



LIGHTBURN MATERIALS LIBRARY

80 Watt Material Settings

58 tested starting points across 22 materials, for the 80 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

- Acrylic
- Bamboo
- Paper/Cardstock
- PowderCoat Tumbler
- MDF
- Cork
- Hard Wood
- Slate
- Plywood
- LoneStar Leatherette
- LoneStar CarbonFiber
- Granite
- Glass
- Anodized Aluminum
- Leatherette
- Leather
- Foam
- CardBoard

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.

Acrylic

OPERATION	MODE	POWER	SPEED	INTERVAL
Clear Frost Depth	Scan	60%	300 mm/s	0.064 mm
Clear Frost Depth	Scan	18%	600 mm/s	0.064 mm
Clear 1/8 Cut	Cut	60%	15 mm/s	0.064 mm
Clear Frost	Scan	25%	600 mm/s	0.085 mm
Photo	Image	10%	300 mm/s	0.064 mm

Bamboo

OPERATION	MODE	POWER	SPEED	INTERVAL
Light Brown	Scan	12%	800 mm/s	0.073 mm
Brown	Scan	15%	520 mm/s	0.085 mm
Dark Brown(Depth)	Scan	20%	400 mm/s	0.064 mm
Brown w/Score	Scan	10%	150 mm/s	0.085 mm

Paper/Cardstock

OPERATION	MODE	POWER	SPEED	INTERVAL
Tan on Black CS	Scan	10%	800 mm/s	0.091 mm
Cut	Cut	30%	60 mm/s	0.076 mm

PowderCoat Tumbler

OPERATION	MODE	POWER	SPEED	INTERVAL
Engrave	Scan	30%	500 mm/s	0.064 mm

MDF

OPERATION	MODE	POWER	SPEED	INTERVAL
Engrave Brown	Scan	20%	500 mm/s	0.085 mm

Engrave Brown Depth	Scan	20%	400 mm/s	0.064 mm
Cut 3mm	Cut	70%	10 mm/s	0.076 mm

Cork

OPERATION	MODE	POWER	SPEED	INTERVAL
Brown	Scan	14%	750 mm/s	0.085 mm
Brown Dark	Scan	20%	600 mm/s	0.073 mm

Hard Wood

OPERATION	MODE	POWER	SPEED	INTERVAL
Cherry Photo Engrave	Image	10%	300 mm/s	0.085 mm
Cherry 1/8 Cut	Cut	70%	10 mm/s	0.064 mm
Cherry Engrave	Scan	20%	500 mm/s	0.085 mm
Cherry Engrave Depth	Scan	25%	400 mm/s	0.073 mm
Walnut Dark w/Score	Scan	14%	80 mm/s	0.085 mm
Maple Brown	Scan	18%	400 mm/s	0.085 mm
Maple Brown Depth	Scan	50%	300 mm/s	0.051 mm

Slate

OPERATION	MODE	POWER	SPEED	INTERVAL
White Engraving	Scan	20%	500 mm/s	0.085 mm
Photo Engraving	Image	10%	300 mm/s	0.085 mm

Plywood

OPERATION	MODE	POWER	SPEED	INTERVAL
Maple Photo Engrave	Image	10%	300 mm/s	0.085 mm

Maple Light Brown Engrave	Scan	20%	800 mm/s	0.091 mm
Maple Brown Engrave	Scan	20%	400 mm/s	0.085 mm
Maple Brown Cut	Cut	65%	20 mm/s	0.064 mm

LoneStar Leatherette

OPERATION	MODE	POWER	SPEED	INTERVAL
Black- Silver/Gold	Scan	12%	800 mm/s	0.085 mm
CUT	Cut	60%	30 mm/s	0.064 mm

LoneStar CarbonFiber

OPERATION	MODE	POWER	SPEED	INTERVAL
CUT	Cut	60%	20 mm/s	0.064 mm
Engrave	Scan	16%	600 mm/s	0.085 mm

Granite

OPERATION	MODE	POWER	SPEED	INTERVAL
Photo	Image	12%	300 mm/s	0.102 mm
Engraving	Scan	20%	600 mm/s	0.102 mm

Glass

OPERATION	MODE	POWER	SPEED	INTERVAL	FREQ
Engraving	Scan	24%	600 mm/s	0.064 mm	25000 Hz

Anodized Aluminum

OPERATION	MODE	POWER	SPEED	INTERVAL
White Engrave	Scan	12%	600 mm/s	0.064 mm

Leatherette

OPERATION	MODE	POWER	SPEED	INTERVAL
Brown/Black	Scan	35%	600 mm/s	0.042 mm
Cut	Cut	85%	20 mm/s	0.076 mm
Brown/Black	Scan	35%	600 mm/s	0.042 mm

Leather

OPERATION	MODE	POWER	SPEED	INTERVAL
Dark	Scan	25%	600 mm/s	0.064 mm
Cut	Cut	65%	30 mm/s	0.076 mm
Light Tan (Raw Veg.)	Scan	14%	800 mm/s	0.085 mm
Dark Tan (Raw Veg.)	Scan	18%	500 mm/s	0.091 mm
Dark Tan Depth (Raw Veg.)	Scan	20%	500 mm/s	0.073 mm
Cut 13oz (Raw Veg.)	Cut	80%	18 mm/s	0.076 mm
Cut 5oz (Raw Veg.)	Cut	70%	20 mm/s	0.076 mm

Foam

OPERATION	MODE	POWER	SPEED	INTERVAL
EVA 1/4 CUT	Cut	30%	50 mm/s	0.076 mm
EVA	Scan	15%	600 mm/s	0.102 mm

CardBoard

OPERATION	MODE	POWER	SPEED	INTERVAL
Cut 1/4	Cut	50%	20 mm/s	0.076 mm
Dark Tan	Scan	16%	500 mm/s	0.073 mm

Rubber

OPERATION	MODE	POWER	SPEED	INTERVAL	FREQ
Gray Stamp Cut	Cut	80%	10 mm/s	0.076 mm	—
Gray Stamp Engraving	Scan	40%	400 mm/s	0.051 mm	8000 Hz

Silicone

OPERATION	MODE	POWER	SPEED	INTERVAL	FREQ
Depth (Watch Band)	Scan	40%	300 mm/s	0.073 mm	18000 Hz
Shallow (Watch Band)	Scan	25%	300 mm/s	0.073 mm	18000 Hz

Rowmark

OPERATION	MODE	POWER	SPEED	INTERVAL
2nd Layer	Scan	18%	600 mm/s	0.064 mm

Fabric

OPERATION	MODE	POWER	SPEED	INTERVAL
Cut	Cut	30%	100 mm/s	0.076 mm

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 **80 Watt** LightBurn library. The current version of this library and its release notes live at thunderlaserusa.com/knowledge/80-watt-materials-libraries.