

Datasheet for #sbcw1590

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 #sbcw1590 (please note that the laser is connected to the DN pad drawn in blue)

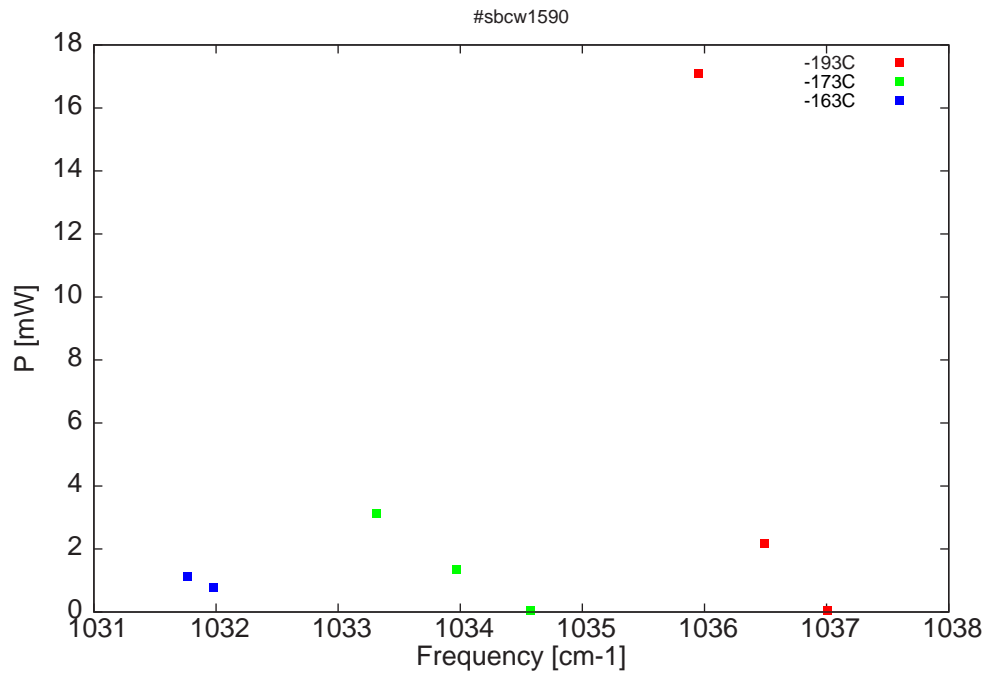


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

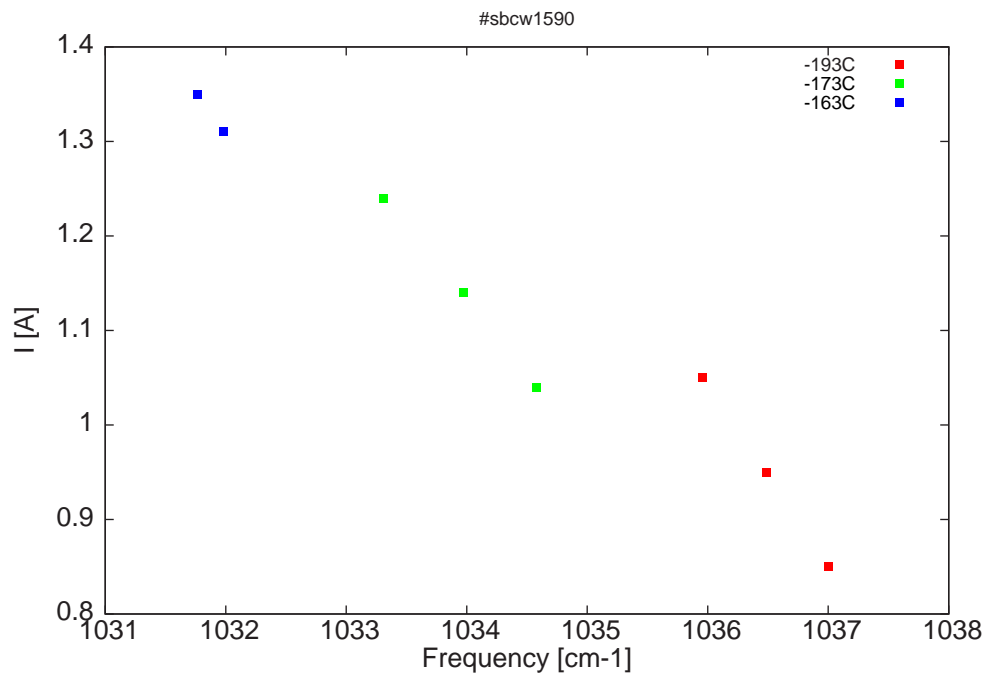


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ [nm]	ν [cm ⁻¹]	P[mW]	Temp[°C]	U_{LASER} [V]	I[A]
9643.1	1037	0.1	-193	7.6	0.85
9647.9	1036.5	2.2	-193	7.7	0.95
9652.9	1036	17.1	-193	7.8	1.05
9665.8	1034.6	0.1	-173	7.6	1.04
9671.4	1034	1.3	-173	7.7	1.14
9677.6	1033.3	3.1	-173	7.8	1.24
9690.1	1032	0.8	-163	7.8	1.31
9692.1	1031.8	1.1	-163	7.9	1.35

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

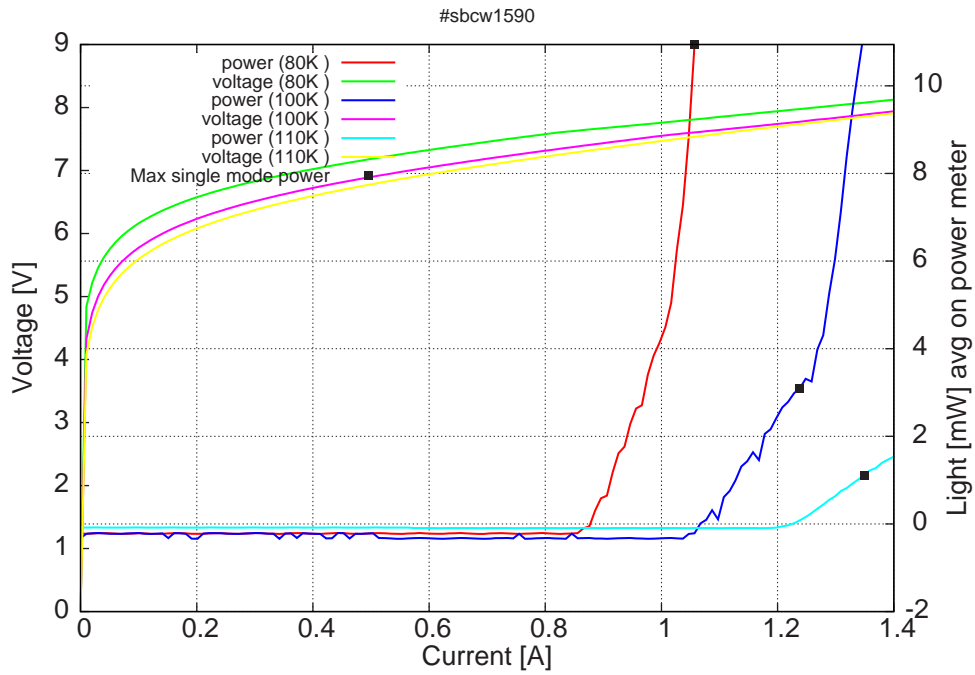


Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

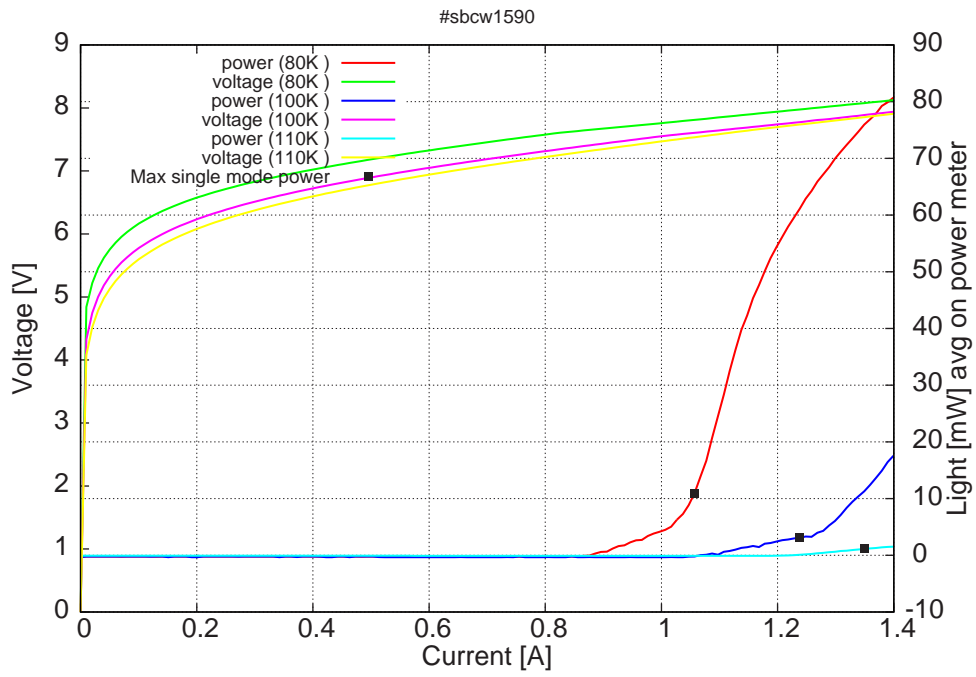
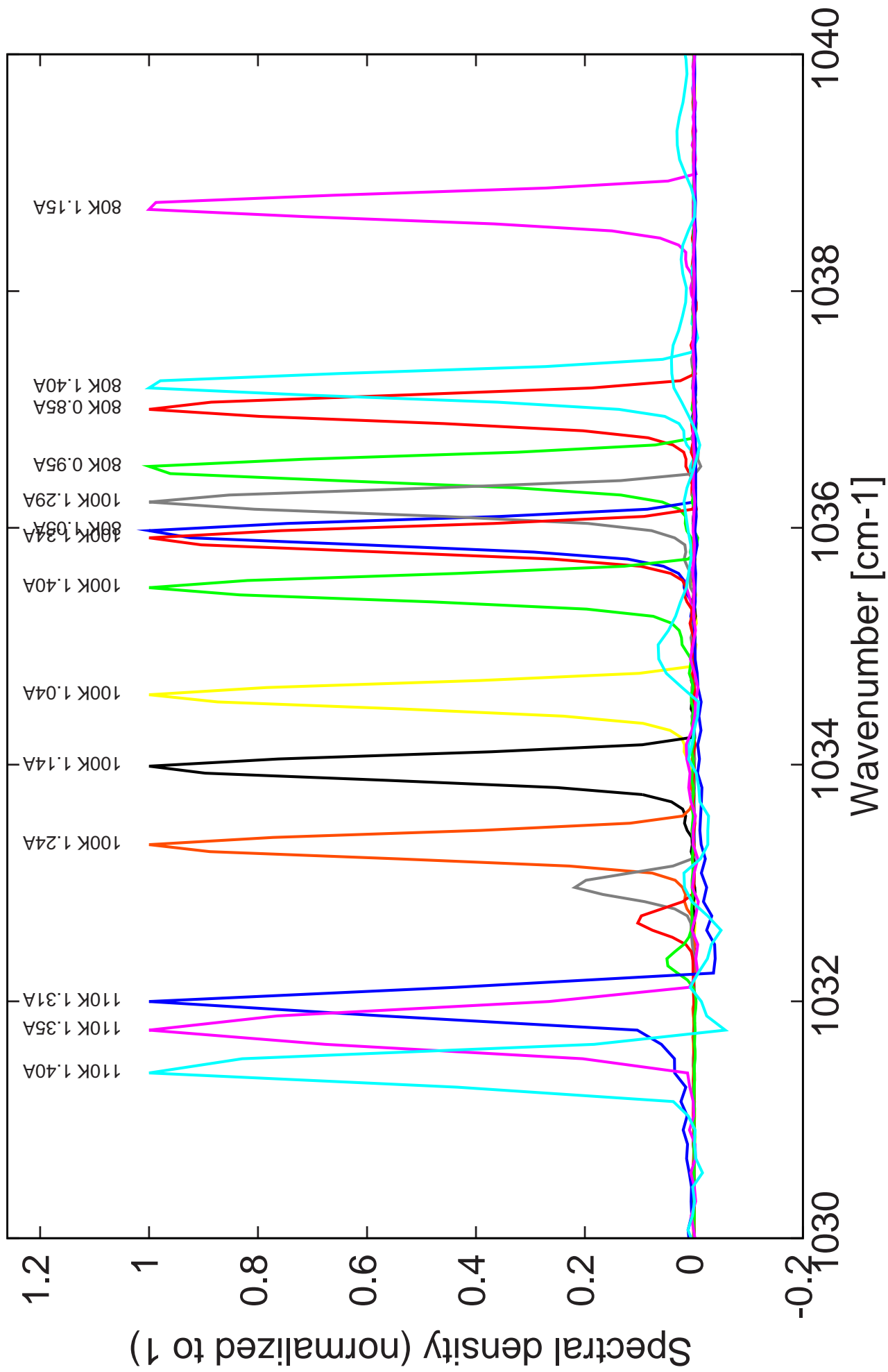


Figure 5: voltage and avg power vs current in continuous-wave operation (including the multimode region)

Note: at 80K: $I_{th} = 850 \text{ mA}$ / $V_{th} = 7.63 \text{ V}$ (4-wires measurements). Maximum operation current: 1.4A for all temperatures.

Figure 4: spectra at 80, 100 and 110 K for various DC currents



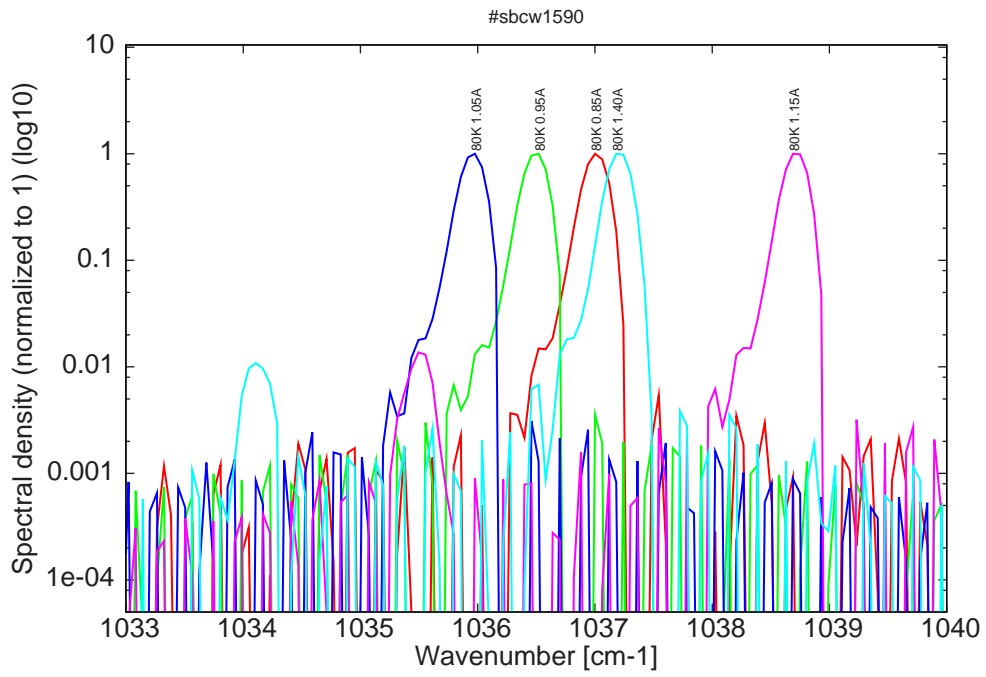


Figure 6: spectra at 80K for various DC currents (mode jumping + bimode for $I > 1.05A$)

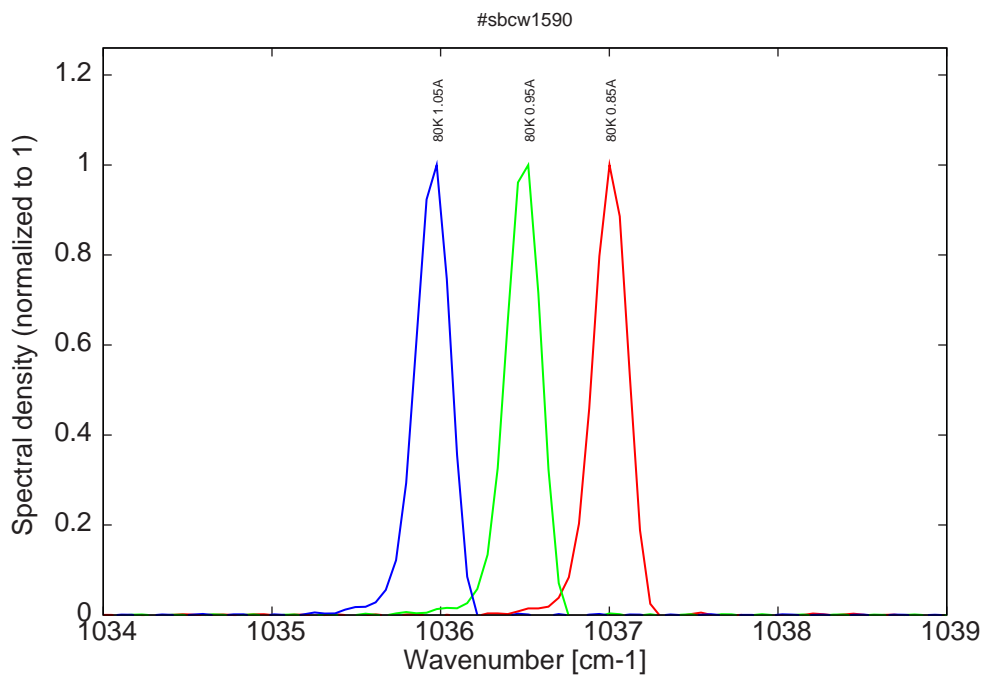


Figure 7: spectra at 80K for various DC currents (monomode range)

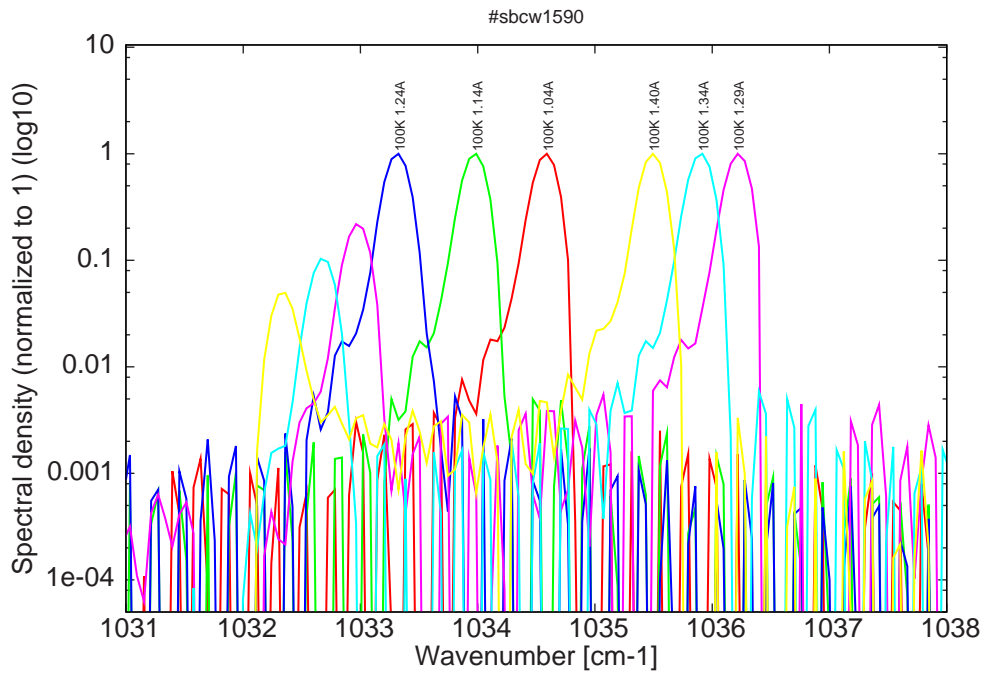


Figure 8: spectra at 100K for various DC currents (bimode for $I > 1.24A$)

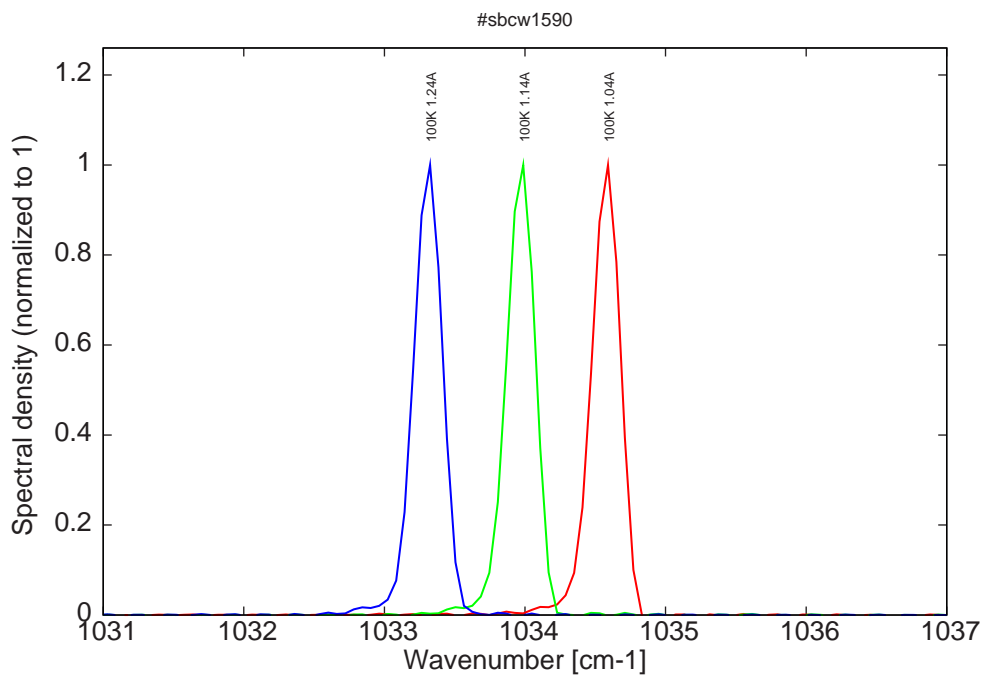


Figure 9: spectra at 100K for various DC currents (monomode range)

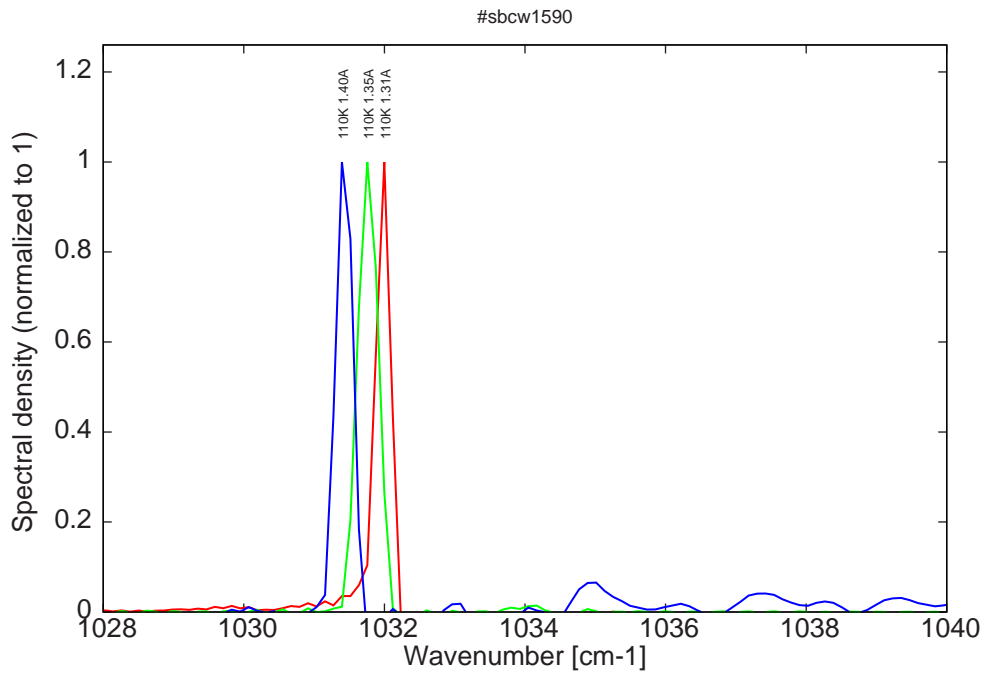


Figure 10: spectra at 110K for various DC currents

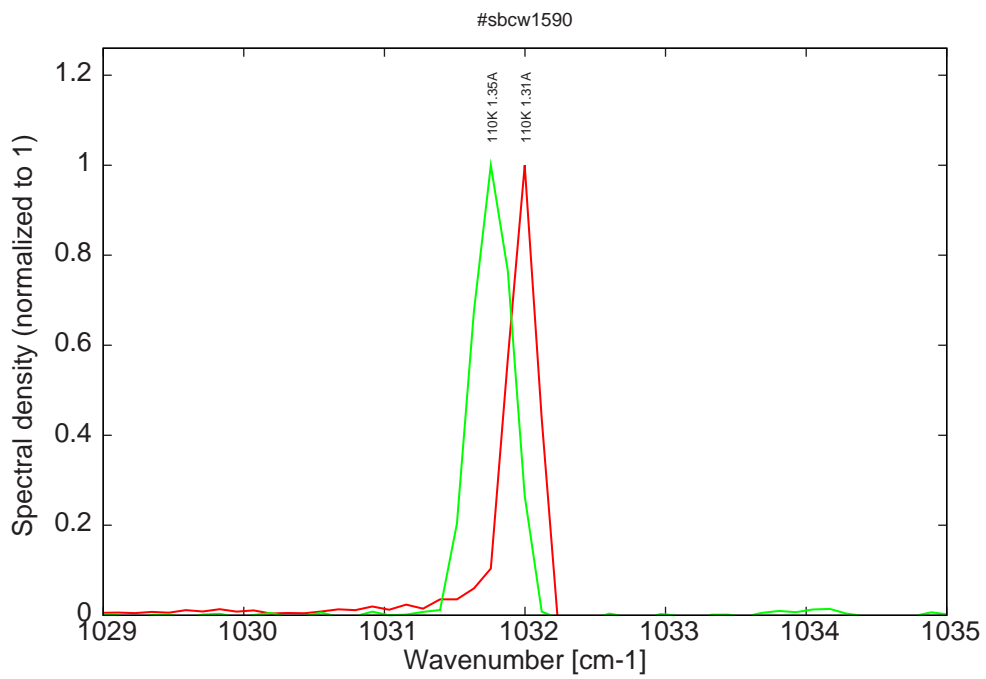


Figure 11: spectra at 110K for various DC currents (monomode range)