Prelab Questions

All pre lab questions must be submitted at the beginning of each laboratory session. They are designed to prepare you for the lab so that you can finish the lab on-time. You will receive zero credit for the pre lab questions, if you come to the lab without answering the pre lab questions. Post lab questions must be handed in class at the beginning of each lecture after the completion of the lab.

(1) Draw the far field pattern of a typical NEC NDL3220 semiconductor laser. How do you convert this to a circular Gaussian beam?
(2) A NEC diode has a beam divergence of 8 deg in one direction and 30 deg in the perpendicular direction. What is the minimum numerical aperture of a lens that can be used to collimate the output of the diode without appreciable clipping of the beam?
(3) The output spectrum of a laser diode is shown below. Why are there multiple peaks in the spectrum and what does each peak represent?