

IPG PHOTONICS APPLICATIONS LAB PROBLEM RESOURCES

1. The laser used was a YLS-4000 4kW, CW, with a 200 um fiber. (This is not the same laser shown in the background of many of the on-site photos. This laser was in a different part of the room.)



For more information see:

<https://www.ipgphotonics.com/en/products/lasers/high-power-cw-fiber-lasers/1-micron/yls-1-120-kw>

2. Collimator specifications:



3. In order to bridge the two pieces of metal being welded, the spot needs to be around 4 mm across with approximate power density of 600 kW/cm^2 .

4. Although increasing the time may seem an attractive way to increase power delivery to the surface, increasing time can increase the HAZ (heat affected zone) and lead to poor weld quality.