

**Datasheet for #sb2598 UP**

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, higher repetition rate, higher voltage or higher current than specified in this document may cause damage. It 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).

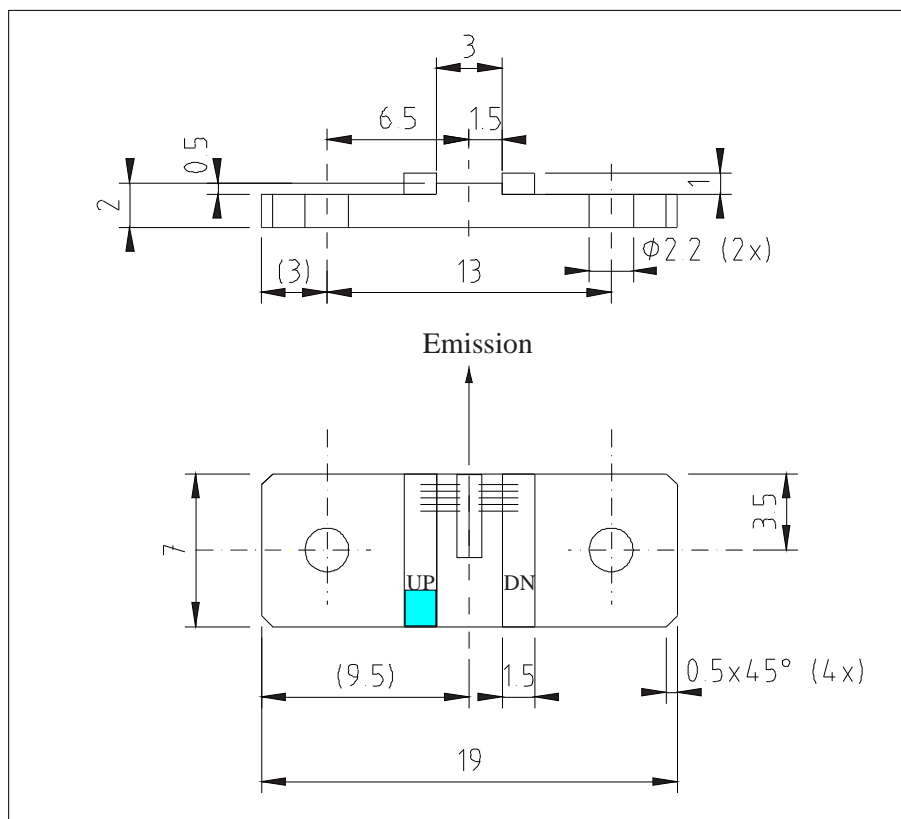


Figure 1: Support mounting for #sb2598 UP (please note that the laser is connected to the UP pad drawn in blue)

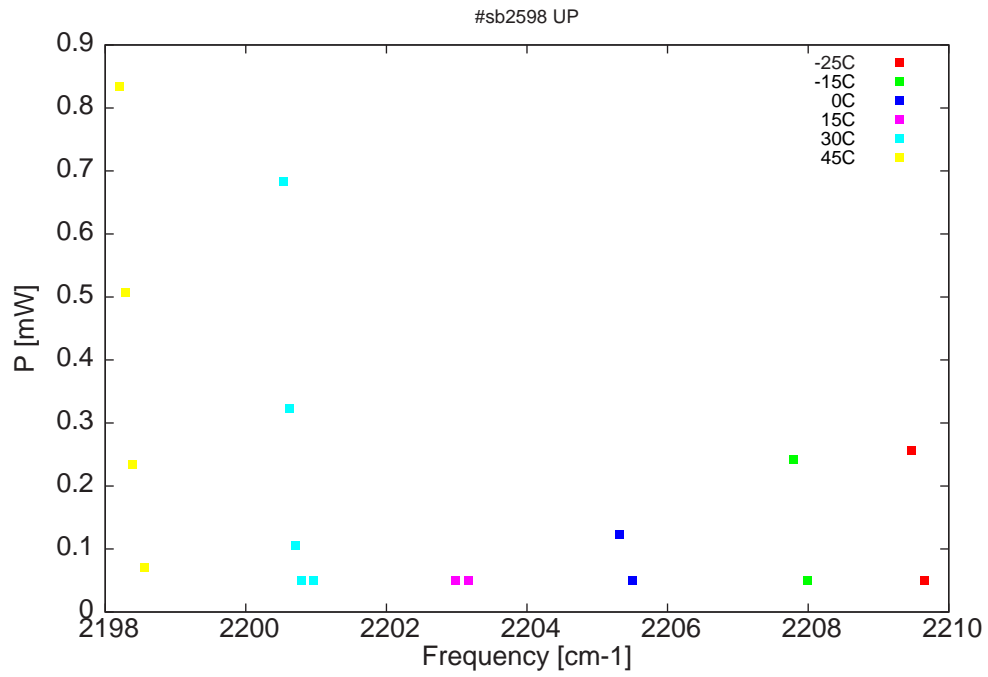


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

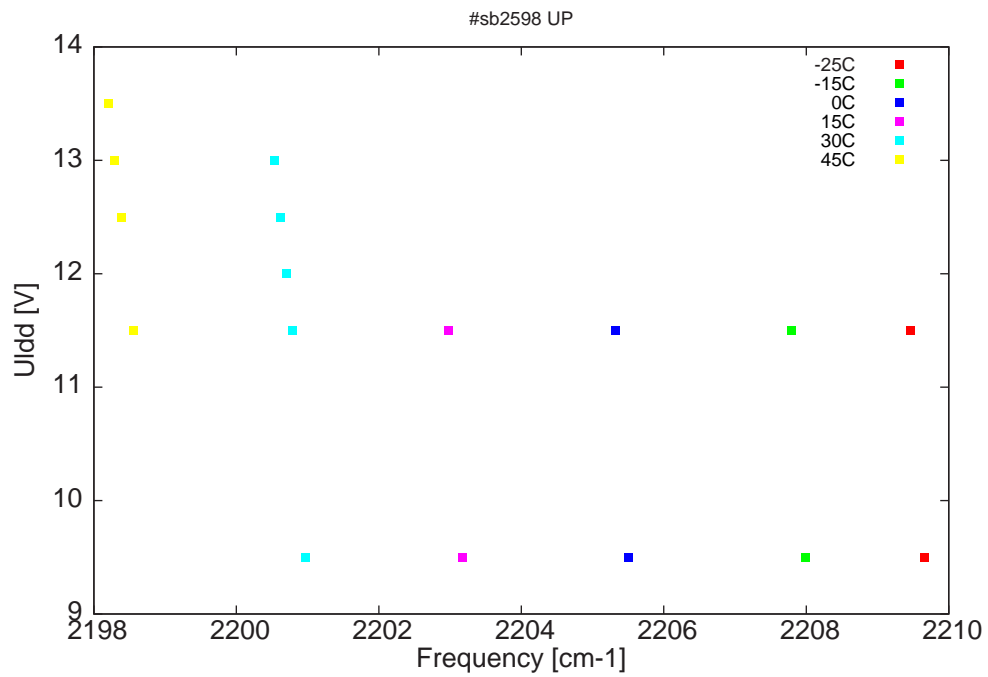


Figure 3: DC voltage fed to LDD ( $U_{ldd}$ ) as a function of the singlemode emission frequencies and temperatures

$\lambda$ [nm]	$\nu$ [cm <sup>-1</sup> ]	P[mW]	Temp[°C]	$U_{LDD}$ [V]	$I_{pulse}$ [A]
4525.6	2209.7	0.1	-25	9.5	0.15
4526	2209.5	0.3	-25	11.5	0.33
4529	2208	0.1	-15	9.5	0.17
4529.4	2207.8	0.2	-15	11.5	0.34
4534.1	2205.5	0.1	0	9.5	0.19
4534.5	2205.3	0.1	0	11.5	0.36
4538.9	2203.2	0.1	15	9.5	0.19
4539.3	2203	0.1	15	11.5	0.37
4543.5	2201	0.1	30	9.5	0.22
4543.8	2200.8	0.1	30	11.5	0.39
4544	2200.7	0.1	30	12	0.43
4544.2	2200.6	0.3	30	12.5	0.48
4544.3	2200.5	0.7	30	13	0.55
4548.4	2198.6	0.1	45	11.5	0.39
4548.8	2198.4	0.2	45	12.5	0.5
4549	2198.3	0.5	45	13	0.54
4549.2	2198.2	0.8	45	13.5	0.61

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

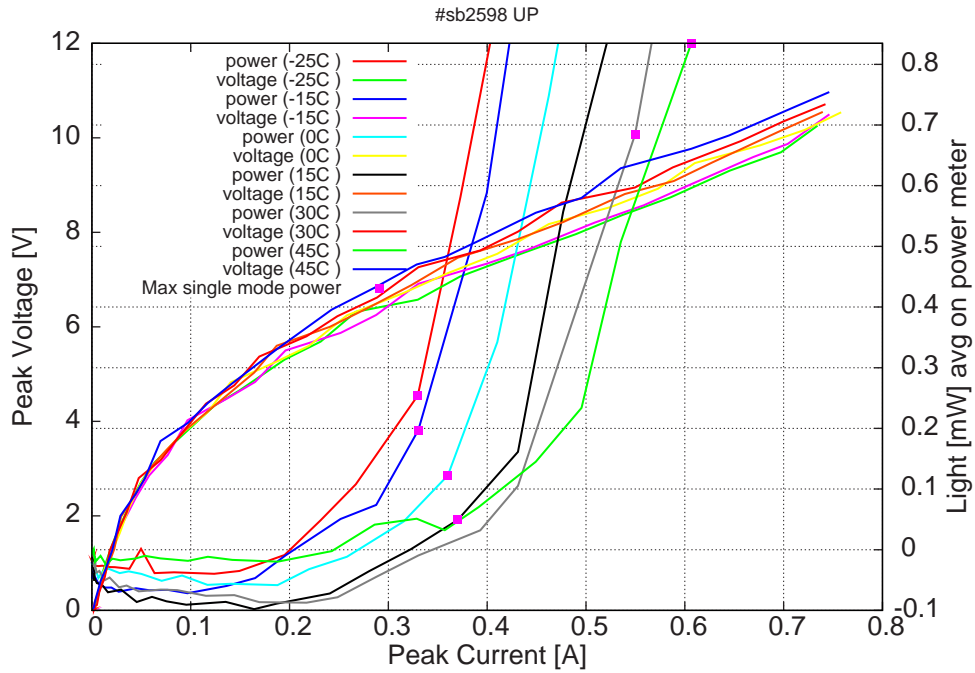


Figure 4: peak voltage and average power vs peak current at 2% duty-cycle (50ns pulses on the laser, 2.5 $\mu$ s period) (the solid squares indicate the maximum singlemode emitted power)

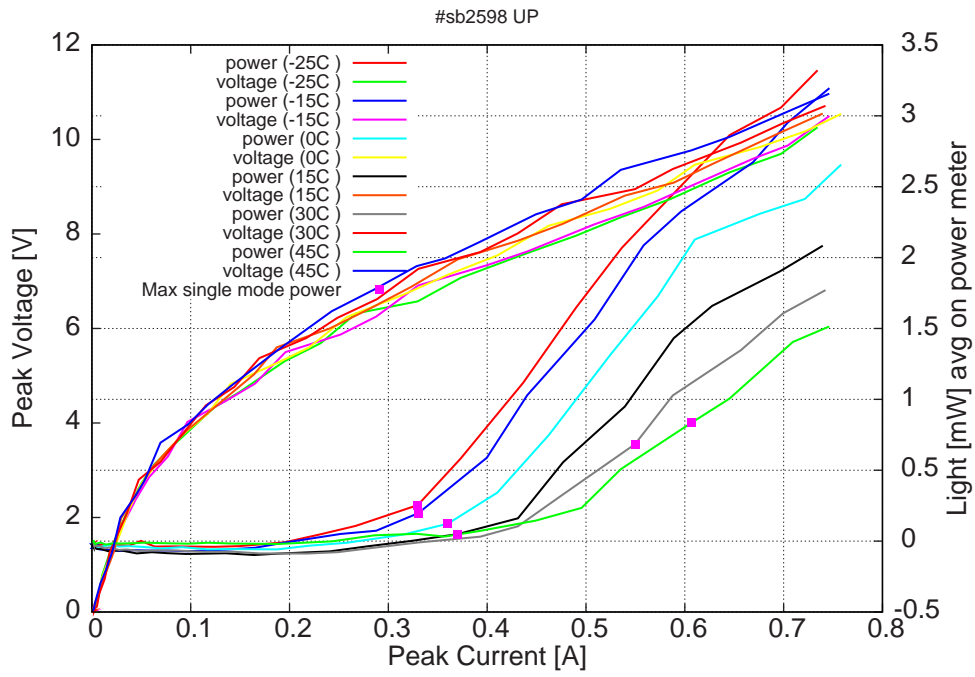


Figure 5: peak voltage and average power vs peak current at 2% duty-cycle (50ns pulses on the laser,  $2.5\mu\text{s}$  period) (including the multimode region)

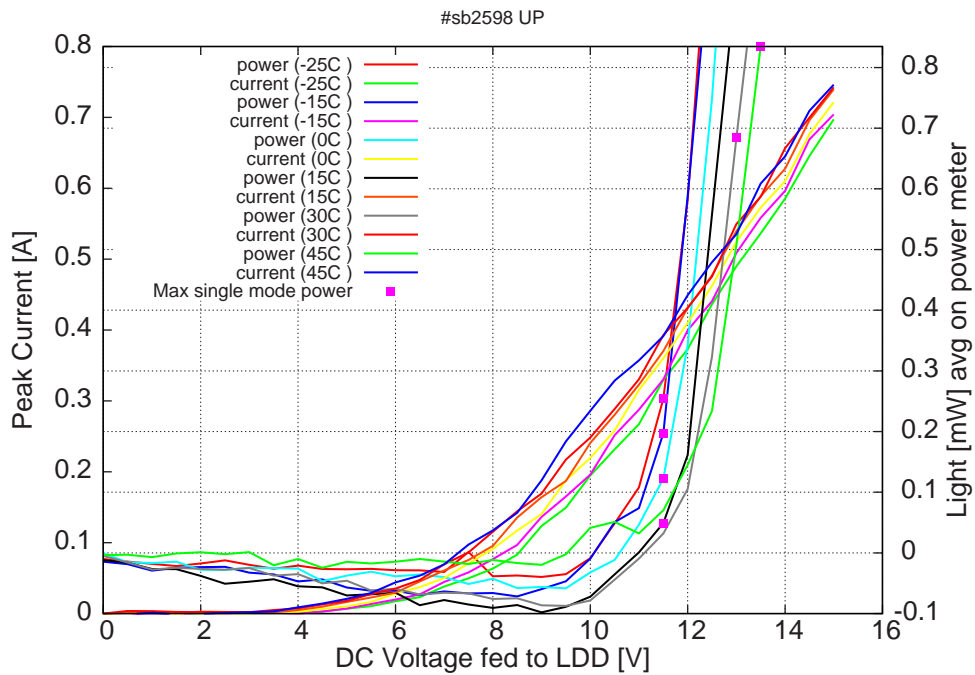


Figure 6: peak current and average power vs LDD voltage at 2% duty-cycle (50ns pulses on the laser,  $2.5\mu\text{s}$  period) (the solid squares indicate the maximum singlemode emitted power)

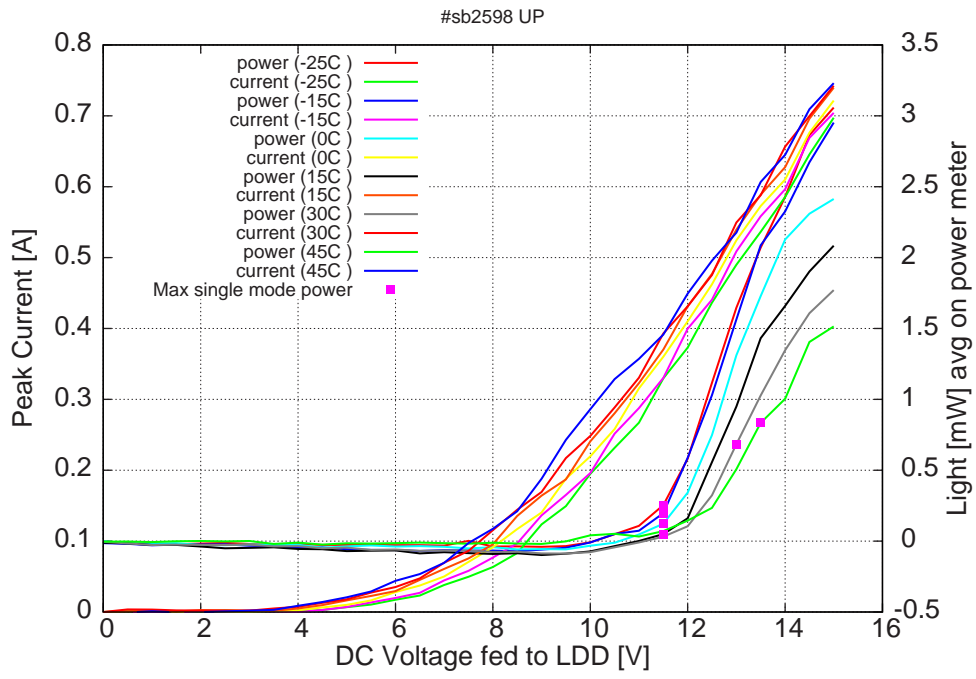
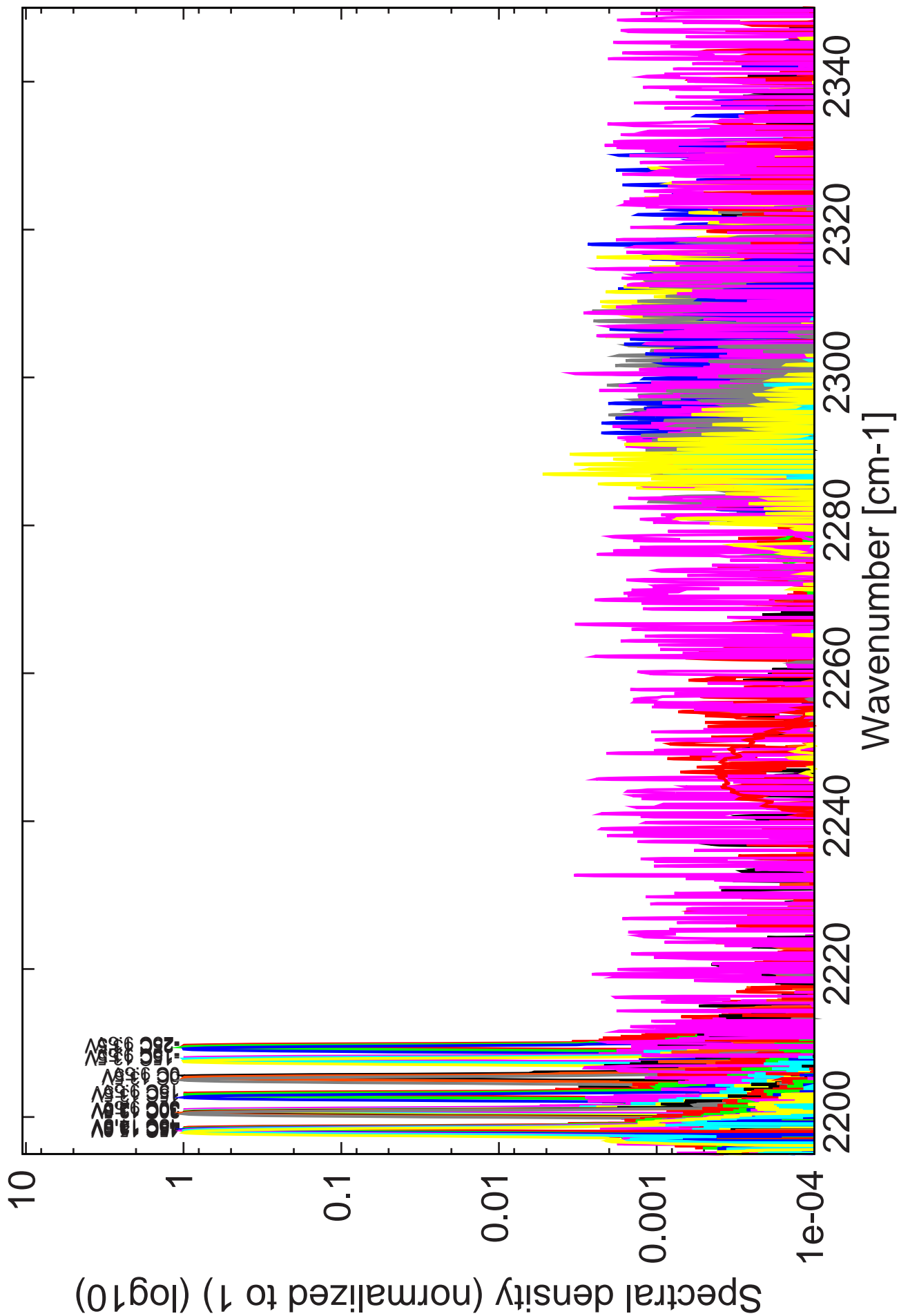


Figure 7: peak current and average power vs LDD voltage at 2% duty-cycle (50ns pulses on the laser,  $2.5\mu\text{s}$  period) (including the multimode region)

Figure 6: spectra at various temperatures and various LDD voltages at 2% duty-cycle (22ns pulses on the laser)



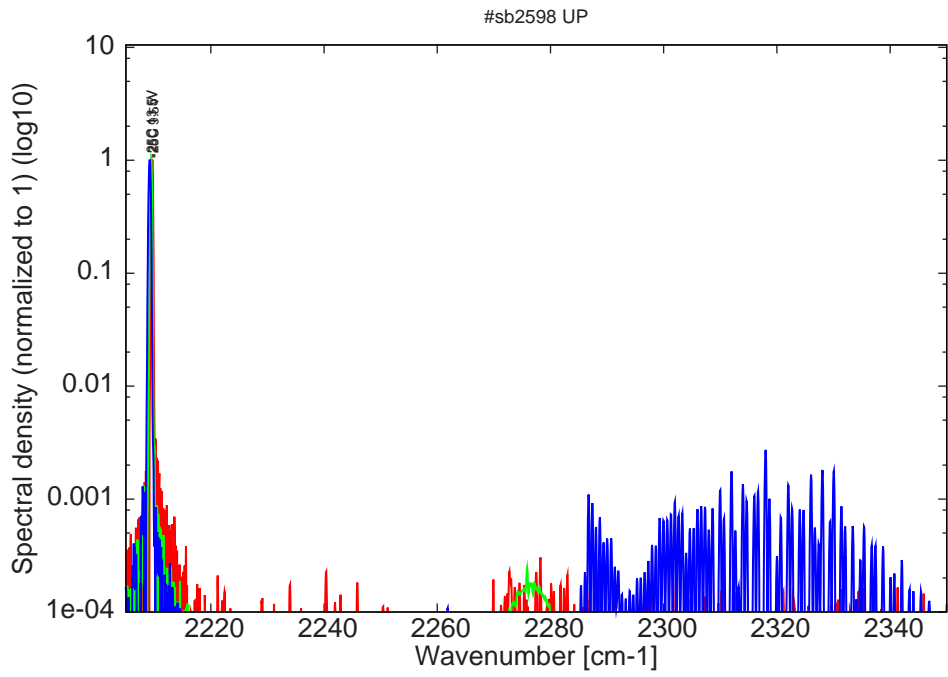


Figure 8: spectra at -25C at various LDD voltages at 2% duty-cycle (22ns pulses on the laser)

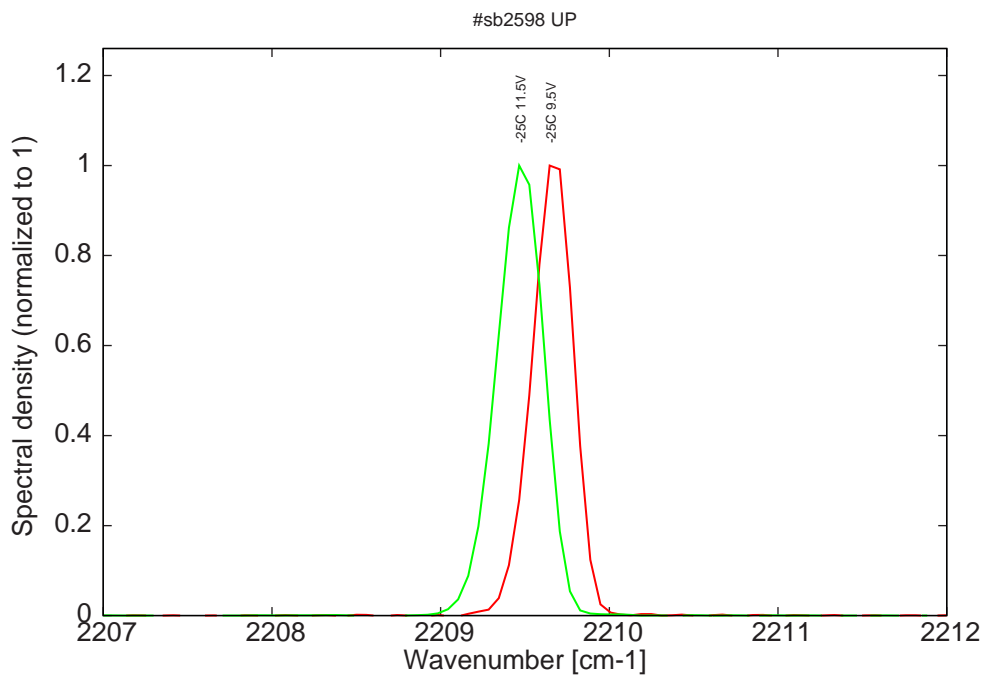


Figure 9: spectra at -25C at various LDD voltages at 2% duty-cycle (monomode range)

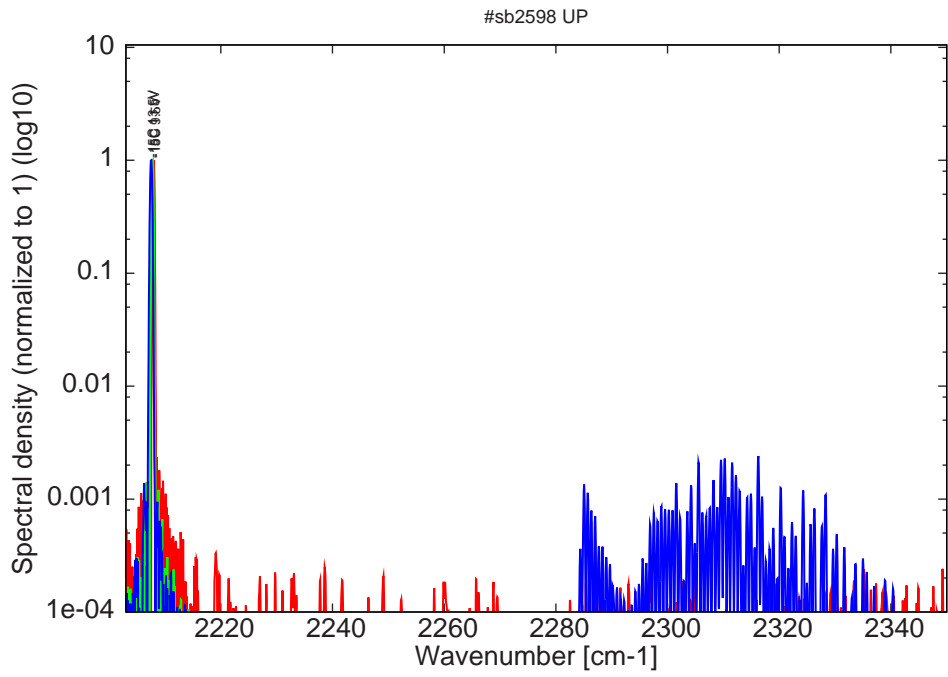


Figure 10: spectra at -15C at various LDD voltages at 2% duty-cycle (22ns pulses on the laser)

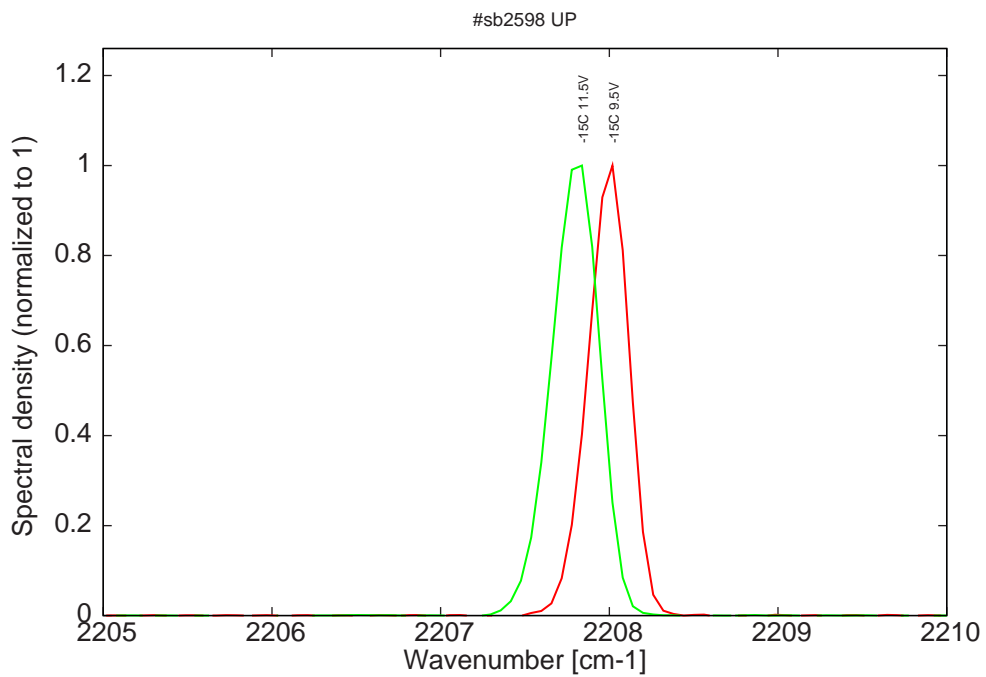


Figure 11: spectra at -15C at various LDD voltages at 2% duty-cycle (monomode range)



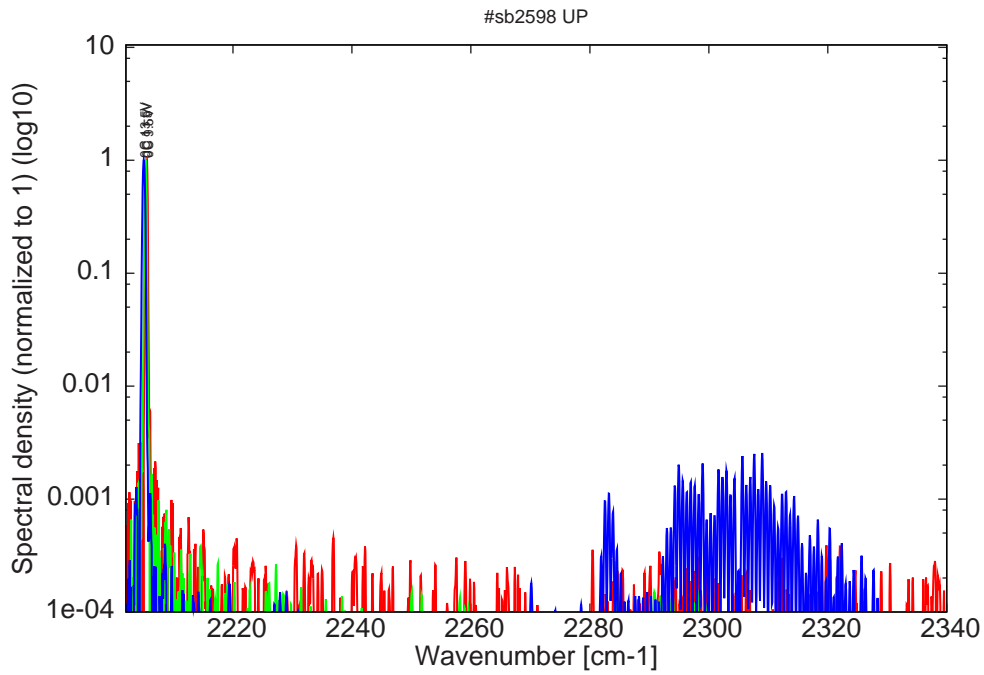


Figure 12: spectra at 0C at various LDD voltages at 2% duty-cycle (22ns pulses on the laser)

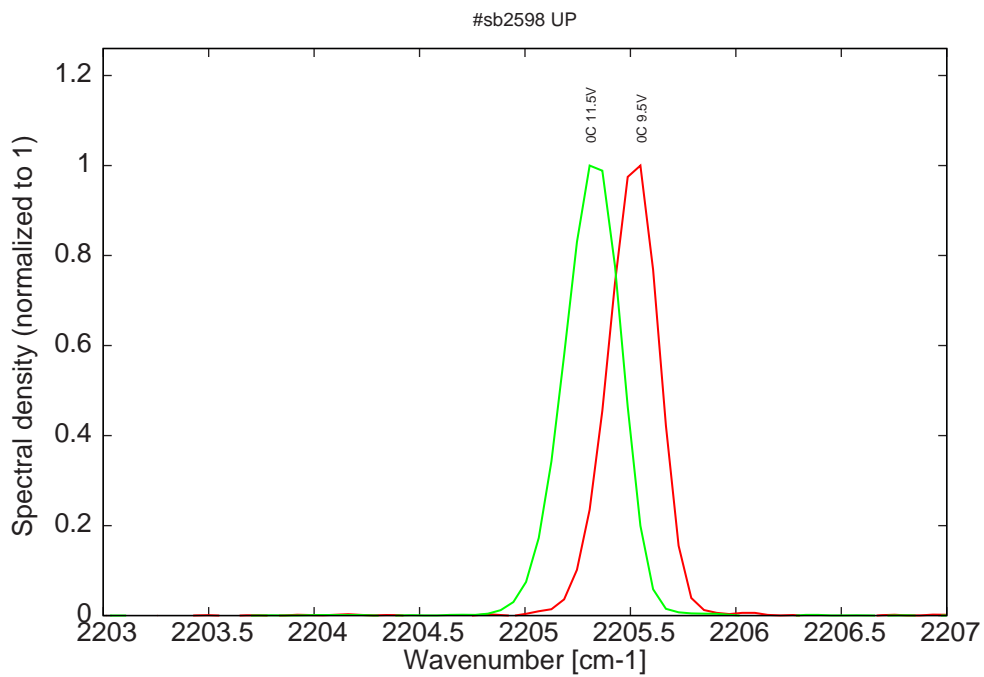


Figure 13: spectra at 0C at various LDD voltages at 2% duty-cycle (monomode range)

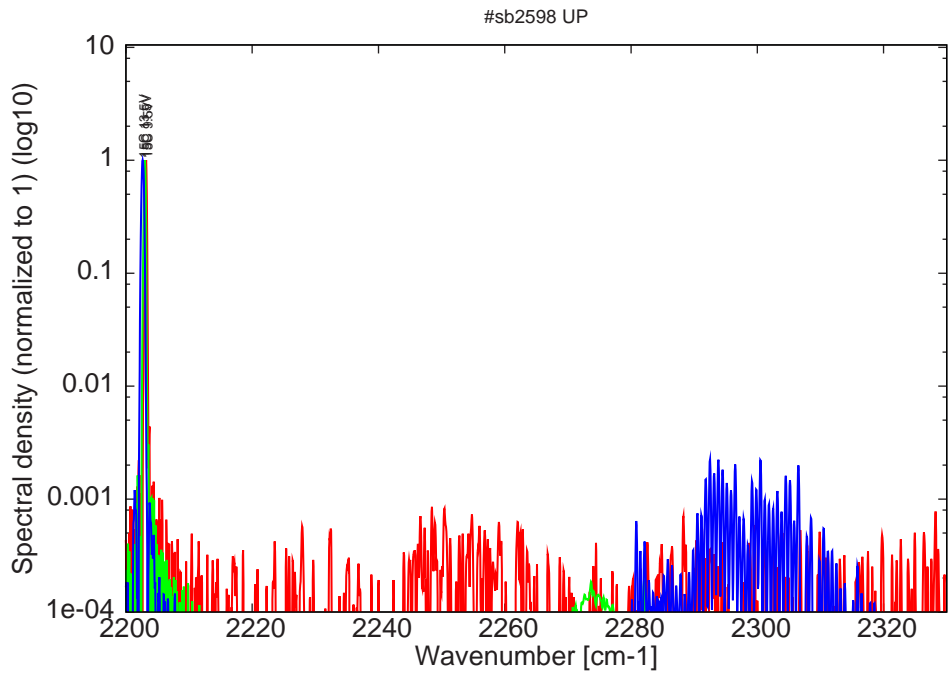


Figure 14: spectra at  $^{15}\text{C}$  at various LDD voltages at 2% duty-cycle (22ns pulses on the laser)

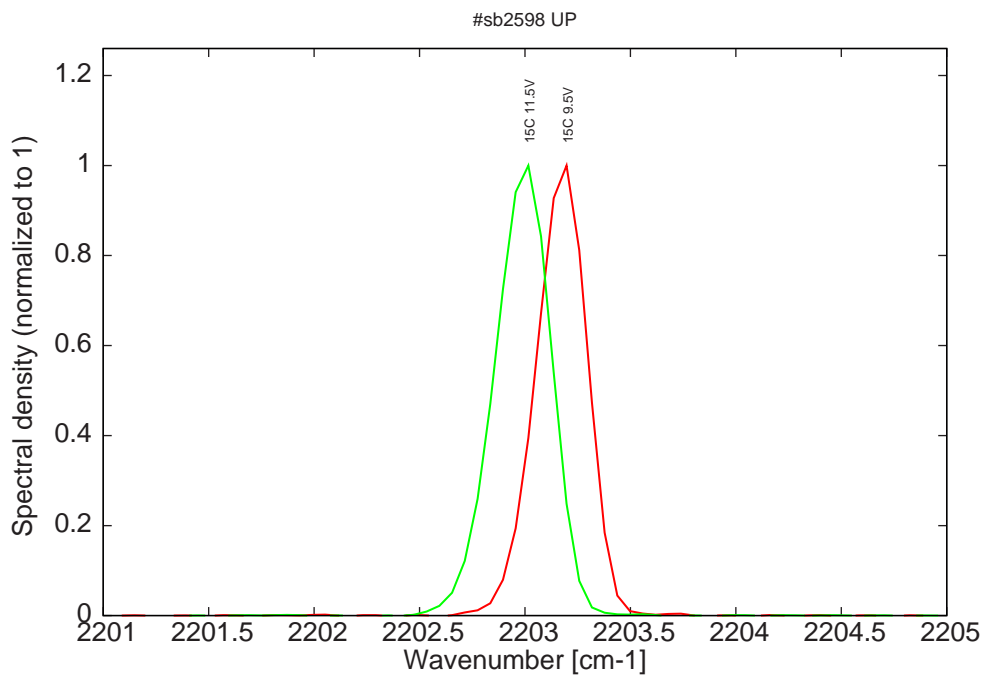


Figure 15: spectra at  $^{15}\text{C}$  at various LDD voltages at 2% duty-cycle (monomode range)

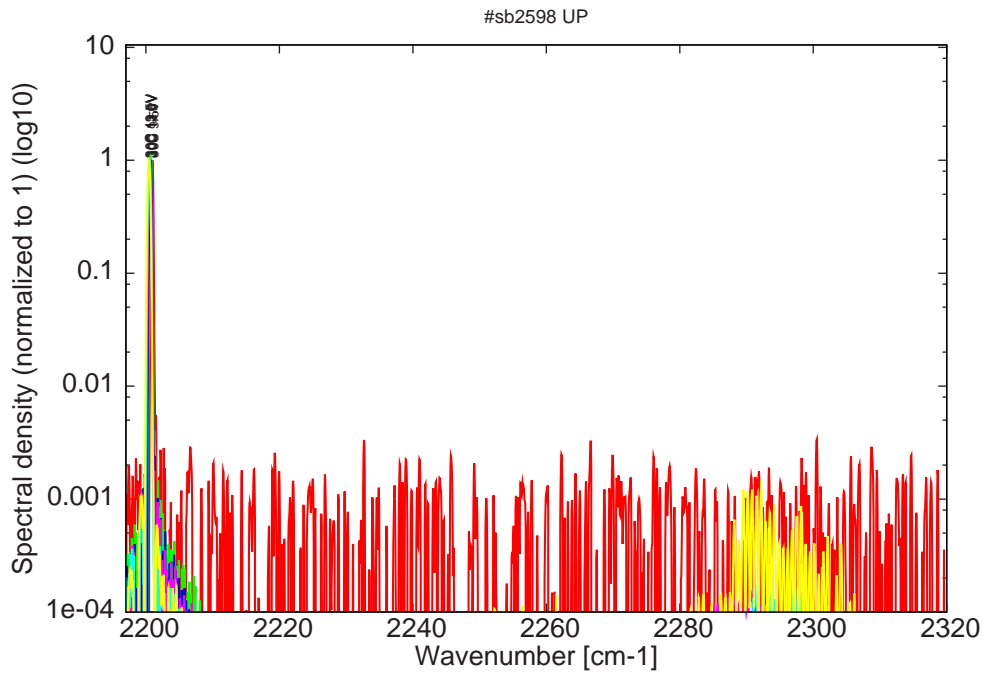


Figure 16: spectra at 30C at various LDD voltages at 2% duty-cycle (22ns pulses on the laser)

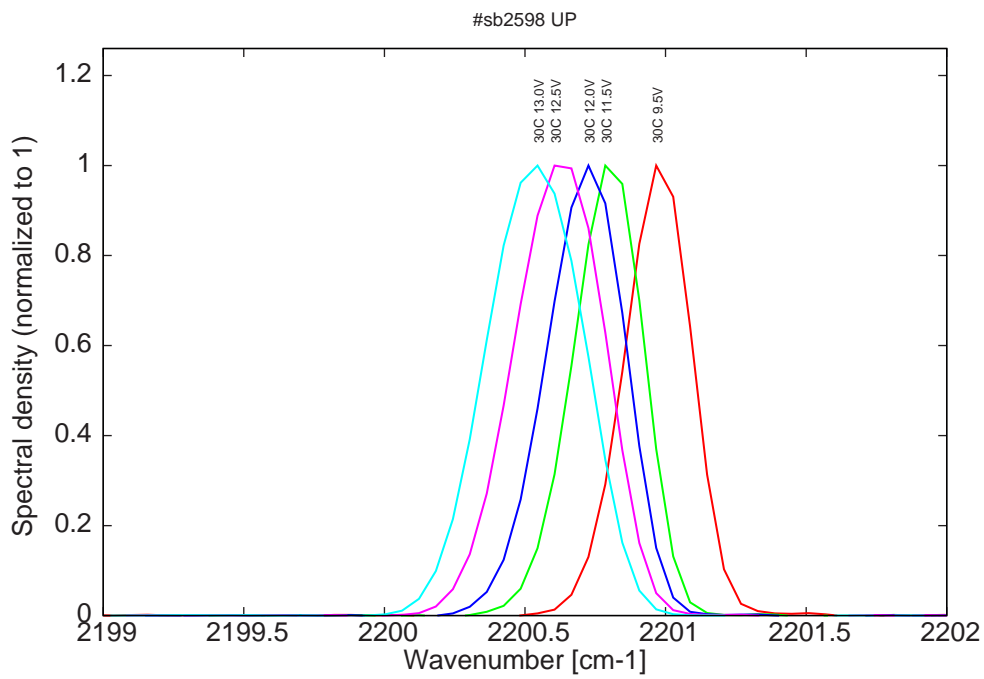


Figure 17: spectra at 30C at various LDD voltages at 2% duty-cycle (monomode range)

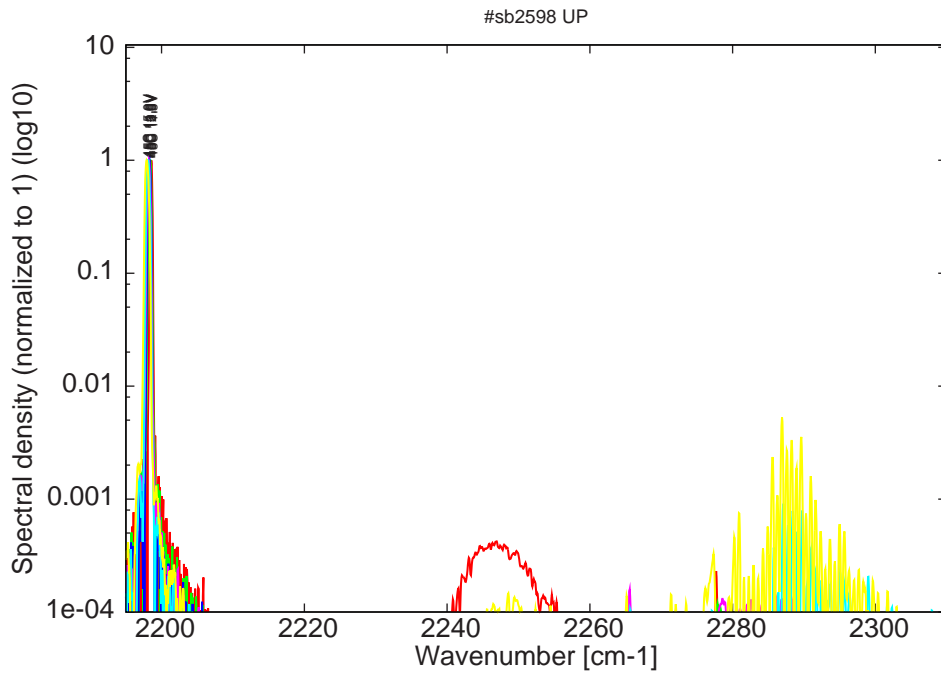


Figure 18: spectra at 45C at various LDD voltages at 2% duty-cycle (22ns pulses on the laser)

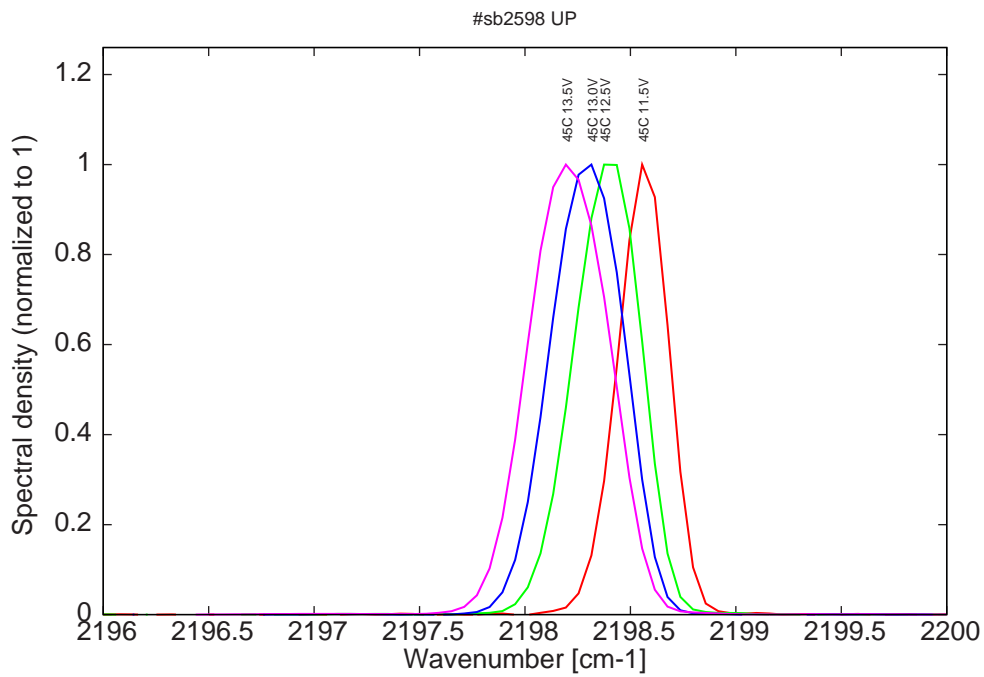


Figure 19: spectra at 45C at various LDD voltages at 2% duty-cycle (monomode range)