

Manual **LASER** **PRINTING**



Use of the service

1 Make an appointment at the link:

<https://citaprevia.upc.edu/etsav>

It is advisable to make an appointment for the laser cutting and it is **mandatory in exams time**.
To make an appointment, we will follow the next steps:

Select: **servei làser**

Fill in the blanks with your own data:

Next, select the day and the hour that works better for you:

Finally, we confirm the appointment.

2 Draw the pieces in real size, with reference to the necessary dimensions and the scale of the piece itself.

(Put the dimensions of the pieces in millimeters)

3 Download the AutoCAD base file on the website.

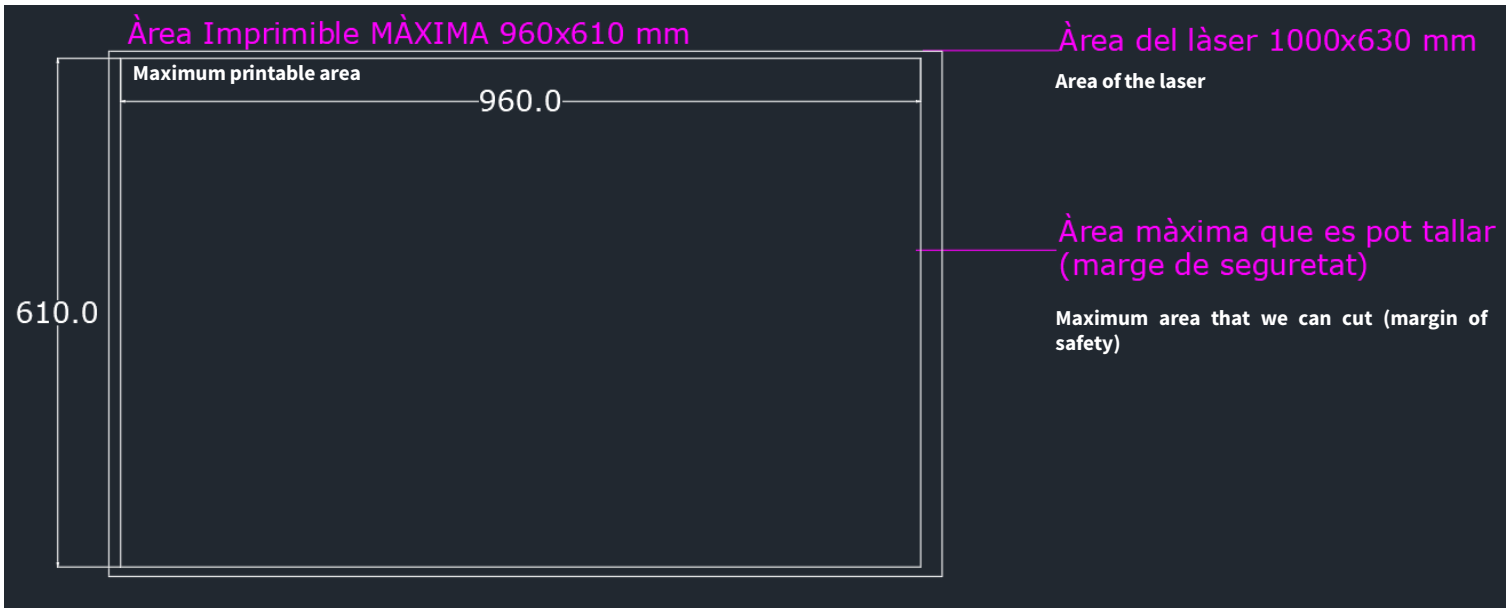
<http://etsav.upc.edu/serveis/maquetes/laser>

4 Copy the content to be printed on the sheet of the downloaded file

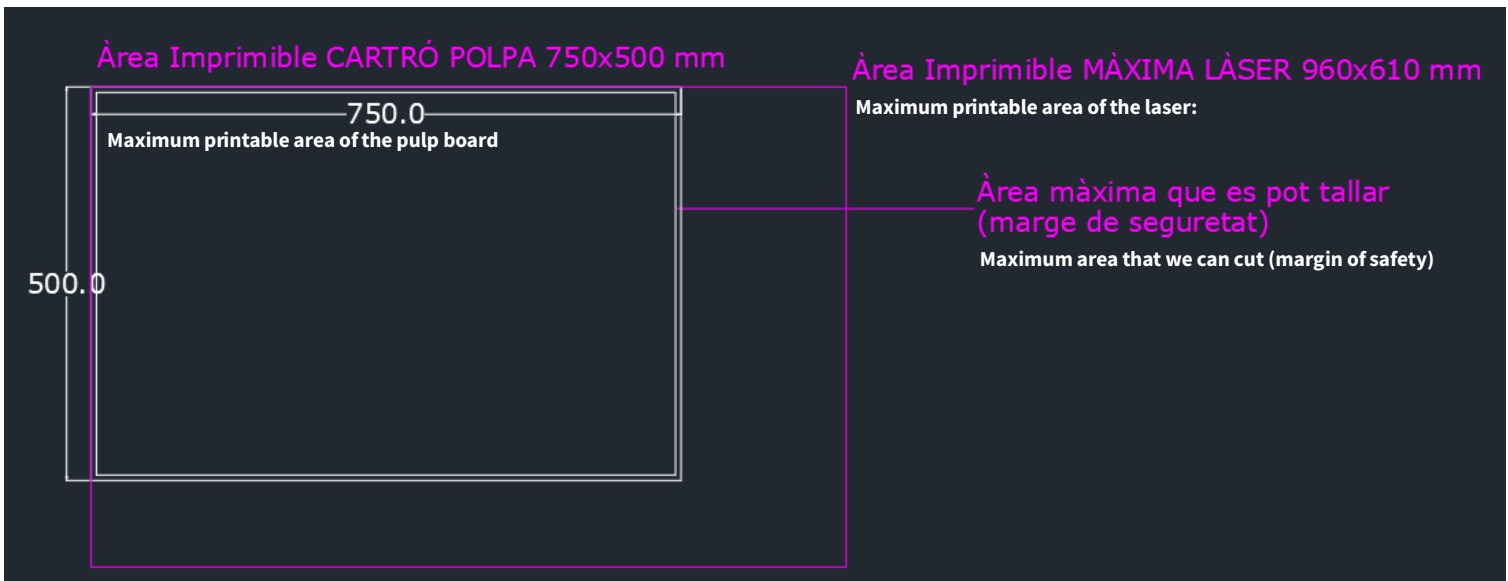
We must put what we want to print inside the sheet marked on it, without exceeding the maximum sizes.
If we lack space to place all the pieces, another "sheet" must be made in the same file.

Size requirements:

- **Maximum area of the laser cutting machine:**



- **Maximum area of the material that we want to cut:**



We will always take into account the most restrictive measure in order to determine our maximum printing area: either by the dimensions of the laser cutting machine, or by the size of the material we want to cut.

5 Apply the layers and the colors

We will apply three types of cutting or engraving in three different layers (one of each color), on all the pieces we want to cut. Only the pieces or lines that are in these three layers will be cut. **All the layers must be width 0,00.**

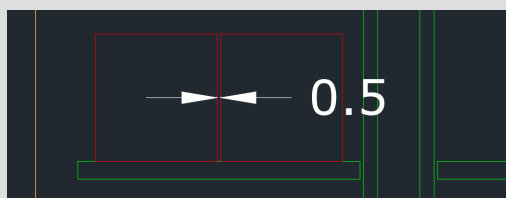
They will be cut according to the following criteria:

Yellow layer - Outer cut 
 Red layer - Inner cut 
 Green layer - Engraved 

6 Recomendations

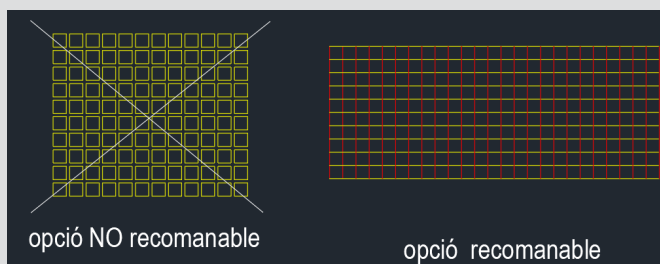
Separation between elements:

The minimum width of the cut piece will be 0.5mm, but it will also depend on the thickness and type of material. If you have any doubts, consult the model laboratory staff.



Put pieces together:

If there are pieces that can share an edge, it is advisable to put them together. Thus, we save cutting and time of printing and we can also fit more pieces on the same sheet of material.



Purge tool and overkill tool:

Purge: clears objects that are not used in the current drawing or screen, to make drawing and printing more efficient.

Overkill: this tool prevents overlapping lines, so the laser won't go through the same spot twice and won't take longer than desired.

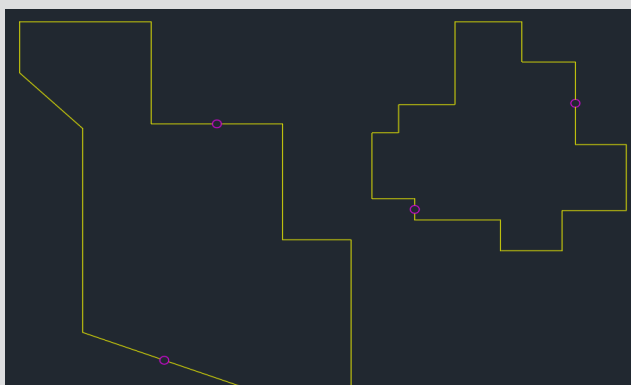
Tabs:

If you want to cut small pieces, it is highly recommended to put tabs on each piece. Thus, the cutting line is interrupted and they are prevented from falling or breaking.

This procedure is done by small circles (drawn on a non-cutting layer) that interrupt the lines.

These circles are approximately 0.5mm, depending on the material and its thickness. If you have any doubts, ask the model laboratory staff.

We will put more or less tabs also depending on the shape of the pieces.



7 Send the file:

Once everything is finished, we will send the file at this email:

laser.etsav@upc.edu

The file must be named: Name_Surname_Telephone. The phone is necessary to be able to consult with the person for any doubt or problem with the file.

The file must be sent with the base and characteristics already mentioned and the material desired for printing and the chosen thickness must be specified in the email.

8 Confirmation email:

Once the laser cutting has been done, you will receive a confirmation email to be able to collect the pieces. The email will also inform you of the price to pay for the service.

Payment can be made through the QR codes that you will find in the model laboratory or through this link:

<https://intranet.etsav.upc.edu/tpvmaquetes/>

Materials:

You can cut:

Any type of paper or cardboard, microflute
Compact cardboard, pulp board, etc.
Walnut wood, balsa, samba, plywood, etc.

Cutting limitations:

Compact cardboard and flat cardboard < 3mm
DM wooden counter
Methacrylate < 8mm
Balsa wood < 6mm
Plywood < 10mm

External materials:

It is the responsibility of the interested to find out about the most suitable materials to produce the desired geometry. The material to be cut with the laser must have maximum dimensions of 1000x630 mm.

