Photocentric
STUDIO

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Minimum Computer Requirements

- Operating System Windows 7, 8 or 10
- Minimum 2.0 Ghz processor speed 2 cores. Recommended 4 cores
- GPU capable of opening opengl version 3.0 or higher
- .net framework version 4.0
- 64bit system: minimum 2GB of RAM, recommended 4GB
- 32bit system: minimum 1GB of RAM, recommended 2GB

You can run the software using macOS by using a Virtual Workstation with Windows installed on it.

Photocentric

USER MANUAL

Software Installation

1 If Windows Defender prevents the installation from starting simply click **More Info** then **Run Anyway** to begin the installation process.

2 The set up wizard will then load on your screen. To proceed with the installation simply click **Next**.

3 Now select the location for your installation to be saved to. If you wish to change the location simply click **Browse** and select a new location of your choice. Once the location has been selected click **Next**.

4 Once you have selected the location of the installation click **Next** to begin the installation of the software.

5 Installation has now completed, click **Close** and you can now open the software. When opening the software you will see a section to enter your license number, click on this section and enter your license number provided into the field as shown.

NOTE
The software comes with a 30 day trial. If you wish to use the trial before activating your license simply click 'Continue Evaluation'.

Getting Started

1 Select the printer and the resin profile, then press **Apply**.

2 To configure general settings, machine and print settings, press **File** and then select **Configuration**. You can change support settings in the dropdown **Support Profiles.**

3 Press the selected button to open your file.

4 Use the highlighted buttons to change views, copy, move and for scaling.

Support
For support you need to activate support mode by going to Help on the top menu, Help documentation, Supporting.

5 Some stl models have a very shiny surface which is difficult to see when adding supports. To solve this issue you can change the view to **Filled Frame**.

NOTE
To help further you can also change the colour of the object surface in configuration mode.

5.1

For designing different variations of manual supports, adding and deleting supports use the 8 buttons shown.

There is also the option to choose different variations of supports in the automatic menu.

The red circled buttons will show you the skeleton of supports or point of support contact to the 3D model, here you can modify the joints and positions.

6 The two circled buttons allow you to flatten supports. This solves the problem of lattice supports becoming slow, this can happen when very detailed supports are used. Typically this would be used once you have finished with an object, allowing you to easily handle 20 objects.
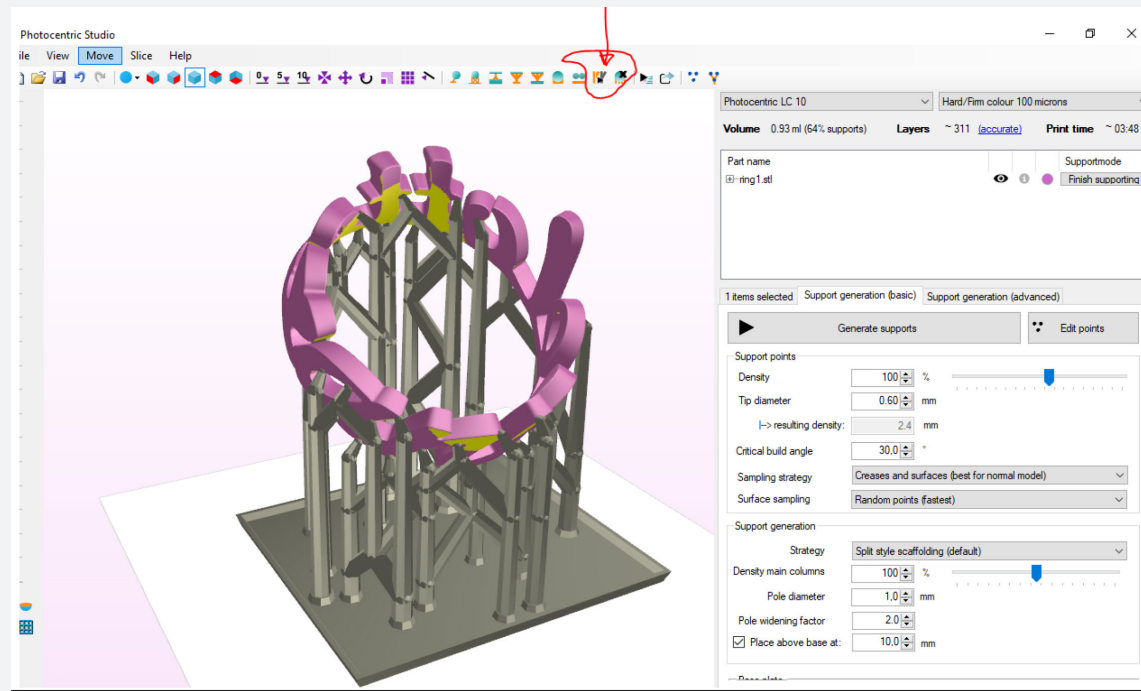
7 To slice file, use the red circled button shown, then choose the location to save file and press **OK.**
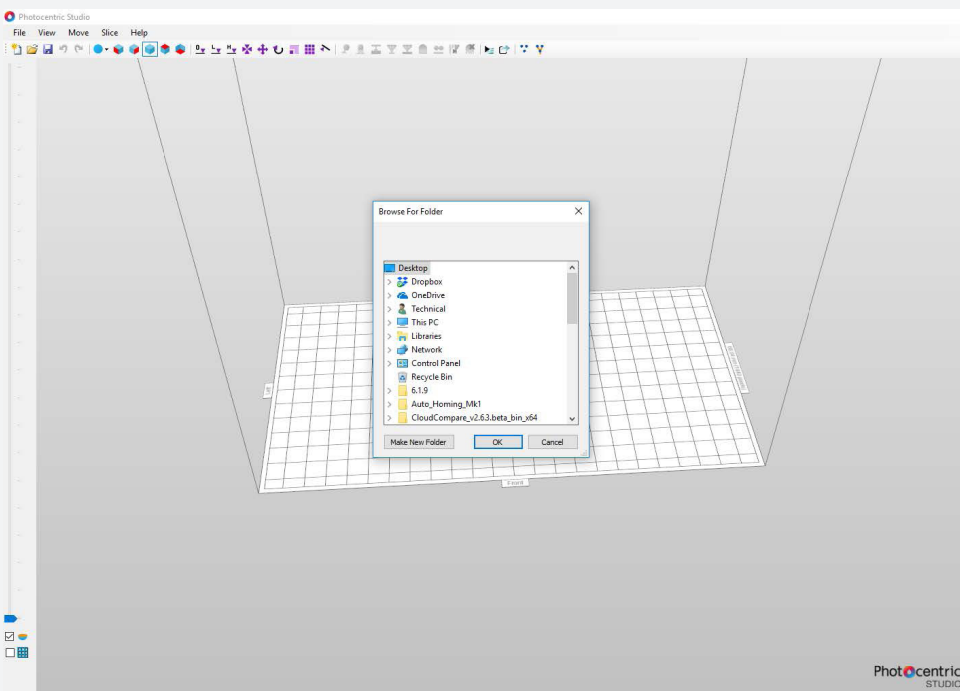
8 Before slicing you can check your machine and print settings in **Edit.**
In **Edit** you can also change your file name under **Slice folder name.**
After your settings have been checked you can then begin slicing by pressing **OK, start slicing.**
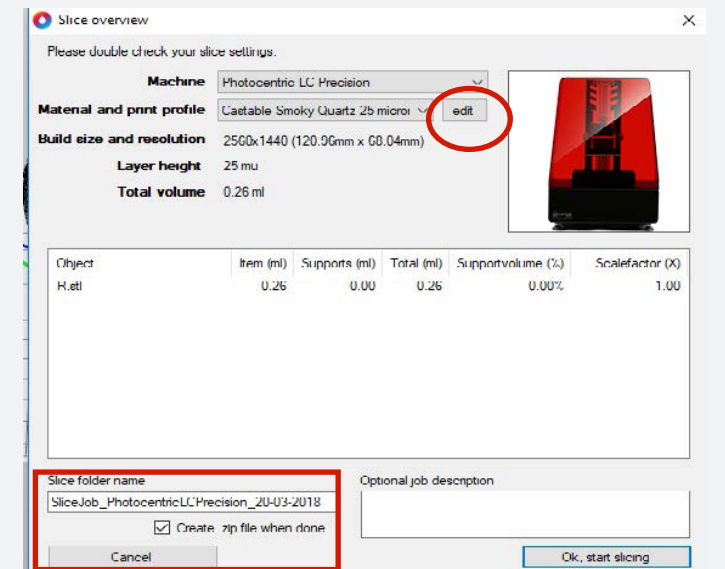
Print settings in **Edit** mode give you access to the advanced print settings option. We do not recommend changing anything in the first two tabs. In the tab **GCode Settings** you have access to the print time and motor parameters which can be modified.

In the tab **GCode Script** you have access to the GCode script modification.
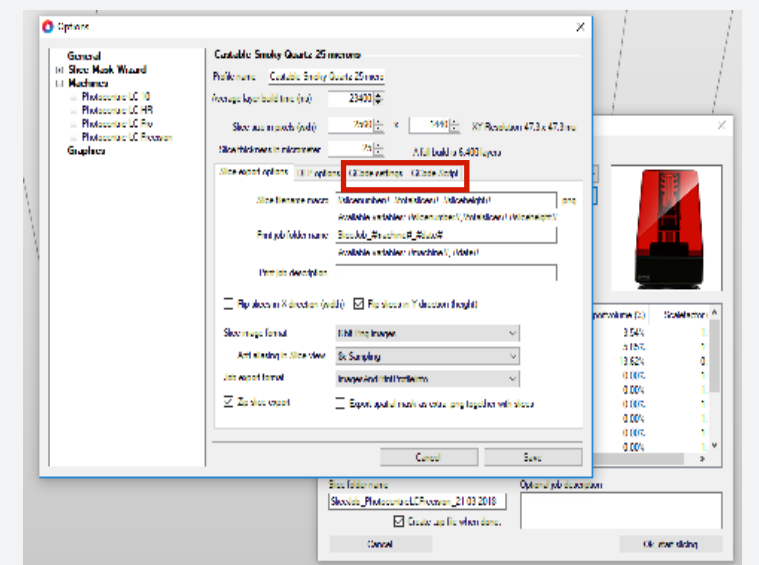
9 Once slicing has finished press **Yes** to open the printer controller.

NOTE

For LCHR you do not need to use printer controller. You can transfer the sliced file to a USB stick and then start your print with LCHR.
For all other printers you will need to use printer controller.
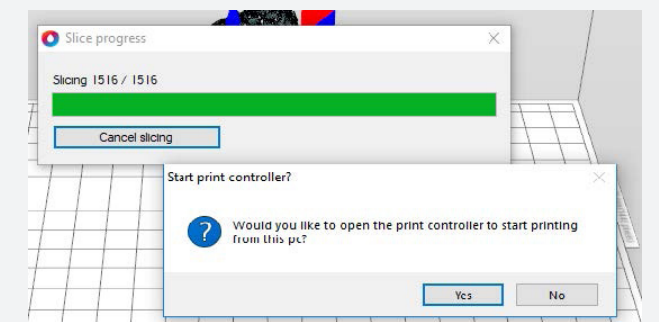
10 Open printer controller via red circled button.
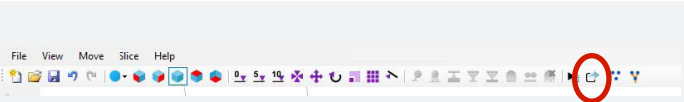
11 To connect your printer via print controller select COM port and display then use **Connect** button.
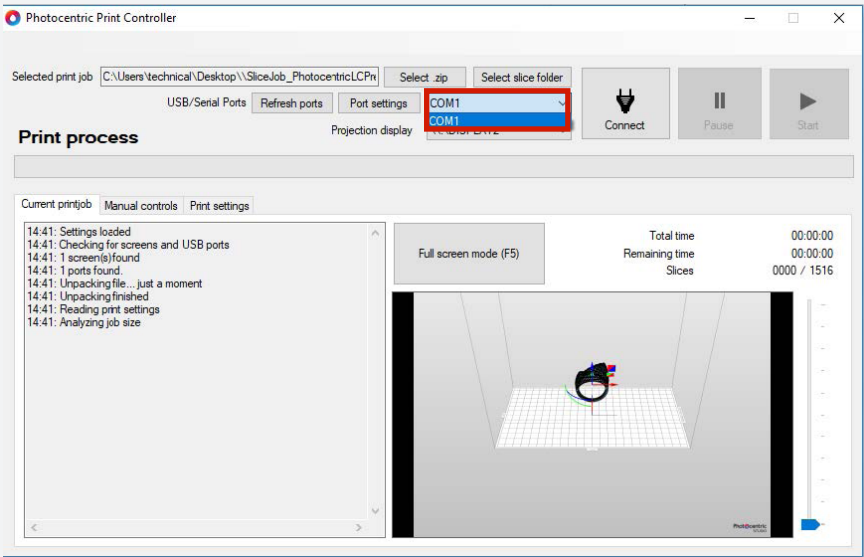
12 After successful connection select **Manual Controls** to check the screen and stepper motor are functioning and connection correctly.

Select **Display Grid** to check your printer display, your display should show a grid.

To show blank screen and turn off grid select **Display Blank.**
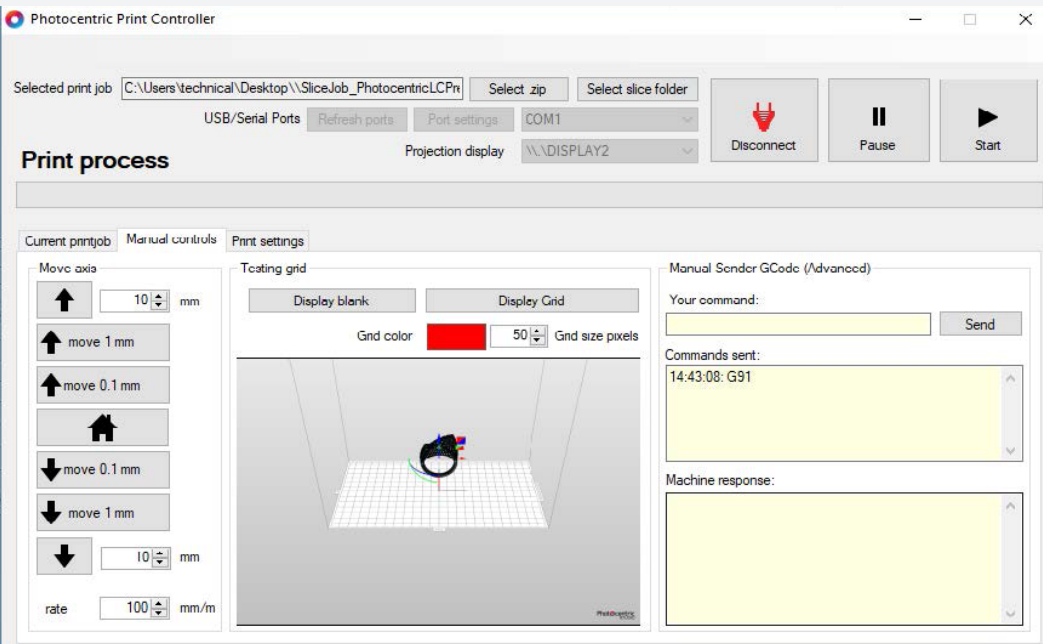
13 For LC Precision you will need to write in the red circled section command M106 to check your screen and back-light, then press **Display Grid**. Use command M107 to turn off. For the LC Pro simply press the display grid.
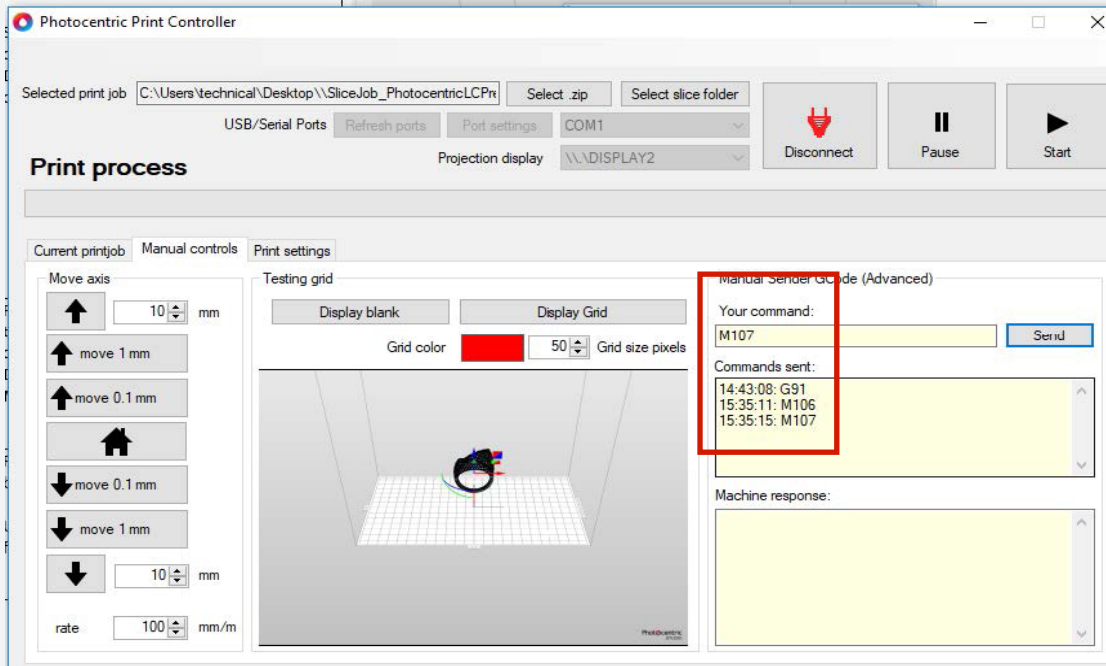
14 For uploading the file please use the **Select Zip** button.
Uploaded file format can be zip, cws or folder with sliced images and g-code.
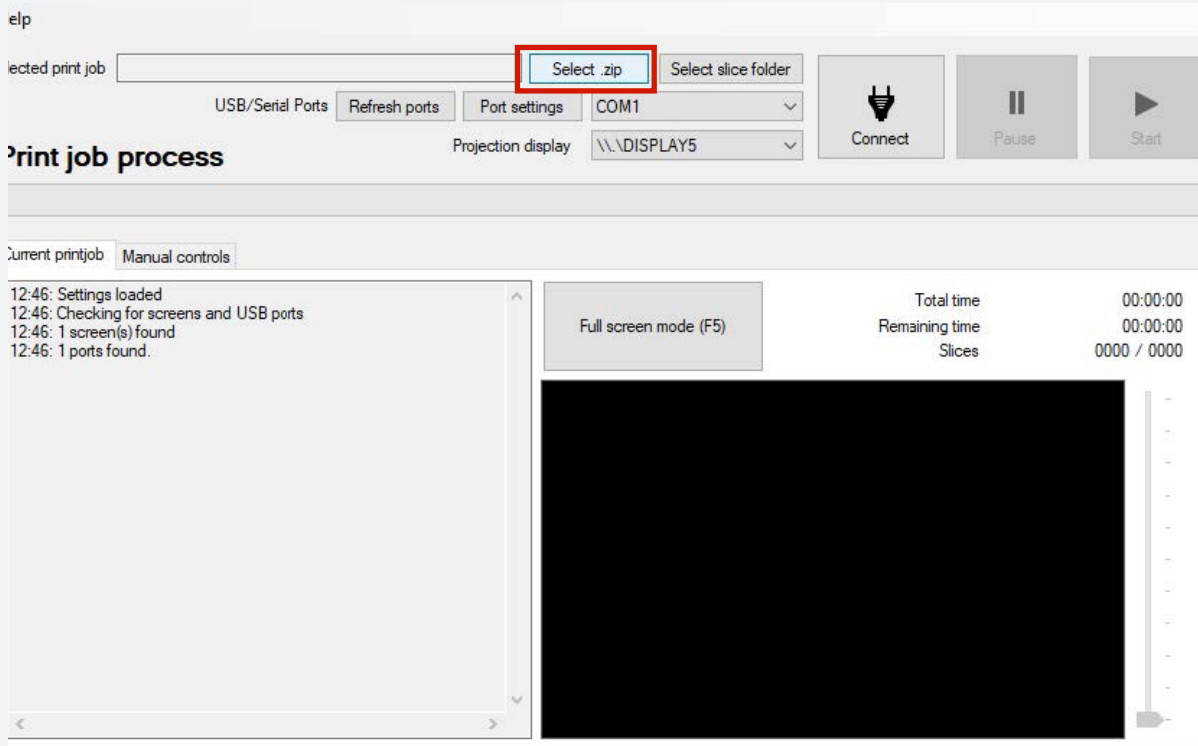
15
Use the red circled option for choosing desired file format.

> **NOTE**
>
> *Printers which do not need a direct connection with computer will recognise cws. and zip. file format.*
> *For printers which are connected directly and need to be used with print controller please use zip file format.*

General
  Slice Mask Wizard
  Machines
    Photocentric LC 10
      Support profiles
      Print profiles
        Hard/Firm colour 100 micro
        Hard/Firm Amber 100 micr
        Hard/Firm colour 50 micron
        Hard/Firm Amber 50 micr
        Flexy Amber 100microns
        Flexy Colour 100microns
    Photocentric LC HR
    Photocentric LC Pro
    Photocentric LC Precision
Graphics

Hard/Firm colour 100 microns

Profile name | Hard/Firm colour 100 microns
Average layer build time (ms) | 44000
Slice size in pixels (wxh) | 1024 x 600 | XY Resolution 220.0 x 220.0 mu
Slice thickness in micrometer | 100 | A full build is 2,000 layers

Slice export options | DLP options | GCode settings | GCode Script

Slice filename macro | #slicenumber#_#totalslices#_#sliceheight# | .png
Available variables: #slicenumber#_#totalslices#_#sliceheight#

Print job folder name | SliceJob_#machine#_#date#
Available variables: #machine#_#date#

Print job description |

☐ Flip slices in X direction (width)   ☐ Flip slices in Y direction (height)

Slice image format | 8 bit Png images
☐ Anti aliasing in Slice view | 4x Sampling
Job export format | ImagesAndPrintProfileInfo
  ImagesAndPrintProfileInfo
  ImagesOnly
  CWS_File
☐ Zip slice export

Cancel | Save

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If you would like to save your file but still have the option to modify, for example supports, go to **File** then **Save as type**: and choose **p3d** format.

If you save your file in the **.stl** format you will not have the option to modify all of the objects.

kosz | 09/11/2017 19:20 | File folder

File name: | E:\25um r
Save as type: | Stereolithography files (*.stl)
  Photocentric Studio Project file (*.p3d)
  Stereolithography files (*.stl)
  OBJ (*.obj)

Hide Folders

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To begin the print process press the **Start** button. The software will inform you when the print process has finished.

Help

Selected print job | C:\Users\technical\Desktop\SliceJob_PhotocentricLC10_ | Select zip | Select slice folder

USB/Serial Ports | Refresh ports | Port settings | COM1 | Disconnect | Pause | Start
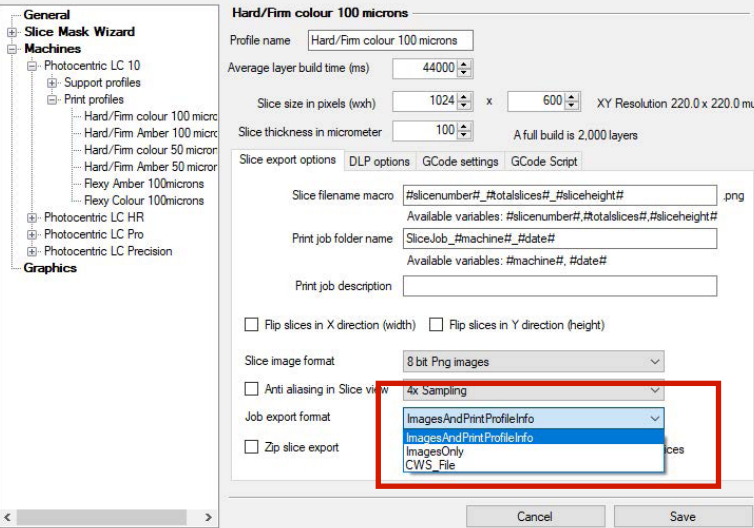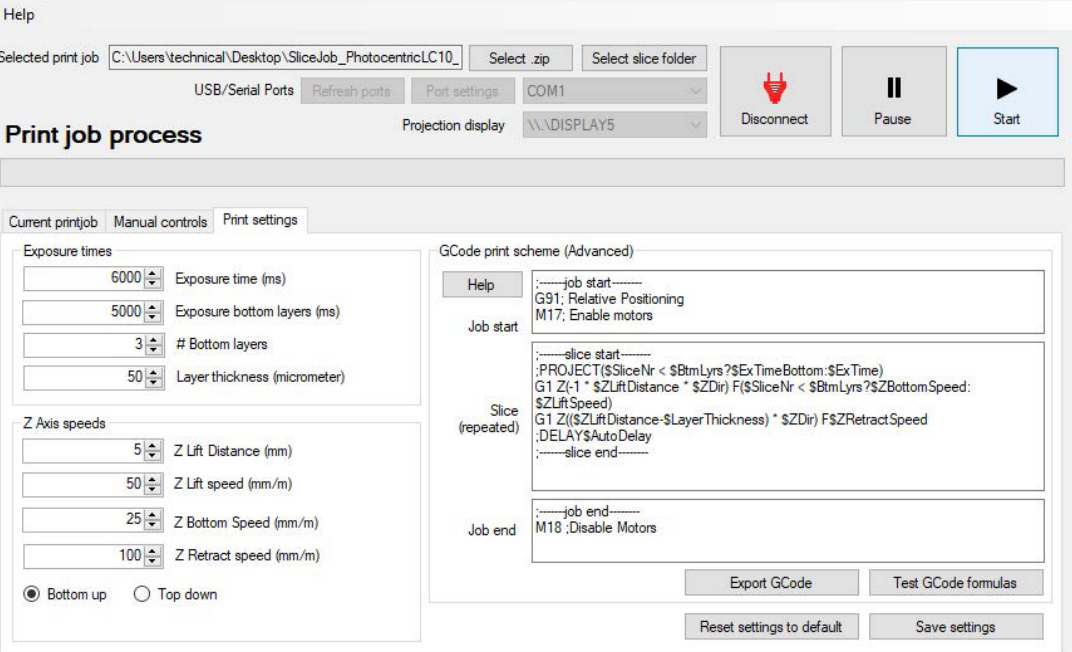
Projection display | \\.\DISPLAY5

Print job process

Current printjob | Manual controls | Print settings

Exposure times
6000 | Exposure time (ms)
5000 | Exposure bottom layers (ms)
3 | # Bottom layers
50 | Layer thickness (micrometer)

Z Axis speeds
5 | Z Lift Distance (mm)
50 | Z Lift speed (mm/m)
25 | Z Bottom Speed (mm/m)
100 | Z Retract speed (mm/m)

◉ Bottom up ○ Top down

GCode print scheme (Advanced)

Help

Job start
```
;-----job start------
G91; Relative Positioning
M17; Enable motors
```
```
;-----slice start------
;PROJECT($SliceNr < $BtmLyrs?$ExTimeBottom:$ExTime)
G1 Z(-1 * $ZLiftDistance * $ZDir) F($SliceNr < $BtmLyrs?$BottomSpeed:
$ZLiftSpeed)
G1 Z(($ZLiftDistance-$LayerThickness) * $ZDir) F$ZRetractSpeed
;DELAY$AutoDelay
;-----slice end------
```
```
;-----job end------
M18 ;Disable Motors
```

Slice (repeated)

Job end

Export GCode | Test GCode formulas
Reset settings to default | Save settings

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When you see the Blue update alert, please download the latest version of software from the Photocentric Studio webpage. Before doing so remember to uninstall your current software, and then install the new one. If you want to keep your configuration/settings, before uninstalling the software go to the tab file "export configuration xml". If you want to just save the machine profiles please go to the tab configuration machine and export the desired machine profile with the resin and support profiles.

Photocentric STUDIO | ⚙ Load default | 💾 Save as default | ✔ Apply to selection

An software update (1.0.1.6) is available. (Current: 1.0.1.5)

File | Edit | View | Transform | Mesh

Liquid Crystal Pro
New machine
New machine (1)

New | Ctrl+N
Open file | Ctrl+O
Import file
Import file special ▶
Batch process
Export selected
Save | Ctrl+S
Save as
Configuration
Reset configuration
Export configuration file (.xml)
Import configuration file (.xml)
Exit

New | Copy
Import machine | **Export machine**