PLED

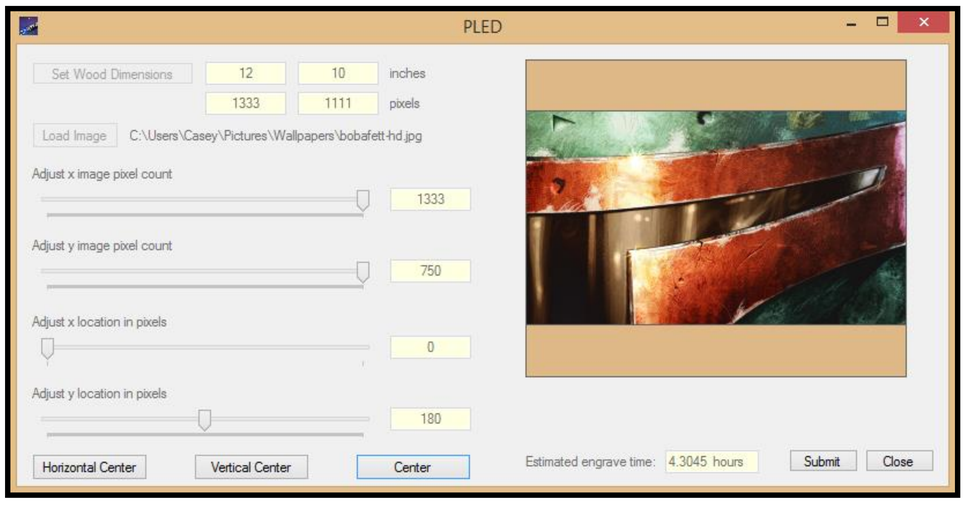
Plaque Laser Engraving Device

Introduction

The Plaque Laser Engraver Device (PLED) is a multidisciplinary project. It was designed with the following purposes and goals in mind:

- control laser head using CNC standards
- engrave 8 shade grayscale images
- provide an affordable hobbyist design
- generate a competent and user friendly software package
- provide engineering, design, and management experience to our team

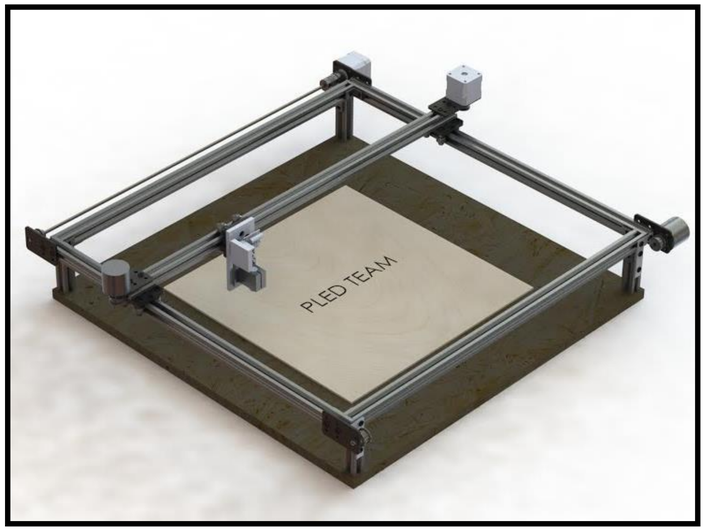
User Interface

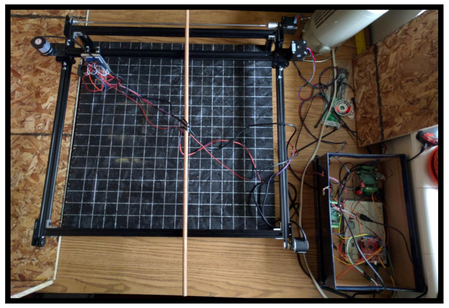


The user interface, written in C#, performs a number of key functions:

- laser head location specification
- image sizing on plaque
- image pixel conversion into 8 shades of grayscale
- host software on PC to control and communicate with PLED
- time estimation for engraving

Machine Structure

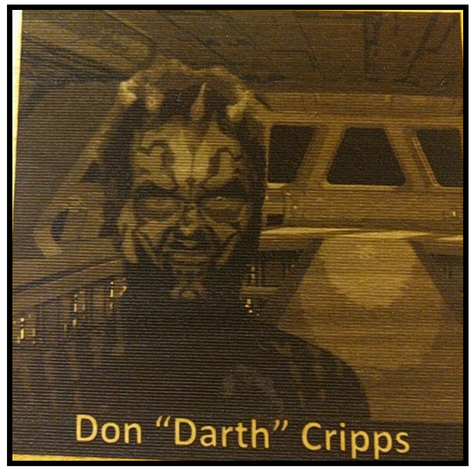




Laser shield

Our mechanical structure utilized mostly affordable and commercially available components. We tried to avoid necessity for custom machined parts. It is also designed to be very structurally sound and reliable, while being lightweight and easy to work with. Any machining that occurred was done using university resources by the PLED team.

Results



Team: Casey Wood, Justin Cox,
Tate Shorthill, Zachary Garrard

COLLEGE of ENGINEERING
UtahStateUniversity

Special Thanks: Don Cripps
Jolynne Berrett, Doran Baker