



cara Print 4.0 FAQ`s

Category	Question	Answer
CAM	How does the customer access the CAM software?	The software will arrive on a USB drive with printer purchase. We are also working on setting up a gateway for customers to try the CAM software prior to printer purchase. More to come.
CAM	What do I need to do when the printer does not automatically show up in the print manager, although it is connected to the same network?	You need to manually add the printer by the IP address shown in the printer display. Wifi Channels restricted to Channel 11 and below - please disable router automatic channel selection and set channel to 11 or below (NOT US).
CAM	How will I know the best way to set the support structures?	Please look at cara Print 4.0 Application Guide (depending on material & indication): www.kulzer.com/cara-print-application
CAM	What types of files are needed to create the print job?	Open .stl-files are required for use with cara CAM software.
CAM	What requirements does the cara Print CAM software have?	Any PC with Windows (7 or later) or Mac OS X installed and a decent graphic card will do. The better the graphic card performance the faster the slicing. We recommend using the CAD PC.
CAM	How is the cara Print CAM software updated?	As soon as there is an update available, the cara Print CAM software tells the user to update. An internet connection is necessary to do this. The cara Print CAM software also manages the firmware update of the printer, so a connection between the cara Print CAM PC and the printer via WLAN or Ethernet is necessary. These network connections do not need to be permanently established but it is recommended to have the PC and the printer connected to the internet to catch all updates. Product Manager will also inform the service teams when an update is released.
CAM	What is the best orientation for the model?	Please look at cara Print 4.0 Application Guide for recommendations: www.kulzer.com/cara-print-application



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CAM	How many printers can be run by one cara Print CAM software?	There is no limitation by the software. It will probably be more the space for all those printers that limit the amount.
CAM	What does the view slices function do?	The print analyzes function checks for unsupported areas that may cause a print failure. Please look at cara Print 4.0 Application Guide, chapter 3.5: www.kulzer.com/cara-print-application
CAM	How is build time affected by orientation?	Assuming a constant slice thickness, the higher the build volume is the longer it takes. This is not linear, as the software checks for delicate areas and adjusts the movement for the z-Axis to ensure that everything is printed well. But 1 st approach is: double the height, double the time.
CAM	I am receiving this error message when trying to open a file in the Print Editor: The model can not be located. Do you want to locate it manually?	This message occurs if you transfer a .cpj-file to another computer or another directory location without also transferring the associated .stl-files. If you still wish to open/edit the .cpj-file then you will need to either put the associated .stl-files in the same directory as the .cpj-file or manually browse to the location of the .stl-files and select them.
CAM	I see white splotches on my cured print.	This is a result of curing the appliance without rinsing the printed object properly.
CAM	Can other files than .stl-files be printed with the cara Print 4.0?	The cara Print CAM software accepts only open .stl-files. Other files like .obj-files can not be uploaded.
dima Print Material	What should I know about mixing used material with new material?	Only mix same materials that have the same batch number. Always add new material to used.
dima Print Material	When shall I pour back unused material in the bottle?	It is mandatory to pour material back in the bottle when not in use longer than 12 hours. Be sure to check for debris in the material and always use the strainer when pouring back material into a bottle. Only mix materials that have the same batch number.
dima Print Material	What will happen when I mix different materials?	Then the mixture can not be used to manufacture a medical device. It can not be guaranteed anymore that the required properties are reached.



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dima Print Material	Can 3 rd party materials be used?	No. All parameters like printing, material (ink or resin) and post-curing are optimized to the existing system consisting of cara Print 4.0, HiLite Power 3D and dima Print materials respectively. Those components are already validated and safe. The printing parameters for 3 rd party materials are not known and not set in the printer. So there is a chance of damaging the tray window by wrong material settings. Also these materials are not validated to meet the medical device standards when processed in the cara Print 4.0 and the HiLite Power 3D. So the resulting material properties can not be guaranteed.
dima Print Material	Is there an automatic identification of the material by the printer?	No this is not implemented. The user needs to set the right material matching the material in the tray. If the wrong material settings are used, the print may fail and in rare cases the tray window may get damaged.
dima Print Material	What is the minimum material volume needed?	To be save always top up the resin in the tray to the max fill line.
dima Print Material	What is the shelf-life of the material?	Shelf life is given on the label of each bottle. Refer to specific material labelling.
dima Print Material	How do I know when to replace the material tray?	When you detect damages such as holes or colored areas in the foil window by visual inspection.
dima Print Material	How do I know how long to post-cure each material?	Please look at cara Print 4.0 Application Guide and the Instructions for Use of the respective material: <u>www.kulzer.com/cara-print-application</u>
dima Print Material	How should the resin be mixed when it is in the material tray?	Remove the build table, pull the vat out to the fill position, then stir with the soft silicone spatula provided in accessories kit. Never stir the resin with the material tray fully inside the machine, too easy to damage the window surface when working at an angle. Also check carefully for any solid debris before mixing, as sharp edges of these parts may damage the tray window.
dima Print Material	There are some bubbles from shaking the dima Print material when filling the tray. Do they affect printing quality negatively?	As the building platform dives into the dima Print material bubbles will be repressed and displaced. Usually they will not appear inside your printed dental object later.



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dima Print Material	Is it allowed to use a specific dima Print material for a different indication or purpose? For example: Print a drilling guide using dima Print Ortho?	Due to regulatory and legal definitions usage of materials for a non-registered indication is not allowed (off-label use). This can lead to damage on the tray because that material was not designed for that application.
dima Print Material	Can I make changes in the material parameter settings?	Due to several safety reasons (Patient and hardware) it is not allowed to make any changes on the material parameter settings.
dima Print Material	Can I store material inside the tray for more than 12 hours?	Sedimentation takes place, so the material must be well mixed before the next use. Use the soft silicone spatula only. Thoroughly mix the material in the tray and check for a homogeneous color. If any solid parts are found, please discard the resin.
dima Print Material	What shall I be aware of before auto-claving a drilling-guide?	You have to polish the outer surface of the drilling guide before auto-claving. For more information please see cara Print 4.0 Application Guide: www.kulzer.com/cara-print-application
dima Print Material	Why is the surgical guide material not colorless?	dima Print Guide material actually has a yellowish color in its printed state. After post curing, it takes on an orange color. When autoclaved following sterilization protocol, the print becomes colorless. Before auto-claving make sure to polish the outer surface.
Documentation	Where can I find the cara Print 4.0 Operating Manual?	See cara Print 4.0 Getting Started or visit the website for downloads: www.kulzer.com/cara-print
Object	What shall I do with an object that has been in contact with isopropanol longer than 10 minutes?	Please discard your object. The mechanical stability may not be obtained anymore so the medical device may fail.
Post-Cure	Can I use other post-curing devices than HiLite Power 3D?	No. All parameters like printing, Material and post-curing are optimized to the existing system consisting of cara Print 4.0, HiLite Power 3D and dima Print materials respectively. Those components are already validated and safe.
Post-Cure	Do I need elevated temperatures for cleaning with ultra-sonic?	No. Please keep your water bath cool the entire process. Otherwise a misfit of your printed objects will occur. Exchange your water with cold one from time to time.



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Printer	I need to be at the printer to start printing?	Yes, this ensures by visual inspection of the tray and the build table that everything is ok for the next print (e.g. no debris in the resin or on the build table).
Printer	Is there a dead stop for the lock knob of the build platform?	Yes there is, be sure to always push it in to the end and then screw it hand tight.
Printer	When does the light engine need replacement?	The lifetime of the LED light source is more than 20,000 hours so replacement is not expected. An intensity sensor is implemented to the printer that guarantees equal light intensity.
Printer	How long do the filters last?	During normal use the filters need to be changed every 3 months (can be purchased at Kulzer). In especially dusty areas and in heavy use (24/7) please change earlier. The lower filters can be washed with water and soap. Please make sure to dry completely before installing.
Printer	Can I start a print from the PC directly?	No, intentionally not. It is advised to check build table and material tray before starting a new print to make sure it is the right material and there is no residual cured material that may damage the foil window.
Printer	Is there a preferred position on the build table for better accuracy?	No, all areas of the build table are of equal accuracy. There is no distortion from the light engine (as there is for laser based systems).
Printer	What does the factory reset do?	It erases all customer made settings and deletes all print files, but it does not delete material files.
Printer	How many prints can be stored on the printer?	Limited to 75 prints but also depending on the file size.
Printer	What care does the tray need?	The window in the tray is the delicate component that must be treated very carefully. Never use sharp or metallic tools to clean the tray. Even fingernails may damage the foil. Use only included silicone spatula and glove protected fingertips when touching the tray window. Carefully clean the tray with isopropanol and microfibre cloths only.



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Printer	What infrastructure is needed?	AC power (110-250V 50-60Hz), an even table able to hold 30 kg, dust reduced environment, isopropanol and an ultrasonic bath, a HiLite Power for post curing.
Printer	How do I remove prints from the build table?	Carefully use the provided plastic scraper or a plastic razor blade to separate the support foundations from the build table.
Printer	Does the print material need light protection?	yes, The material cures at 405 nm, which is deep blue. Normal office lights, especially white LED lights do contain this wavelength so material may be hardened when exposed to this light. During printing the printer does not need light protection, the orange windows prevent the blue light to enter. But when handling the tray, no direct bright light exposure (e.g. LED white light or sunlight) should happen.
Printer	How to remove supports after printing?	Carefully remove the supports before post-curing. Grind back carefully the remaining witnesses of the supports and polish when needed. For robust structures the supports can be broken off or clipped off before post curing, if it is not expected that the structure can bend. For detailed description please look at cara Print 4.0 Application Guide: www.kulzer.com/cara-print-application
Printer	When and how do I clean the build table?	Wipe off directly after removing all printed structures with a paper towel and isopropyl alcohol. Check carefully that the building table is absolutely clean and dry. If any remaining material is protrudent on the surface it may be pressed in the foil during the next print damaging the foil.
Printer	Can I take out the tray before removing the build table?	It is recommended to remove the build table first, as the residual material on the build table may drip on the glass window of the printer, and if not removed can destroy the next print.
Printer	How long do the trays last?	The trays are expected to last for 600 prints or more as long as it is maintained well and used according to the Instructions for Use and the Application guide.



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Printer	What happens if you upload an unsliced cpj-file to a printer?	Printing without slicing is not possible. If you try to transfer the file through the network cara Print CAM software will ask if you want to slice the file. If transfer is done via USB it will give an error.
Printer	I find that if the printer sits idle for a period of time in order to get the Wi-Fi to connect to the printer I have to turn off the power (switch on the back) and then back on again to connect?	Try restarting the cara Print CAM software or just clicking "Add printer" and entering the IP address.
Printer	How do I connect to Wi-Fi?	See the user manual of cara Print 4.0. Networking hardware in the printer can only operate at channel 1-11. If problems to connect occur then adjust the router settings manually to one of the channels 1-11. Auto channel in Router has then to be switched of. See manual of your router or ask your network admin.
Printer	How do I update the printer firmware via USB?	In the cara Print CAM software select "settings" (gear symbol) and then "Latest Firmware Version: xx". Scroll to the bottom and select "Show Firmware Update Files". The file will be displayed in the explorer window. Transfer the file to an USB drive and insert the USB drive into your printer. Select the file via the "USB Transfer" menu icon on the printer display and follow the instructions.
Printer	How do I update the printer firmware via network with internet connection?	A new update is displayed in the cara Print CAM software with an exclamation mark behind the printer in the list. When selecting the printer the update button appears. Click on it and follow the instructions.
Printer	How can I delete the print files on the printer?	Via the cara Print CAM software on the connected PC in the network or by clicking on the preview in the print library and clicking on "x".
Printer	How to clean the printer case?	It can be cleaned with water and a soft and clean cloth. Resin residuals can be cleaned with isopropanol and a soft and clean cloth. Do not use Acetone.



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Printer	Which environmental conditions are needed for the Printer?	Dust from milling and gypsum should be avoided. Area around the printer should not be influenced by direct sunlight or strong UV light sources.
Printer	What shall I do in case of loss of power?	Unfortunately, your print job has failed and you have to restart it completely. Please ensure to properly remove all already printed parts, cleaning the building platform, refill material and start again afterwards.
Support	How do I get technical support?	The customer contacts Technical Services if they are having issues printing, or need general troubleshooting assistance with the printer. They will be instructed to try a "test print" for validation to determine if it is a printer issue or possibly a CAM or workflow issue. As needed, tech services will work to troubleshoot issues remotely. If printer issue can not be addressed remotely with support from tech services it will need to be returned for service and a replacement unit will be sent.
Support	If the LED source is damaged in transport can my lab replace it themselves?	No, if a replacement is required due to damage, it would need to be returned for repair as significant calibration is required to replace it.
Support	How can I send Kulzer a Print Job for further investigations?	Please identify your sliced .cpj- and .stl-file and send them to Kulzer. <u>cara@kulzer-dental-service.com</u>
Support	Can I give cara Customer Support access to my cara Print 4.0 device?	This can only be done remotely to your cara CAM PC. Make sure your cara Print 4.0 is switched on and connected to the same network as your cara CAM software already is.
Tray	Can I directly begin printing after cleaning the material tray?	You can but you have to ensure that the material tray is clean, completely dry and without residues. Please fill in well mixed material only.
Tray	How to change the resin material?	Please see cara Print 4.0 Instruction for Use and Application Guide: <u>www.kulzer.com/cara-print-application</u>



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cara Print 4.0

A comprehensive, yet open digital workflow

The cara system for 3D printing works with open STL files commonly used by CAD programs, such as 3Shape. cara Print CAM software is included with the purchase of cara Print 4.0, so no hidden licensing fees!

Materials: dima Print

cara Print 4.0 will work with our resins that cure at 405 nm. dima Print materials, created with a deep knowledge of 3D printing, are especially designed to deliver perfect results.



Post-curing: HiLite® Power 3D

HiLite Power 3D, the high-performance light-polymerization unit can be used with all light-curing dental materials.

cara Service

Our experts ensure a quick learning curve and long-term support.

Overview of applications:



A night guard,
made with
dima Print Ortho



An individual impres-
sion tray, made with
dima Print Impression



A surgical drill guide,
made with
dima Print Guide



A dental model,
made with
dima Print Model



A CAD-to-cast structure,
made with
dima Print Cast

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