

Datasheet for #sbcw1950 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 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.

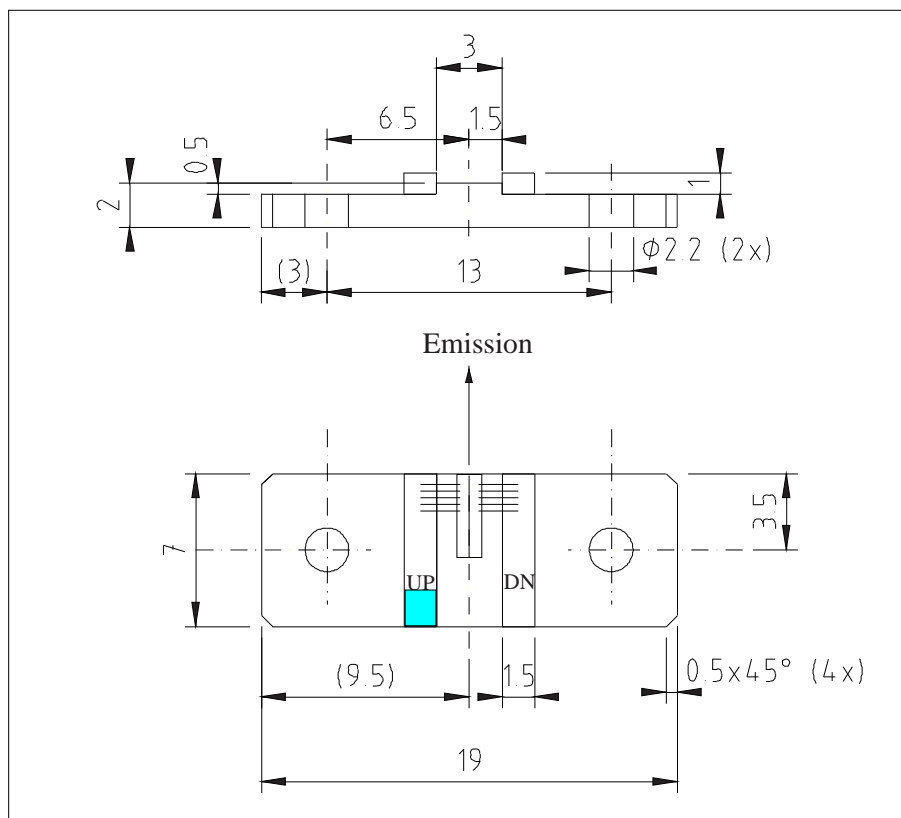


Figure 1: Support mounting for #sbcw1950 UP (please note that the laser is connected to the UP pad drawn in blue)

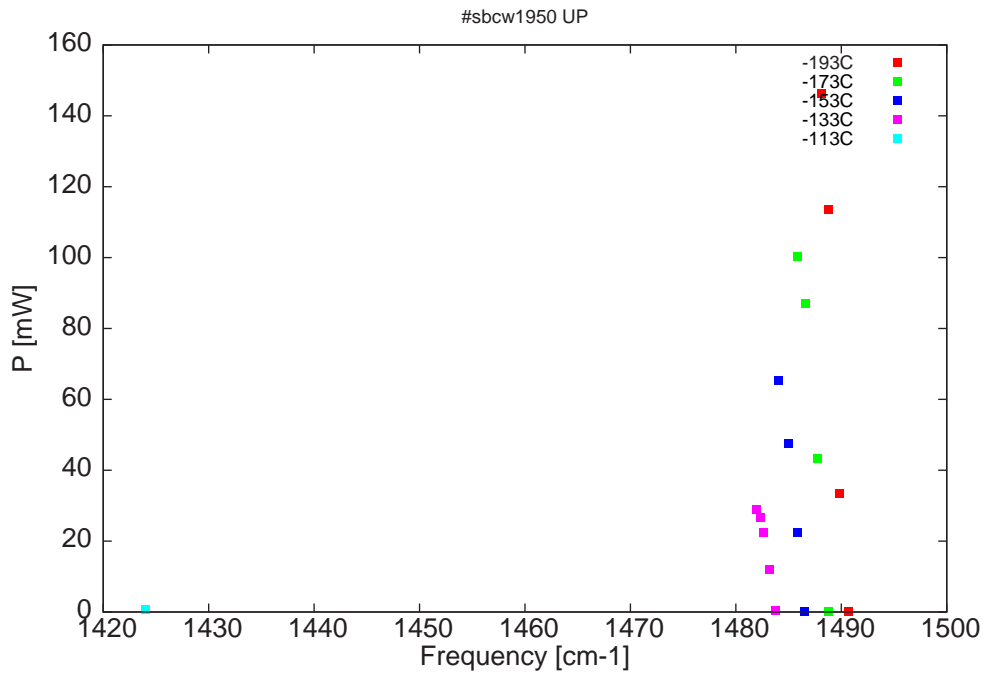


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

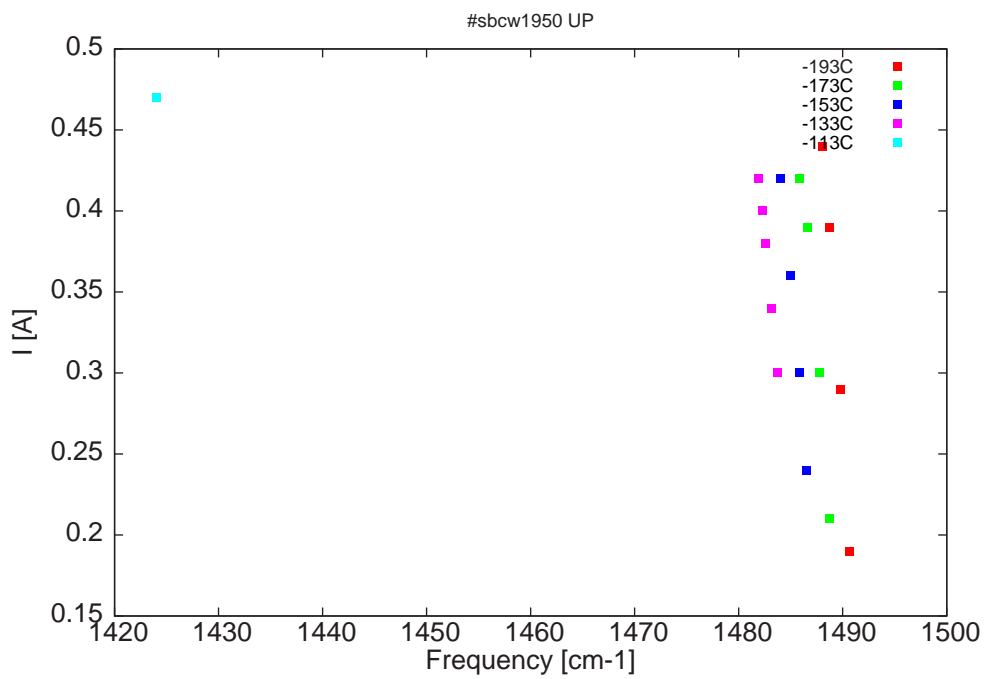


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ [nm]	ν [cm ⁻¹]	P[mW]	Temp[°C]	U_{LASER} [V]	I[A]
6708.3	1490.7	0.1	-193	10.7	0.19
6712.3	1489.8	33.3	-193	11.1	0.29
6717.1	1488.7	113.7	-193	11.4	0.39
6720	1488.1	146.4	-193	11.6	0.44
6717.1	1488.7	0.1	-173	10.5	0.21
6721.5	1487.8	43.4	-173	10.8	0.3
6726.7	1486.6	86.9	-173	11.1	0.39
6730.4	1485.8	100.3	-173	11.2	0.42
6727.1	1486.5	0.1	-153	10.3	0.24
6730.4	1485.8	22.5	-153	10.5	0.3
6734.1	1485	47.4	-153	10.7	0.36
6738.3	1484.1	65.3	-153	10.9	0.42
6739.6	1483.8	0.5	-133	10.3	0.3
6742.2	1483.2	11.9	-133	10.4	0.34
6744.9	1482.6	22.4	-133	10.5	0.38
6746.3	1482.3	26.6	-133	10.6	0.4
6748	1481.9	29	-133	10.7	0.42
7022.3	1424	0.7	-113	10.5	0.47

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

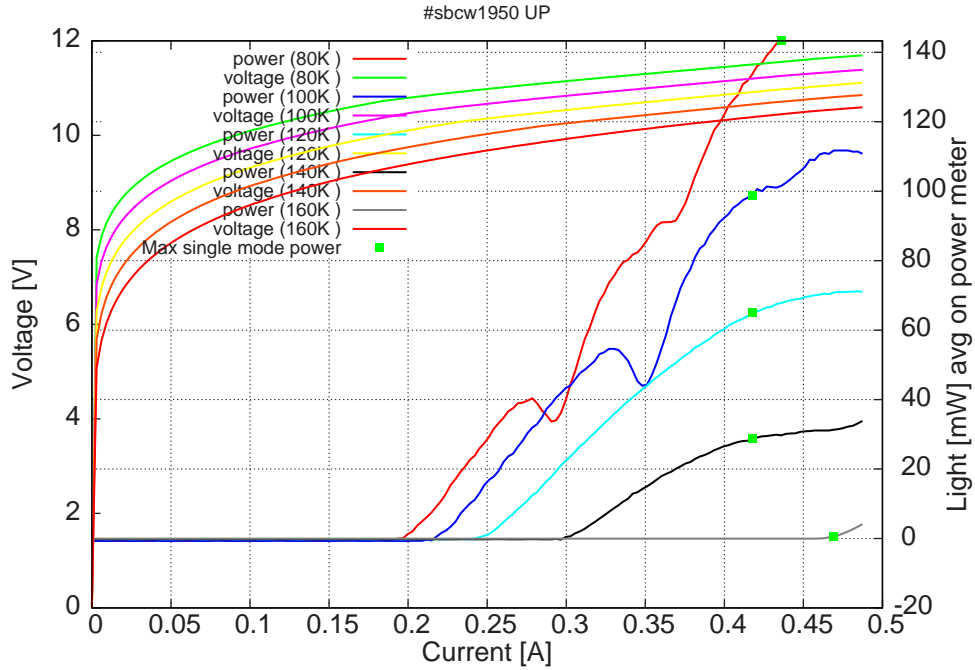


Figure 4: peak voltage and average power vs peak current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

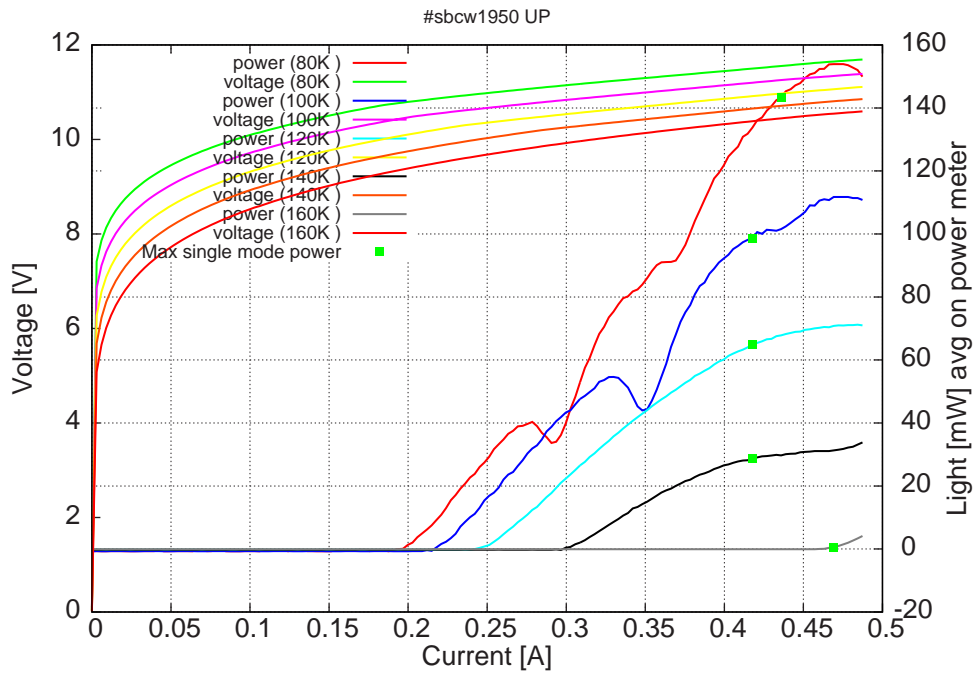
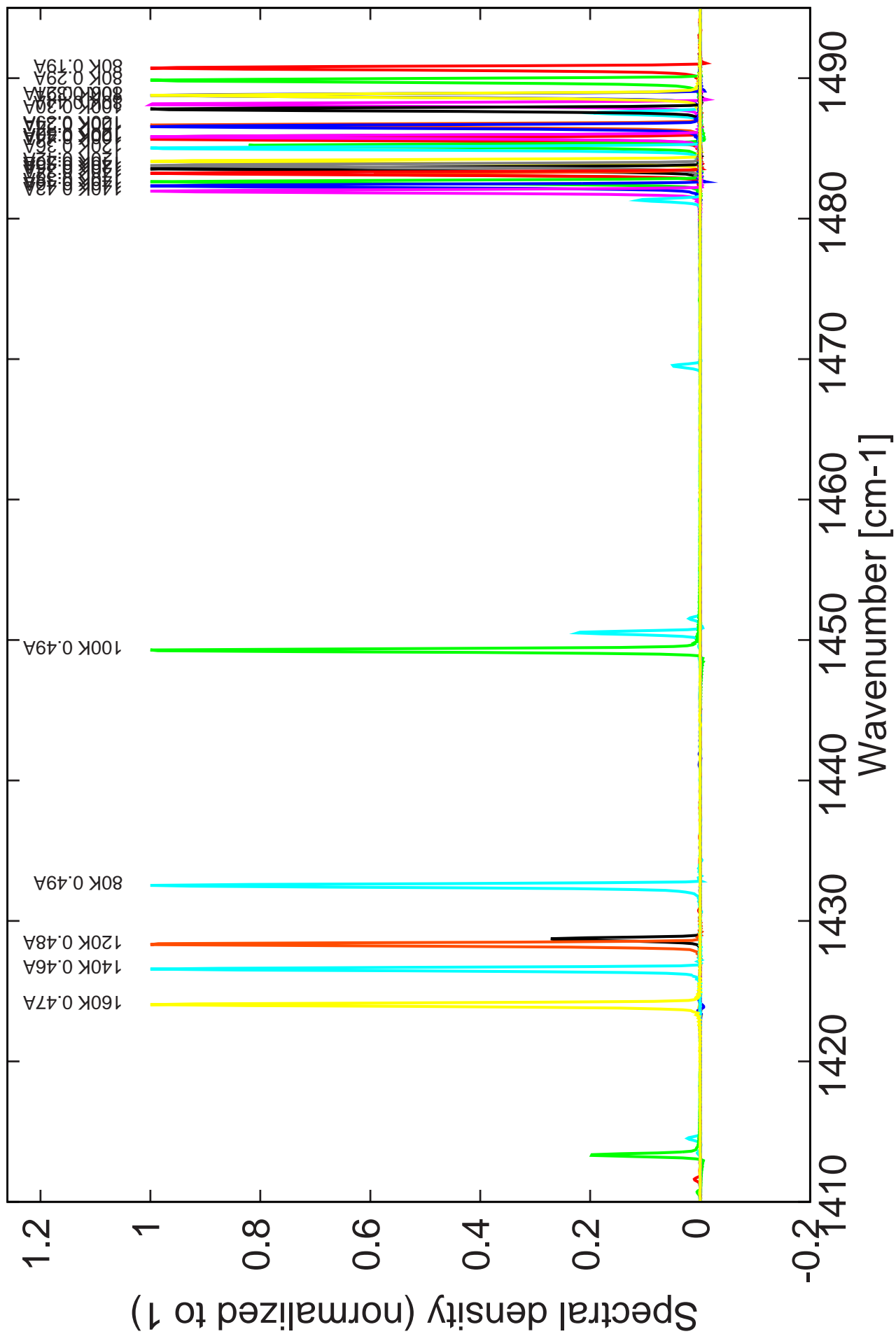


Figure 5: peak voltage and average power vs peak current in continuous-wave operation (including the multimode region)

Note: at 80K: $I_{th}=190\text{mA}$ / $V_{th}= 10.7\text{V}$ (2-wires measurements). Maximum operation current: 490mA for all temperatures.

Figure 4: spectra at different temperatures for various DC currents



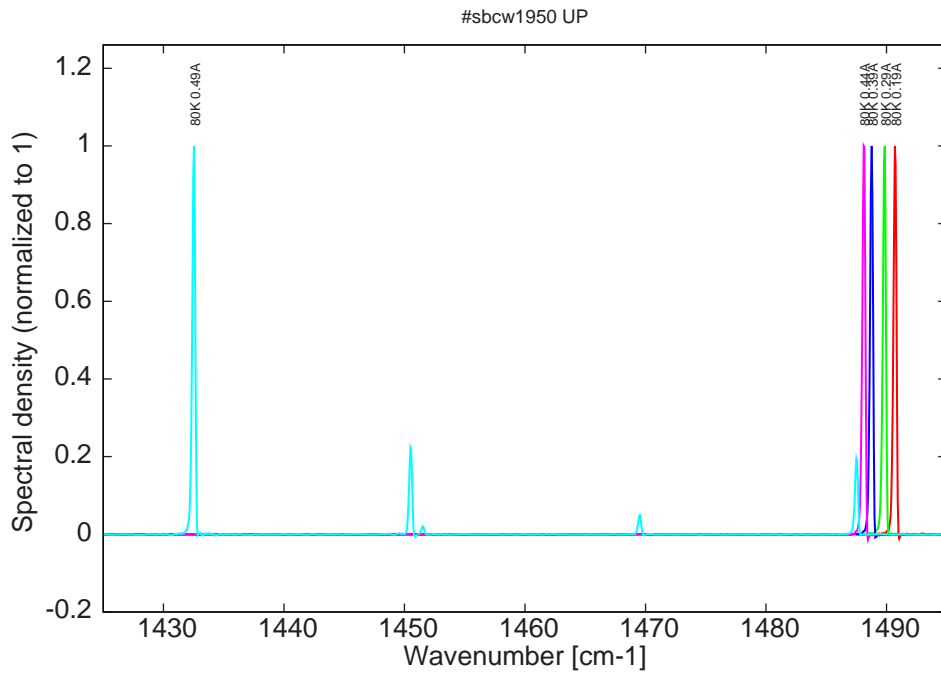


Figure 6: spectra at 80K for various DC currents

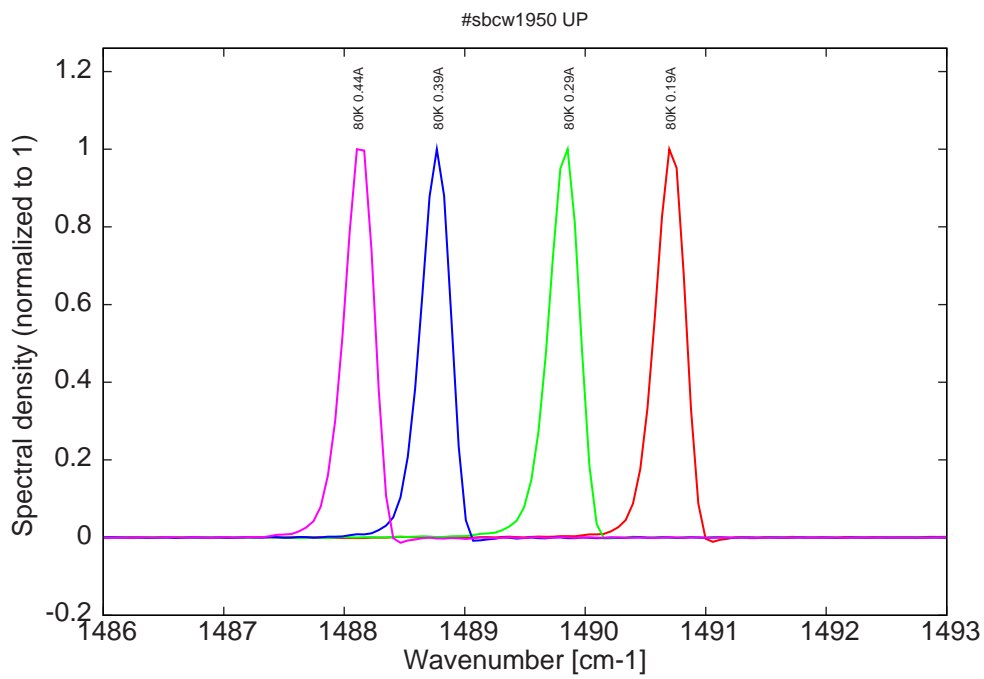


Figure 7: spectra at 80K for various DC currents (monomode range)

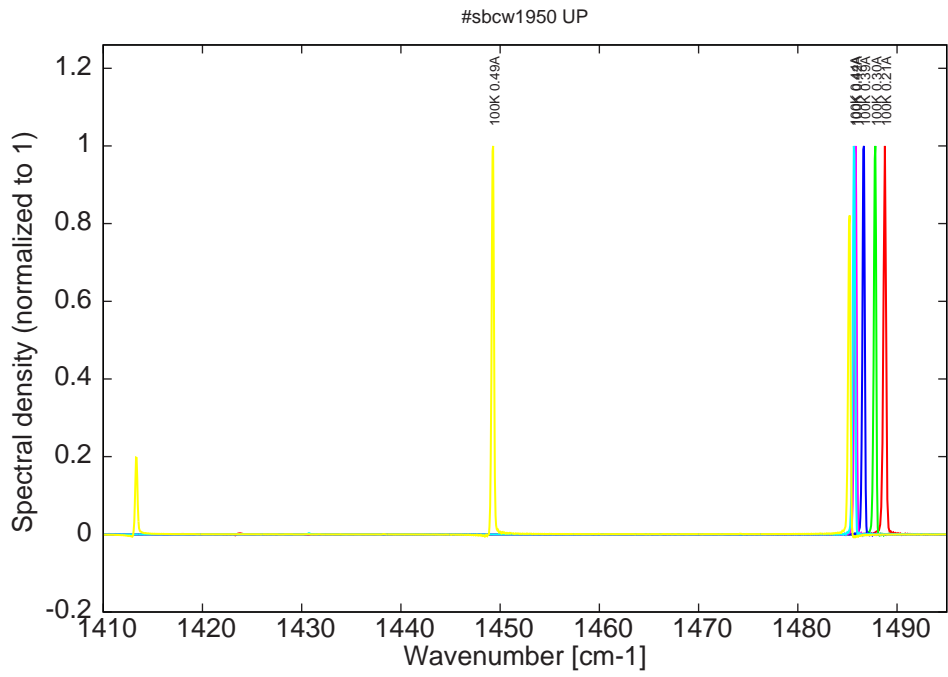


Figure 8: spectra at 100K for various DC currents

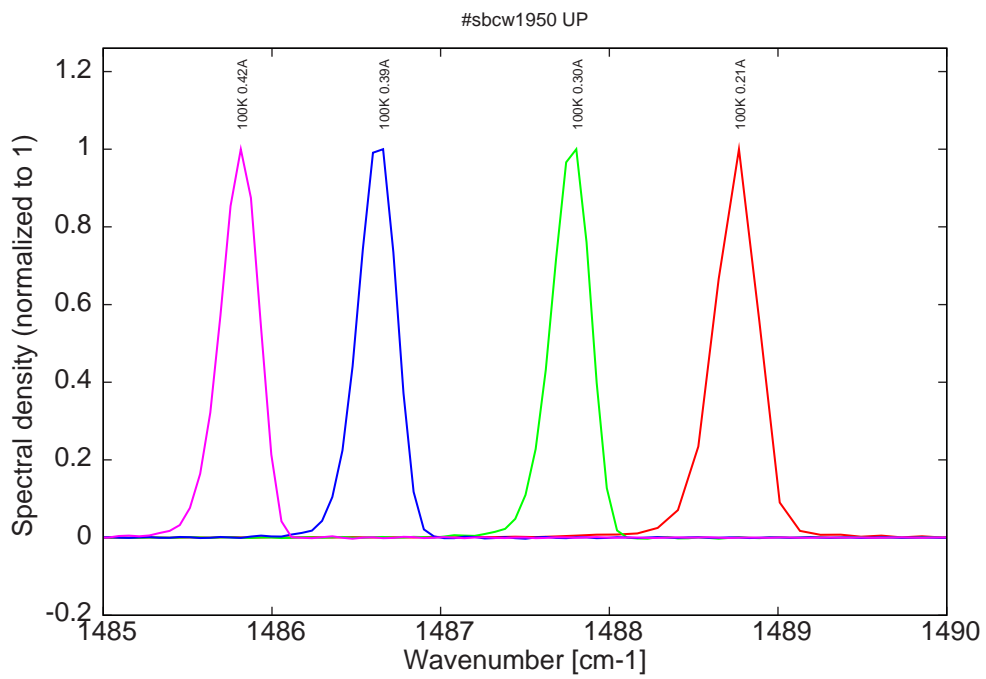


Figure 9: spectra at 100K for various DC currents (monomode range, but with mode jumping for $I > 0.39A$, see Fig. 1)

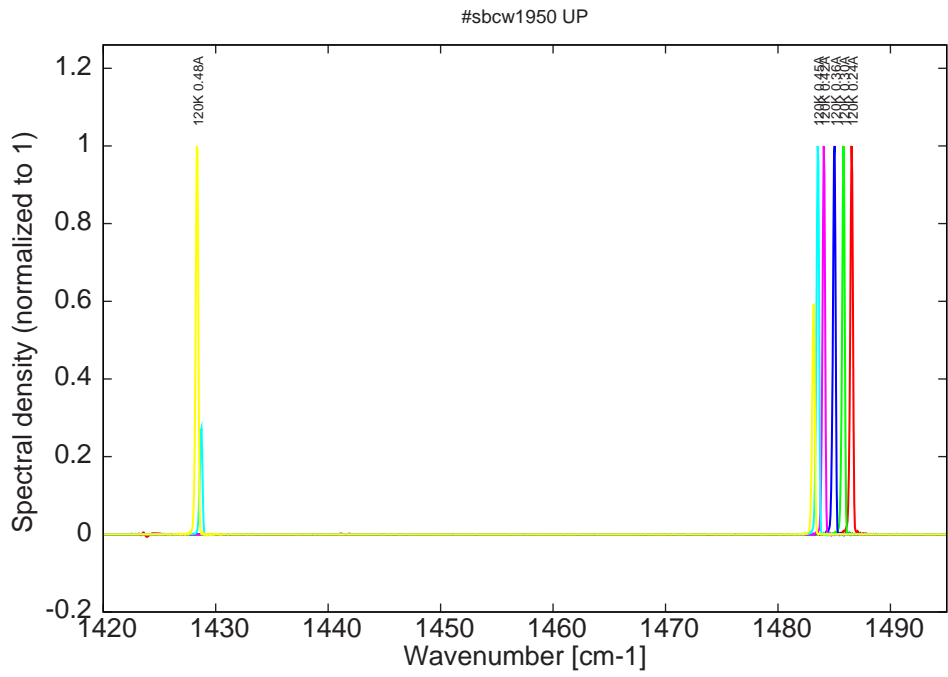


Figure 10: spectra at 120K for various DC currents

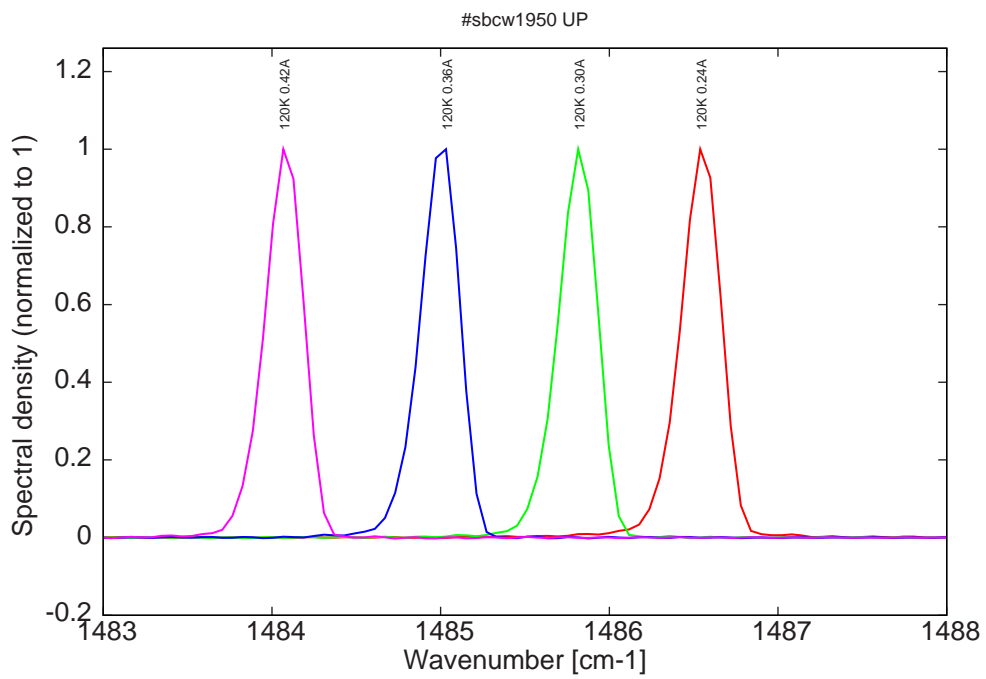


Figure 11: spectra at 120K for various DC currents (monomode range)

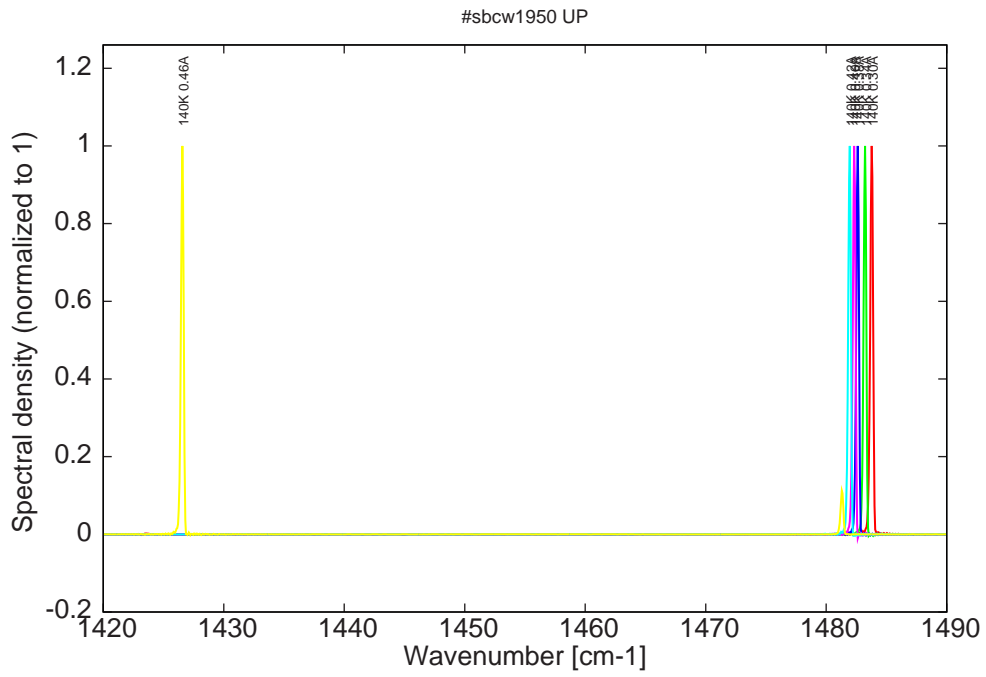


Figure 12: spectra at 140K for various DC currents

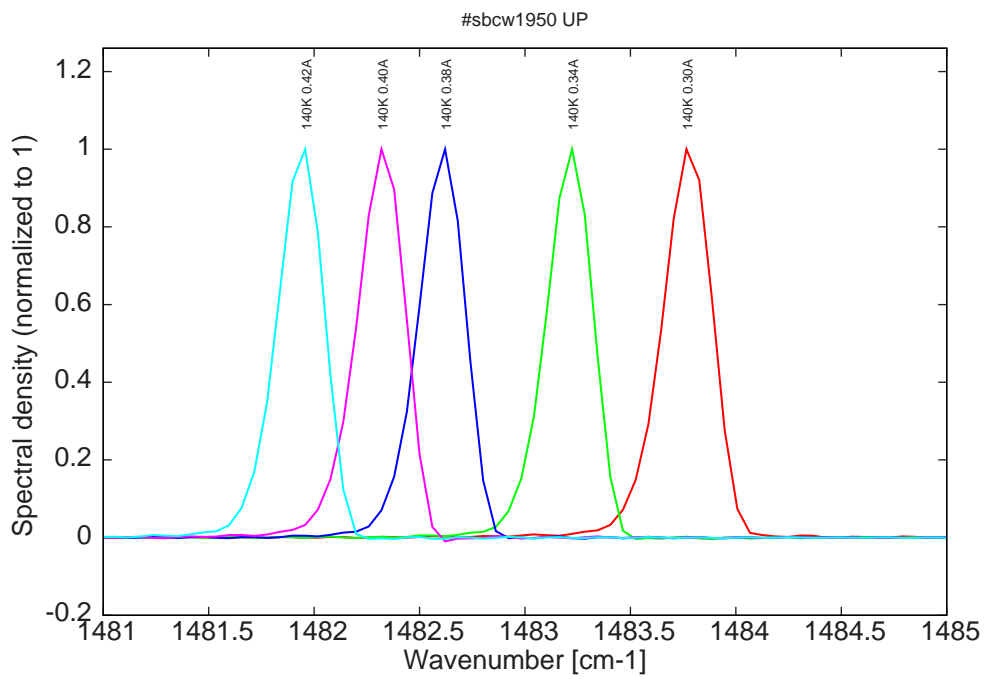


Figure 13: spectra at 140K for various DC currents (monomode range)

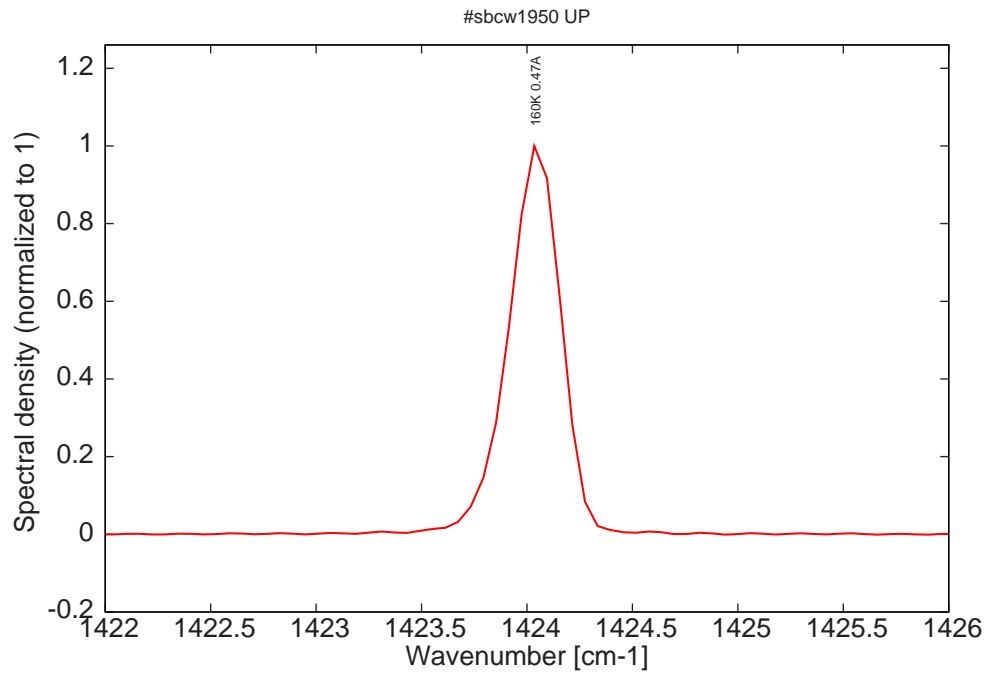


Figure 14: monomode spectrum at 160K at 0.47A (on another mode compared to other temperatures, see Fig.1)