APPENDIX B: MATERIAL SETTINGS

Epilog Zing Suggested Material Settings

Material	DPI/Freq.	30 watt	40 watt	50 watt	60 watt
Acrylic					
Photo Engraving	500 DPI	90s 45p	90s 35p	90s 25p	90s 15p
Text/Clipart Engraving	400 DPI	90s 60p	90s 50p	90s 40p	90s 30p
Text/Clipart Engraving	500 DPI	90s 50p	90s 40p	90s 30p	90s 20p
Cutting 1/8" (3 mm)	5000 f	20s 100p	30s 100p	40s 100p	50s 100p
Cutting 1/4" (6 mm)	5000 f	5s 100p	10s 100p	25s 100p	30s 100p
Cutting Note: Adjusting the standard focus distance so it is closer to the lens by about .030" (.762 mm) will produce better edge quality on 1/4" acrylic and thicker. Two passes may produce better results and allow for cutting through thicker materials. There are two types of acrylic: cast is better for engraving (creates a frosted look when engraved) and extruded acrylics are better for smooth-edged cutting.					
Alumamark					
Engraving	400 DPI	90s 65p	90s 55p	90s 45p	90s 35p
Engraving	500 DPI	90s 60p	90s 50p	90s 40p	90s 30p
Anodized Aluminum					
Photos/Clipart	400 DPI	90s 65p	90s 55p	90s 45p	90s 35p
Photos/Clipart	500 DPI	90s 55p	90s 45p	90s 35p	90s 25p
Text	500 DPI	90s 60p	90s 50p	90s 40p	90s 30p
We find when engraving anodized aluminum, text appears best at 500 DPI, but photos and clipart can be engraved with great detail down to 400 DPI.					
Cork					
Engraving	400 DPI	90s 45p	90s 35p	90s 25p	90s 15p
Cutting	500 f	60s 50p	60s 40p	60s 30p	60s 20p
Cotton					
Engraving	250 DPI	90s 40p	90s 30p	90s 20p	90s 10p
Denim					
Engraving	250 DPI	90s 45p	90s 35p	90s 25p	90s 15p
Fleece					
Engraving	200 DPI	90s 30p	90s 25p	90s 20p	90s 15p
Cutting	2500 f	40s 20p	40s 15p	40s 10p	40s 5p
When engraving fabric, try changing the graphic to 80% gray and use the Jarvis dithering pattern for the best results. Every fabric you are cutting will need to have adjusted settings - find a small swatch of the fabric you can test first.					
Glass					
Engraving	400 DPI	20s 100p	25s 100p	30s 100p	35s 100p
When etching glass, try changing the graphic to 80% gray before engraving and using the Jarvis dithering pattern. You can also diffuse heat by covering the glass with a thin sheet of dish soap.					
Leather					
Photo Engraving	400 DPI	90s 35p	90s 30p	90s 25p	90s 20p
Text/Clipart Engraving	500 DPI	90s 40p	90s 35p	90s 30p	90s 25p
Cutting 1/8" (3 mm)	500 f	50s 50p	60s 50p	70s 50p	80s 50p

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Material	DPI/Freq.	30 watt	40 watt	50 watt	60 watt
Mat Board					
Engraving	400 DPI	90s 70p	90s 60p	90s 50p	90s 40p
Cutting	500 f	30s 60p	30s 50p	30s 40p	30s 30p
Bottom-up engraving is suggested for mat board etching.					
Marble					
Photo Engraving	400 DPI	90s 55p	90s 50p	90s 45p	90s 40p
Text Engraving	500 DPI	90s 65p	90s 60p	90s 55p	90s 50p
Every marble is very different for settings. Start low and increase the power with a second run if you haven't used that marble before.					
Painted Brass					
Engraving	400 DPI	90s 65p	90s 60p	90s 55p	90s 50p
Engraving	500 DPI	90s 60p	90s 55p	90s 50p	90s 45p
Plastics					
Engraving	400 DPI	90s 40p	90s 35p	90s 30p	90s 25p
These settings work well with many plastics, including plastic phones and covers. Even one color plastics can achieve a great look when engraved.					
Plastic (2 Layer Engraveable)					
Engraving	400 DPI	50s 100p	60s 100p	70s 100p	80s 100p
Engraving	500 DPI	60s 100p	70s 100p	80s 100p	90s 100p
Cutting 1/8" (3 mm)	5000 f	60s 30p	70s 30p	80s 30p	90s 30p
Rubber Stamps					
Engraving	400 DPI	10s 100p	20s 100p	30s 100p	40s 100p
Engraving	500 DPI	20s 100p	30s 100p	40s 100p	50s 100p
Cutting	100 f	10s 100p	15s 100p	20s 100p	25s 100p
Stainless Steel w/Cermark					
Engraving	500 DPI	20s 100p	25s 100p	30s 100p	35s 100p
Twill					
Cutting	2500 f	60s 30p	60s 25p	60s 20p	60s 15p
Wood					
Photo Engraving	500 DPI	65s 100p	75s 100p	85s 100p	95s 100p
Clipart/Text Engraving	400 DPI	50s 100p	60s 100p	70s 100p	80s 100p
Clipart/Text Engraving	500 DPI	60s 100p	70s 100p	80s 100p	90s 100p
Deep Engraving	500 DPI	20s 100p	30s 100p	40s 100p	50s 100p
Thin Veneer	500 f	30s 22p	30s 18p	30s 14p	30s 12p
Cutting 1/8" (3 mm)	500 f	70s 60p	70s 45p	70s 35p	70s 25p
Cutting 1/4" (6 mm)	500 f	20s 100p	30s 100p	40s 100p	50s 100p
When cutting wood, multiple passes may allow cutting of thicker materials. You can readjust the focus between passes down to the center point of the cut for the best results.					

- **These are only suggestions:** Every type of material will react differently with the laser, even from one plastic to the next. But don't feel that you need to be exact on any of the settings. While engraving acrylic at 35% speed and 75% speed will give you a very different result, the difference between 35% and 39% will be much more subtle and relies more on personal preferences.

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- **Test your material:** If you have a small area of the material you won't be using, or an extra of the item, take advantage of this area to test out your settings by engraving a small square or cutting a small circle. You can fine tune your settings in these areas.
- **Similar materials use similar settings**: When you are working with a material you aren't familiar with, think about a similar material and what settings you would use with that product. Most anodized aluminums will react well with similar settings, as will most plastics.
- **When in doubt, start low**: Remember, you can always re-run your job as long as you don't move it in the machine. Let's say you're running a photograph in a one-of-a-kind wood plaque. Start with a lower power setting, look at the engraving, then run the project a second time at high speed and lower power a second time to add a little more depth if needed.
- **Run only one part of the file**: If running a job on a new material, you can always just select one piece of the engraving, like a piece of text, and run that part first to make sure your settings are perfect before running the whole file.

To print a copy of these settings to keep next to your laser, go to www.epiloglaser.com/material-settings.htm.