Team5: Initial CAD and FEM

Figure 1: CAD Model showing web/truss type structure for max stiffness and minimum weight

Figure 2: Solid Mesh of Model showing applied loads and boundary conditions
Figure 3: Von Mises Stress plot

Figure 4: Displacement in the Y direction in mm
Figure 5: Displacement in the X direction in mm

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Displacement 1</th>
<th>Displacement 2</th>
<th>Mass</th>
<th>Natural Freq</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td>0.303</td>
<td>0.0455</td>
<td>1.4lbs</td>
<td>231.7 Hertz</td>
</tr>
<tr>
<td>% Off</td>
<td>426%</td>
<td>383%</td>
<td>87.5%</td>
<td>127%</td>
</tr>
</tbody>
</table>

Table 1: Results to date on meeting Design Constraints

Conclusion:

Got some changes to make.

Team 5