

Datasheet for #sbcw998 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.

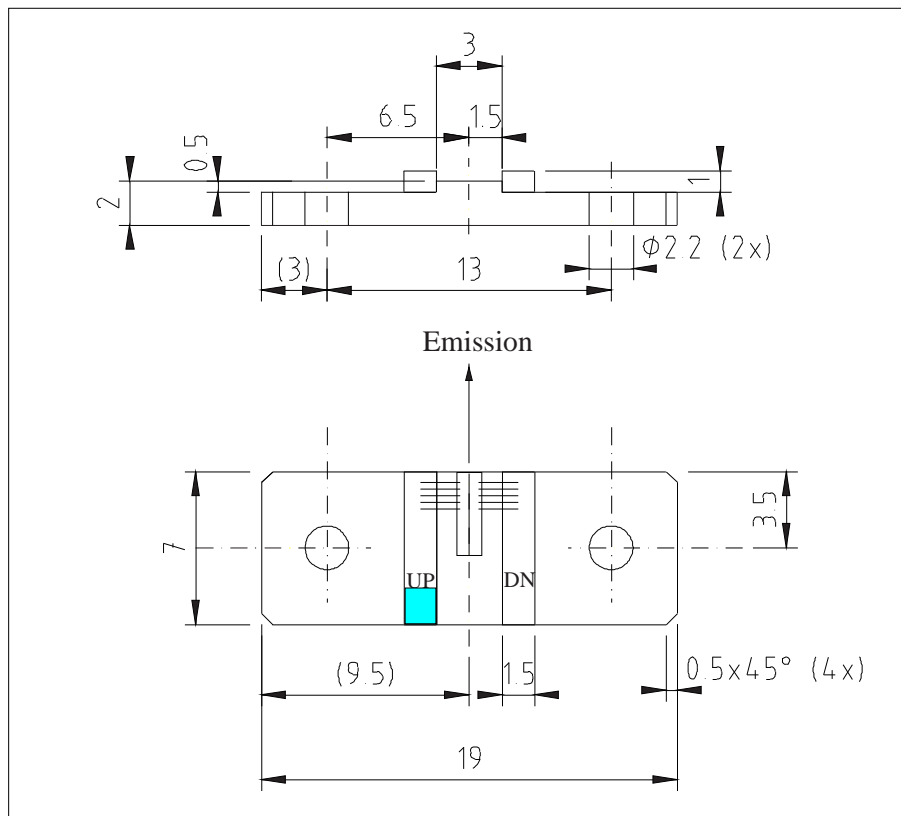


Figure 1: Support mounting for #sbcw998 UP (please note that the laser is connected to the UP pad drawn in blue)

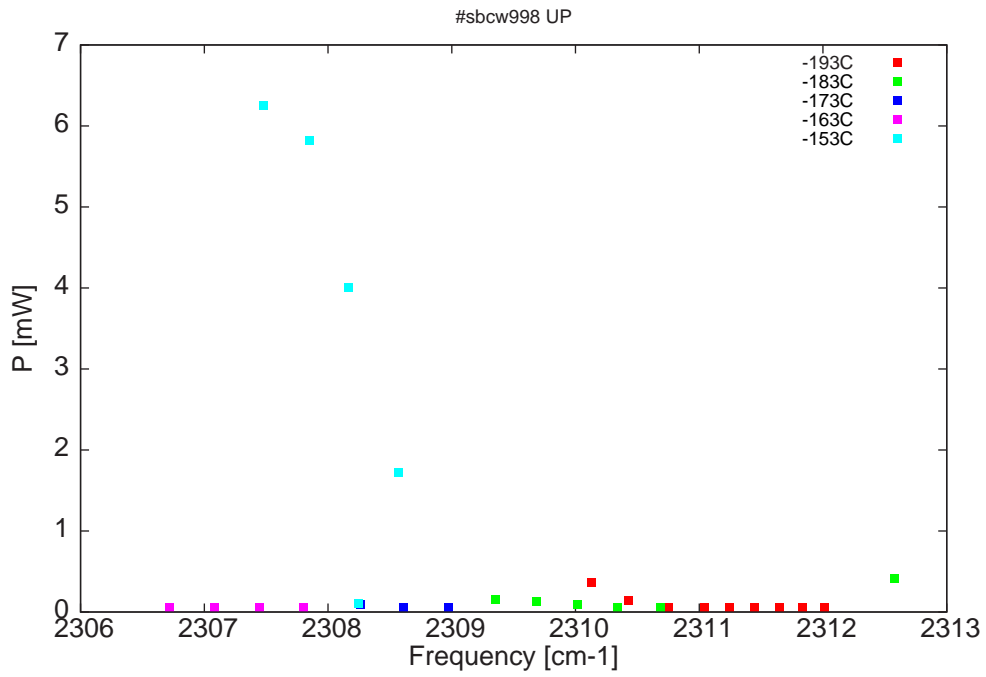


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

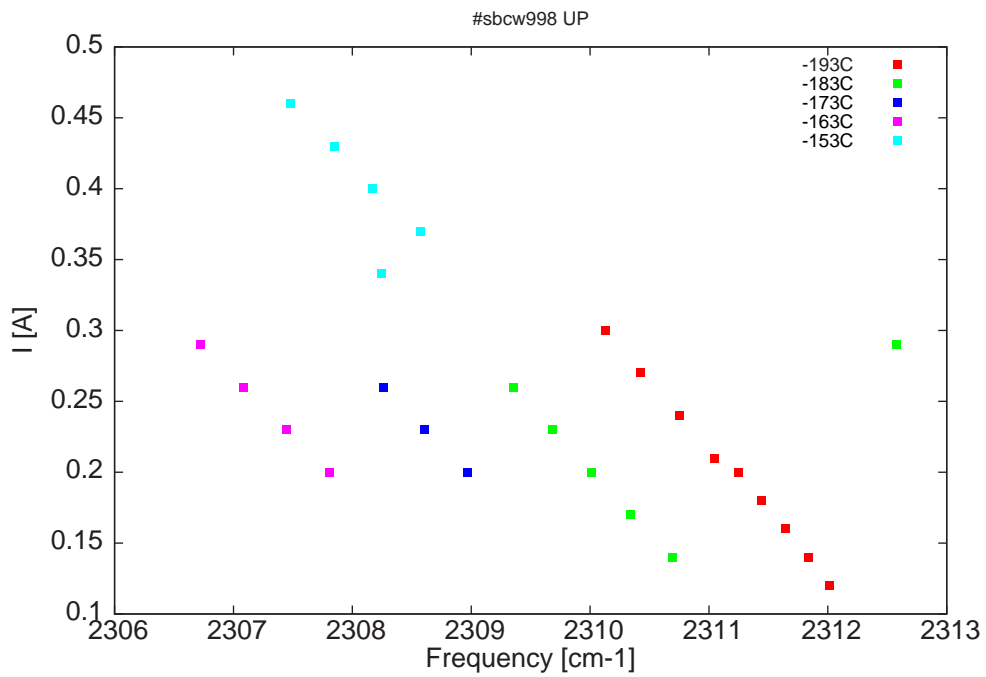


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ [nm]	ν [cm ⁻¹]	P[mW]	Temp[°C]	U_{LASER} [V]	I[A]
4325.2	2312	0.1	-193	7.8	0.12
4325.6	2311.8	0.1	-193	7.9	0.14
4325.9	2311.6	0.1	-193	7.9	0.16
4326.3	2311.4	0.1	-193	8	0.18
4326.7	2311.2	0.1	-193	8.1	0.2
4327.1	2311	0.1	-193	8.1	0.21
4327.6	2310.8	0.1	-193	8.2	0.24
4328.2	2310.4	0.1	-193	8.3	0.27
4328.8	2310.1	0.4	-193	8.3	0.3
4327.7	2310.7	0.1	-183	7.8	0.14
4328.4	2310.3	0.1	-183	7.9	0.17
4329	2310	0.1	-183	8	0.2
4329.6	2309.7	0.1	-183	8.1	0.23
4330.2	2309.4	0.2	-183	8.1	0.26
4324.2	2312.6	0.4	-183	8.2	0.29
4330.9	2309	0.1	-173	7.9	0.2
4331.6	2308.6	0.1	-173	8	0.23
4332.3	2308.3	0.1	-173	8.1	0.26
4333.1	2307.8	0.1	-163	7.8	0.2
4333.8	2307.4	0.1	-163	7.9	0.23
4334.5	2307.1	0.1	-163	7.9	0.26
4335.2	2306.7	0.1	-163	8	0.29
4332.3	2308.2	0.1	-153	8.1	0.34
4331.7	2308.6	1.7	-153	8.1	0.37
4332.4	2308.2	4	-153	8.2	0.4
4333	2307.9	5.8	-153	8.3	0.43
4333.7	2307.5	6.3	-153	8.3	0.46

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

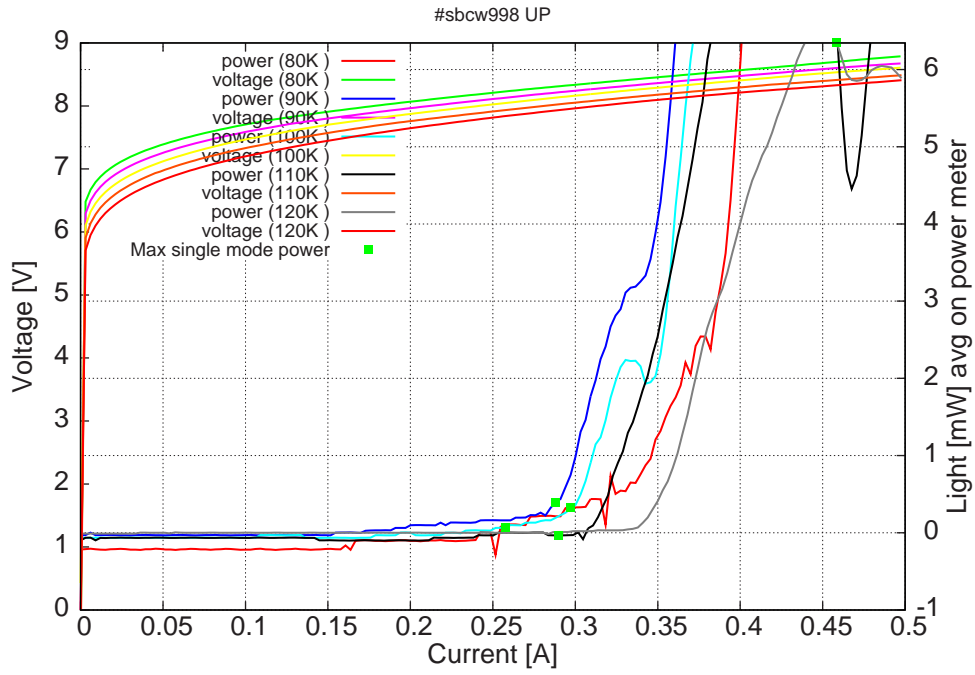


Figure 4: peak voltage and average power vs peak current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

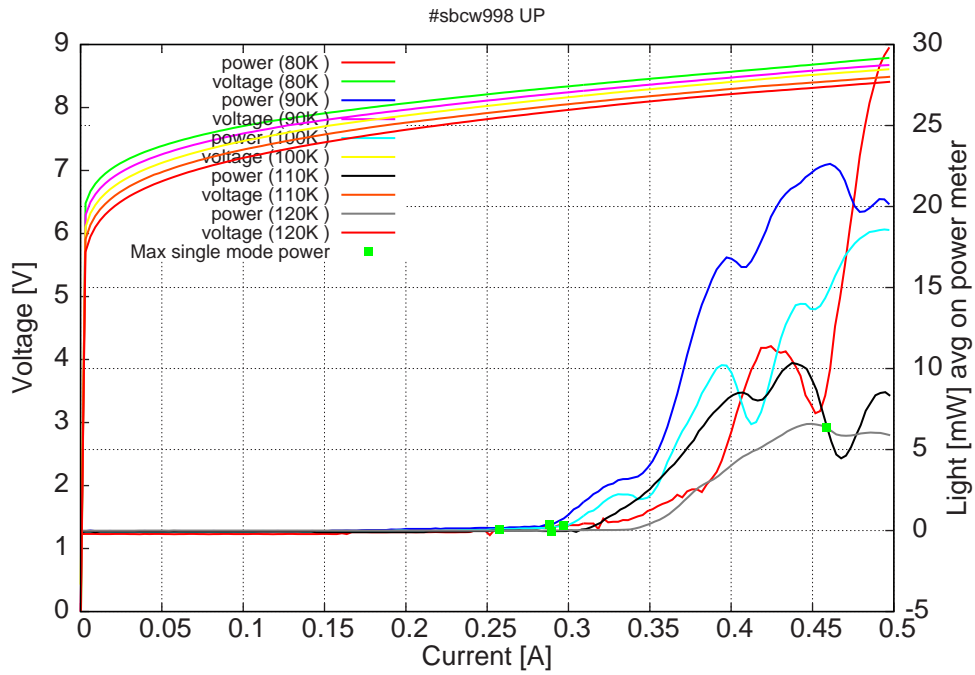


Figure 5: peak voltage and average power vs peak current in continuous-wave operation (including the multimode region)

Note: the bumps in the li-curves are due to absorptions in the beam-path. The laser exhibits a single-mode emission over the temperature and current ranges shown in the following spectra.

Note: at 80K: $I_{th}=120\text{mA}$ / $V_{th}= 7.81\text{V}$ (2-wires measurements)
Maximum operation current: 0.50A for all temperatures between 80K and 120K.

Note: very low power in the monomode ranges, but usable for 2311cm^{-1} .

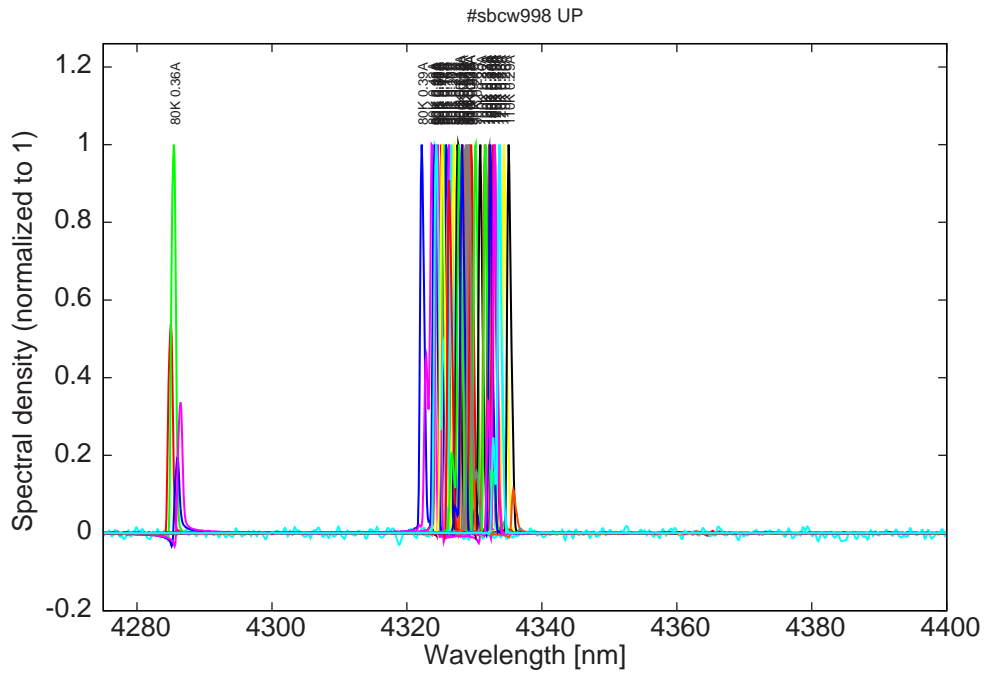


Figure 6: spectra at 80K, 90K, 100K, 110K and 120K

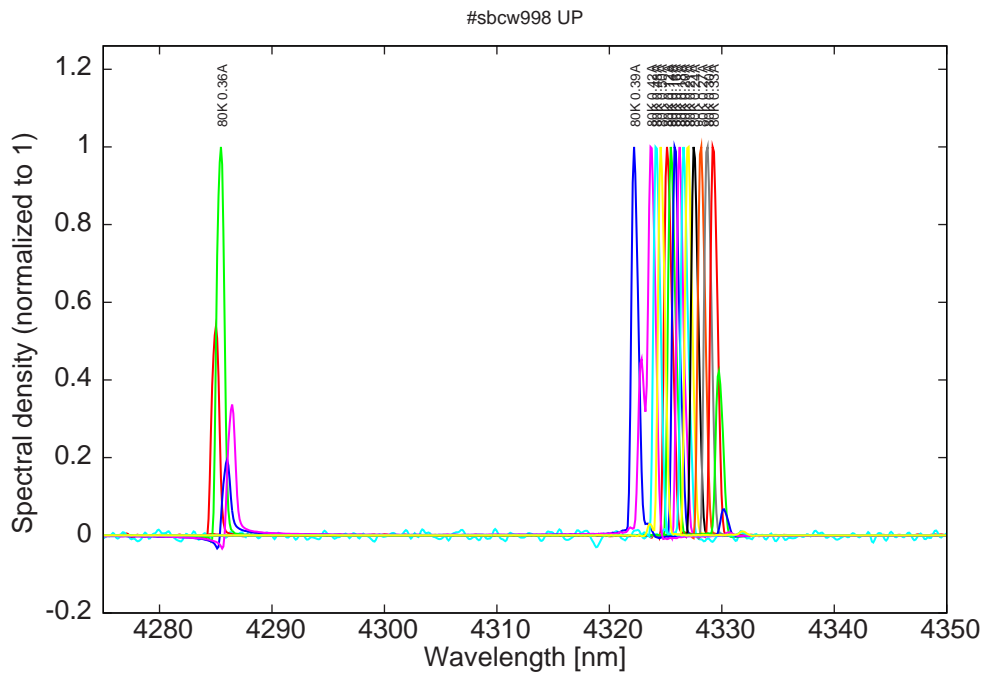


Figure 7: spectra at 80K

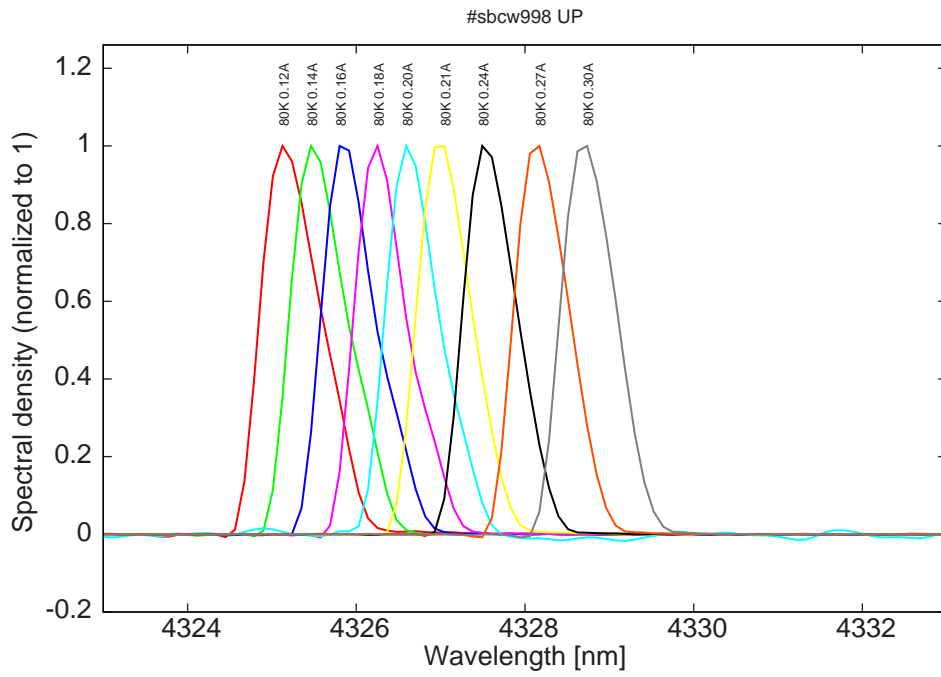


Figure 8: spectra at 80K

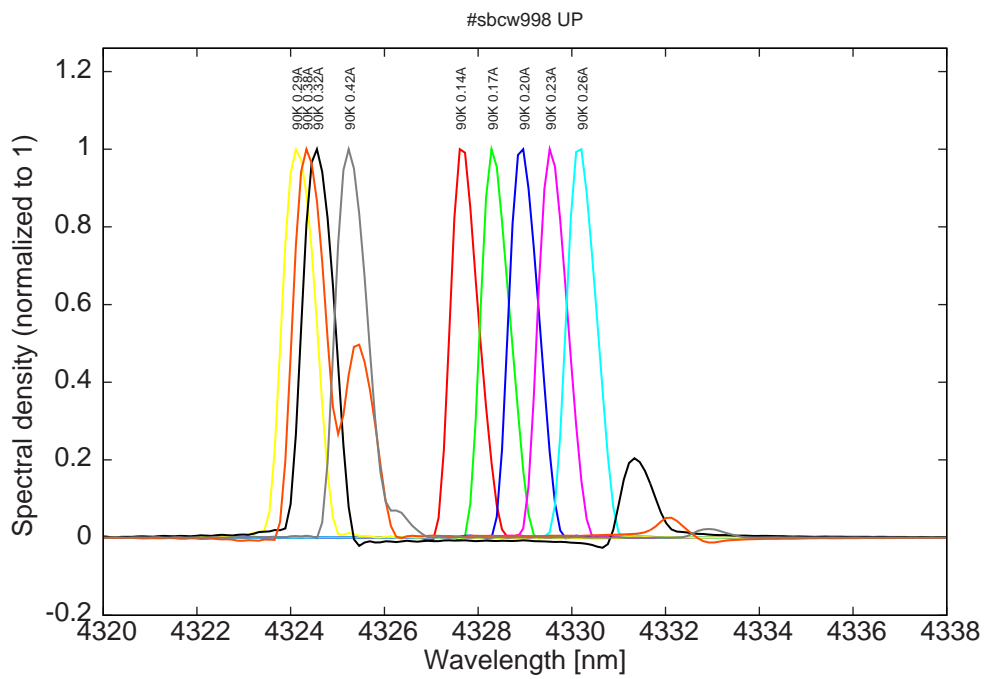


Figure 9: spectra at 90K

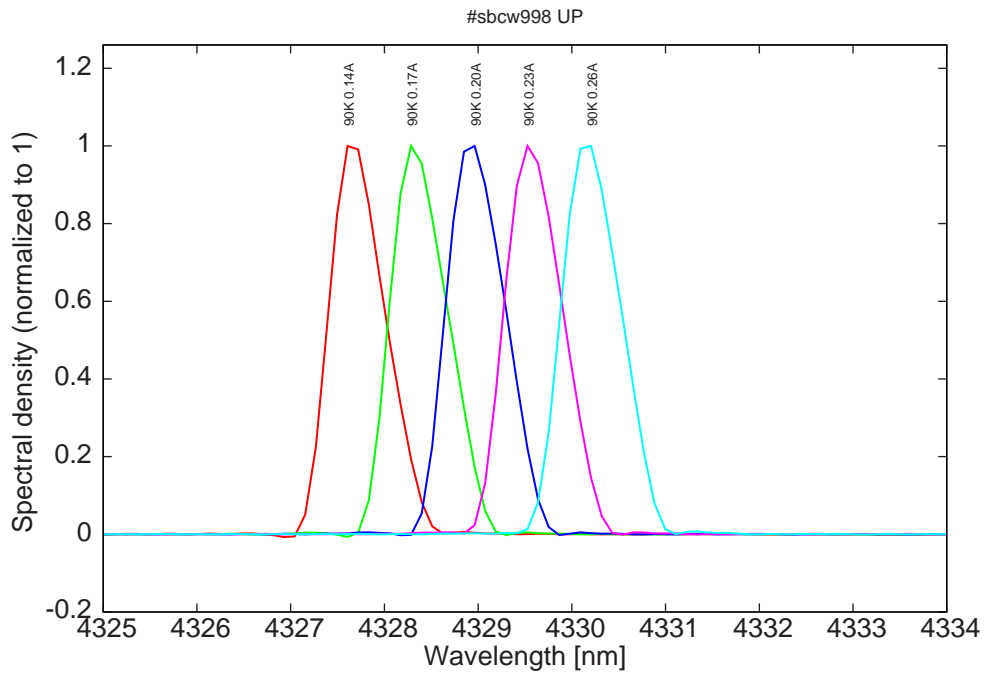


Figure 10: spectra at 90K (monomode range)

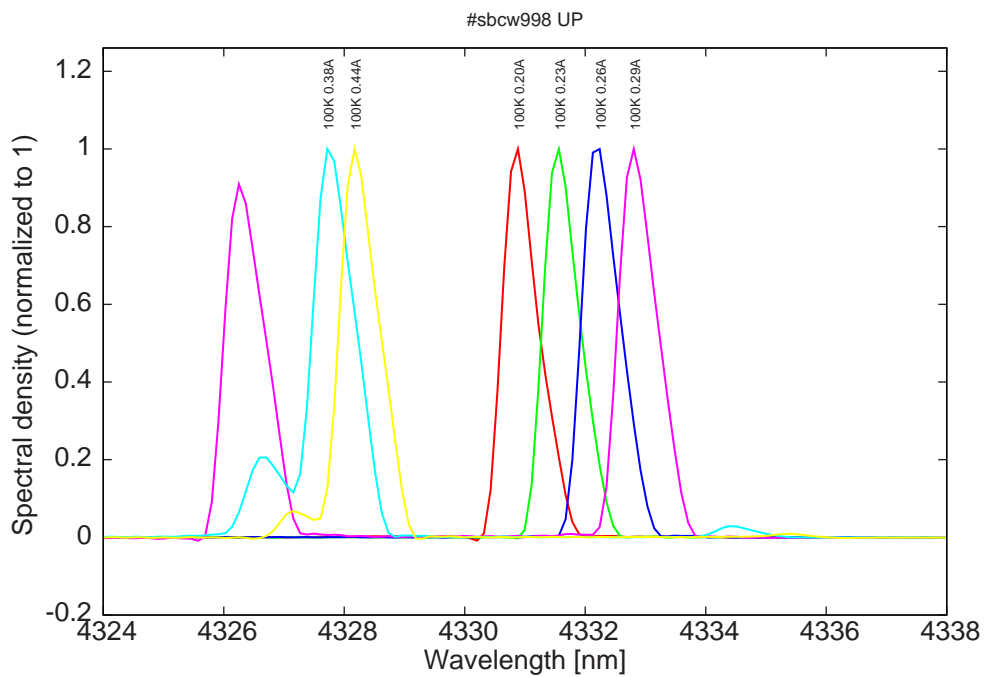


Figure 11: spectra at 100K

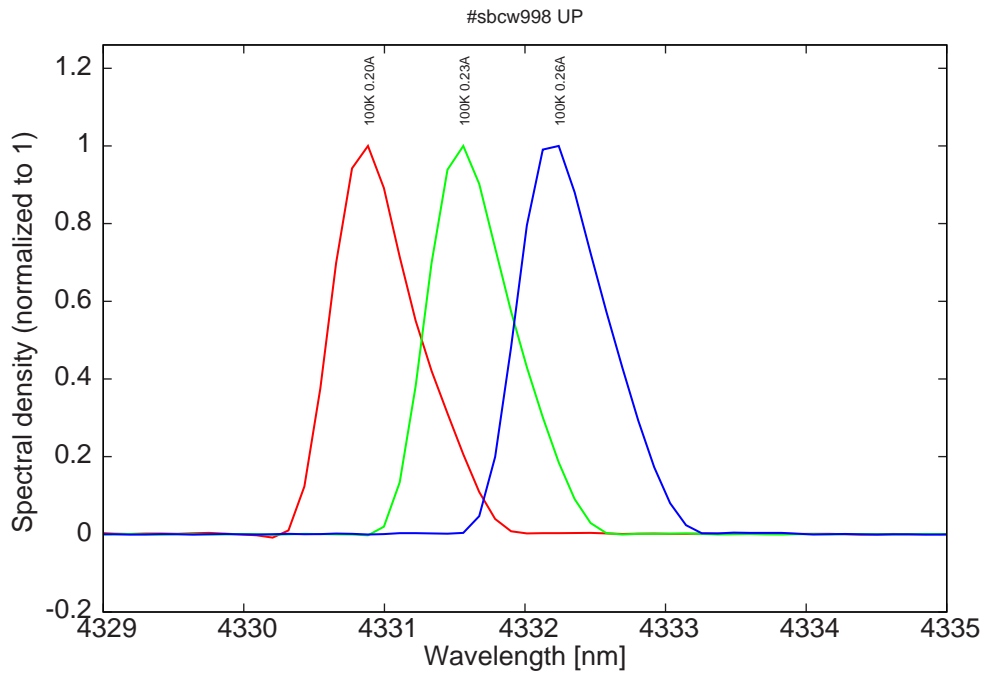


Figure 12: spectra at 100K (monomode range)

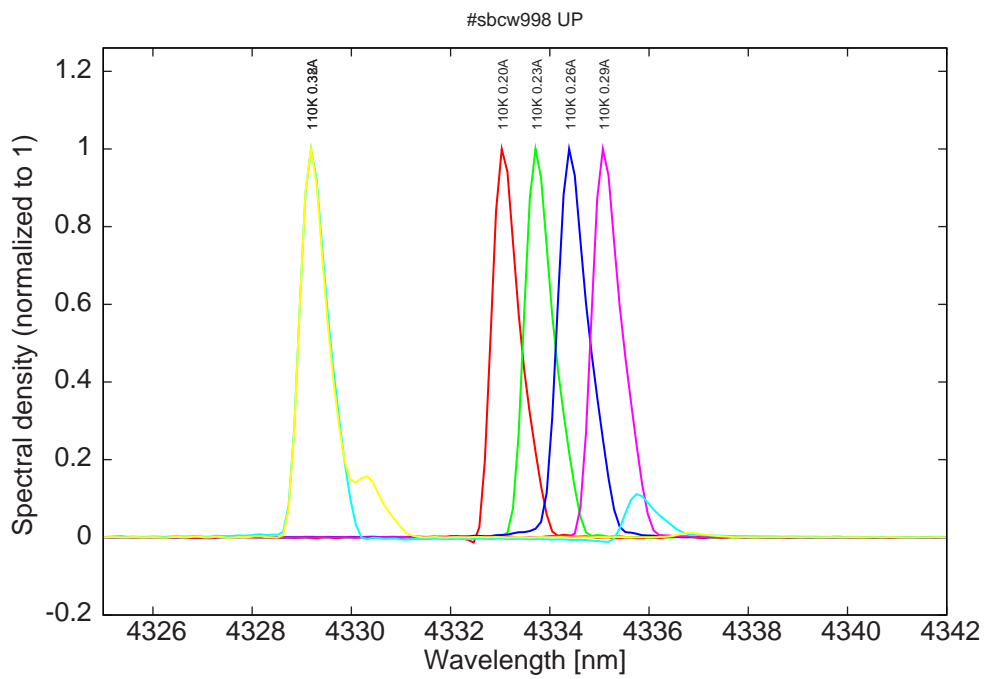


Figure 13: spectra at 110K

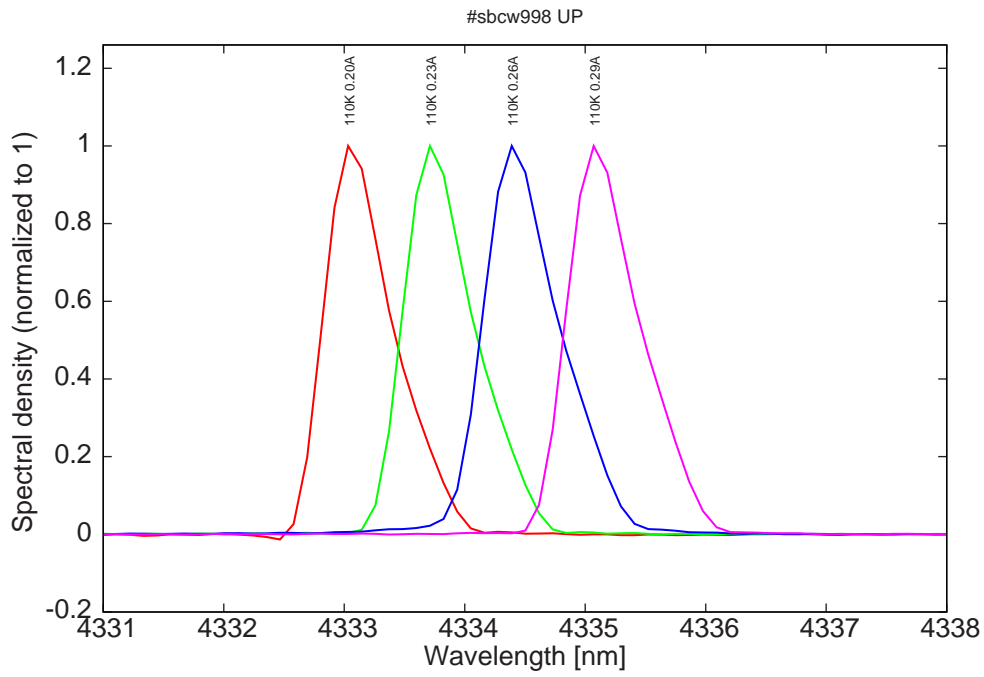


Figure 14: spectra at 110K (monomode range)

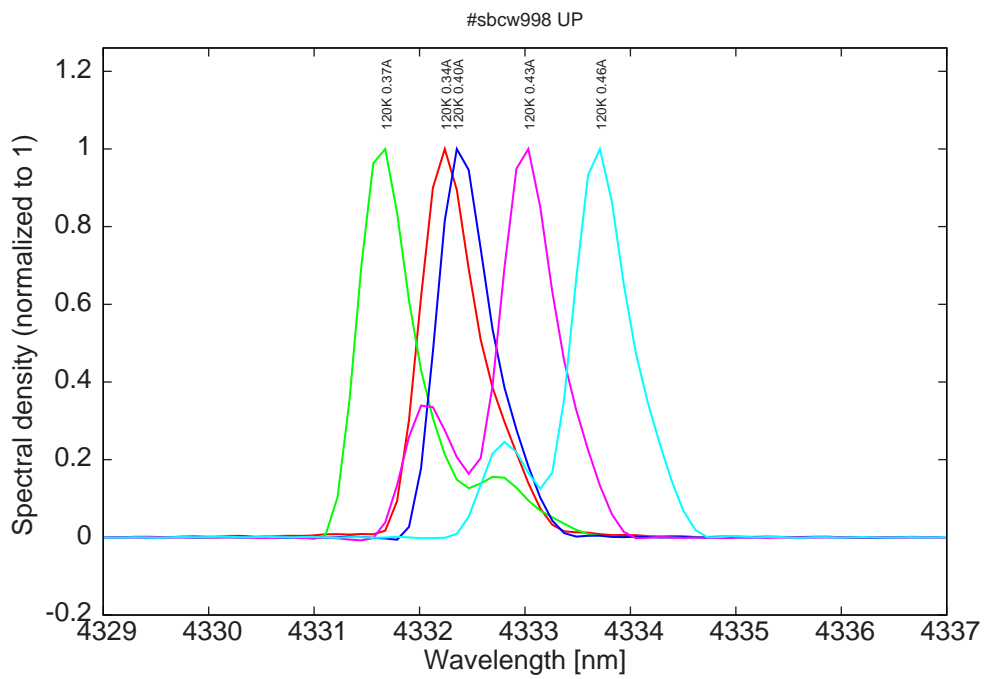


Figure 15: spectra at 120K (all monomode but with mode jumping compared to the spectra at 110K, spectra shape due to absorption in the air))