



LIGHTBURN MATERIALS LIBRARY

40 Watt Material Settings

28 tested starting points across 18 materials, for the 40 Watt CO2 machine. Every number here is the number inside the LightBurn library file that came with this download — load the file and these settings are already in your machine.

MATERIALS COVERED

- 2 Color Boards
- Acrylic
- Anodized Aluminum
- Bamboo
- Cardboard
- Cherry
- Composite Wood
- Foam
- Glass
- Kraft Paper
- Leather
- MDF
- Marble
- Non-Dust Cloth
- Painted Aluminum
- Paper
- Ply
- Rubber

START HERE

Load the library, then read the table

You got two files. The **.clb** is the library LightBurn reads. This PDF is the same data in a form you can read at the machine, mark up, and hand to whoever runs the next job.

1 Open the Library window

In LightBurn, go to **Window** → **Library**. The panel opens on the right.

2 Load the .clb

Click **Load** at the bottom of the Library panel, pick the .clb file from this download, and it appears in the **Select Library** dropdown.

3 Assign a setting to a layer

Select the layer you want in your project, click the material entry in the library, then click **Assign**. The power, speed and interval drop straight into that layer.

Run a test cut first. Every time.

This information is provided **AS IS** as a starting point. Tube age, lens condition, focus, humidity and the specific sheet you bought all move the result. Test on an offcut of the actual material before you commit a real part, and update the library entry with what worked on *your* machine.

READING THE TABLES

What each column means

COLUMN	WHAT IT IS
Operation	The named entry in the library — the finish or the job it produces (for example a cut, or a particular engrave tone).
Mode	LightBurn layer mode. Cut follows the outline. Scan rasters back and forth. Image rasters a photo with dithering.
Power	Percent of full tube power. Where two numbers are shown, it is LightBurn's min-max range used for power ramping on curves.
Speed	Millimetres per second of head travel.
Interval	Distance between raster lines, in millimetres. Smaller interval means finer, darker, slower engraving.

2 Color Boards

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	1.5 mm	Cut	80%	18 mm/s	0.1 mm	1	20000 Hz

Acrylic

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	4 mm	Cut	60%	5 mm/s	0.1 mm	1	20000 Hz
Cut	5 mm	Cut	60%	5 mm/s	0.1 mm	1	20000 Hz
Cut	8 mm	Cut	60%	2 mm/s	0.1 mm	1	20000 Hz
Cut	10 mm	Cut	60%	1 mm/s	0.1 mm	1	20000 Hz
Engrave	—	Scan	30%	500 mm/s	0.08 mm	1	20000 Hz

Anodized Aluminum

OPERATION	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Engrave	Scan	20%	500 mm/s	0.08 mm	1	20000 Hz

Bamboo

OPERATION	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Engrave	Scan	20%	500 mm/s	0.08 mm	1	20000 Hz

Cardboard

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	6 mm	Cut	60%	15 mm/s	0.1 mm	1	20000 Hz

Cherry

OPERATION	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Engrave	Scan	25%	500 mm/s	0.08 mm	1	20000 Hz

Composite Wood

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	7 mm	Cut	60%	10 mm/s	0.1 mm	1	20000 Hz

Foam

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	17 mm	Cut	40%	5 mm/s	0.1 mm	1	20000 Hz

Glass

OPERATION	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Engrave	Scan	15%	500 mm/s	0.08 mm	1	20000 Hz

Kraft Paper

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	1 mm	Cut	20%	300 mm/s	0.1 mm	1	20000 Hz
Engrave	—	Scan	18%	500 mm/s	0.08 mm	1	20000 Hz

Leather

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	2 mm	Cut	60%	6 mm/s	0.1 mm	1	20000 Hz

MDF

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	2.3 mm	Cut	60%	25 mm/s	0.1 mm	1	20000 Hz
Engrave	—	Scan	25%	500 mm/s	0.08 mm	1	20000 Hz

Marble

OPERATION	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
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Engrave	Scan	30%	500 mm/s	0.08 mm	1	20000 Hz
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Non-Dust Cloth

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	1 mm	Cut	50%	300 mm/s	0.1 mm	1	20000 Hz

Painted Aluminum

OPERATION	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Engrave	Scan	35%	450 mm/s	0.08 mm	1	20000 Hz

Paper

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	0.2 mm	Cut	17%	300 mm/s	0.1 mm	1	20000 Hz
Engrave	—	Scan	13%	500 mm/s	0.08 mm	1	20000 Hz
Engrave	—	Scan	13%	500 mm/s	0.08 mm	1	20000 Hz

Ply

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	2 mm	Cut	60%	140 mm/s	0.1 mm	1	20000 Hz
Cut	4.5 mm	Cut	60%	20 mm/s	0.1 mm	1	20000 Hz
Engrave	—	Scan	13%	500 mm/s	0.08 mm	1	20000 Hz

Rubber

OPERATION	THICKNESS	MODE	POWER	SPEED	INTERVAL	PASSES	FREQ
Cut	4.5 mm	Cut	80%	2 mm/s	0.1 mm	1	20000 Hz

NEXT

Not sure it will cut what you need?

Mail us the material. We will cut or engrave it on a Thunder machine, mail the piece back, and tell you the exact settings we used to get it. No charge, no obligation.

Send a sample

Thunder Laser USA · 321 Richards St., Quitman, TX 75783

Questions on a setting in this document: **support@thunderlaserusa.com**

*Settings rendered directly from **40 Watt** LightBurn library. The current version of this library and its release notes live at thunderlaserusa.com/knowledge/40-watt-materials-libraries.*