed in light.
Motherboard	The motherboard is the main circuitry through which all systems in the Form Cure L communicate.
Motor assembly	The motor assembly rotates the turntable during the post-cure cycle.
Post-cure chamber	The main chamber of the Form Cure L, where parts are placed to be post-cured with light and heat.
Power cable	Provides power to the Form Cure L.
Turntable	A rotating plate ensures balanced post-curing across all exposed part surfaces. The turntable is made of glass, allowing light to reach all surfaces of printed parts in the Form Cure L.
USB port	The Form Cure L can connect to a computer via USB. The port is connected to the motherboard and can be accessed from the back of the machine.
Wi-Fi antenna	The Wi-Fi antenna enables the machine's wireless connectivity.

12 Product compliance

The Form Cure L complies with the following electronics and safety standards:

ETL	CE
UL 61010-1:2012 CSA C22.2 No. 61010-1-12:2012 UL 61010-2-010:2019 CSA C22.2 No. 61010-2-010:2019	Machinery Directive 2006/42/EC Radio Equipment Directive 2014/53/EU RoHS Directive 2011/65/EU EMC Directive 2014/30/EU

Other
FCC IEC 61010-1:2010 IEC 61010-1:2010/AMD1:2016 IEC 61010-2-010:2019 IEC 62471:2006

