

English



This guide applies to the EnvisionTEC D4K printer.

FCC Compliance Information

These devices comply with part 15 of the FCC Rules as applicable. Operation is subject to the following two conditions:

- (1) These devices may not cause harmful interference, and
- (2) these devices must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by EnvisionTEC could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the 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 his own expense.

ISED compliance information

This device complies with the Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
 - (2) This device must accept any interference, including interference that may cause undesired operation of the device.
- CAN ICES-003(A) / NMB-003(A)



Hereby, EnvisionTEC declares that the radio equipment for D4K Printer is in compliance with Directive 2014/53/EU. The full text of the EU Declaration of Conformity is supplied with the equipment and is available at the following Internet address:

<https://knowledge.envisiontec.com/hc/en-us/articles/4499917131159-Compliance-documentation>

Radio equipment contained in this product operates at the following frequencies:

WLAN: 2.4 GHz Band 2.412-2.472 GHz, and 5GHz, maximum radio frequency power
28.2mW



EU WEEE Directive 2002/96/EC

This equipment at the end of life must be discarded in accordance with the National or Local Regulations. Please contact your dealer or supplier for further information.

EnvisionTEC™

Manufacturer:

EnvisionTec GmbH
A Desktop Metal Company
Bruesseler Str. 51
45968 Gladbeck
Germany

All rights reserved.
Subject to change without notice.

www.envisiontec.com

02/2022

Product overview

The D4K printer produces small, premium components requiring a high level of precision and use industrial UV LEDs as the light source.

The D4K printer builds 3D models by curing liquid materials through a projector system.

The model created in CAD (Computer-Aided Design) software is loaded into the Envision One RP software supplied with the printer. Envision One RP software slices the model, which then is sent to the printer.

Reasonably Foreseeable Misuse

Reasonably foreseeable misuse is:

- Operating the printer with inappropriate materials.
- Exceeding the technical values specified for normal operation.
- Operating the printer with damaged printer parts or electric cables.
- Unauthorized modifications and changes to the printer.

For any damage resulting from misuse:




- The printer owner bears the sole responsibility.
- The manufacturer assumes no liability.

Safety procedures and protocols









READ THESE SAFETY INSTRUCTIONS PRIOR TO INSTALLING, OPERATING OR PERFORMING MAINTENANCE ON THE PRINTER. DO NOT DISCARD.

Conventions

 DANGER	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
 WARNING	Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.
NOTICE	Indicates important information or a situation that, if not avoided, could result in equipment or property damage.

Safety pictograms








EnvisionTEC US LLC and its affiliated companies do not accept any liability for damages or injury caused by any other use of D4K or materials. Furthermore, before using D4K or any material, the user must independently check for its suitability and applicability for the intended use. EnvisionTEC and is a registered trademarks of EnvisionTEC GmbH.









	Lifting hazard: Indicates possibility of strain or other injury when lifting heavy objects.
	Electrical hazard: Indicates risk of electrical shock which can cause serious injury or death, or damage to equipment. Do not touch anything that displays this label.
	Hot surface: Indicates risk of burns due to heated areas or surfaces. Avoid areas marked with this label.
	Pinch / Crush hazard: Indicates parts within the furnace that may pinch or crush.
	General warning sign
	Consult User Manual for instruction for use.






Mandatory Action Signs


		
Use protective hand wear	Use protective goggles	Use protective clothing

Printer safety warnings

 WARNING	<p>Risk of electric shock: Disconnect power before servicing the printer.</p>
 WARNING	<p>Risk of electric shock: Make sure all conducting components are in good order and condition. The switch cabinet may be opened by trained and authorized service personnel only. Do not try to set up the printer yourself. Have the printer set up by trained and authorized service personnel only.</p>
 WARNING	<p>Risk of UV radiation hazard: Never look directly into the projectors beam. Looking into the projector with unprotected eyes may cause injury. Use protective goggles and wear safety gloves when working with the printer.</p>
 WARNING	<p>Risk of injury: The use of the materials intended for the printer may cause risks to the health and safety of the operator or third persons. In order to ensure a safe handling of the materials, the hazard and precautionary statements must be observed.</p>
 WARNING	<p>Risk of electric shock: Connect the printer to a grounded outlet ground wire before using. Only use the grounding adapters of the plug & socket type targeted for the country of intended use of the printer.</p>
 CAUTION	<p>Risk of hand crushing caused by automatically moving printer parts: Always keep the print door closed when operating the printer. The printer may only be operated if the protecting devices are working properly. The printer may only be operated by instructed and specially trained personnel. Only execute the calibration tasks described in this user manual. For the remaining tasks, have the printer calibrated by trained and authorized service personnel only.</p>
 CAUTION	<p>Risk of injury: printer overturning during transportation can cause injury. Do not try to move the printer yourself. Have the printer transported by trained personnel only.</p>

 CAUTION	<p>Risk of injury caused by improper handling of the build platform: Before taking the build platform out, make sure that all persons are clear of the danger zone.</p>
 CAUTION	<p>Risk of injury: Avoid unnecessary movements. Avoid non-ergonomic joint positions.</p>
 CAUTION	<p>Risk of injury: risk for the operator to slip, stumble or fall. Keep the floor of the printer area clear of loose cables, objects or liquids.</p>
 CAUTION	<p>Burn hazard: touching the hot light source might result in severe burns. Use heat-resistant protective gloves.</p> <p>ONLY AUTHORIZED, TRAINED PERSONEL MAY TOUCH THE LIGHT SOURCE.</p>
 CAUTION	<p>Risk of injury: the print door must always be closed, except when removing models from the printer. After the models are removed, close the print door on the printer.</p>
 CAUTION	<p>Risk of injury from crushing caused by moving printer parts: The printer may only be operated by instructed and specially trained personnel. The printer may only be operated if the protecting devices are working properly.</p>
 CAUTION	<p>Risk of injury from crushing caused by automatically moving printer parts: The printer may only be operated by instructed and specially trained personnel. Make sure that all persons are clear of the danger zone. The printer may only be operated if the protecting devices are working properly.</p>
 CAUTION	<p>Risk of injury: Use the appropriate personal protective equipment.</p>

 CAUTION	<p>Risk of injury: do not use other materials than the materials delivered by EnvisionTEC. Observe the relevant Material Safety Data Sheets for the materials. Use the appropriate personal protective equipment.</p>
 CAUTION	<p>Risk of injury: As handling chemicals puts you at risk of coming into contact with corrosive chemicals, being burnt, inhaling poisonous vapors, etc., always put on suitable protective clothing (gloves, protective goggles) before working with construction substances. Take utmost care to avoid getting any chemicals in your eyes or breathing the chemical vapors in. Always wash your hands thoroughly afterwards with soap and water only. Don't use Isopropyl alcohol to wash your hands if come in contact with materials. Be careful not to spill chemicals.</p>
 CAUTION	<p>Risk of injury: from crushing caused by automatically moving printer parts. Body parts may be crushed by movements of the build platform. The printer may only be operated if the protecting devices are working properly.</p>
 CAUTION	<p>Risk of injury from slipping, stumbling or falling of persons through loose cables, objects or liquids on the floor. Keep the printer area clean and dry. Make sure that no loose cables or objects are lying on the floor of the printer area. Place all printer cables carefully to prevent trip hazard. After repairing the printer, place cables back carefully to prevent trip hazard. Remove tools and other objects from the printer. Inform the personnel of residual risks.</p>
 CAUTION	<p>Risk of injury: Always wear nitrile gloves when handling the material tray.</p>


 CAUTION	<p>Risk of injury caused by the ergonomics of the printer. Maintain a healthy posture. Instruct the personnel accordingly.</p>
NOTICE	<p>The printer may only be used for the intended purposes. The printer may only be operated if in a flawless state in terms of technical safety. Only then the operational safety of the printer is guaranteed.</p>
NOTICE	<p>Do not use other materials than the photopolymers delivered by EnvisionTEC. Read the relevant Material Safety Data Sheets supplied with the materials before use.</p>
NOTICE	<p>When working with materials, observe the instructions regarding personal protective equipment in the relevant Material Safety Data Sheets.</p>
NOTICE	<p>The printer must be positioned on a flat and even surface to prevent the printer from moving. Check the horizontal orientation of the printer at regular intervals. This can be done by use of a spirit level placed on the build platform. If the printer is not levelled any more, e. g. if it has suffered an impact, have the printer repositioned by trained and authorized service personnel.</p>
NOTICE	<p>Incorrect positioning of the printer can cause damage to the printer and/or to the printed models. Please, follow the guidelines.</p>
NOTICE	<p>Ensure that you put the material tag into the reader. Failure to do so can result in damage to the RFID tag and reader.</p>
NOTICE	<p>Do not try to touch or open anything on the screen before the Controller Software has finished booting. This can cause damage to the files on the printer.</p>

NOTICE	Fastening the material tray clips is very important. If they are not fastened properly, the material will splash inside the printer.
NOTICE	Always remove the build platform before taking the material tray out of the printer! Failure to do so can result in material dripping down into the glass panel causing failed builds and ruined equipment.
NOTICE	Use a different material tray for each kind of material to avoid contamination. If not possible, clean the material tray carefully and thoroughly.
NOTICE	<p>Improper use of the remote printer control over local network using VNC software may lead to damage.</p> <p>Use the remote printer control with great attention.</p> <p>Do not use the remote printer control without an operator next to printer.</p> <p>The printer owner is responsible for any unsafe operation of the printer using the remote printer control.</p>
NOTICE	Do not turn the printer off during update.
NOTICE	<p>Always remove the platform before taking the material tray out of the printer.</p> <p>Failure to do so can result in material dripping down into or onto the printer causing failed builds and damaged equipment.</p>
NOTICE	Checking the printer ensures the highest quality of printed models and minimizes the risk of errors or printer malfunctioning.

NOTICE	<p>Make sure the build platform is clean and the material tray is in place and has material in it before starting a print. Failure to do so will result in failed builds and damage to the equipment.</p>
NOTICE	<p>Carry out the maintenance tasks according to the maintenance table and the intervals specified therein.</p>
NOTICE	<p>Use 99% IPA to clean the build platform away from the material tray and thoroughly wipe all IPA completely from the build platform before installing it back onto the printer.</p>
NOTICE	<p>Always clean the material tray each time you need to change the material for printing parts on the printer.</p>
NOTICE	<p>Do not pour material from your material tray into the bottle it came from. This can potentially contaminate the whole bottle of material and ruin it.</p>
NOTICE	<p>Never use chemicals inside the material tray. This will contaminate and ruin any material you put into the material tray.</p>
NOTICE	<p>All emergency stopping devices and protection doors must be checked one by one and separately. In case of defective safety equipment, shut the printer down immediately and secure it against being switched on again.</p>

Users in California: California Proposition 65

EnvisionTEC US LLC and its affiliated companies do not accept any liability for damages or injury caused by any other use of D4K or materials. Furthermore, before using D4K or any material, the user must independently check for its suitability and applicability for the intended use. EnvisionTEC and is a registered trademarks of EnvisionTEC GmbH.

 WARNING	<p>Cancer and Reproductive Harm: This product can expose you to chemicals including Lead (CAS 303-4-34) and Nickel (CAS 74400-02-), which are known to the State of California to cause cancer, birth defects or other reproductive harm. For more information, go to http://www.p65warnings.ca.gov/.</p>
---	---

General safety

All general workplace safety rules should be followed when operating the printer. It is the responsibility of the user to ensure compliance with all local, regional, and national regulations. Additionally, it is the responsibility of the user to ensure that the system is installed and maintained properly by EnvisionTEC.

Materials safety

Those components of the materials delivered by EnvisionTEC that have been classified as hazardous do not have a threshold limit value (TLV). It is not necessary to give concrete instructions concerning the TLV.



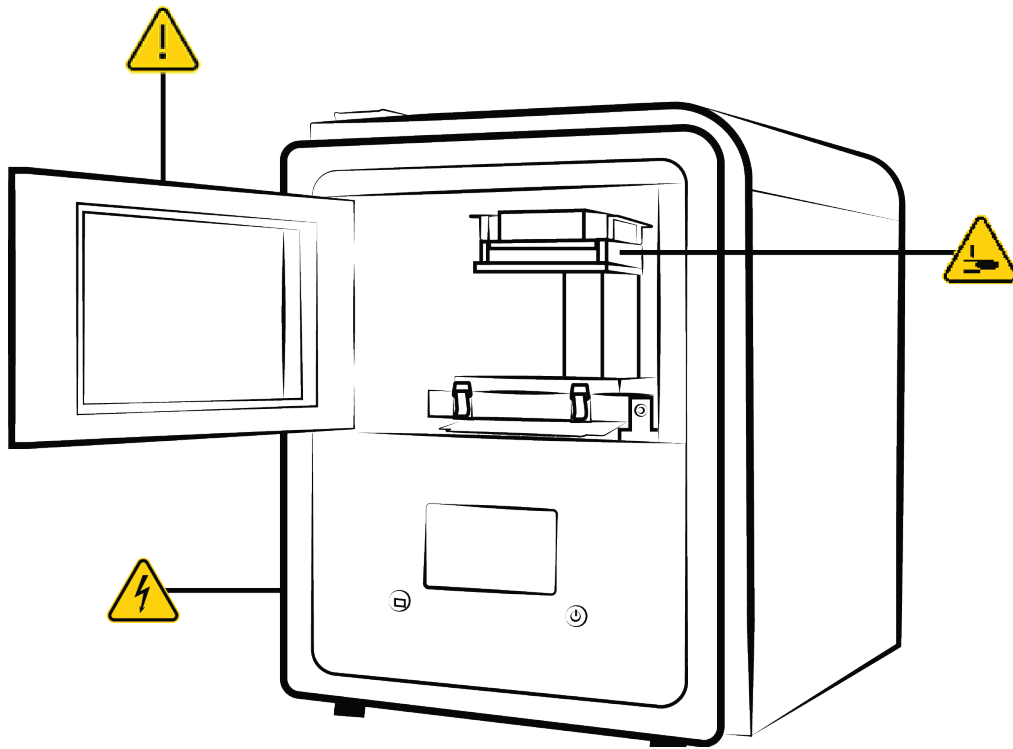
Note: Make sure the extraction is sufficient. EnvisionTEC recommends an air change of 25 m³/h per m² effective surface of the laboratory per EN 13779 or 3.2 m³/h per m² per US ANSI ASRAE 62. Check local requirements.

For accident prevention, make sure all operators wear suitable protective clothing:

- protective gloves
- safety boots
- laboratory coats
- safety goggles
- dust mask during post-processing

First aid

If you are injured while operating the printer or handling media, refer to any first aid directions included in the material SDS. If minor injury occurs—such as cuts, bruises, lifting injuries, or other related injuries—generally accepted first aid procedures should be followed. If serious injury occurs, procedures for contacting emergency first responder personnel should be immediately implemented.



Printer operational considerations

EnvisionTEC US LLC and its affiliated companies do not accept any liability for damages or injury caused by any other use of D4K or materials. Furthermore, before using D4K or any material, the user must independently check for its suitability and applicability for the intended use. EnvisionTEC and is a registered trademarks of EnvisionTEC GmbH.



Manufacturer:

EnvisionTEC US LLC
A Desktop Metal Company
15162 S. Commerce Dr. Dearborn,
Michigan 48120
USA

All rights reserved.
Subject to change without notice.

www.envisiontec.com