## Datasheet for  #sb50

Recommendations:

Please read the starter kit user manual (at least installation chapter 5), if available, and have a look at the FAQ at http://www.alpeslasers.ch/alfaq.pdf

WARNING: Operating the laser with longer pulses, shorter period, or higher voltage or current than specified in this document may cause damage and will result in loss of warranty, unless agreed upon with Alpes Lasers!

WARNING: Beware of the polarity of the laser. This laser has to be powered with negative bias on the laser contact (= bonding pad, corresponding to the label "laser" on the LLH) and the positive bias on the base contact (= submount, corresponding to the label "base" on the LLH).
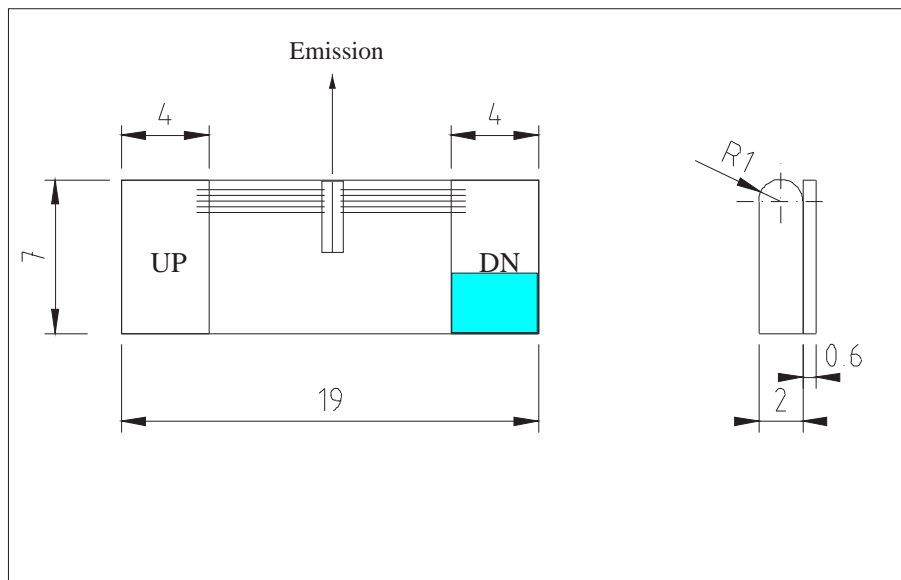


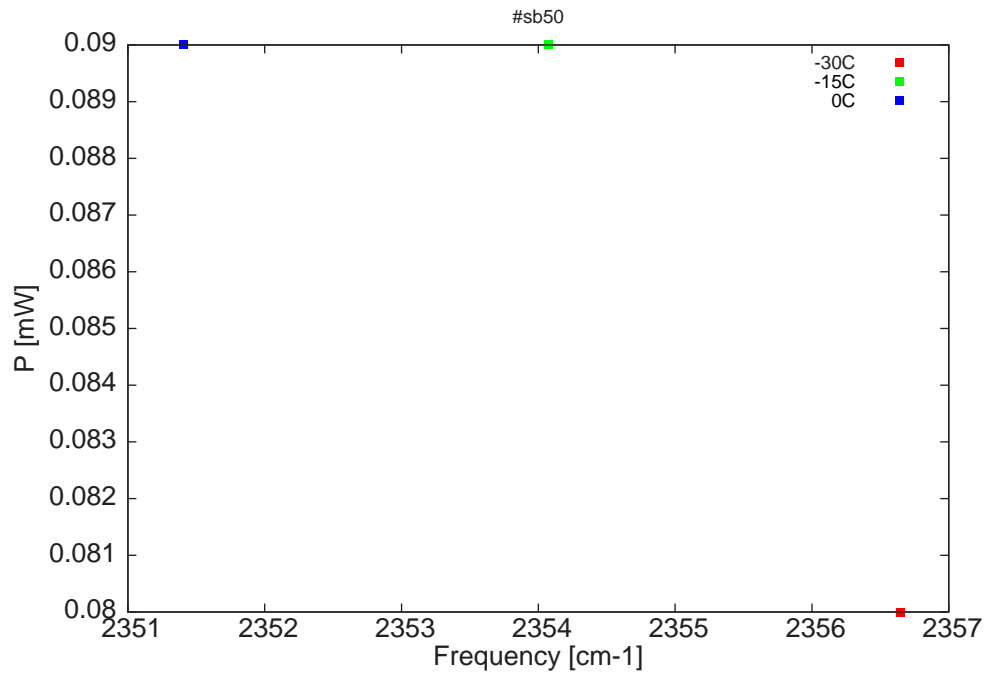Figure 1: Support mounting for #sb50 (please note that the laser is connected to the DN pad drawned in blue)

Figure 2: Output power as a function of the singlemode emission frequencies and temperatures
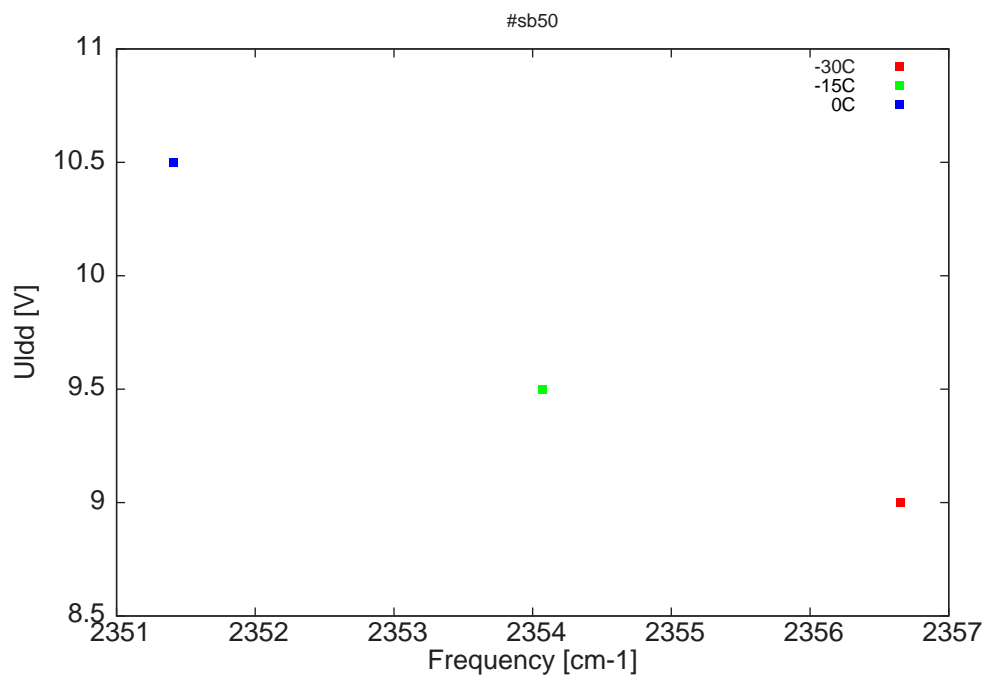


Figure 3: DC voltage fed to LDD (Uldd) as a function of the singlemode emission frequencies and temperatures

| $\lambda$[nm] | $\nu$[cm$^{-1}$] | P[mW] | Temp[°C] | U$_{LDD}$[V] | I$_{pulse}$[A] |
|---|---|---|---|---|---|
| 4243.3 | 2356.6 | 0.1 | -30 | 9 | 0.95 |
| 4248 | 2354.1 | 0.1 | -15 | 9.5 | 1.12 |
| 4252.8 | 2351.4 | 0.1 | 0 | 10.5 | 1.42 |

Table 1 : singlemode optical output power as function of operating parameters
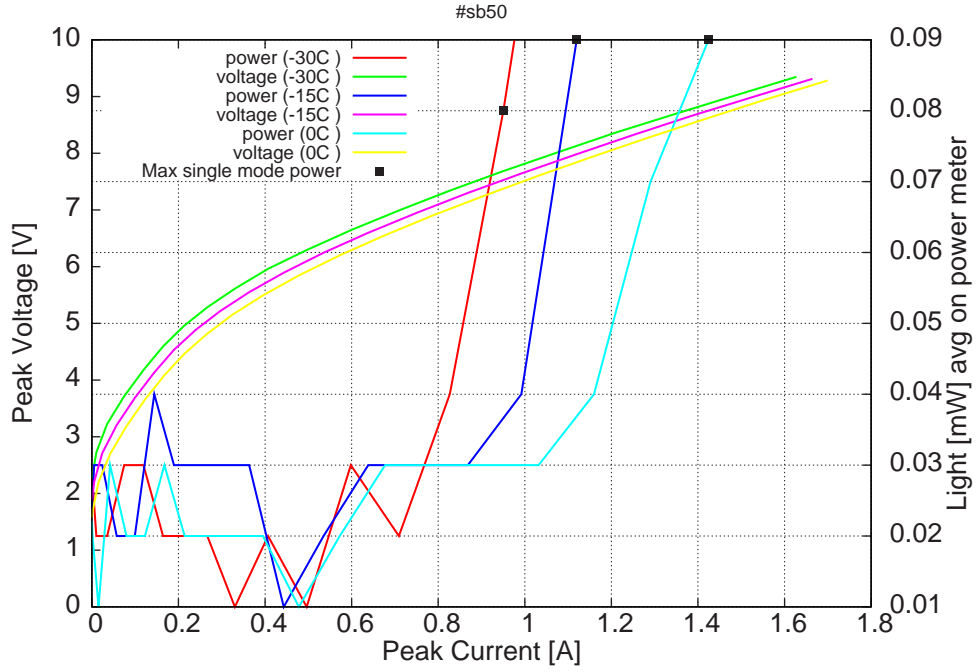


Figure 4: peak voltage and avg power vs peak current (the solid squares indicate the maximum singlemode emitted power)
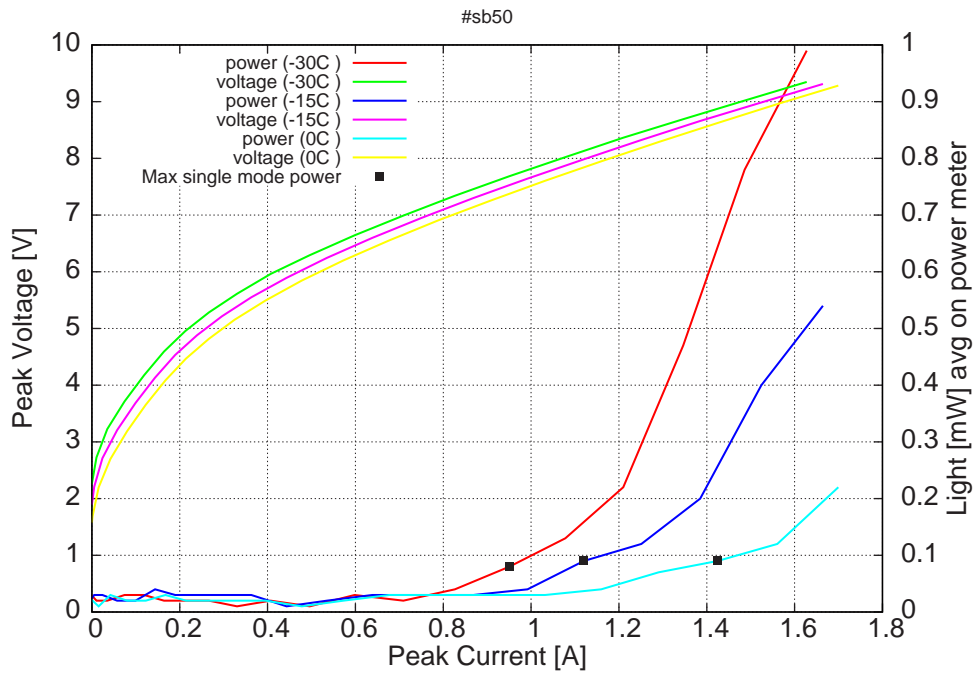
Figure 5: peak voltage and avg power vs peak current (including the multimode region)

Note: data taken with 50ns pulses, $2.5\mu s$ period.
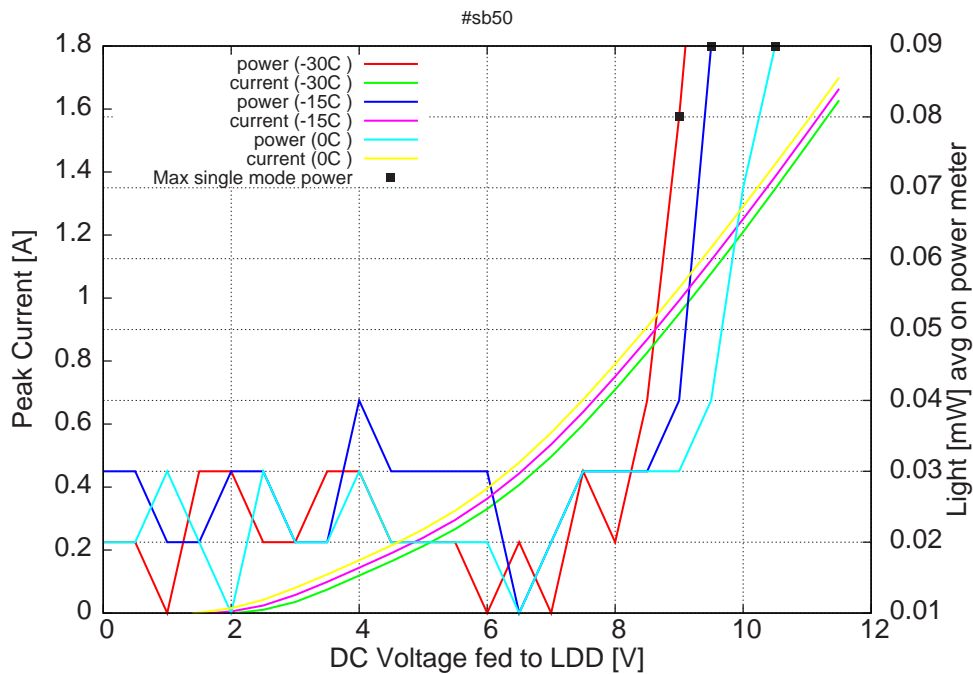Laser multimode for high output power.



Figure 6: peak current and avg power vs LDD voltage (the solid squares indicate the maximum singlemode emitted power)
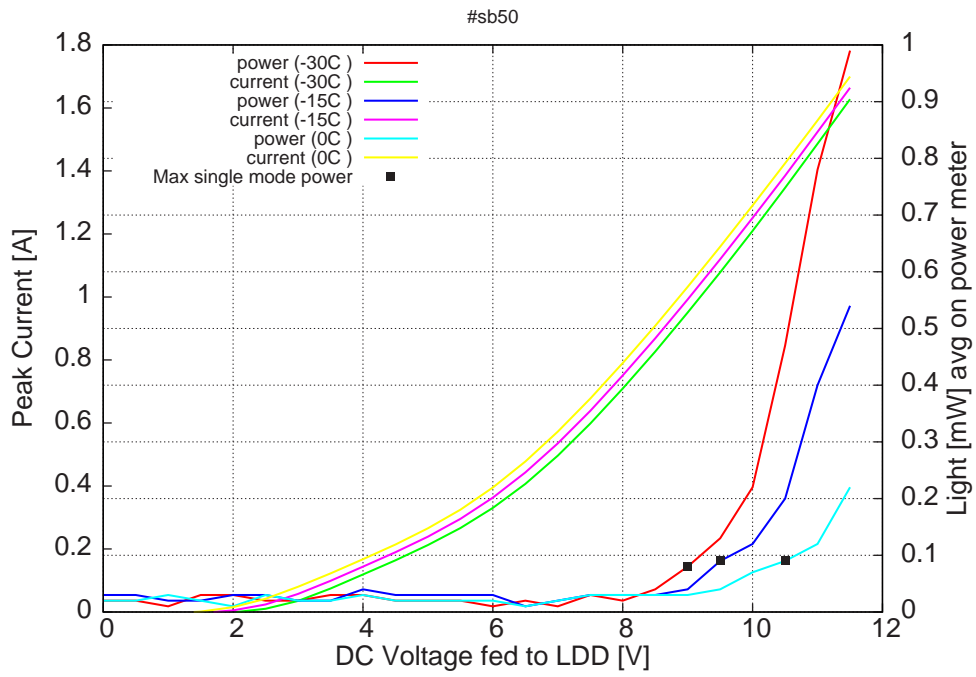
#sb50

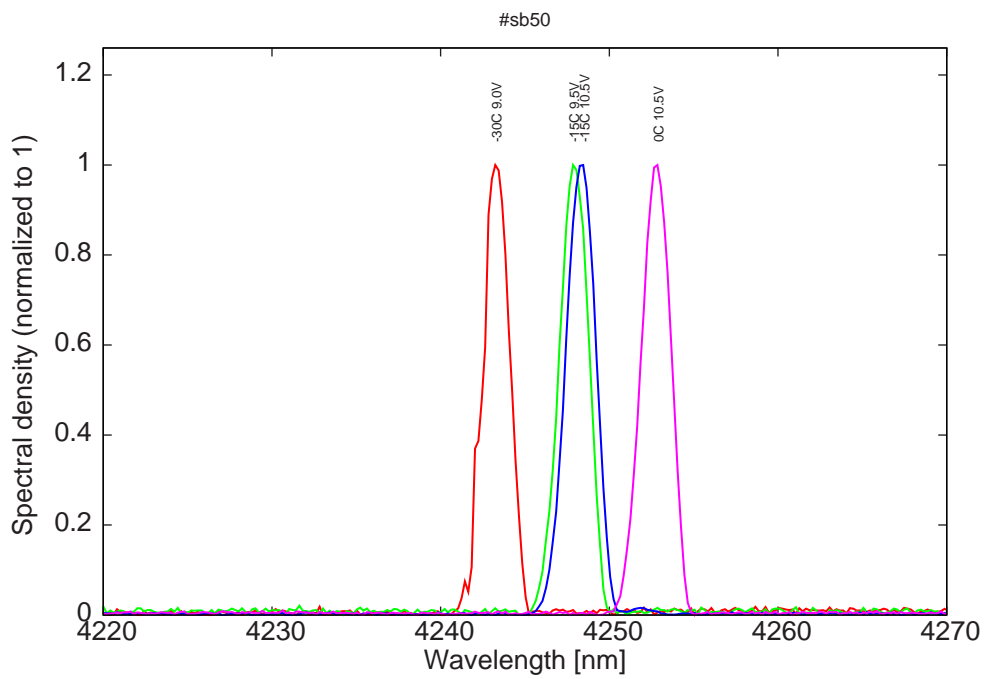Figure 7: peak current and avg power vs LDD voltage (including the multimode region)



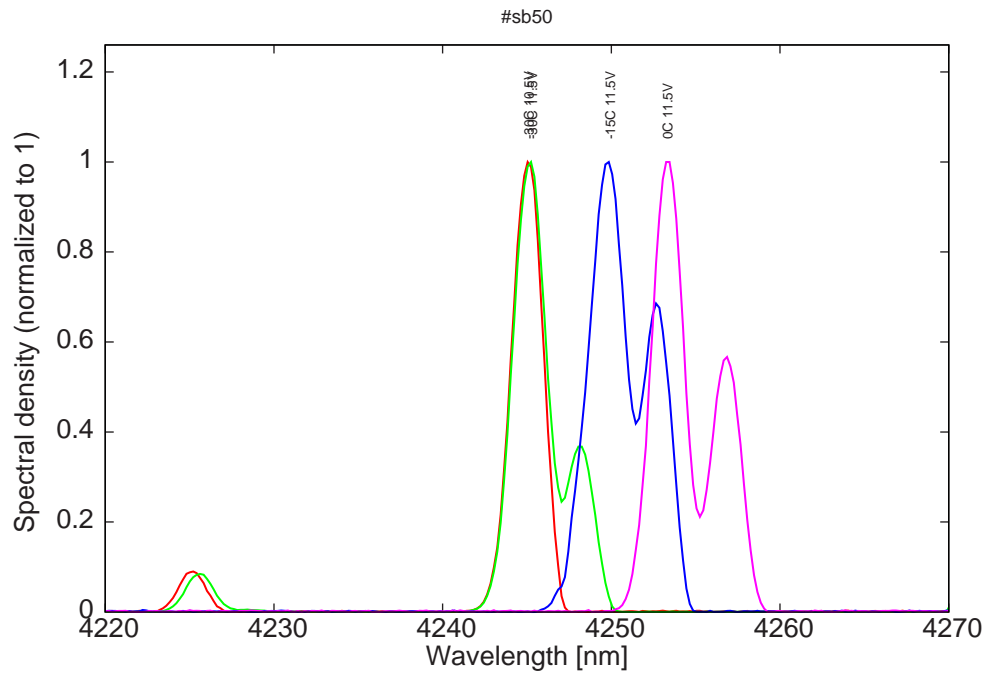Figure 8: monomode spectra for various temperatures and LDD voltages

Figure 9: bimode spectra for various temperatures and LDD voltages