

**Datasheet for #sbcw1816 DN**

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 #sbcw1816 DN (please note that the laser is connected to the DN pad drawn in blue)

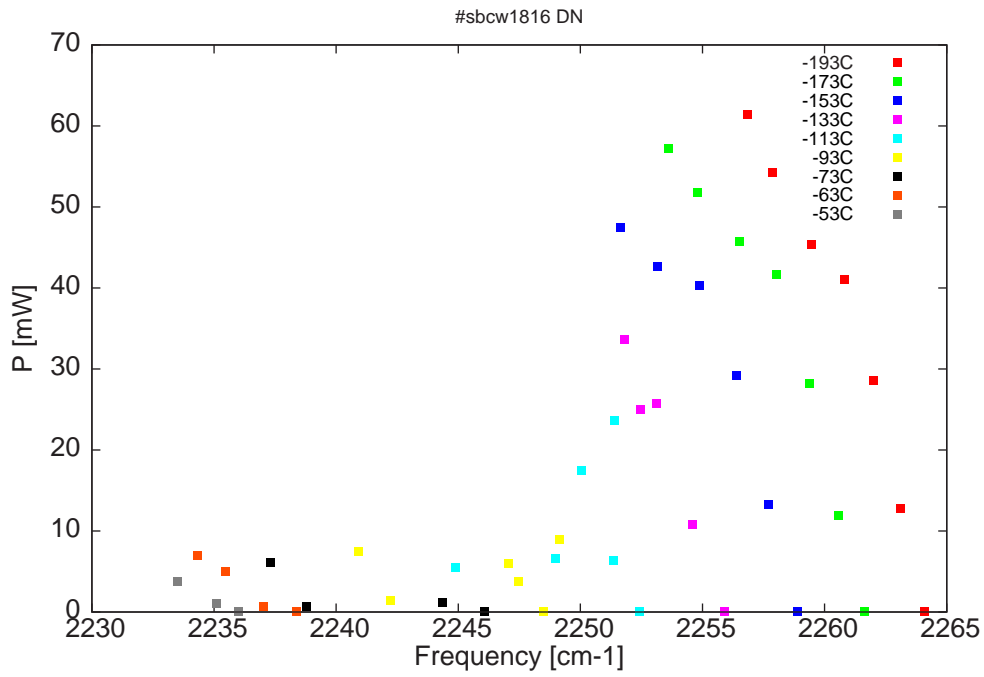


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

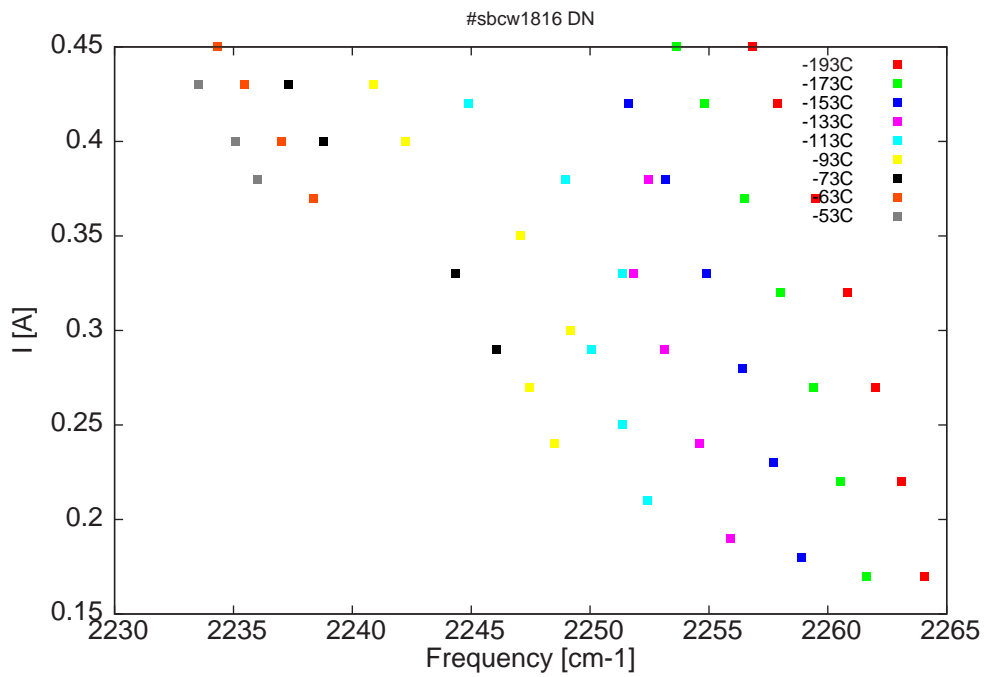


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

$\lambda$ [nm]	$\nu$ [cm <sup>-1</sup> ]	P[mW]	Temp[°C]	$U_{LASER}$ [V]	I[A]
4416.8	2264.1	0.1	-193	11.9	0.17
4418.7	2263.1	12.8	-193	12.2	0.22
4420.9	2262	28.6	-193	12.5	0.27
4423.2	2260.8	41.1	-193	12.8	0.32
4425.8	2259.5	45.3	-193	13.2	0.37
4429	2257.9	54.2	-193	13.5	0.42
4431	2256.8	61.4	-193	13.7	0.45
4421.6	2261.6	0.1	-173	11.5	0.17
4423.7	2260.5	11.9	-173	11.8	0.22
4425.9	2259.4	28.2	-173	12.1	0.27
4428.7	2258	41.7	-173	12.5	0.32
4431.6	2256.5	45.7	-173	12.9	0.37
4435	2254.8	51.8	-173	13.2	0.42
4437.3	2253.6	57.2	-173	13.5	0.45
4427	2258.9	0.1	-153	11.2	0.18
4429.3	2257.7	13.2	-153	11.6	0.23
4431.9	2256.4	29.2	-153	11.9	0.28
4434.8	2254.9	40.4	-153	12.3	0.33
4438.2	2253.2	42.6	-153	12.7	0.38
4441.2	2251.6	47.5	-153	13.1	0.42
4432.8	2255.9	0.1	-133	11	0.19
4435.4	2254.6	10.7	-133	11.4	0.24
4438.3	2253.1	25.7	-133	11.8	0.29
4440.9	2251.8	33.7	-133	12.1	0.33
4439.6	2252.5	24.9	-133	12.6	0.38
4439.7	2252.4	0.1	-113	10.9	0.21
4441.8	2251.4	6.4	-113	11.2	0.25
4444.3	2250.1	17.4	-113	11.6	0.29
4441.7	2251.4	23.6	-113	11.9	0.33
4446.5	2249	6.5	-113	12.5	0.38
4454.6	2244.9	5.4	-113	12.8	0.42
4447.4	2248.5	0.1	-93	11	0.24
4449.4	2247.5	3.8	-93	11.2	0.27
4446.1	2249.2	8.9	-93	11.5	0.3
4450.3	2247.1	6	-93	12	0.35
4459.9	2242.2	1.4	-93	12.5	0.4
4462.5	2240.9	7.4	-93	12.7	0.43
4452.2	2246.1	0.1	-73	11.3	0.29
4455.6	2244.3	1.1	-73	11.6	0.33
4466.7	2238.8	0.7	-73	12.3	0.4
4469.6	2237.3	6.1	-73	12.5	0.43
4467.5	2238.4	0.1	-63	11.9	0.37
4470.2	2237	0.6	-63	12.2	0.4
4473.3	2235.5	5	-63	12.5	0.43
4475.6	2234.3	6.9	-63	12.7	0.45
4472.2	2236	0.1	-53	11.9	0.38
4474.1	2235.1	1.1	-53	12.1	0.4
4477.2	2233.5	3.7	-53	12.4	0.43

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

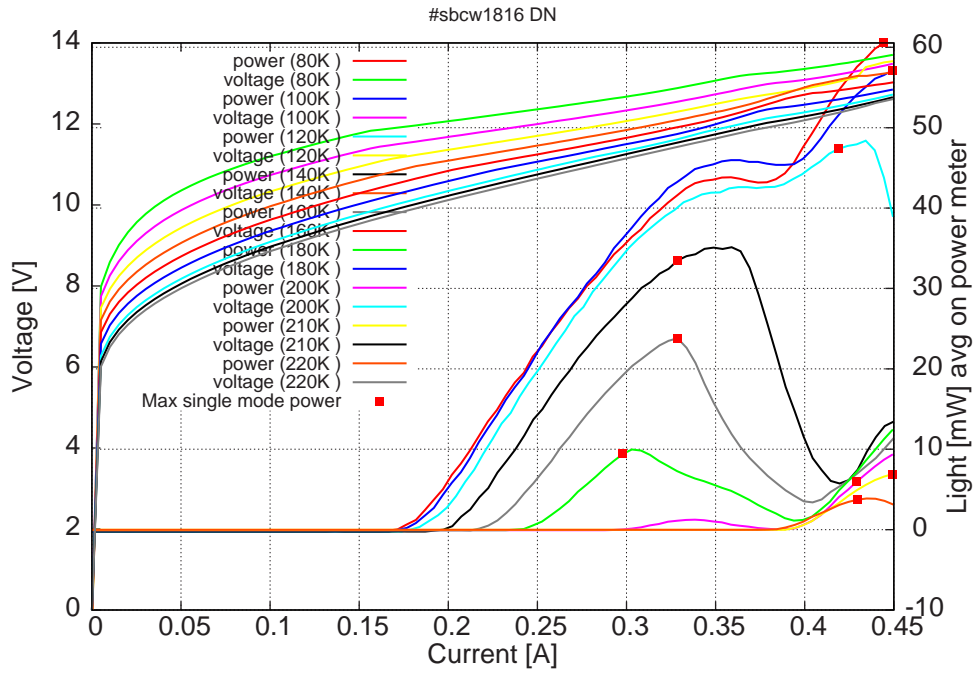


Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

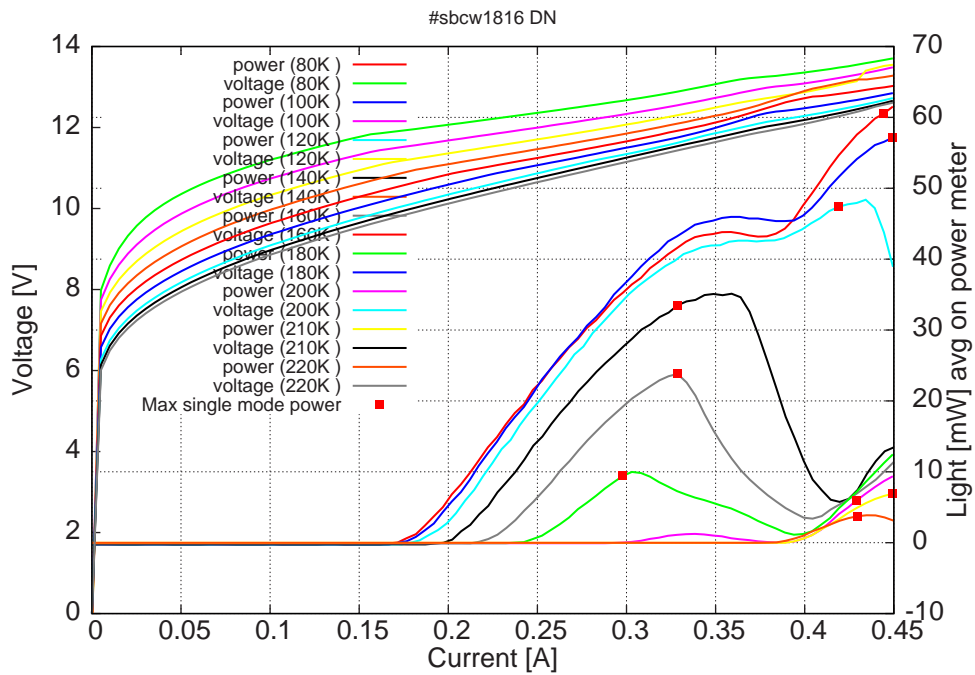
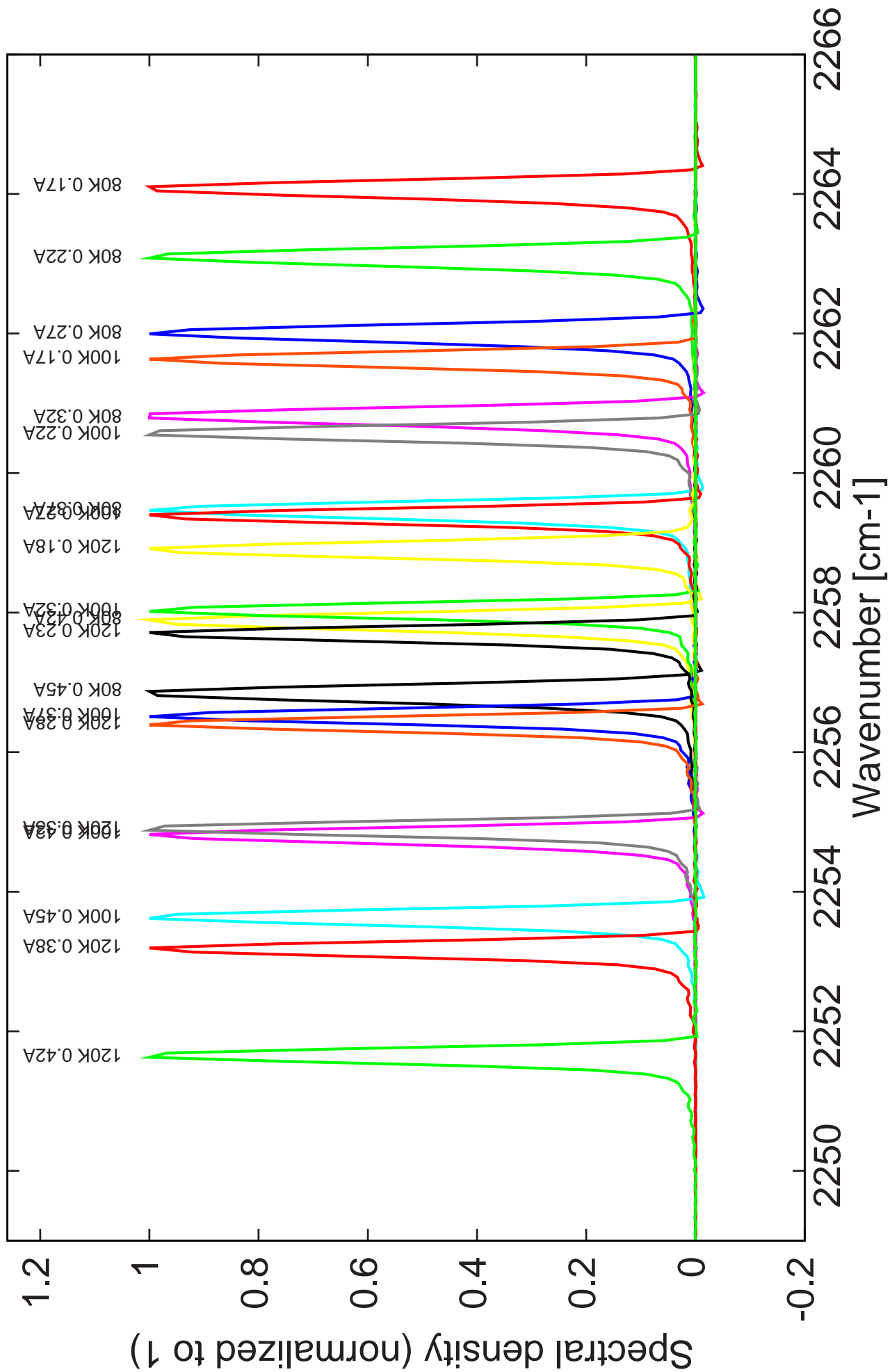


Figure 5: voltage and avg power vs current in continuous-wave operation (including the multimode region)

Note: at 80K:  $I_{th}=170\text{mA}$  /  $V_{th}= 11.9\text{V}$  (2-wires measurements). Maximum operation current: 0.45A for all temperatures.

Figure 4: spectra between 80K and 120K for various DC currents (all monomode)



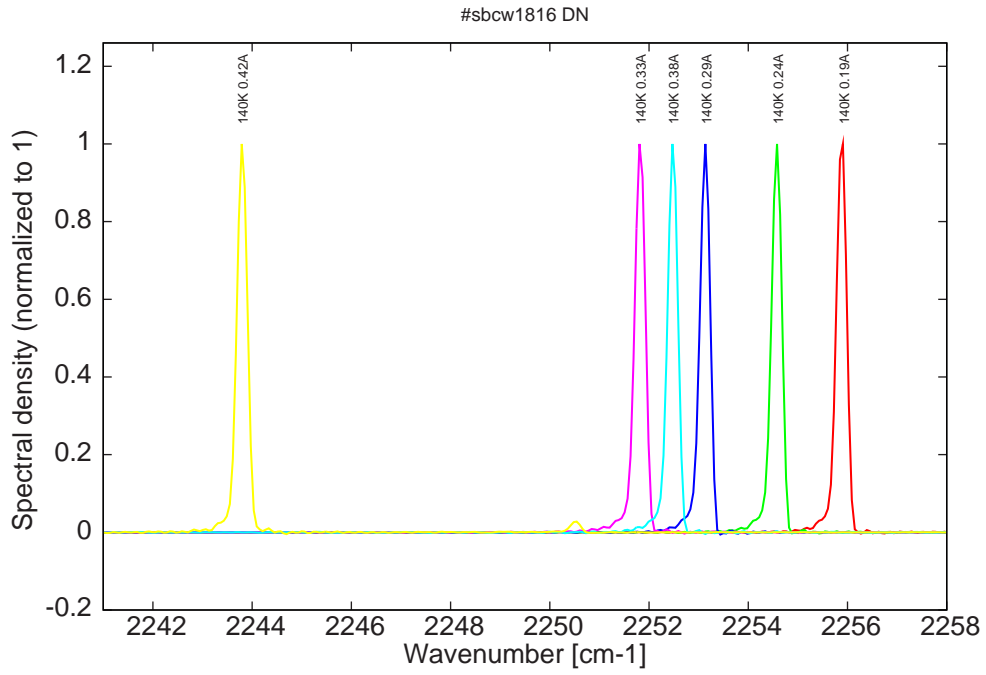


Figure 6: spectra at 140K for various DC currents (mode jumping for  $I > 0.33A$ , see Fig.1)

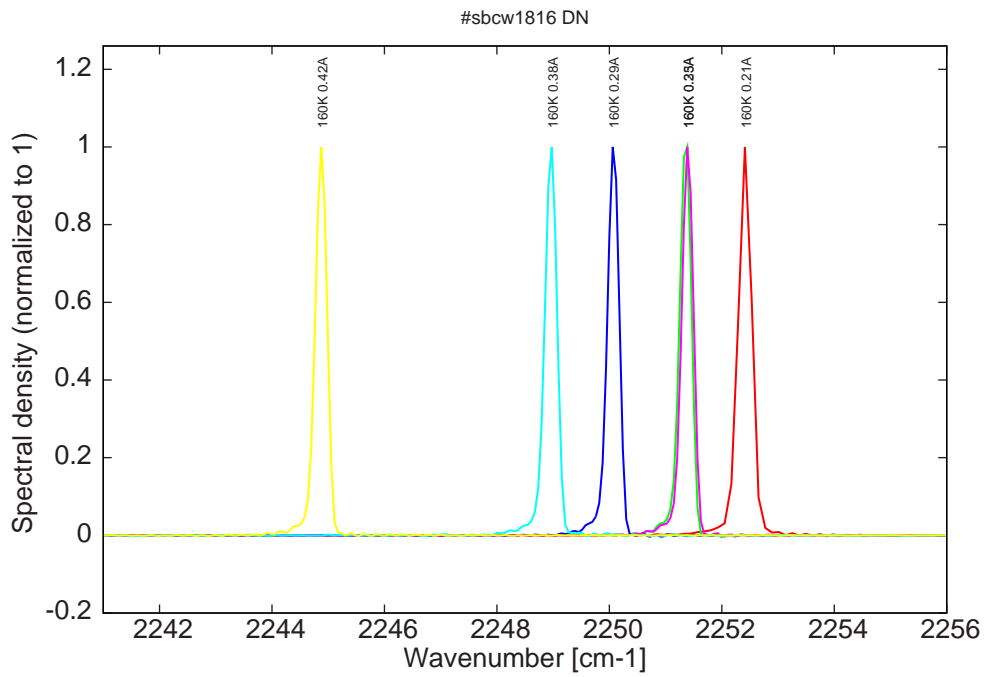


Figure 7: spectra at 160K for various DC currents (mode jumping for  $I > 0.29A$ , see Fig.1)

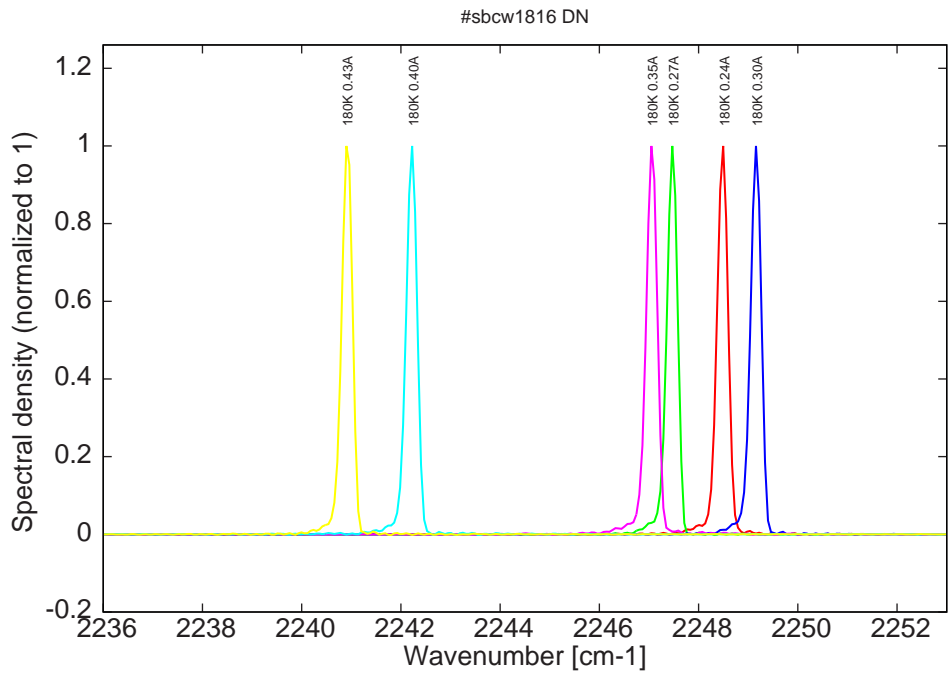


Figure 8: spectra at 180K for various DC currents (mode jumping for  $I > 0.27A$ , see Fig.1)

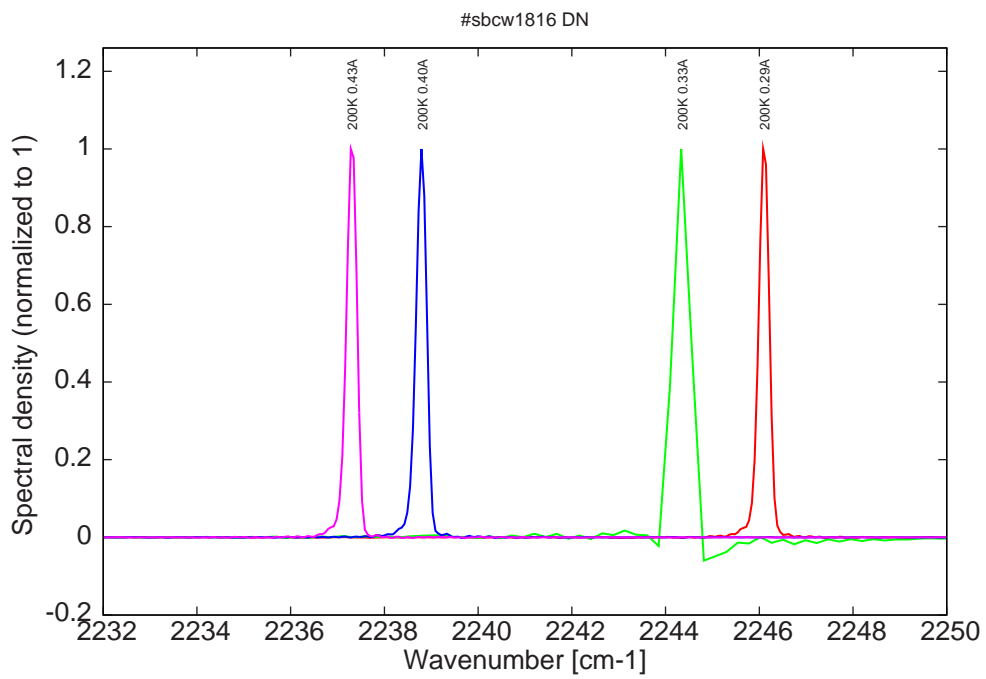


Figure 9: spectra at 200K for various DC currents (mode jumping for  $I > 0.33A$ , see Fig.1)

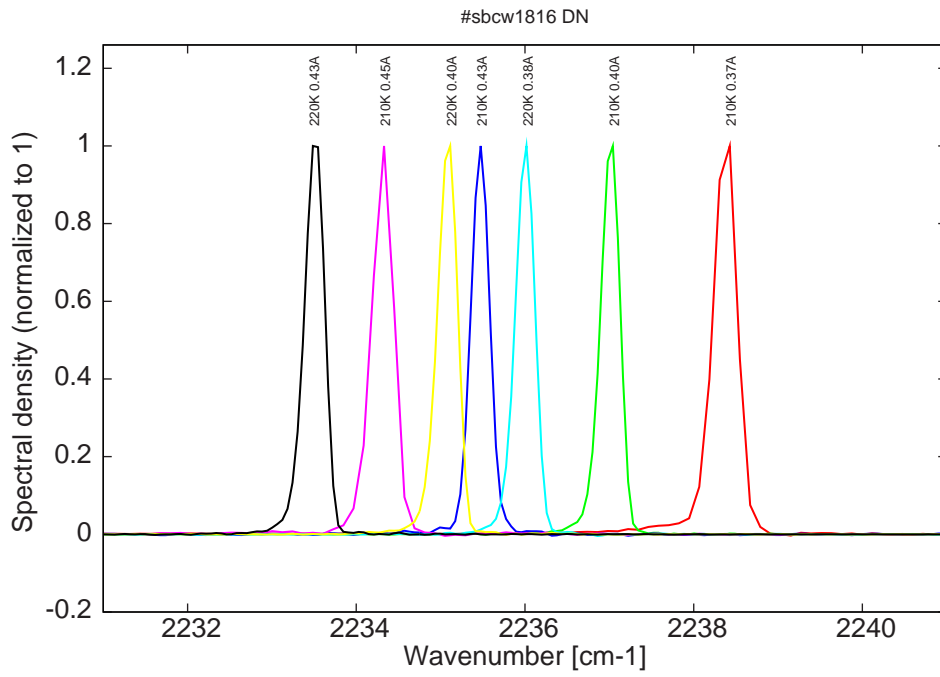


Figure 10: spectra at 210K and 220K for various DC currents (all monomode, but on another mode compared to spectra between 80K and 180K, see Fig.1)