

Datasheet for #sbcw303 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/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.

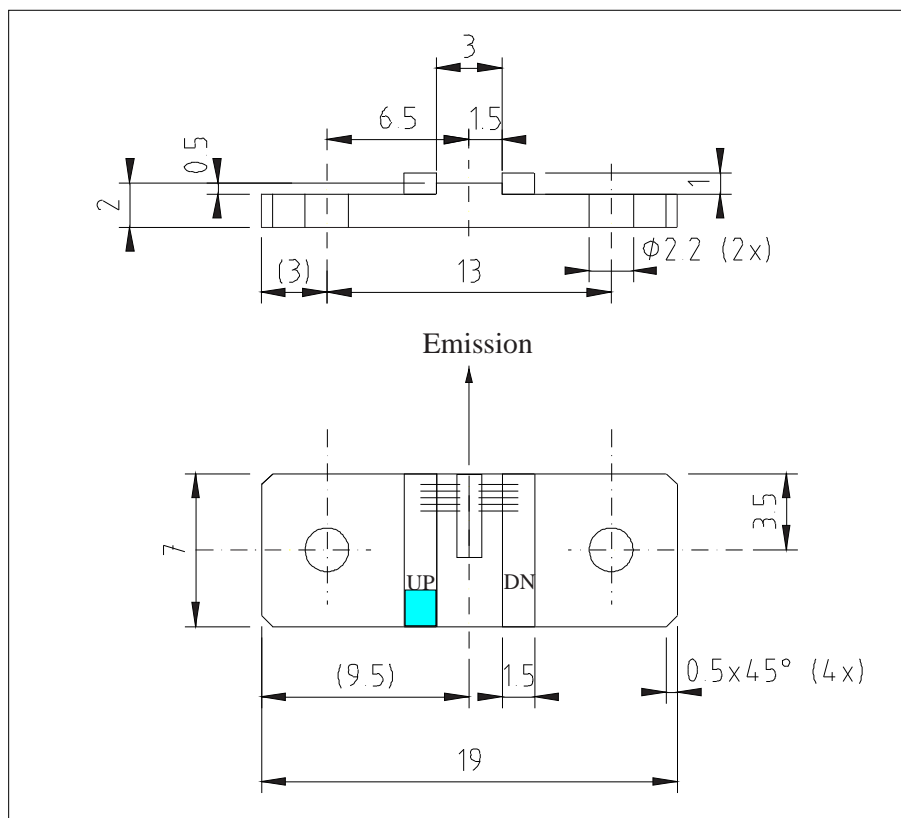


Figure 1: Support mounting for #sbcw303 UP (please note that the laser is connected to the UP pad drawn in blue)

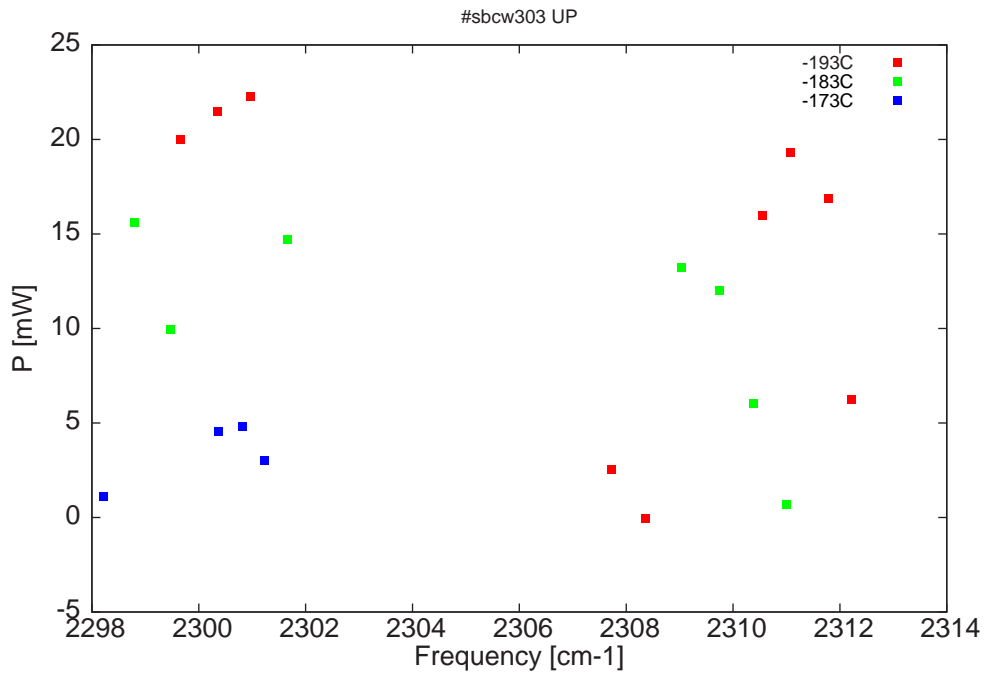


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

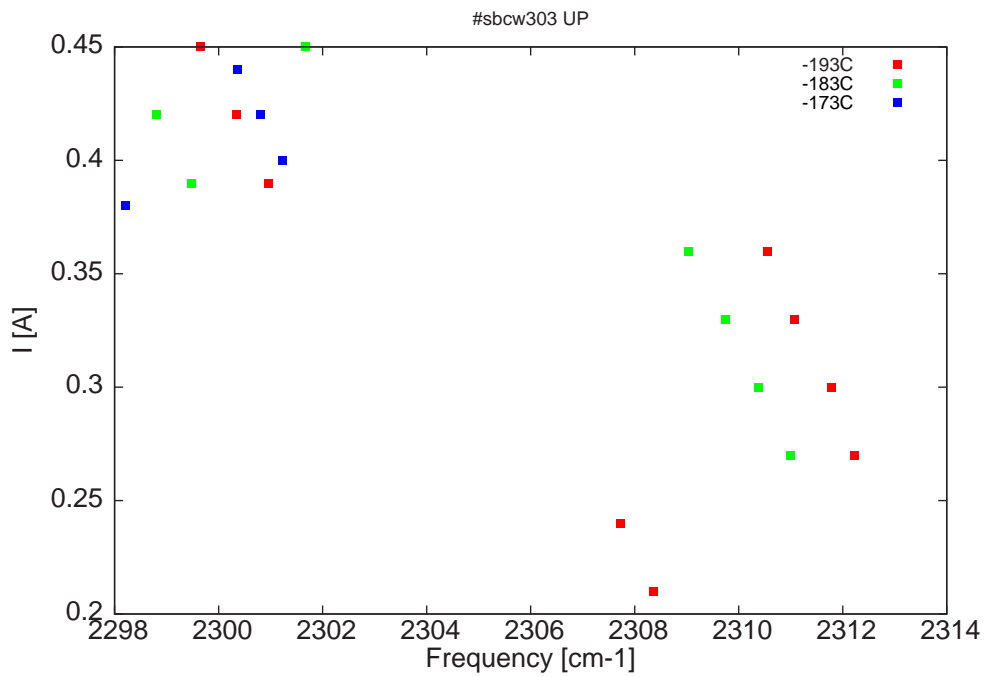


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ [nm]	ν [cm ⁻¹]	P[mW]	Temp[°C]	U_{LASER} [V]	I[A]
4332.1	2308.4	-0.1	-193	8.9	0.21
4333.3	2307.7	2.5	-193	9	0.24
4324.8	2312.2	6.3	-193	9.1	0.27
4325.6	2311.8	16.9	-193	9.2	0.3
4327	2311.1	19.3	-193	9.3	0.33
4328	2310.6	16	-193	9.4	0.36
4346	2301	22.3	-193	9.5	0.39
4347.2	2300.3	21.5	-193	9.6	0.42
4348.5	2299.7	20	-193	9.7	0.45
4327.1	2311	0.7	-183	9	0.27
4328.3	2310.4	6	-183	9.1	0.3
4329.5	2309.7	12	-183	9.2	0.33
4330.8	2309	13.2	-183	9.3	0.36
4348.8	2299.5	9.9	-183	9.4	0.39
4350.1	2298.8	15.6	-183	9.5	0.42
4344.7	2301.7	14.7	-183	9.6	0.45
4351.2	2298.2	1.1	-173	9.3	0.38
4345.5	2301.2	3	-173	9.4	0.4
4346.3	2300.8	4.8	-173	9.4	0.42
4347.1	2300.4	4.6	-173	9.5	0.44

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

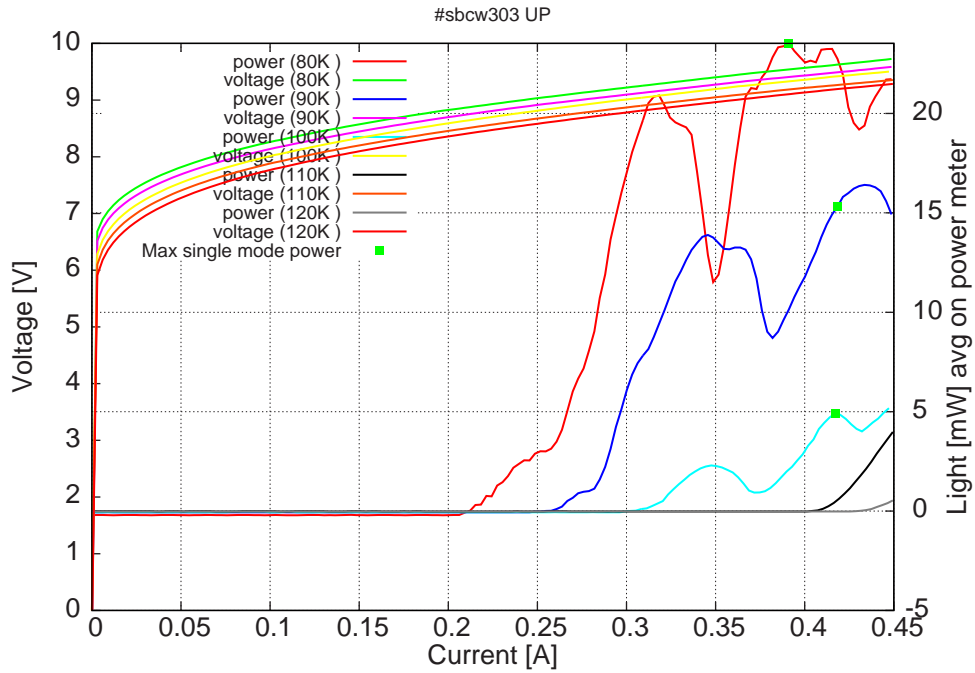


Figure 4: peak voltage and average power vs peak current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

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: $I_{th}=210\text{mA}$ / $V_{th}= 8.86\text{V}$ (2-wires measurements)

Maximum operation current: 0.45A for all temperatures between 80K and 100K.

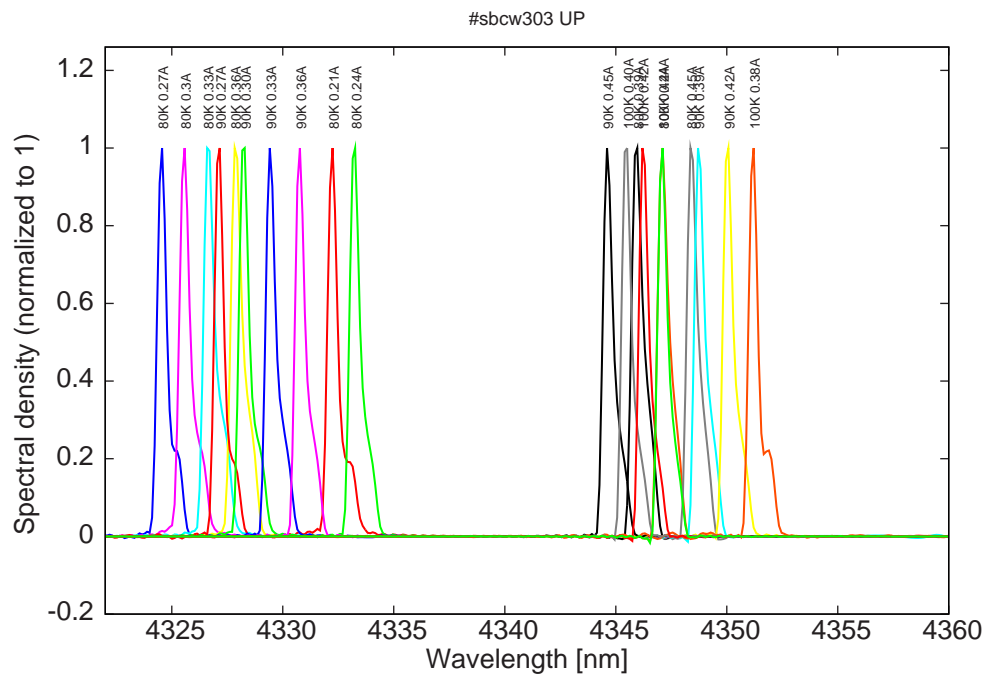


Figure 5: spectra at 80K, 90K and 100K

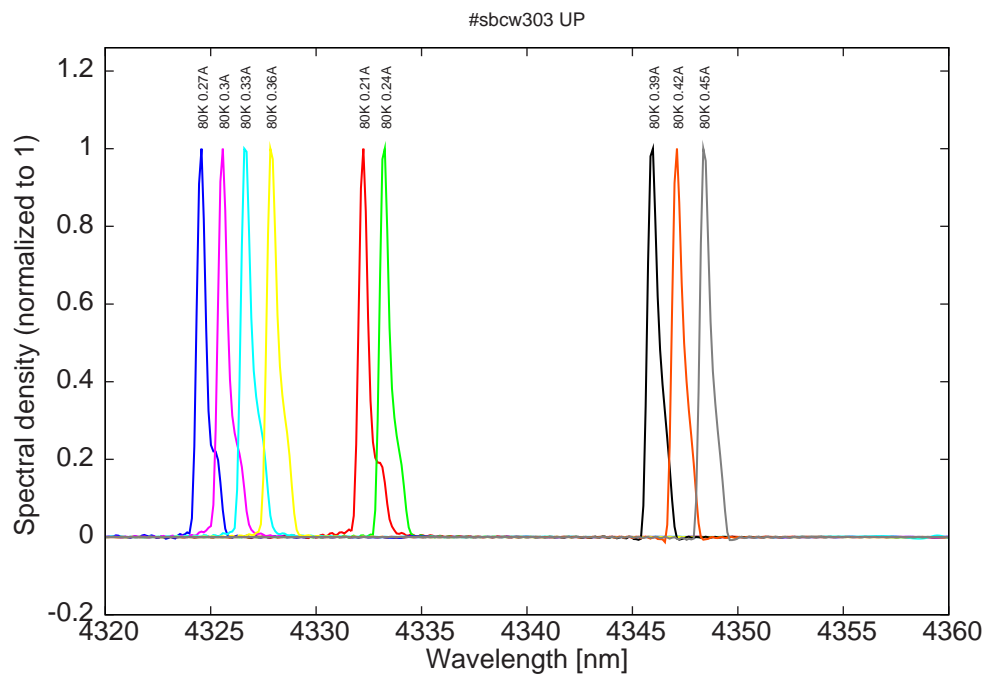


Figure 6: spectra at 80K (mode jumping: zone I (emission around 4333nm):between 0.21A and 0.24A; zone II (emission around 4326nm): between 0.27A and 0.36A; zone III (emission around 4348nm): for $I \geq 0.39\text{A}$)

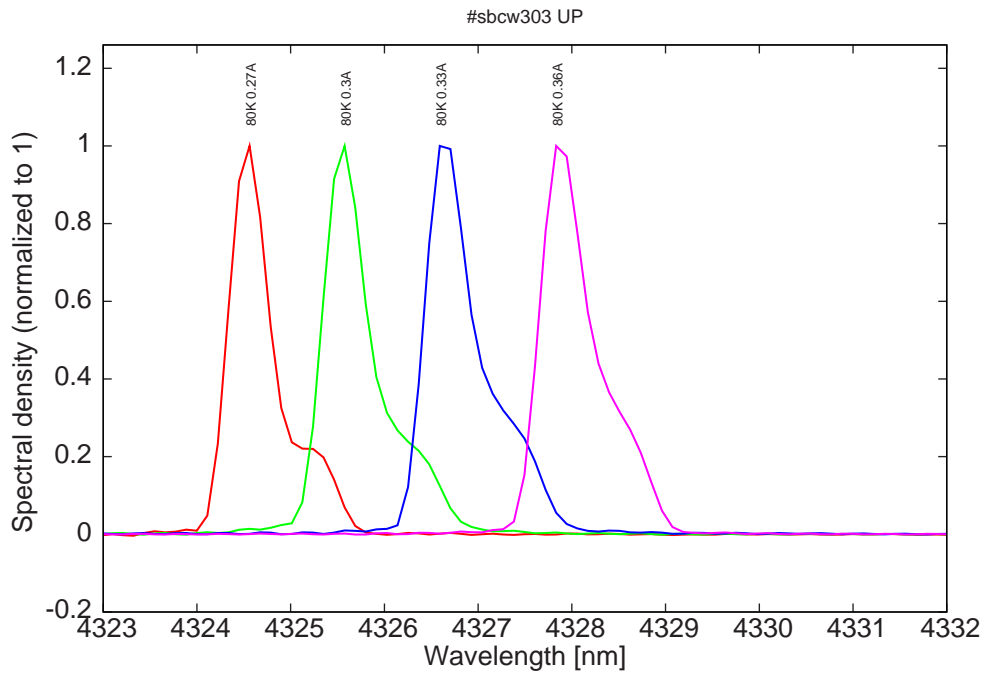


Figure 7: spectra at 80K (monomode range around 4326nm)

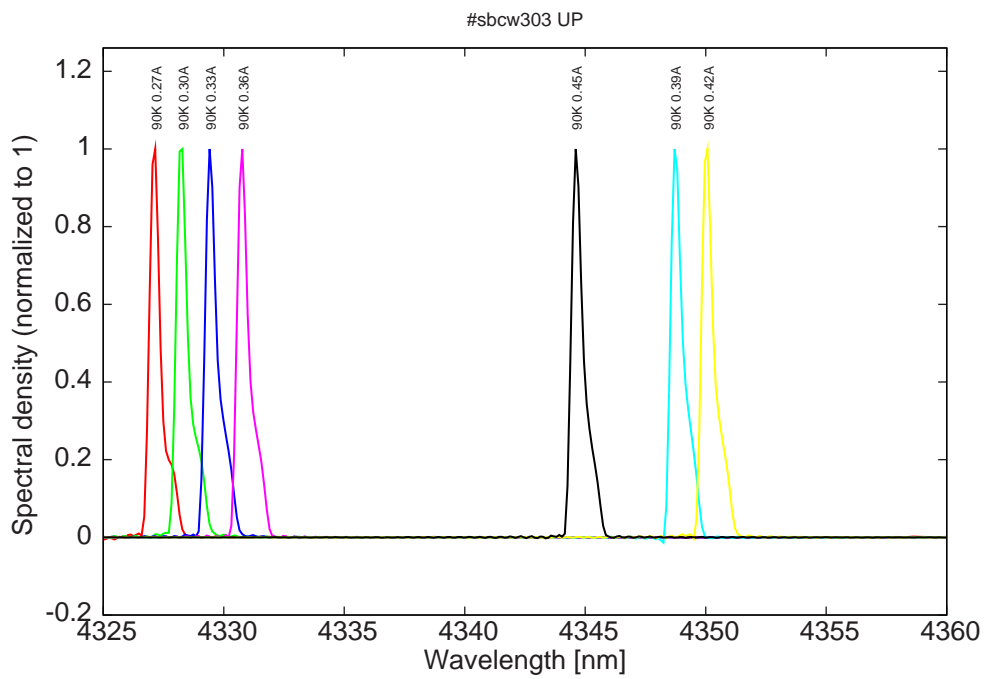


Figure 8: spectra at 90K (mode jumping between 0.36A and 0.39A and also between 0.42A and 0.45A)

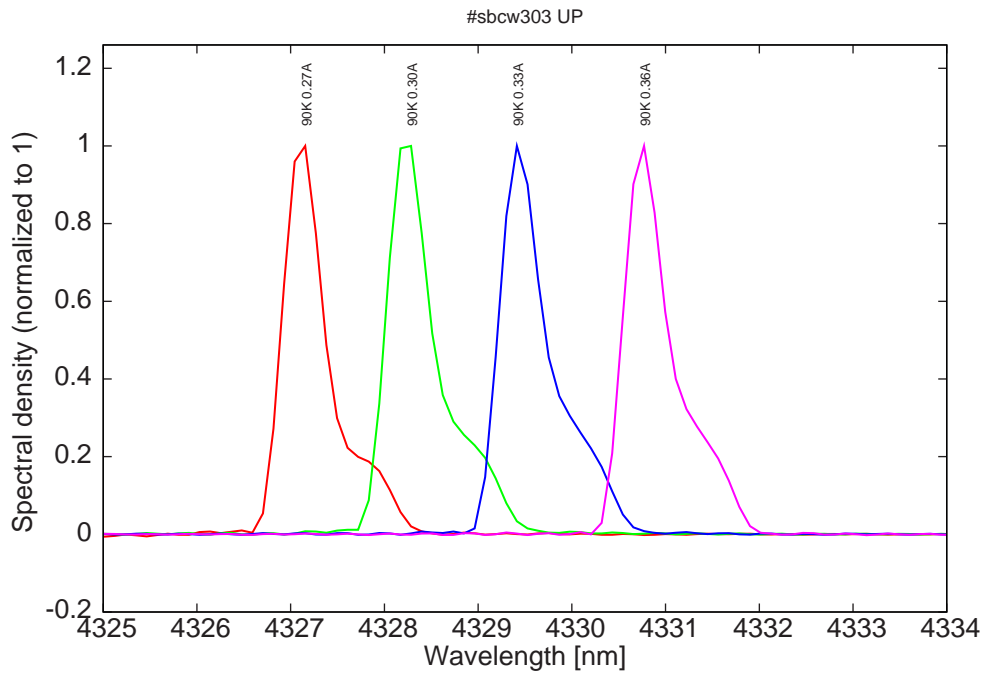


Figure 9: spectra at 90K (monomode range around 4329nm before mode jumping)

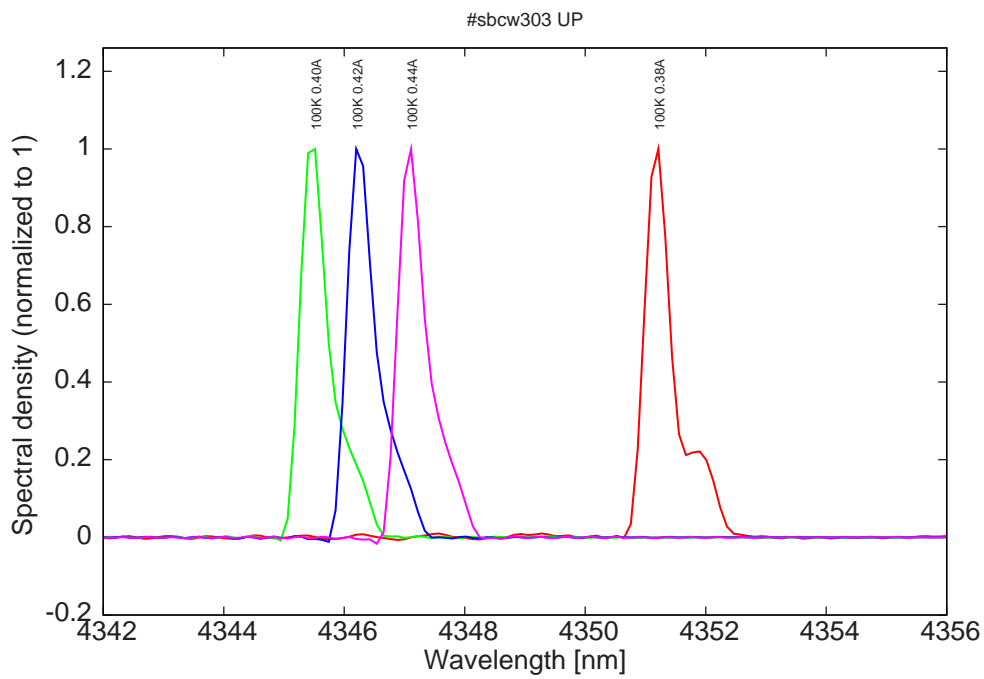


Figure 10: spectra at 100K (monomode but with mode jumping between 0.38A and 0.40A)