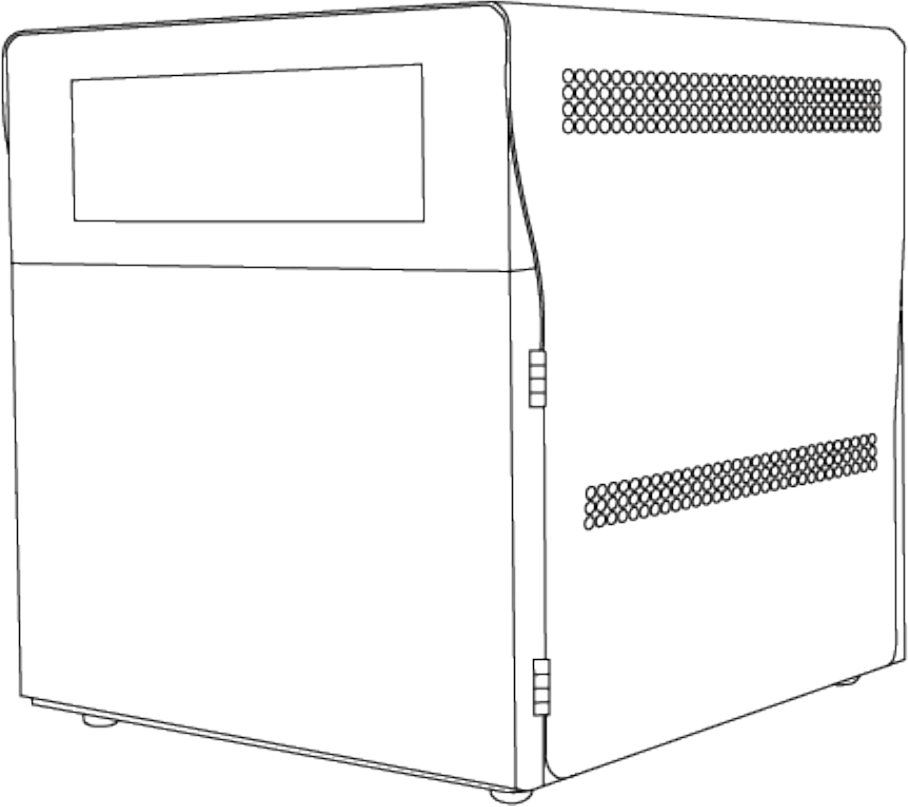


# Manual | Fast Cure



Installation and Usage Instructions

## **Fast Cure**

High-speed desktop stereolithography  
post-cure chamber

Original English instructions

Read this manual carefully and keep it for future reference.

Jun 2023

REV 01

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

## DISCLAIMER

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## DOCUMENT REVISIONS

Date	Version	Document Changes
Jun 2023	REV 01	Initial publication

# 1. Preface

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

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

The manual is intended for anyone who is installing, operating, maintaining, or otherwise interacting with the Fast Cure. 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 Fast Cure. 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 Fast Cure shall only be used by persons who have fully read and understand the contents of this manual. Ensure that each person who uses the Fast Cure 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](https://formlabs.com) to:

- Access your **Formlabs store** ([formlabs.com/store](https://formlabs.com/store)) and **Dashboard** accounts ([formlabs.com/dashboard](https://formlabs.com/dashboard)).
- Find **certified service providers** in your region ([formlabs.com/company/partners](https://formlabs.com/company/partners)).
- Access the **Terms of Service** ([formlabs.com/terms-of-service](https://formlabs.com/terms-of-service)) and the **Privacy Policy** ([formlabs.com/privacy-policy](https://formlabs.com/privacy-policy)).

Visit [support.formlabs.com](https://support.formlabs.com) to:

- Access the latest version of all Formlabs product documentation.
- Contact [Formlabs Support](https://support.formlabs.com) to request documentation, manuals, repair guides, and technical information.
- Submit any comments or feedback regarding what is good and what can be improved. Formlabs values comments from its users.
- 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](https://support.formlabs.com) or a [certified service provider](https://support.formlabs.com) for product support.

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 **FCU#####**, where **#####** is a number.

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 products purchased from certified service providers, contact the original service provider for assistance before contacting Formlabs Support.

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

<b>support.formlabs.com</b>	<b>USA</b> Formlabs, Inc. 35 Medford St. Somerville, MA, USA, 02143	<b>USA</b> Formlabs, Inc. 220 E Buffalo St. Milwaukee, WI, USA 53202
<b>Germany</b> Formlabs GmbH Nalepastrasse 18-50 12459 Berlin, Germany	<b>Hungary</b> Formlabs Andrássy út 9 1061 Budapest, Hungary	<b>Taiwan</b> No. 282號21號之9, Shizheng North 2nd Rd, Xitun District Taichung City, Taiwan 407
<b>Japan</b> 1F Kitashinagawa 369 Building 3 Chome-6-9 Kitashinagawa Shinagawa City Tokyo 140-0001, Japan		

### 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:

<b>US</b>	<a href="https://support.formlabs.com/support/terms-of-service/#Warranty">formlabs.com/support/terms-of-service/#Warranty</a>
<b>EU (EN)</b>	<a href="https://support.formlabs.com/support/terms-of-service/eu/">formlabs.com/support/terms-of-service/eu/</a>
<b>EU (DE)</b>	<a href="https://support.formlabs.com/de/support/terms-of-service/eu/">formlabs.com/de/support/terms-of-service/eu/</a>
<b>EU (FR)</b>	<a href="https://support.formlabs.com/fr/support/terms-of-service/eu/">formlabs.com/fr/support/terms-of-service/eu/</a>
<b>EU (ES)</b>	<a href="https://support.formlabs.com/es/terms-of-service/eu/">formlabs.com/es/terms-of-service/eu/</a>
<b>EU (IT)</b>	<a href="https://support.formlabs.com/it/terms-of-service/eu/">formlabs.com/it/terms-of-service/eu/</a>
<b>Latin America (ES)</b>	<a href="https://support.formlabs.com/latam/terms-of-service/">formlabs.com/latam/terms-of-service/</a>
<b>Asia and Oceania (EN)</b>	<a href="https://support.formlabs.com/asia/terms-of-service/">formlabs.com/asia/terms-of-service/</a>
<b>Japan (JA)</b>	<a href="https://support.formlabs.com/jp/terms-of-service/">formlabs.com/jp/terms-of-service/</a>

## 2. Introduction

### 2.1 Intended use

The Fast Cure post-cures 3D printed parts via exposure to 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.



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.



You shall independently verify the suitability of additive manufacturing, stereolithography (SLA), the Fast Cure, 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.



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.



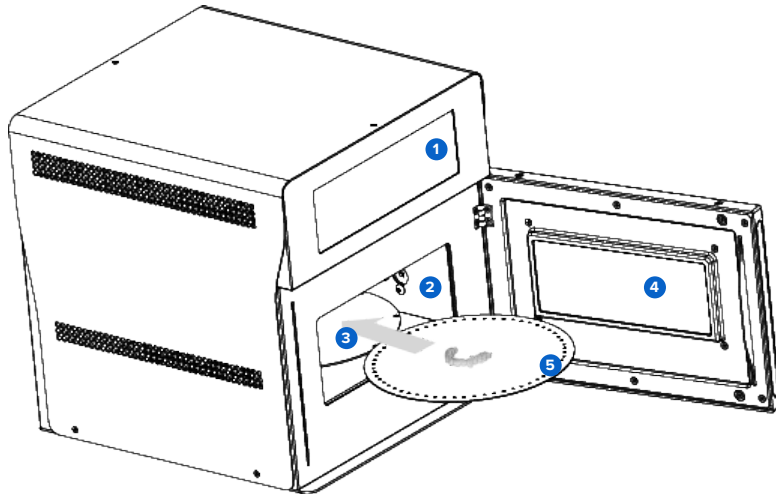
**Do not modify.** The Fast Cure is intended for use as-is. Modifying the machine without explicit approval and directions from Formlabs or a certified service provider will void your warranty, and could potentially ruin the machine and cause you bodily harm.

## 2.2 Technical specifications

Parameter	Unit
Unit	Fast Cure
Installation surface	Desktop unit
Minimum dimensions for convenient access (W × D × H)	57.9 × 60.5 × 31.0 cm   22.8 × 23.8 × 11.8 in
Product dimensions (W × D × H)	27.5 × 31.0 × 31.0 cm   10.8 × 11.8 × 11.8 in
Product weight	8.2 kg   18 lb
Turntable diameter	18 cm   7.1 in
Curing volume	Cylinder 18 cm in diameter and 6.5 cm tall Cylinder 7.1 in in diameter and 2.56 in tall
Operating temperature	5–35 °C   41–95 °F
Power requirements	Input: 100–240 VAC, 50–60 Hz, 5.4 A max
Maximum post-cure temperature	160 °C   320 °F
Light source	56 multi-directional LEDs (405 nm-LEDs)
UV LED electrical power	200 W
Connectivity	USB: 2.0
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

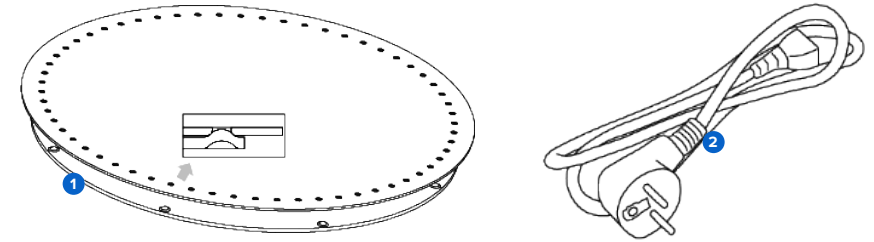
### 2.3.1 Fast Cure



- 1 **Display:** Shows status, time, LED intensity, and preset options for configuring the Fast Cure.
- 2 **LEDs:** An array of 405 nm LEDs post-cure parts.
- 3 **Turntable:** Rotating plate ensures balanced post-curing across all exposed surfaces.
- 4 **Door:** Double walls insulate the post-cure chamber and the internal surfaces reflect light.
- 5 **Turntable tray:** Removable plate ensures balanced post-curing across all exposed surfaces.

### 2.3.2

#### Additional Fast Cure package components



- 1 **Turntable tray (2x):** Rotating plate ensures balanced post-curing across all exposed surfaces.
- 2 **Power cable:** Provides power to the Fast Cure.

## 2.4

### Fast Cure user interface

For detailed guidance and visual assistance, visit [support.formlabs.com](https://support.formlabs.com).

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

The home screen displays the post-cure time and LED intensity, current resin, and device status. The following screens and options are accessible via the home screen on the Fast Cure display:

Home	Select a post-curing time, LED intensity, and temperature.
Create Custom Preset	Select or create a custom resin profile.
Start	Start a post-cure cycle.
Pause	Pause a post-cure cycle to flip the printed parts if indicated.
End cycle	Finish a post-cure cycle.

### 3. Safety



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

Supervise young or inexperienced users to ensure enjoyable and safe operation. The 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.



**CAUTION:** Do not touch hot surfaces.



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



**MANDATORY ACTION:** Refer to instruction manual/booklet.



**MANDATORY ACTION:** Grounding required.



**MANDATORY ACTION:** Disconnect before carrying out maintenance or repair.



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

#### 3.1 Component and subsystem safety

##### 3.1.1 General

The Fast Cure 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 Fast Cure contains banks of LEDs to help ensure parts are strong after post-curing. These LEDs generate heat during use, so surfaces of the Fast Cure and printed parts may be hot during and after use. Keep the Fast Cure 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.

##### 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.



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](https://support.formlabs.com) for more detail.

##### 3.1.3 Solvents

Formlabs does not manufacture solvents, such as isopropyl alcohol and tripropylene glycol monomethyl ether, that may be used to clean the Fast Cure or printed parts. Consult the chemical manufacturer or supplier for detailed safety information. Carefully follow the safety instructions provided with the solvent that you purchase. Flammable solvents, such as isopropyl alcohol, should be kept away from heat, fire, or sparks, and any containers 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 solvents as part of your workflow.

#### 3.2 Personal protective equipment (PPE)

Safe operation of the Fast Cure can be achieved by implementing the following equipment:

- Non-reactive nitrile gloves
- Safety glasses
- Heat-insulating gloves



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.



The Fast Cure's cure chamber heats up during usage. Use thermal-insulating gloves when removing a hot turntable tray or post-cured printed part. Failure to follow these procedures may result in injuries, including burning and/or scalding of skin.



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 Fast Cure 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:

- Thermal-insulated gloves safe to at least 160 °C (320 °F)
- 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 Fast Cure 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 Fast Cure uses three LED modules to expose printed parts to light during post-curing. Refer to section **8 Disassembly and repair** for more information.

#### • Motor

The Fast Cure uses a turntable, driven by a motor underneath the post-cure chamber, that rotates throughout the post-cure cycle, ensuring that printed parts are evenly exposed to light. Refer to section **8 Disassembly and repair** for more information.

#### • Touchscreen

The Fast Cure touchscreen is the primary method of interacting with the machine, including selecting post-cure profiles and starting a post-cure cycle. Refer to section **6.4.3 Maintaining the touchscreen** 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](https://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 Fast Cure is open, close its door if possible.
  - If a part inside the Fast Cure 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.

#### 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 Fast Cure and house the necessary accessories and consumables.

#### To prepare the workspace:

- Ensure that the workspace meets the following requirements:
  - Dry, indoor location
  - Low ambient humidity
  - Mains supply voltage fluctuations  $\leq 10\%$
- Operate the device in a well-ventilated room with a temperature of 5–35 °C (41–95 °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 5.4 A of current.

### 4.2 Power and networking

For detailed guidance and visual assistance, visit [support.formlabs.com](https://support.formlabs.com).



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

### 4.3 Unboxing the machine

For detailed guidance and visual assistance, visit [support.formlabs.com](https://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
41.3 × 38.1 cm × 49.5 cm 16.25 in × 15.0 in × 19.5 in	11.8 kg 26 lb	27.5 × 31.0 × 31.0 cm 10.8 × 11.8 × 11.8 in	8.2 kg 18 lb

#### 4.3.2 Unboxing

The custom packaging the Fast Cure arrives in 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. Open the outer box and remove the top foam.
2. Lift and remove the foam insert.
3. Lift and remove the box of Fast Cure accessories.
4. Beneath the accessories box is the inner box for the Fast Cure. Open the inner box and remove the unit.



Remove all packaging material before connecting power. Retain all packaging and inserts for warranty service.

### 4.4 Accessing the serial name

For detailed guidance and visual assistance, visit [support.formlabs.com](https://support.formlabs.com).

The serial name is a unique identifier used to track the history of manufacturing, sales, and repair. The serial name is on the back panel of the machine in the format **FCU####**, where **####** is a number.

### 4.5 Installing the machine

For detailed guidance and visual assistance, visit [support.formlabs.com](https://support.formlabs.com).

After selecting a location, connect the Fast Cure to a power source to turn on the machine.

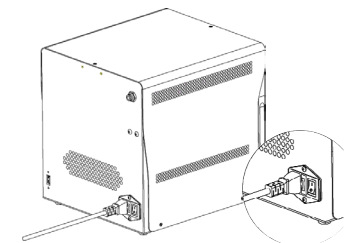
#### 4.5.1 Connecting the cables

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

#### 4.5.2 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 **I/ON** position to turn on the machine.
3. As the Fast Cure initializes, the Formlabs logo with a progress bar appears on the touchscreen. To turn off the machine, refer to section **6.6.3 Turning off**.



### 4.6 Updating firmware

Formlabs regularly releases updated firmware to fix bugs and improve functionality. Visit [support.formlabs.com](https://support.formlabs.com) for the latest firmware version for your Formlabs device. Review the [firmware downloads and release notes](#) to learn more about the improvements that come with each version's release.

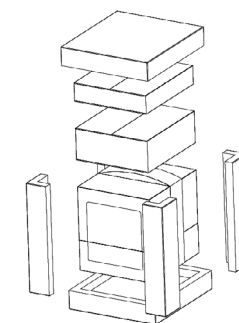
### 4.7 Transporting the machine

For detailed guidance and visual assistance, visit [support.formlabs.com](https://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 inner carton, cardboard
- 1 accessories box
- 1 upper insert, foam
- 1 lower insert, foam
- 4 edge protectors, foam



#### 4.7.1 Preparing for transportation

Before repackaging, ensure the post-cure chamber as well as the outer shells are clean and dry.

##### To prepare the machine:

1. Always remove the turntable tray 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.



NOTICE

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 Fast Cure 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.



NOTICE

When shipping a Fast Cure for replacement, include the power cable and other accessories. Original packaging is required for warranty service. Contact Formlabs Support or a certified service provider for unique guidance on shipping requirements.

#### 4.7.2 Packaging



NOTICE

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. Power off and unplug the Fast Cure.
2. Open the door, remove the turntable tray, and close the door.
3. Place the power cable and turntable trays in the accessories box.
4. Reassemble the outer box.
5. Place the lower foam in the bottom of the box.
6. Place the Fast Cure in the lower half of the inner box.
7. Cover the Fast Cure with the top half of the inner box.
8. Place the inner box on the lower foam. It should fit securely in the recess in the foam.
9. Insert edge protector foams around edges of the inner box.
10. Place the accessories box on top of the inner box.
11. Place the upper foam on the accessories box. It should fit securely in the recess.
12. Close and secure outer box.

## 5. Usage

### 5.1 Operational environment

- **Ventilation:** No specific requirements
- **Temperature:** 5–35 °C (41–95 °F)
- **Power:**
  - Dedicated power outlet and circuit capable of delivering 5.4 A of current at 100–240 VAC, 50/60 Hz
  - Easy access to the power switch of the device
- **Location:** Dry, indoor
- **Humidity:** Low ambient humidity
- **Mains supply voltage fluctuations:** ≤ 10%

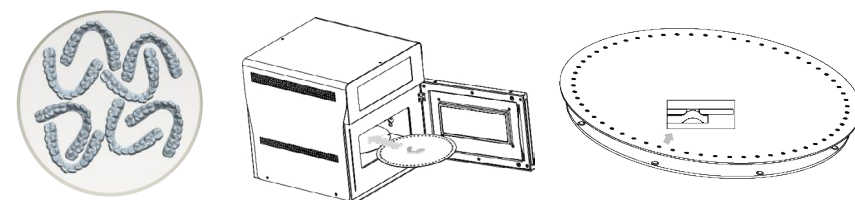
### 5.2 Post-curing printed parts

Many resin types require post-curing to achieve their optimal mechanical properties or as a step in producing a biocompatible printed part. The Fast Cure 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](https://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:

1. Open the door.
2. Distribute parts on the round turntable tray. Place parts with the most even spacing possible to allow light and heat to reach all areas.
3. Place the turntable tray on the turntable, ensuring that the bumps at the edge of the turntable sit in the corresponding holes in the turntable tray.
4. Gently close the door.



CAUTION



The Fast Cure's cure chamber can reach up to 160 °C (320 °F) after prolonged usage at high LED intensity. Use thermal-insulating gloves when removing a hot turntable tray or post-cured printed part. Failure to follow these procedures may result in injuries, including burning and/or scalding of skin.

#### 5.2.2 Setting the time and LED intensity

The Fast Cure has presets for resin types that you can select through the touchscreen.

### To set the post-cure time and LED intensity based on resin type:

1. Close the door.
2. On the home screen, scroll down the list of preset post-cure profiles and tap the one you want to use. Tap **Start**.
3. If indicated, flip parts halfway through the post-cure cycle to ensure all parts are thoroughly post-cured. Tap **Resume** to continue the post-cure cycle.
4. After a post-curing cycle ends, the status **Cooling** appears in the top right corner for 10 minutes.

Depending on the size of your printed parts and their geometry, you may need to manually create a post-cure setting.

### To manually set the post-cure time and LED intensity or save a custom post-curing profile for later use:

1. On the home screen, scroll down the list of preset post-cure profiles and tap **Create Custom Preset**. The **Custom Preset** screen appears.
2. Set each parameter of the custom post-curing profile.
  - a. Tap **Time** to set the duration of the post-cure cycle.
  - b. Tap **Light Intensity** to set the LED intensity to which the Fast Cure will cure the printed parts.
  - c. Tap **Flip Halfway** to indicate if the parts should be flipped halfway through the post-cure cycle.
3. Tap **Save** to confirm your selection. The preset is saved as Customer Preset X, where X is the next available number from 1 to 10. You can save up to 9 custom presets.
4. Tap **Start**.

The Fast Cure LEDs activate and the timer starts once the door is closed and the **Start** button is tapped. Once a post-cure cycle has started, use the touchscreen or open the door to pause the post-curing cycle.

### To adjust the post-cure settings:

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



NOTICE

Formlabs recommends allowing the Fast Cure to cool down for 10 minutes between post-curing cycles.

### 5.2.3 Collecting printed parts

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



CAUTION



The Fast Cure's cure chamber can reach up to 160 °C (320 °F) after prolonged usage at high LED intensity. Use thermal-insulating gloves when removing a hot turntable tray or post-cured printed part. Failure to follow these procedures may result in injuries, including burning and/or scalding of skin.

### 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.



CAUTION



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](https://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 Fast Cure 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 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.



NOTE

The Fast Cure turntable has a diameter of 18 cm (7.1 in). The curing envelope is a cylinder the diameter of the turntable and 6.5 cm (2.56 in) tall. This is the maximum single part size that can be post-cured in the Fast Cure.

#### 5.3.3 Large or thick parts

Large or thick parts may require a longer post-cure time or higher LED intensities because the part takes longer to heat. When post-curing thick geometries, warm the part before post-curing.

#### 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 Fast Cure 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 settings

For the best results, use the recommended time and LED settings tested specifically for use with the Fast Cure. For detailed guidance and visual assistance, visit [support.formlabs.com](https://support.formlabs.com). Each material's print settings are designed and refined to print parts successfully at optimal speeds. Post-curing 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.

## 5.5 Managing the machine

Between post-cure cycles, perform maintenance or turn the machine off. For detailed guidance and visual assistance, visit [support.formlabs.com](https://support.formlabs.com).

### 5.5.1 Turning off

The Fast Cure is designed to remain powered on when not in use. Flip the breaker switch on the back of the unit to the **O/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. It 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.



Tampering with, or disassembling the Fast Cure prior to disconnecting the power cable and waiting approximately ten minutes can subject users to potentially fatal electrical hazards.



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



When removing the exterior paneling, disconnect the machine from its power source before maintenance. Moving parts present crushing and tangling hazards.



- Formlabs provides instructions to advise skilled and unskilled persons in installing, operating, and maintaining the Fast Cure. The Fast Cure shall only be maintained by a qualified and trained person.
- Do not open the Fast Cure 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 Fast Cure that are outlined in this manual, by prompts on the touchscreen, and on [support.formlabs.com](https://support.formlabs.com).

Do not use any tools, chemicals, or unapproved procedures with the Fast Cure 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 shell 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 shell 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	5.2 6.3.2

### 6.2.2 Periodic maintenance

Inspect	Frequency	Refer to	Section
Interior surfaces	Monthly	Maintaining interior surfaces	6.4.1
Door	Every three months	Maintaining the door	6.4.2
Touchscreen	Every three months	Maintaining the touchscreen	6.4.3

## 6.3 Tasks between uses

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

### 6.3.1 Maintaining the turntable

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

#### To maintain the turntable:

- Inspect the underside of the turntable and the top of the tray for small pieces of cured resin. Remove particles of cured resin to ensure the tray sits flush on the turntable and 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 Fast Cure. Do not operate the Fast Cure with uncured resin, partially cured resin, or other liquids on the turntable.

## 6.4 Periodic maintenance

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

Inspect	Frequency	Refer to	Section
Interior surfaces	Monthly	Maintaining interior surfaces	6.4.1
Door	Every three months	Maintaining the door	6.4.2
Touchscreen	Every three months	Maintaining the touchscreen	6.4.3

### 6.4.1 Maintaining interior surfaces

The post-cure chamber of the Fast Cure reflects the light from the LEDs to ensure that parts post-cure evenly. If the post-cure chamber is damaged or covered in resin, parts may not post-cure properly.

If parts are washed but not fully dry before post-curing, certain washing solvents, such as tripropylene monomethyl ether (TPM), may evaporate and form deposits on the interior surfaces of the Fast Cure. These deposits cloud the reflective coating and prevent parts from post-curing properly.

#### To maintain the post-cure chamber of the Fast Cure:

- Visually inspect the internal surface of the Fast Cure for traces of resin, cracks, or other damage.
- Clean the post-cure chamber as needed. Use isopropyl alcohol to clean the chamber and allow it to fully evaporate before starting a post-cure cycle.

### 6.4.2 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.

### 6.4.3 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
Add custom profiles for new materials	When indicated by Formlabs	Setting the time and LED intensity	5.1.1
Replace the LED modules	After 1,500 hours of use	Disassembly and repair	8

## 7. Troubleshooting

For detailed guidance and visual assistance, visit [support.formlabs.com](https://support.formlabs.com).

### 7.1 Resolving abnormal functions

In the case of errors or abnormal activity with the Fast Cure, 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.

Error	Cause	Solution
The display does not turn on.	<ul style="list-style-type: none"> <li>Power failure or a faulty electrical connection</li> </ul>	<ul style="list-style-type: none"> <li>Disconnect and reconnect the power. Plug the power cable into a different outlet.</li> <li>Check and replace the fuse, located in a compartment next to the power port.</li> </ul>
The touchscreen is unresponsive.	<ul style="list-style-type: none"> <li>Faulty or damaged touchscreen</li> </ul>	<ul style="list-style-type: none"> <li>Disconnect and reconnect the power. Replace the touchscreen.</li> </ul>
The door does not fully close.	<ul style="list-style-type: none"> <li>The turntable tray is not mounted properly</li> <li>The printed parts inserted into the Fast Cure are blocking the door</li> </ul>	<ul style="list-style-type: none"> <li>Remove and reseal the turntable tray on the turntable.</li> <li>Adjust the position and orientation of the printed parts on the turntable tray.</li> </ul>
The LEDs do not turn on.	<ul style="list-style-type: none"> <li>Power failure or a faulty electrical connection</li> </ul>	<ul style="list-style-type: none"> <li>Disconnect and reconnect the power. Plug the power cable into a different outlet.</li> </ul>
The turntable does not turn.	<ul style="list-style-type: none"> <li>Turntable is obstructed</li> <li>Turntable is not fully seated</li> <li>Faulty or damaged motor assembly</li> </ul>	<ul style="list-style-type: none"> <li>Ensure that no cured resin or printed parts are blocking the turntable. Reorient large prints as necessary.</li> <li>Reseat the turntable tray on the turntable.</li> <li>Replace the motor assembly.</li> </ul>
Parts are undercured or do not have desired mechanical properties.	<ul style="list-style-type: none"> <li>Expired resin</li> <li>Part was washed but not fully dried before post-curing</li> </ul>	<ul style="list-style-type: none"> <li>Check the expected lifetime of the resin used for the print.</li> <li>Fully dry all solvent off of parts before post-curing.</li> </ul>
Post-cured parts have tacky or sticky surfaces.	<ul style="list-style-type: none"> <li>Part was not washed before post-curing</li> <li>Part was washed but not fully dried before post-curing</li> </ul>	<ul style="list-style-type: none"> <li>Wash liquid resin off of printed parts before postcuring.</li> <li>Fully dry all solvent off of parts before post-curing.</li> </ul>

### 7.2 Resolving errors

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

Error	Cause	Solution
Door open	The Fast Cure door was not fully closed during use.	<ul style="list-style-type: none"> <li>Close the Fast Cure door. Check that the door closes properly. When the door is fully closed, the top of the door is flush with the bottom of the touchscreen.</li> <li>If the Fast Cure has been used recently, particularly for long or repeated cycles at high LED intensity, let the unit cool for 10 minutes before trying to start a new cycle.</li> </ul>
High temperature	The Fast Cure reached its upper temperature limit during a post-cure cycle.	<ul style="list-style-type: none"> <li>Allow the Fast Cure to cool. The post-cure cycle automatically resumes when the temperature in the post-cure chamber is low enough.</li> </ul>

## 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.

### 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	As indicated on the touchscreen after 1,500 hours of use, or if the LEDs have stopped functioning or behave erratically.
Replacing the touchscreen	The touchscreen has stopped functioning or behaves erratically.
Replacing the motor	The turntable does not turn or behaves erratically.
Replacing the power supply	The Fast Cure does not power on after verifying that the power source, power cable, and fuse are operating correctly.
Replacing the control board	The Fast Cure has stopped functioning or behaves 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 in-field service or an RMA (short for “return to manufacturer authorization”).

## 9. Recycling and disposal

### 9.1 Disposal of resin

#### 9.1.1 Liquid 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.



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

#### 9.1.1.1 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.

#### 9.1.1.2 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.

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## 11. Glossary

Term	Meaning
Display	The display shows status, time, LED intensity, and options for configuring the Fast Cure.
Door	The hinged door allows access to the Fast Cure turntable. Double walls insulate the cure chamber and internal surfaces reflect light.
Fans	Fans in the Fast Cure cool the three LED modules during use.
Interlock	The interlock detects when the door is closed. This safety mechanism disables the LEDs and turntable when the cover is open.
LEDs	Three banks of LEDs help to post-cure parts and illuminate the turntable. The LED modules are located on the top, left, and right of the post-cure chamber.
Control board	The control board is the main circuitry through which all systems in the Fast Cure communicate.
Motor assembly	The motor assembly rotates the turntable during the post-cure cycle.
Post-cure chamber	The main chamber of the Fast Cure, where parts are placed to be post-cured.
Power cable	Provides power to the Fast Cure.
Turntable	A rotating plate ensures balanced post-curing across all exposed part surfaces. The turntable is made of metal, which reflects light upwards onto parts being post-cured.

## 12. Product compliance

The Fast Cure complies with the following electrical safety standards:

**Electrical:**

- IEC 62368-1