

Datasheet for #sbcw4033 UP

Recommendations:

Please read the starter kit user manual, if available, and have a look at the FAQ at <http://www.alpeslasers.ch/alfaqa.pdf>

WARNING: Operating the laser with higher current or voltage than specified in this document may cause damage and will result in loss of warranty, unless Alpes Lasers has permitted to do so!

WARNING: Beware of the polarity of the laser. This laser has to be powered with negative current on the laser contact (= bonding pad, corresponding to the label "laser" on the LLH) and the positive current on the base contact (= submount, corresponding to the label "base" on the LLH). To use with a power-supply ILX Lightwave LDX-3232 or equivalent.

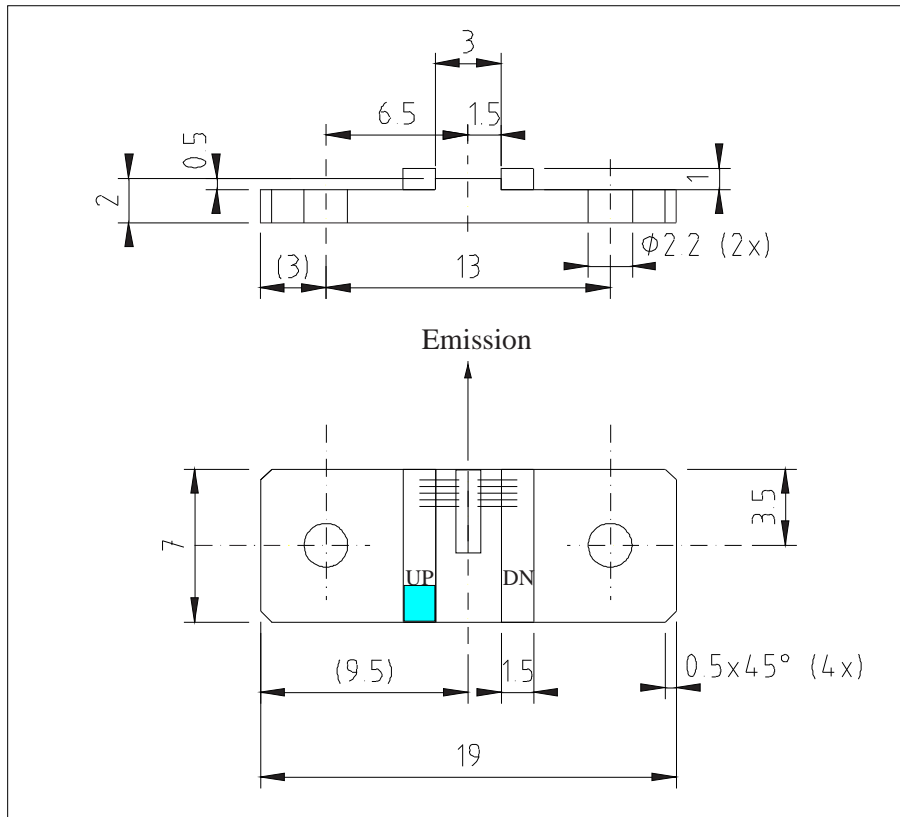


Figure 1: Support mounting for #sbcw4033 UP (please note that the laser is connected to the UP pad drawn in blue)

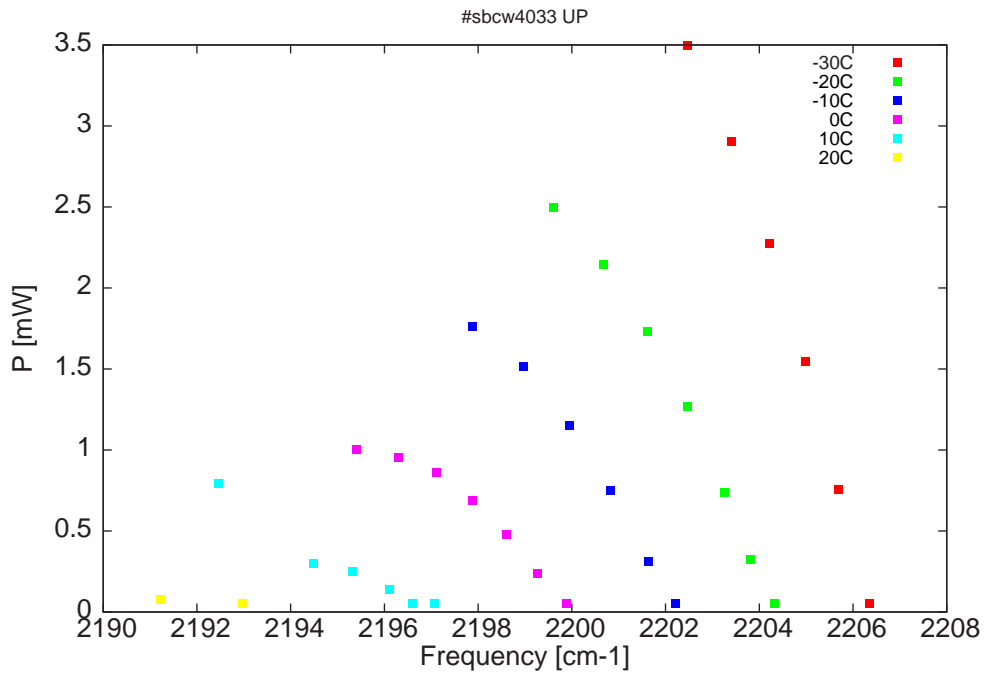


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

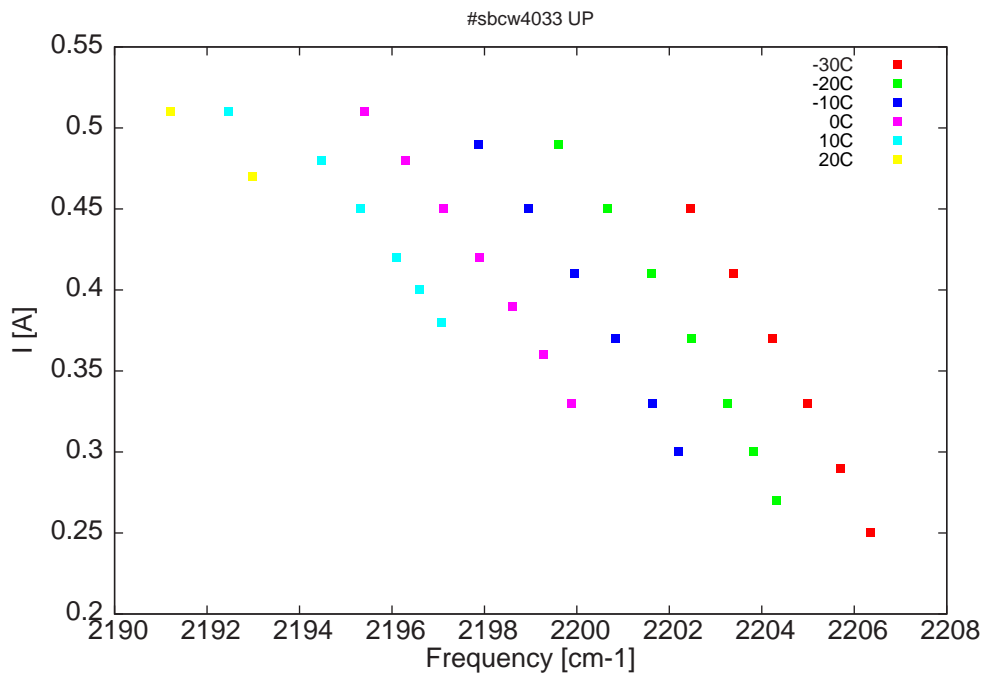


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ [nm]	ν [cm ⁻¹]	P[mW]	Temp[°C]	U_{LASER} [V]	I[A]
4532.4	2206.3	0.1	-30	8.7	0.25
4533.7	2205.7	0.8	-30	9	0.29
4535.2	2205	1.5	-30	9.2	0.33
4536.7	2204.2	2.3	-30	9.5	0.37
4538.5	2203.4	2.9	-30	9.8	0.41
4540.4	2202.5	3.5	-30	10.1	0.45
4536.5	2204.3	0.1	-20	9	0.27
4537.6	2203.8	0.3	-20	9.2	0.3
4538.7	2203.3	0.7	-20	9.4	0.33
4540.3	2202.5	1.3	-20	9.7	0.37
4542.1	2201.6	1.7	-20	10	0.41
4544.1	2200.7	2.1	-20	10.3	0.45
4546.3	2199.6	2.5	-20	10.6	0.49
4540.9	2202.2	0.1	-10	9.2	0.3
4542.1	2201.6	0.3	-10	9.4	0.33
4543.7	2200.8	0.8	-10	9.7	0.37
4545.6	2199.9	1.1	-10	10	0.41
4547.6	2199	1.5	-10	10.3	0.45
4549.9	2197.9	1.8	-10	10.6	0.49
4545.7	2199.9	0.1	0	9.3	0.33
4547	2199.3	0.2	0	9.5	0.36
4548.3	2198.6	0.5	0	9.8	0.39
4549.8	2197.9	0.7	0	10	0.42
4551.4	2197.1	0.9	0	10.3	0.45
4553.1	2196.3	1	0	10.5	0.48
4555	2195.4	1	0	10.8	0.51
4551.5	2197.1	0.1	10	9.7	0.38
4552.5	2196.6	0.1	10	9.9	0.4
4553.5	2196.1	0.1	10	10.1	0.42
4555.2	2195.3	0.2	10	10.3	0.45
4556.9	2194.5	0.3	10	10.6	0.48
4561.1	2192.5	0.8	10	10.8	0.51
4560	2193	0.1	20	10.5	0.47
4563.7	2191.2	0.1	20	10.9	0.51

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

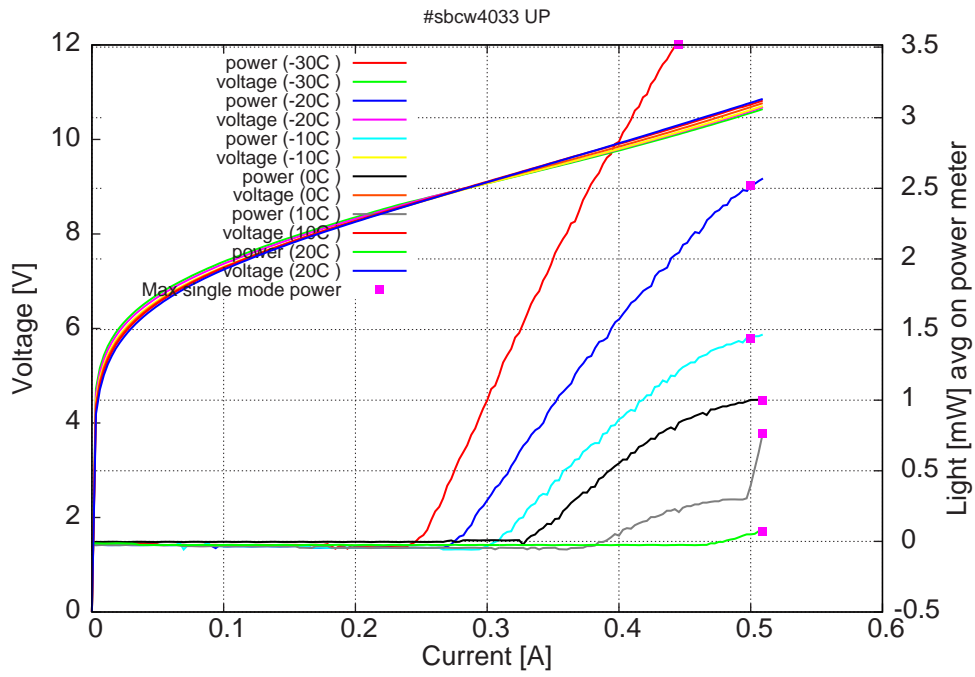


Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

Note: at -30C: $I_{th}=250\text{mA}$ / $V_{th}= 8.7\text{V}$ (2-wires measurements). Maximum operation current: 0.45A at -30C, 0.49A between -20C and 0C, 0.51A between 10C and 20C.

Figure 3: spectra at different temperatures for various DC currents

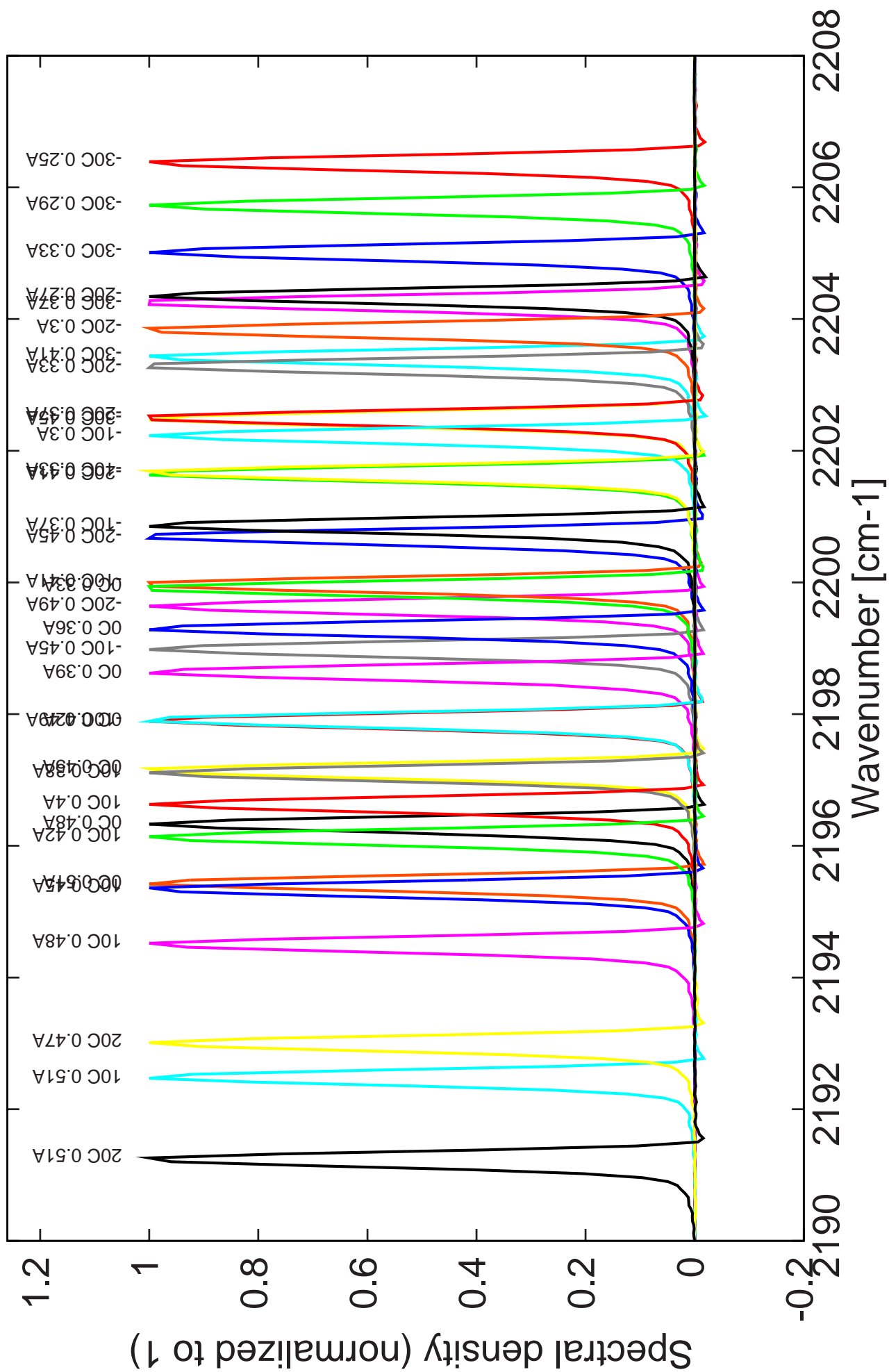
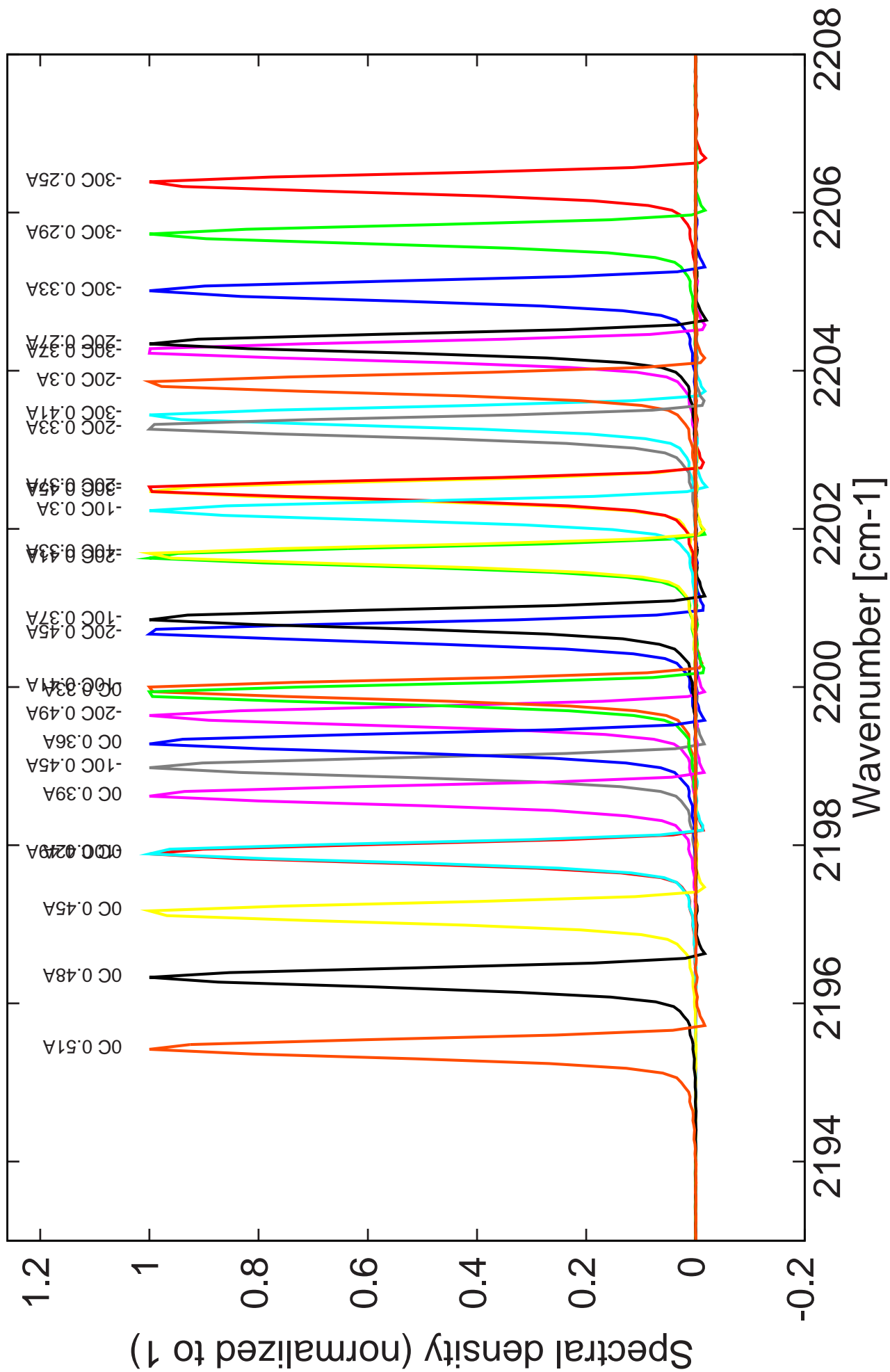


Figure 4: spectra between -30C and 0C for various DC currents (all monomode on the same mode, see Fig. 2 & 3)



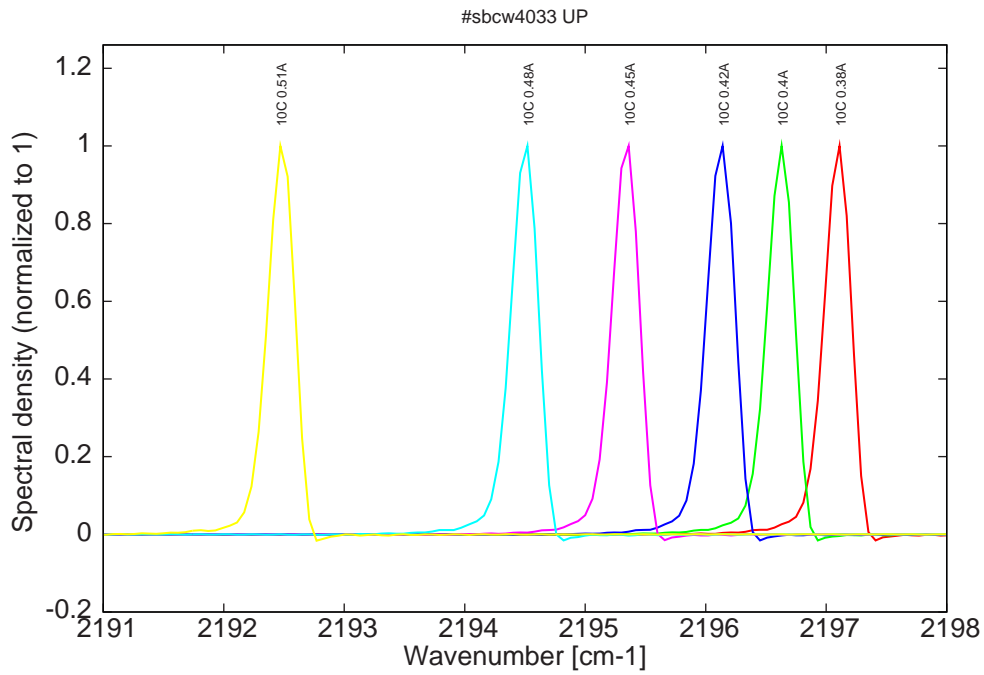


Figure 5: spectra at 10C for various DC currents (monomode with mode jumping for $I > 0.48A$, see Fig. 2 & 3)

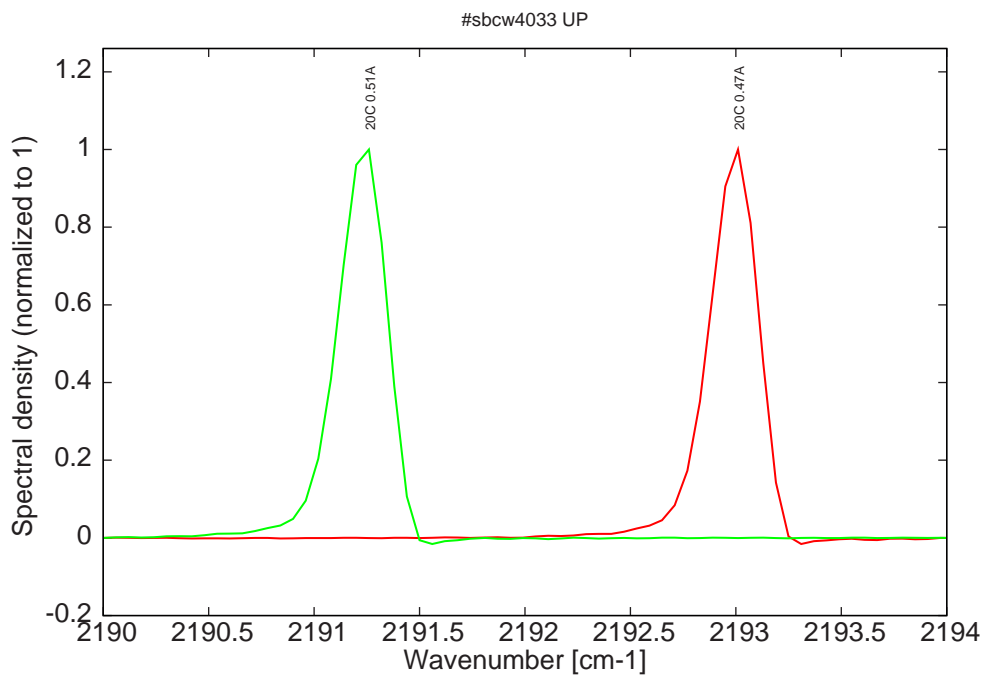


Figure 6: spectra at 20C for various DC currents (monomode with mode jumping for $I > 0.47A$, see Fig. 2 & 3)