



L1 PRODUCT MANUAL

Original Instructions

Part Number: 114896-01-C

Carbon, Inc.

1089 Mills Way

Redwood City, CA 94063

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1 Introduction

Intended Use

The intended use of Carbon's printer is to print parts from liquid resins using Digital Light Synthesis™ (DLS™) technology.

Signal words and symbols

The following types of warnings alert you to specific hazards:



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE is used to address practices not related to physical injury.



SAFETY INSTRUCTIONS indicates specific safety-related instructions or procedures.



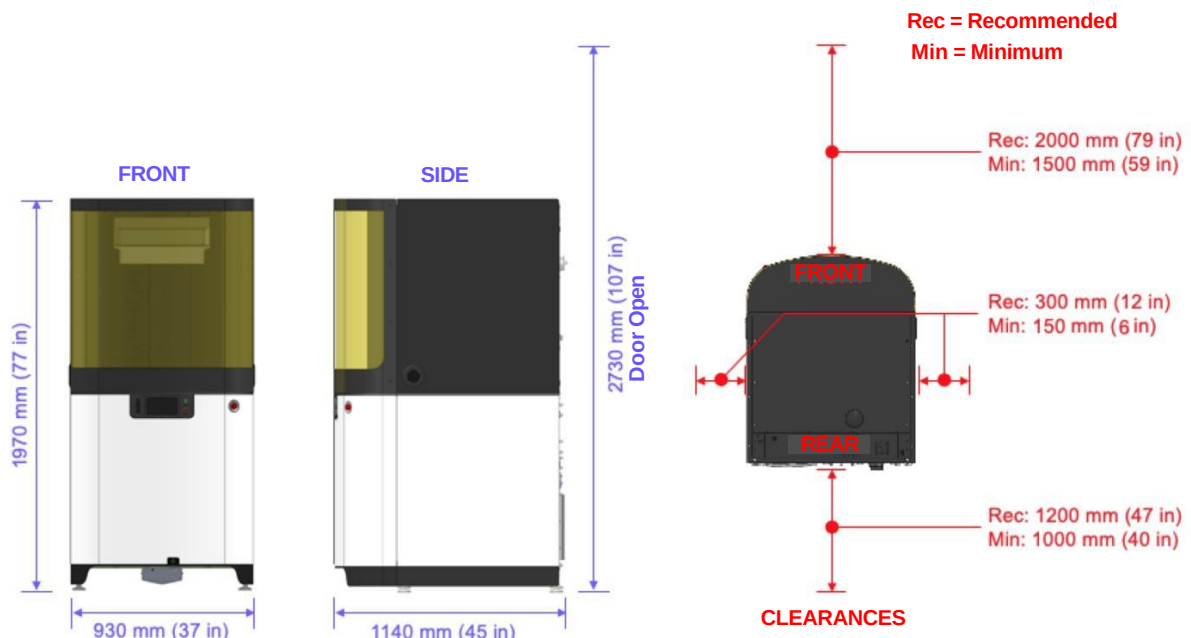
This machine is to be operated only by trained personnel in accordance with the Operator's Manual, safety procedures, and instructions for safe machine operation. Failure to comply with these specified procedures and instructions may impair the safety features of the machine.



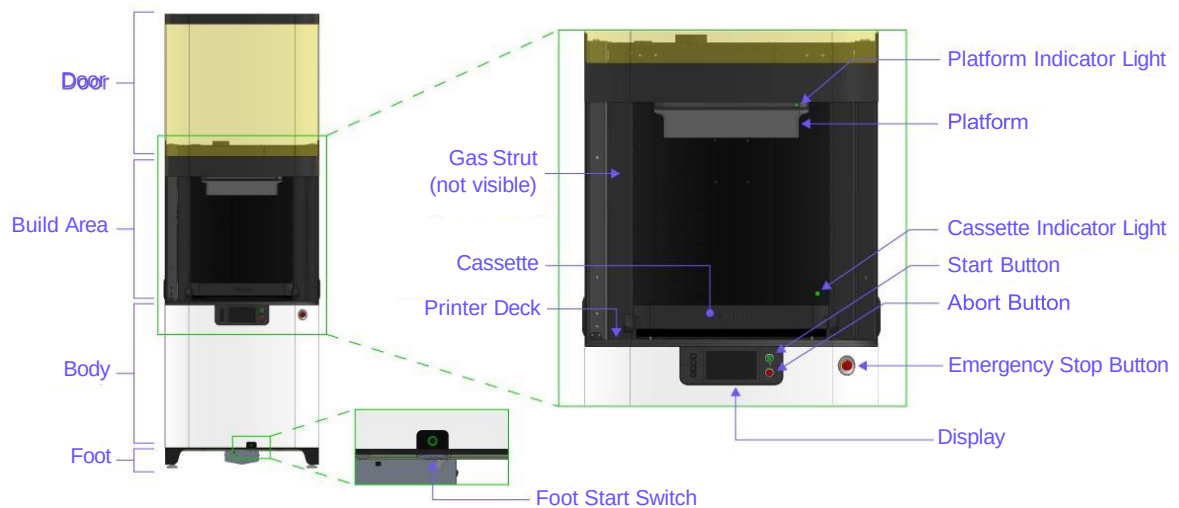
WARNING
UV emitted from this product. Avoid eye and skin exposure to unshielded product.

Printer overview

The printer is 730 kg (1600 lbs) and 930 mm (W) x 1140 mm (D) x 2730 mm (H) (37" x 45" x 107") when the door is open, and 1970 mm in height (77") when the door is closed. Ideally, multiple printers should be spaced with at least 150 mm (12") clearance on the sides, 1500 mm (59") clearance in the front, and 1000 mm (40") clearance in the rear. Additionally, trained Carbon service personnel will access the printer's back via a rear walking path.



The main components of the printer are the build area, door, body, and foot.



Build Area

The build area is where you will interact directly with the printer to print parts. It includes the display and two removable accessories, the platform and the cassette.

Display

When printing, the display shows the information relevant to the current print, such as the remaining print time. When the printer isn't printing, the display shows the current status.

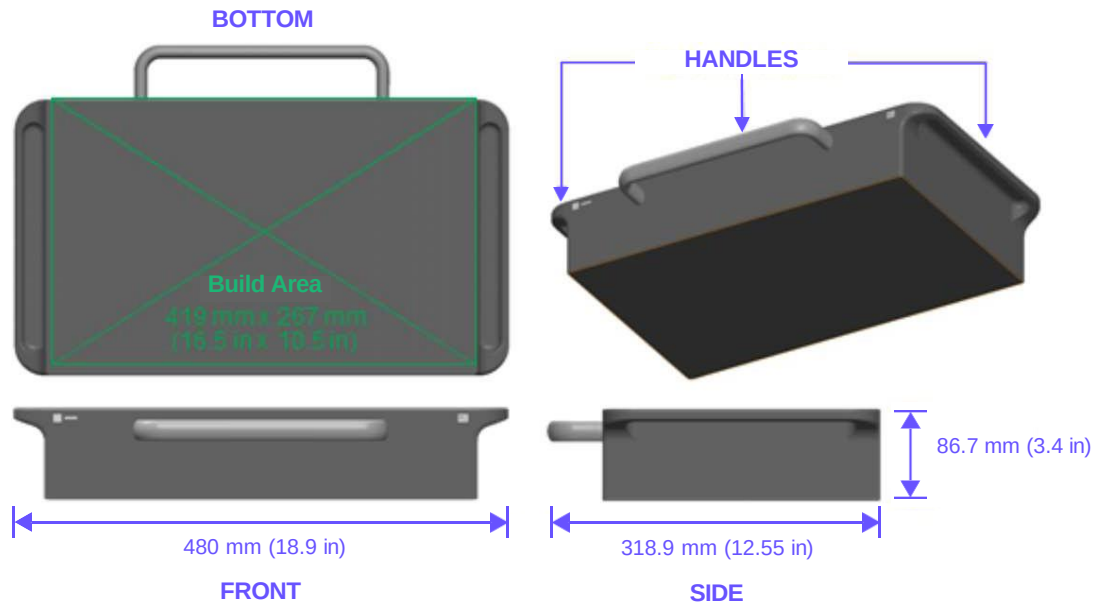


The display panel includes four buttons for diagnostics, the Start and Abort button, and an Emergency stop.

Platform

The platform moves up and down, has a flat surface that parts print on, and has side handles for maneuvering the platform (some platforms also have a front handle). Based on your specific application, the exact platform design and specifications may vary.

Platforms typically weigh approximately 4.95 kg (10.9 lbs) – 6.8 kg (15 lbs), and measure 480 mm x 268 mm x 88.5 mm (18.9" x 10.6" x 3.5"). Some platforms may have features such as a groove on the underneath side. Here's an example of a typical platform, though the features on your platform may vary:



NOTICE

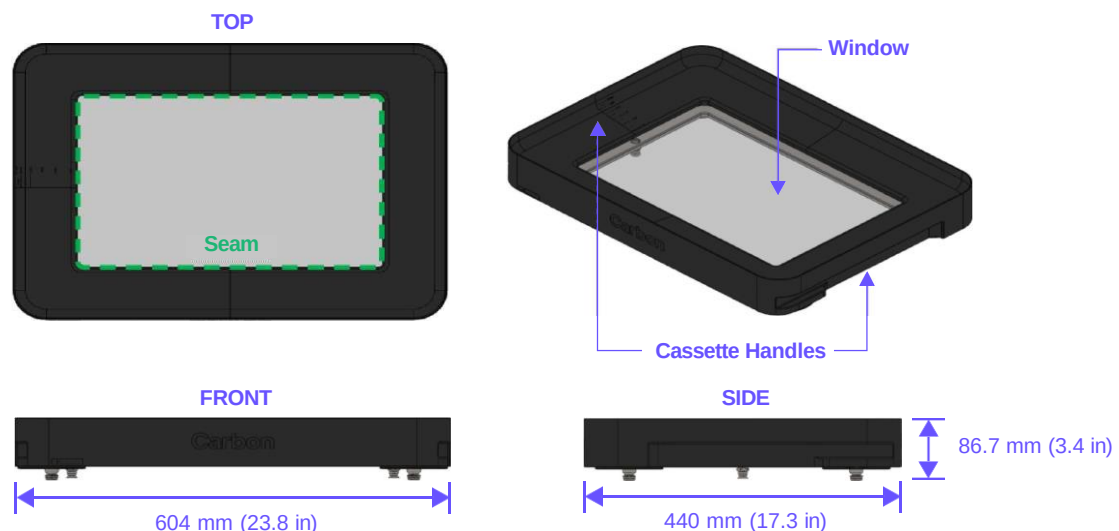
Dents, bumps, and scratches on the platform can damage your cassette, so it is critical to clean it carefully and always treat the platform with care.

Cassette

The cassette is an oxygen permeable optic device that rests on the printer deck and holds the programmable liquid resin used to make parts. It weighs approximately 23 kg (51 lbs) unfilled and 24.5 kg (54 lbs) filled with resin, and measures 604 mm x 440 mm x 86.7 mm (23.8" x 17.3" x 3.4"). Note that cassette design and dimensions may also vary depending on the specific application.

NOTICE

The cassette is very expensive, delicate, and critical to print success, so it is important to always clean it carefully and treat the cassette with care. Only touch the window with Carbon approved tools or cleaning products, to avoid introducing print defects.



When removing the cassette from the printer, the cart must be used, Carbon part number 104894. Once the cassette is on the cart, When lifting or moving a cassette by hand, it is recommended to use two people and use the handles on the sides of the cassette.

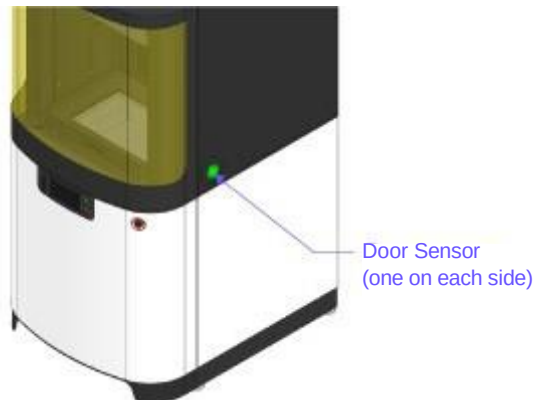
The printer has indicator lights near the platform and cassette installation sites that will illuminate green when these accessories are properly seated. For your safety and that of the printer, the cassette should always be present before installing or removing the platform.

Cart

The cart is a Carbon accessory designed to safely transport and install the large printer cassette. See the Cart manual for additional information about the use of the cart.

Door

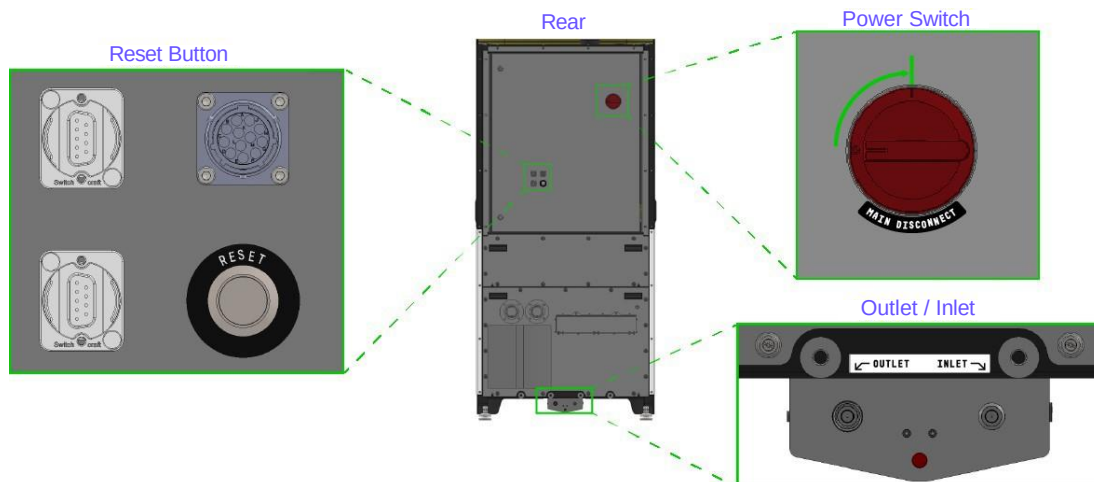
The door moves up and down, and is activated using the capacitive touch switch located at waist-level on either side of the machine. The door sensors are disabled during printing, and forcing open the door will automatically abort your print. The door will close automatically upon starting a print.



Body

The body of the printer includes the body panels as well as features on the back used mostly by Carbon Service. Carbon will install and service the printer. Specifics regarding your site preparation requirements can be found in the Carbon Site Prep guides in the Appendices.

During normal use, you shouldn't need to touch the back of the printer, but you will need access to power up or reset the printer, or to perform routine maintenance. You should not attempt to open or remove any of the printer panels.



Foot

The foot of the printer is stabilized using four leveling feet and can only be moved using a pallet jack or forklift. The foot start switch, located underneath the front edge of the printer, allows the user to start a print by activating the switch using the front of their shoe. The coolant inlet and outlet connections are located on the back of the printer. Carbon will install and service the printer. Specifics regarding your site preparation requirements can be found in the Carbon Site Prep guides in the Appendices.

Power supply cable

The specifications for power supply cable are in the Carbon L1 Site Prep Document (109777). The printer must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. The power supply cable must be equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is installed and grounded in accordance with all local

codes and ordinances. To connect the printer to the mains supply, plug the power cable into the appropriately installed and grounded outlet in your facility. No additional protective earthing methods are necessary.

**WARNING**

Improper connection of the equipment-grounding conductor can result in a risk of electric shock.

**WARNING**

Do not use a cable that does not meet the specified requirements. Replacing the power cable with an inadequately rated cable can result in electric shock, arc flash, fire, or damage to the equipment.

Check with a qualified electrician if you are in doubt whether the printer is properly grounded. Do not modify the plug provided with the power supply cable; if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

2 Waste Management

The printing workflow produces general waste, as well as liquid and solid hazardous waste that you need to collect and dispose of properly. Consult your local regulations for specifics regarding the frequency, storage, and methodology to organize your waste collection containers, clean up spills, and remove waste from your lab.

3 Safety

Resin safety

Visit the Carbon Academy (<https://academy.carbon3d.com/learn/article/material-sds-tds>) to obtain safety and technical information for our current resins and solvents.

Printer safety

Machine safety information can be found on the printer labels as well as in Appendices A and B. These additional safety guidelines should also be reviewed:

**DANGER**

Arc flash and shock hazard. Follow ALL requirements in NFPA 70E for safe work practices and appropriate Personal Protective Equipment (PPE).

**DANGER**

Do not attempt to override safety features. Doing so makes the printer unsafe.

**WARNING**

Hazardous voltage inside. Disconnect power before servicing. Service by trained personnel only.

**WARNING**

Pinch hazard. Internal moving parts in clamps can cause severe injury. Watch out for pinch points and bump hazards. Only interact with the printer using the cart when a cassette is present. Use the built-in handles to install and remove platform or when using the cart to install and remove the cassette.

**WARNING**

Burn hazard. Hot surfaces inside. Allow to cool before servicing. Take care when interacting with the cassette and surrounding deck after printing since they may be warm to the touch.

**CAUTION**

Clean up resin spills (including drips) immediately to avoid slippery floors and prevent spreading of resin contamination.

**CAUTION**

Proper PPE is always required when printing or interacting with resin (nitrile gloves, lab coat, safety glasses, long pants, closed-toe shoes).

**CAUTION**

Do not cover chassis ventilation slots or block enclosure openings.

**CAUTION**

Power off printer before disconnecting coolant hoses.

**CAUTION**

Be aware, printed parts may fall from build platform during platform removal due to poor adhesion.

**NOTICE**

Lock cart casters when not in use.



Never squirt solvent directly on the underside of the cassette, as it will cause immediate, permanent cassette damage.



Only use acetone to clean the platform, printer deck, and frame of the cassette, and top of the window. Do not use it to clean the printer door, body panels, silicone spatulas, or plastic tool handles. Use IPA for these surfaces.



Installation and Service should only be performed by Carbon personnel.

Additional printer safety features:

Compliance

Printers are CE marked. The high voltage electronics, DC power supply, and pneumatics are housed in a secure electrical housing box on the printer's back.

Emergency stop

The red knob on the right side of the front panel will immediately vent the pneumatic system and stop power to all actuating mechanisms in the case of an emergency. Only the computer within the printer will remain powered.

Safety interlocks

The door must be closed before the platform can move and the printing process will begin. Opening the door will cause the platform to halt. The door must also be closed for the platform to travel to the home height and lock in place. Printing cannot start or continue if the cassette and platform become unlocked. The heating system can only run during printing, and printing will abort if the maximum allowable temperature is surpassed. Additionally, hardware thermal cutoff switches will disconnect power to the heaters in the event of a heater malfunction.

Spill prevention

A secondary containment system is located within the printer under the light engine and will hold the full volume of the coolant system plumbing within the printer should a failure occur. Additionally, a leak detector is tied to the fluid system valve and will not allow printing to start or continue if a leak is detected. In the event that a leak is detected, the system's fluid coolant inlet valve is closed and a message will appear on the display.

Site Prep

Sufficient ventilation is required during operation of the printer. The complete site prep requirements can be found in the Carbon Site Prep (109777).

4 Workflow

Pre-Processing

Preparing files

Upload and prepare model into Carbon Software using the desired print controls and parameters based on several factors, such as the resin and part geometry.

Preparing printer

Starting the printer

Turn the power switch to the on (I) position. Press the silver reset button to start the display. (These are located on the back, which is not accessible to users. Only trained service personnel will access these power controls.)



Proper PPE is always required when printing or interacting with resin (nitrile gloves, lab coat, safety glasses, long pants, closed-toe shoes).

Opening door

With gloved hand, touch either hip-level sensors (one located on each side of machine). A green light will indicate when the sensor has been activated.

Dispensing resin

Pour prepared resin directly into the installed cassette.



Clean up resin spills (including drips) immediately to avoid slippery floors and prevent spreading of resin contamination.



Never squirt solvent directly on the underside of the cassette, as it will cause immediate, permanent cassette damage.

Installing cassette

User should always load a clean, inspected cassette before platform. Once display reads "Install Cassette," user will open the door, line up the cart holding a unfilled cassette with the guide rails, and push the "raised" cart straight into the machine with the built-in handle. Once fully inserted, lower the cassette into place using the foot pedal. If properly seated, the cassette indicator light will illuminate.



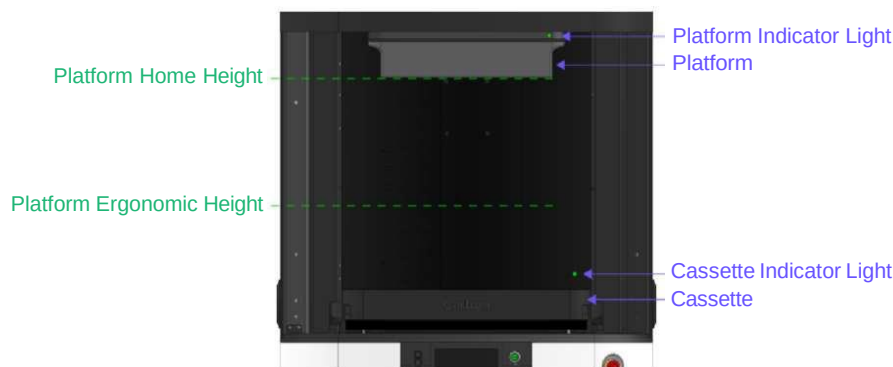
Pinch hazard. Internal moving parts in clamps can cause severe injury. Watch out for pinch points and bump hazards. Only interact with the printer using the cart when a cassette is present. Use the built-in handles to install and remove platform or when using the cart to install and remove the cassette.



Lock cart casters when not in use.

Installing platform

Every time before installing a platform, user must check the platform for damage; if platform's metal surface is protruding down into the build area, it will damage the window. User should always load platform after cassette. Once display reads "Install Platform," user will use the built-in handles to insert the clean of debris platform into the guide rails and push straight back until a green light indicates the platform is properly seated.



Printing



Proper PPE is always required when printing or interacting with resin (nitrile gloves, lab coat, safety glasses, long pants, closed-toe shoes).

Starting a print

Once the print job is queued in the Carbon web interface, the cassette and platform have been loaded, and resin has been dispensed into the cassette, user may start a print using either Start button or foot start switch. At this time, the printer door will close if it was not already closed, and the display will update with the printer status as the printing process begins.

Emergency stop

In the case of an emergency, press in the Emergency stop knob. Otherwise, use the Abort button on the printer display or in Carbon's software. In either case, printing cannot be resumed after stopping a print. If the Emergency stop was activated, user must release the red knob by twisting clockwise.



Default

Activated

Restarting the printer after an Emergency stop

The trained service personal will then press the silver reset button to reset the display (this is located on the back, which is not accessible to users) and follow the instructions on the display to return the platform to the home position. Open the door using the touch switch on either side of the printer to unlock the platform for removal and cleaning.

Post-Processing

Removing platform

After printing, user must always remove the platform before the cassette. At the end of the print, the platform will automatically move to the ergonomic height and then unlock.



Burn hazard. Hot surfaces inside. Allow to cool before servicing. Take care when interacting with the cassette and surrounding deck after printing since they may be warm to the touch.



Be aware, parts may fall from build platform during platform removal due to poor adhesion.



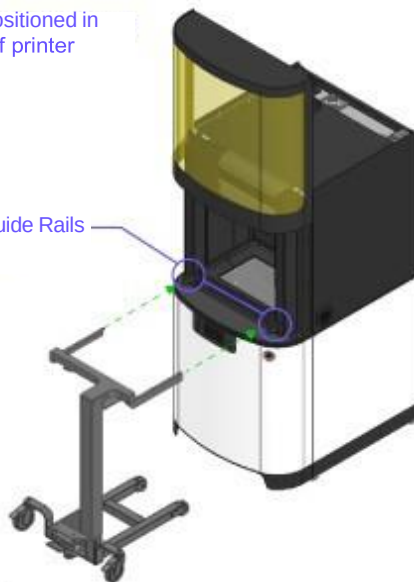
Clean up resin spills (including drips) immediately to avoid slippery floors and prevent spreading of resin contamination.

Removing cassette

The cassette does not need to be removed after every print. If need, after printing, user must always remove the platform before the cassette. Once the platform has been removed, user will line up the empty cart with the guide rails and push the “lowered” cart straight back. Then, user will raise the cassette using the foot pedal and remove the cart from the guide rails.

Cart positioned in front of printer

Guide Rails



**WARNING**

Pinch hazard. Internal moving parts in clamps can cause severe injury. Watch out for pinch points and bump hazards. Only interact with the printer using the cart when a cassette is present. Use the built-in handles to install and remove platform or when using the cart to install and remove the cassette.



Lock cart casters when not in use.

Removing a part

Once the platform has been removed from the printer, the part will need to be cured before it is safe to handle. Follow the post-processing instructions specific to your part to ensure correct part removal and curing methods.

5 Cleaning

Cleaning cassette

Once the resin's pot life has expired, user will use a vacuum or soft silicone spatula (never metal) to scoop the excess resin out of the cassette (while still on the cart), then clean the window, and frame with paper towels and either Isopropanol (IPA) or acetone in a ventilated environment. Dispose of the expired resin in accordance with your local regulations. Use a light source held at different angles to detect fingerprints or streaks. Between prints and always after print failures, use a soft silicone spatula to check for partially-cured resin floating or adhered to the window.

Cleaning platform

Use a Carbon-approved tool, then paper towel with either IPA or acetone to remove all cured resin and residue from the platform's surface and sides in a ventilated environment. Consult the training documents on detailed platform cleaning instructions for your application as found on the Carbon Academy (academy.carbon3d.com).

Cleaning a resin spill -

It is important to clean up a resin spill immediately, as the resin may begin to gel. Transfer as much of the spilled resin as possible into the liquid waste, then wipe away the remaining resin with paper towels, soaked with IPA (if needed).

**CAUTION**

Clean up resin spills (including drips) immediately to avoid slippery floors and prevent spreading of resin contamination.

Daily Cleaning

Wipe down the inside of the printer build area with an acetone-soaked paper towel to remove any resin spills, splashes, or residue and prevent material build-up. Never use acetone on the printer door or body panels as it will damage the printer's finish.

Weekly Cleaning

Completely remove the platform and cassette, then perform a thorough cleaning of the cart, tools, inside and outside of the printer using an IPA-soaked paper towel. Wipe the inside and outside of the printer door with a damp (never dry) microfiber cloth to prevent build-up of static charge. Ensure the printer deck, platform and cassette guide rails, display buttons, door, and body panels are clean of any drips and smears of uncured resin. .

**NOTICE**

Never squirt solvent directly on the underside of the cassette, as it will cause immediate, permanent cassette damage.

**NOTICE**

Only use acetone to clean the platform, printer deck, and frame of the cassette, and top of the window. Do not use it to clean the printer door, body panels, silicone spatulas, or plastic tool handles.

6 Installation & Maintenance

Carbon Service is responsible for installation and all printer maintenance.

Installing or moving the printer

This printer does not have casters, so a pallet jack or forklift will be required to move locations. Consult the Carbon Site Prep guides in the Appendices for details regarding the appropriate equipment. Once the crate has been delivered to a customer

facility, **Carbon Service is responsible for all printer installs (including future repositioning) and must be contacted prior to any printer movements.**

The printer has no user maintenance. Carbon Service personnel should be aware of the following risks related to service or installation.



Arc flash and shock hazard. Follow ALL requirements in NFPA 70E for safe work practices and appropriate Personal Protective Equipment.



Hazardous voltage inside. Disconnect power before servicing. Service by trained personnel only.



Do not attempt to lift or carry the printer. A pallet jack or forklift is required to move the printer.



Do not restore power to the printer until maintenance is complete. Do not operate the printer until proper function has been verified through proper service procedures performed by qualified Carbon service personnel.



Installation and Service should only be performed by Carbon personnel. .



Do not cover chassis ventilation slots or block enclosure openings.



Power off printer before disconnecting coolant hoses.

When connecting to the printer, Carbon will connect the coolant outlet before the inlet. When disconnecting the coolant lines, the printer must be turned off, followed by the inlet being disconnected first.

7 Support

Contact Carbon Support (support@carbon3d.com) or call **1 (650) 285-6307**, option **#2**.

Troubleshooting

Always review the printer display for error messages or alerts before contacting Carbon Support. When reporting a problem, it is helpful to the know the printer name and job ID.

Consumable materials replacements

To order additional resin or accessories, contact your Account Manager or Carbon Support.

8 Regulatory Information

Refer to the printer label, Appendices A, for the printer's specifications, including the printer weight and power requirements.

Our resins are compliant with European Parliament RoHS directives. For more information, refer to our Compliance Declaration Statement, Appendix B.

Refer to the Table of Toxic and Hazardous Substances, Appendix C, for the names, content, and sub-assembly location of this product's regulated substances. This table is also available at <https://www.carbon3d.com/RoHS>.

To see a copy of the L1 Printer Declaration of Conformity, refer to Appendix D.

Visit <https://carbon3d.print.carbon3d.com/opensource/opensource.html> for Carbon's Open Source Credits. Contact Carbon for additional questions.

9 Appendices

Appendix A: L1 Product Label

Item Number: 108422-08

Carbon

MODEL	104545
WEIGHT	730 KG (1600 LBS)
YEAR OF CONSTRUCTION	
INPUT	200-240 VAC~ 18 A 50/60 HZ 1 Ø
NO. OF WIRES	2 + PE
LARGEST LOAD	18 A
INPUT FUSE	20 A
AIC	100 kA VACRMS
SCCR	180 A
SCHEMATIC	106003-02
MAIN DOCUMENT	PRODUCT MANUAL

Supply conductor and machine overcurrent protection is provided at machine supply terminals.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Contains FCC ID: 2AITLNFC
Contains Transmitter Module NCC ID: CCAQ20Y10010T0

COUNTRY OF ORIGIN: USA
Carbon, Inc.
1089 Mills Way
Redwood City, CA 94063 USA



Appendix B: Compliance Declaration for Hazardous Substances

Carbon

RoHS / RoHS2/RoHS3 Compliance Declaration Statement Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment

Carbon, Inc. certifies that our resins to be used in Carbon3D electrical and electrical products (identified below) to be placed on the market in the European Union (EU) are compliant with European Parliament Directives, 2011/65/EU (RoHS2 directive) and its amendment 2015/863 (RoHS3). The following table lists the restricted substances and the allowable limits.

RoHS Restricted Substance	Allowable Limit
Cadmium and its compounds	100 ppm (0.01 weight %)
Mercury and its compounds	1000 ppm (0.1 weight %)
Hexavalent Chromium and its compounds	1000 ppm (0.1 weight %)
Lead and its compounds*	1000 ppm (0.1 weight %)
Polybrominated biphenyls (PBB)	1000 ppm (0.1 weight %)
Polybrominated diphenyl ethers (PBDE)	1000 ppm (0.1 weight %)
Bis (2-ethylhexyl) phthalate (DEHP)	<1000 ppm (0.1 weight %)
Butyl benzyl phthalate (BBP)	<1000 ppm (0.1 weight %)
Dibutyl phthalate (DBP)	<1000 ppm (0.1 weight %)
Diisobutyl phthalate (DIBP)	<1000 ppm (0.1 weight %)

Carbon, Inc. resins:

PR25

RPU 70

EPU 41

UMA 90

DPR 10

RPU 60

FPU 50

EPU 42/43

SIL 30

RPU 130

RPU 61

EPU 40

EPX 82

MPU 100

CE 221

RoHS 2 Directive also requires CE marking on products which are defined within a listing of 20 product group categories. This listing can be reviewed at, <http://www.ce-marking.org/what-product.html>.

Carbon, Inc is pleased that we are able to accommodate your needs and look forward to a continued and successful business relationship. If you have any questions, do not hesitate to give me a call at (703) 244-0265 or email at lmacdougall@carbon3d.com.



Leslie MacDougall
Global Materials Compliance Manager

February 26, 2020

Date

Carbon, Inc.
1089 Mills Way
Redwood City, CA 94063
Tel 650.285.6307
Carbon3D.com

Appendix C: Table of Toxic and Hazardous Substances



CN-G103655677-1

6.0 Table of Toxic and Hazardous Substances

Table of Toxic and Hazardous Substances
表中有毒有害物质

Product (产品): Model 104545

Part Names 部件名称	Toxic and Hazardous Substances or Elements 有毒有害物质或元素					
	Pb 铅	Cd 镉	Hg 汞	Cr6+ 六价铬	PBB 多溴联苯	PBDE 多溴二苯醚
Enclosure 围墙	O	O	O	O	O	O
Chassis 机壳	O	O	O	O	O	O
Bezel 表圈	O	O	O	O	O	O
Build Arm 建立臂	O	O	O	O	O	O
Build Platform 建立平台	X	O	O	O	O	O
Resin Tray 树脂托盘	O	O	O	O	O	O
Light Engine (Light Source) 光引擎 (光源)	O	O	O	O	O	O
Motors 马达	O	O	O	O	O	O
Filters 滤	O	O	O	O	O	O
Concentrators 集中器	O	O	O	O	O	O
Regulators 调节器	O	O	O	O	O	O
Valves 阀门	O	O	O	O	O	O



CN-G103655677-1

Heaters 加热器	O	O	O	O	O	O
Fan Assemblies 风扇组件	O	O	O	O	O	O
Display Screen 显示屏幕	X	O	O	O	O	O
Cables 电缆	X	O	O	O	O	O
Printed Circuit Assemblies / Printed Circuit Boards 印刷电路组件 / 印刷电路板	X	O	O	O	O	O
Hardware / Fasteners 硬件 / 紧固件	X	O	O	O	O	O
Power Supply 电源	X	O	O	O	O	O
O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572-2011 X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572-2011 O: 表示该有毒有害物质在该部件所有均质材料中的含量均在GB/T 26572-2011标准规定的限量要求以下 X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572-2011标准规定的限量要求 (Producers or importers may further provide in this box the technical explanation for marking "X" based on their actual conditions) Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight 鉛用於加工用途之鋼材及鍍鋅鋼的合金元素之一，其含量最高可達0.35% Lead as an alloying element in aluminium containing up to 0,4 % lead by weight 鉛用於鋁合金，並為其元素之一，含量最高可達0.4% Copper alloy containing up to 4 % lead by weight 銅合金中所含的鉛，最高可達4% Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound 鉛用於電器及電子元件中之玻璃或陶瓷（介電陶瓷電容除外）。例如：壓電元件或者玻璃/陶瓷複合材料 Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages 用於積體電路覆晶封裝流程中，為連接半導體晶片及載體間，以完成電力連結的鉛錫可含鉛。						

Appendix D: Declaration of Conformity

Carbon®

Declaration of Conformity

V02.01
11 JANUARY 2024

L1 ADDITIVE MANUFACTURING MACHINE

The manufacturer of the products covered by this declaration is

Carbon®**Authorized Representative:**

Carbon Technologies DE GmbH
Dornhofstrasse 38a,
63263 Neu-Isenburg Germany
E-mail: productstewardship@carbon3d.com
Attention: Michael Brielmann

The directives covered by this declaration

2014/35/EC - LV (Low Voltage)
2006/42/EC - Machinery (consolidated edition)
2004/108/EC - EMC (Electromagnetic Compatibility)
2014/53/EU - RE (Radio Equipment)
2011/65/EU as amended by 2015/863/EU - RoHS (Restriction of Hazardous Substances)

The products covered by this declaration

Carbon, Inc. L1 Additive Manufacturing Machine (Printer, Cassette, and Platform)

The basis on which conformity is being declared

The products identified above comply with the listed directives and the manufacturer has created the Technical File, which includes reports from:

California Code Compliance, Inc., P.O. Box 2503, Gardnerville, NV 89410-2503.
Met Laboratories Inc., 3162 Belick St. Santa Clara, CA 95054
Intertek, 1365 Adams Court, Menlo Park, CA 94025
Intertek, 545 E. Algonquin Road, Arlington Heights, Illinois 60005

The manufacturer has applied the following standards:

EN 60204-1:2006 (Safety of Machinery/Electrical Equipment for Machinery)
EN1200:2011 (Safety Guidelines for Risk Assessment)
IEC/EN 61000-3-11:2000 (Electromagnetic Compatibility)
FCC Part 15 B & ICES-003 (Unintentional Radiators)
ETSI EN 301 489-1 & 301 489-17 v2.1.1 (Electromagnetic Compatibility)
EN 300 330 v2.1.1 (Short Range Devices)
EN 50581:2012 (Technical documentation for the assessment of electrical and electronics products)
IEC 62321:2015 (Determination of levels of six regulated substances)

The technical documentation required to demonstrate the products meet the requirements of the listed directives has been compiled and is available for inspection by the relevant enforcement authorities. The CE mark was first applied in 2018.

Signed: 
Chris Van Wert

Date: 11 January 2024

Authority: VP, Operations
Title

**Attention!**

The attention of the specifier, purchaser, installer, or user is drawn to special measures and limitations to use that must be observed when these products are taken into service to maintain compliance with the above directives. Details of these special measures and limitations to use are available on request and are also contained in the product manuals.