

**Datasheet for #sbcw4820 DN**

Recommendations:

Please read the User Manual and have a look at the FAQ at <http://www.alpeslasers.ch/?a=142>

**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 #sbcw4820 DN (please note that the laser is connected to the DN pad drawn in blue)

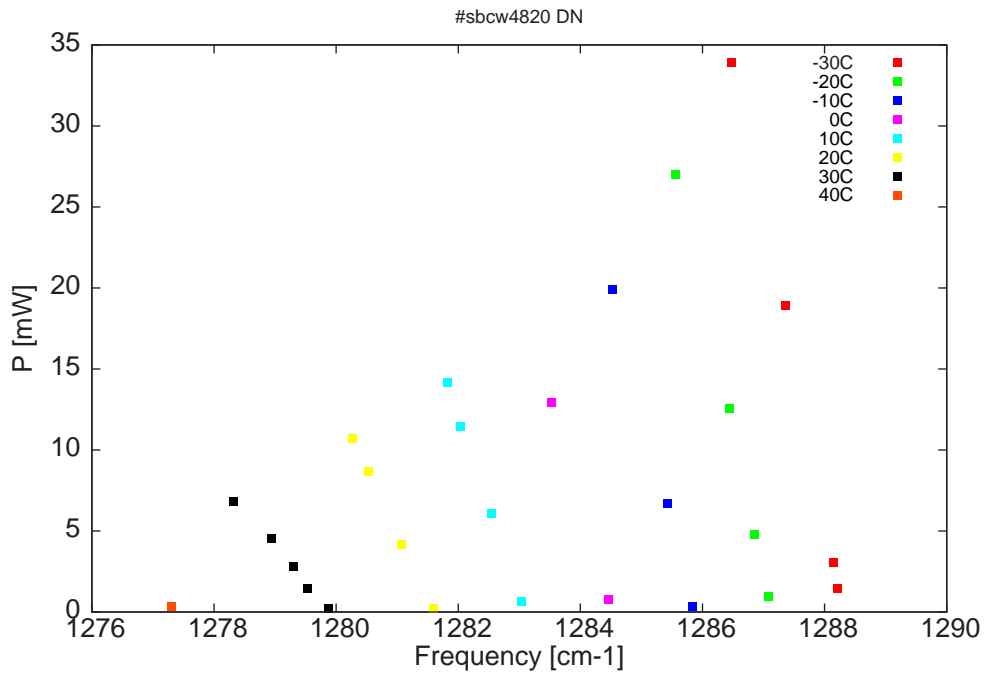


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

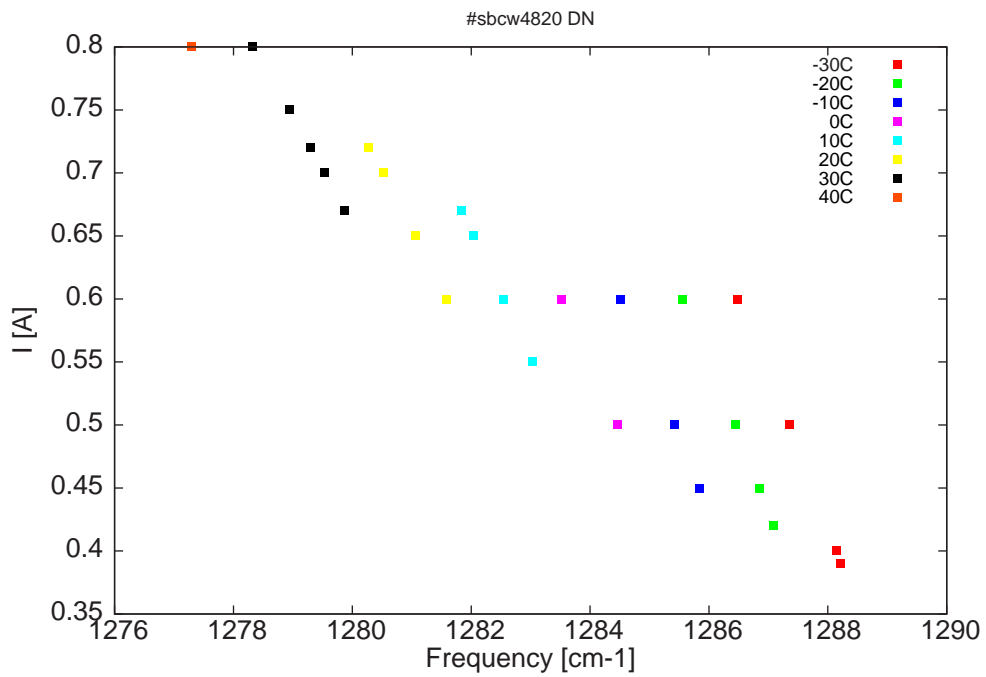


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

$\lambda$ [nm]	$\nu$ [cm <sup>-1</sup> ]	P[mW]	Temp[°C]	$U_{LASER}$ [V]	I[A]
7762.7	1288.2	1.5	-30	8.4	0.39
7763.1	1288.1	3.1	-30	8.4	0.4
7767.9	1287.4	18.9	-30	8.8	0.5
7773.2	1286.5	33.9	-30	9.2	0.6
7769.5	1287.1	1	-20	8.4	0.42
7770.9	1286.9	4.8	-20	8.6	0.45
7773.4	1286.4	12.5	-20	8.8	0.5
7778.7	1285.6	27	-20	9.2	0.6
7777	1285.8	0.3	-10	8.5	0.45
7779.5	1285.4	6.7	-10	8.7	0.5
7785	1284.5	19.9	-10	9.1	0.6
7785.3	1284.5	0.8	0	8.6	0.5
7791.1	1283.5	12.9	0	9.1	0.6
7794	1283	0.6	10	8.8	0.55
7797	1282.5	6.1	10	9	0.6
7800.1	1282	11.5	10	9.2	0.65
7801.3	1281.8	14.1	10	9.3	0.67
7802.8	1281.6	0.2	20	8.9	0.6
7806	1281.1	4.2	20	9.1	0.65
7809.3	1280.5	8.7	20	9.3	0.7
7810.9	1280.3	10.7	20	9.4	0.72
7813.3	1279.9	0.2	30	9.2	0.67
7815.4	1279.5	1.5	30	9.3	0.7
7816.8	1279.3	2.8	30	9.4	0.72
7819	1278.9	4.5	30	9.5	0.75
7822.8	1278.3	6.8	30	9.7	0.8
7829	1277.3	0.3	40	9.6	0.8

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

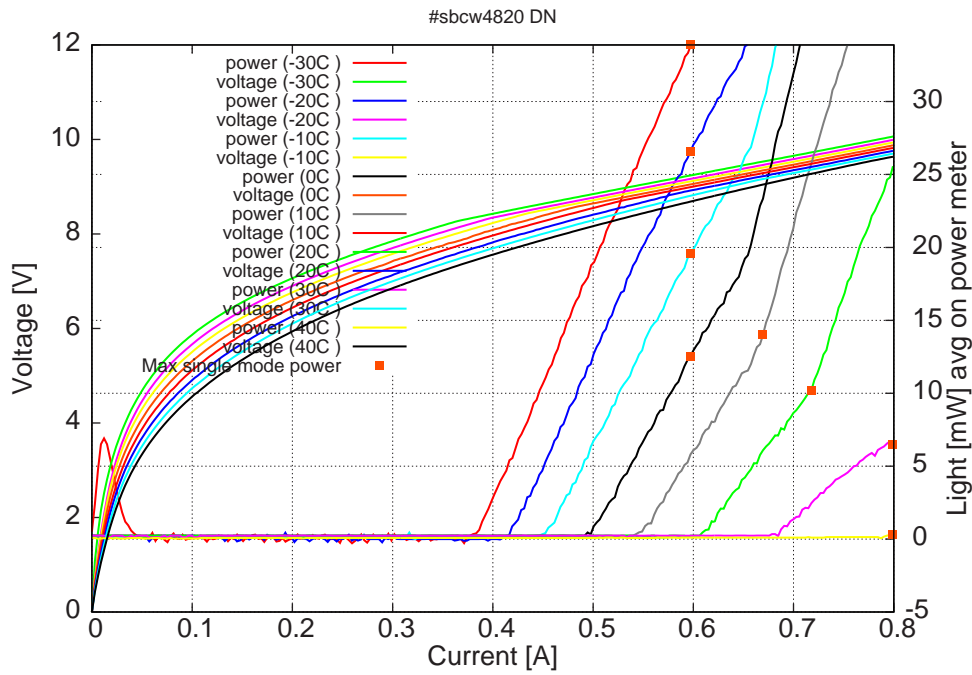


Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

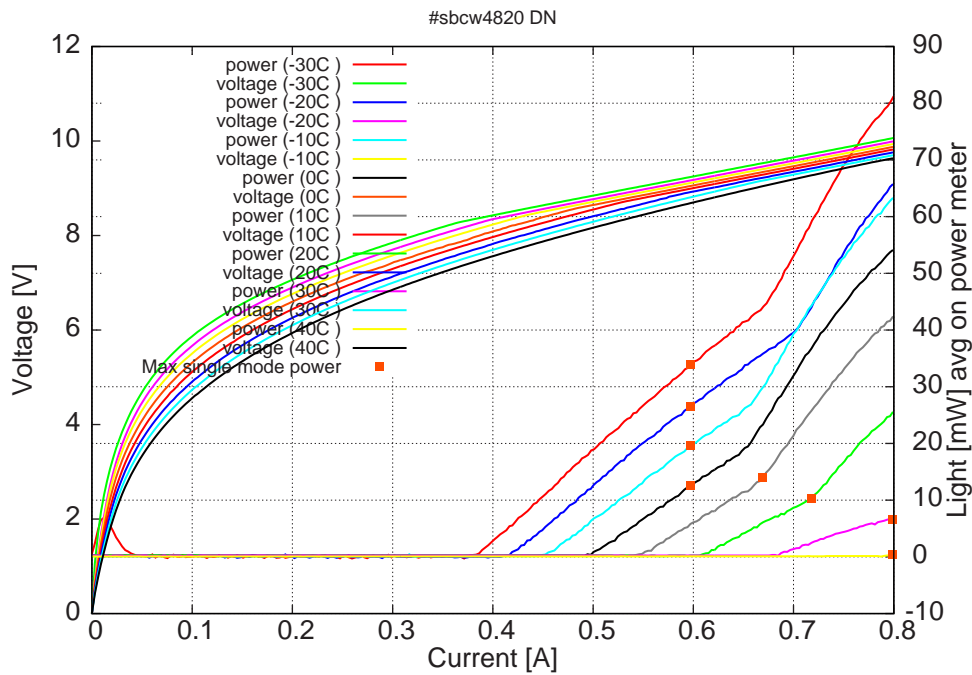


Figure 5: voltage and avg power vs current in continuous-wave operation (including the multimode region)

Note: at -30C:  $I_{th}=380\text{mA}$  /  $V_{th}= 8.3\text{V}$  (2-wires measurements). Maximum operation current: 0.8A for all temperatures.



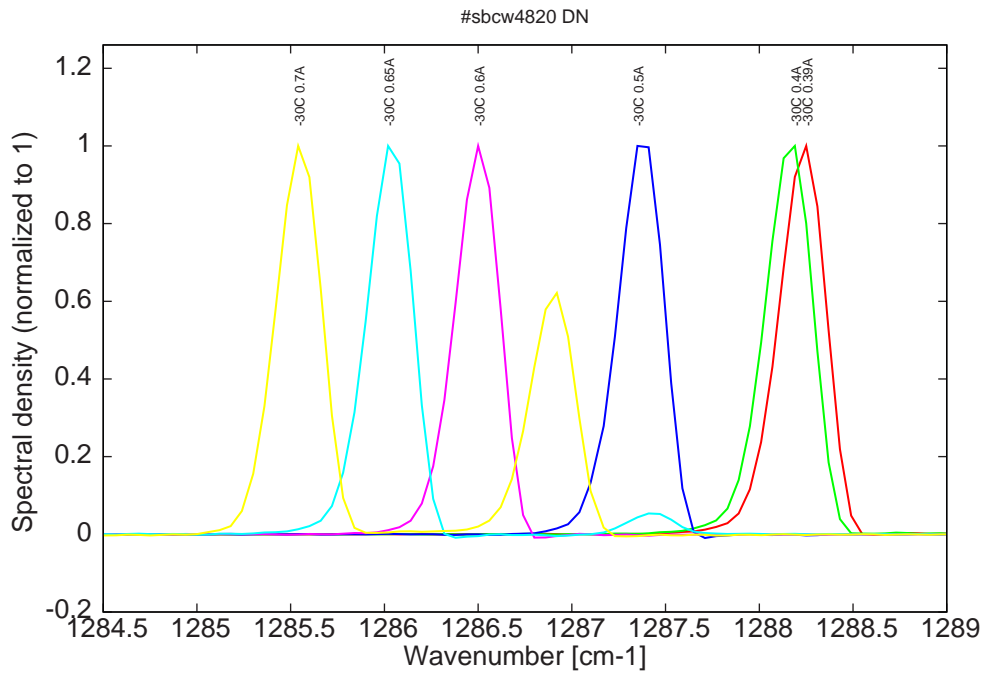


Figure 6: spectra at -30C for various DC currents (monomode up to 0.6A, then becomes bimode)

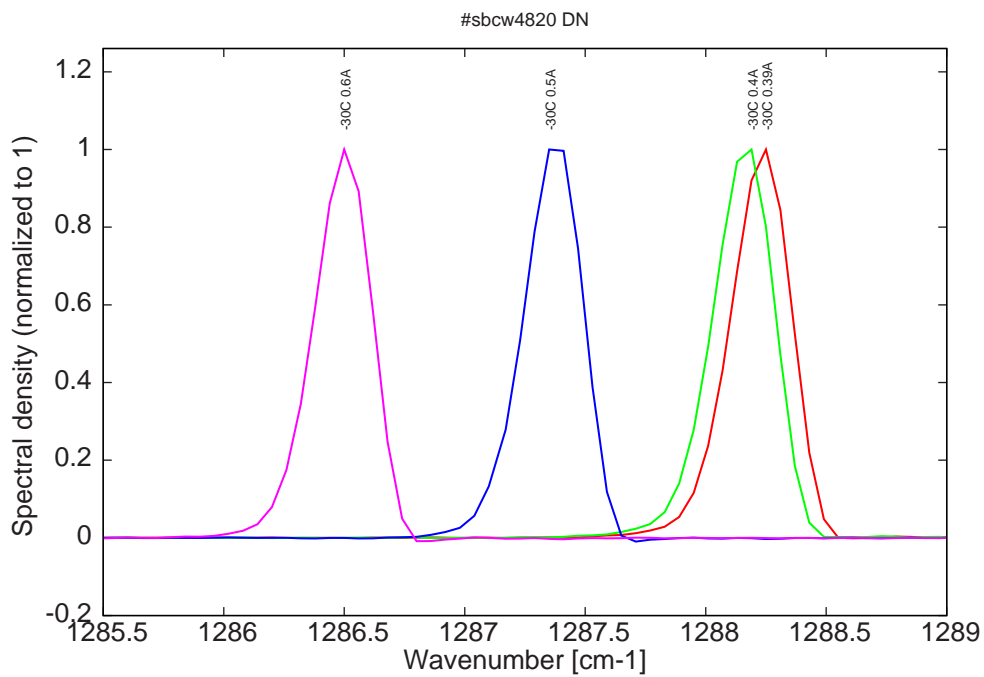


Figure 7: spectra at -30C for various DC currents (monomode range)

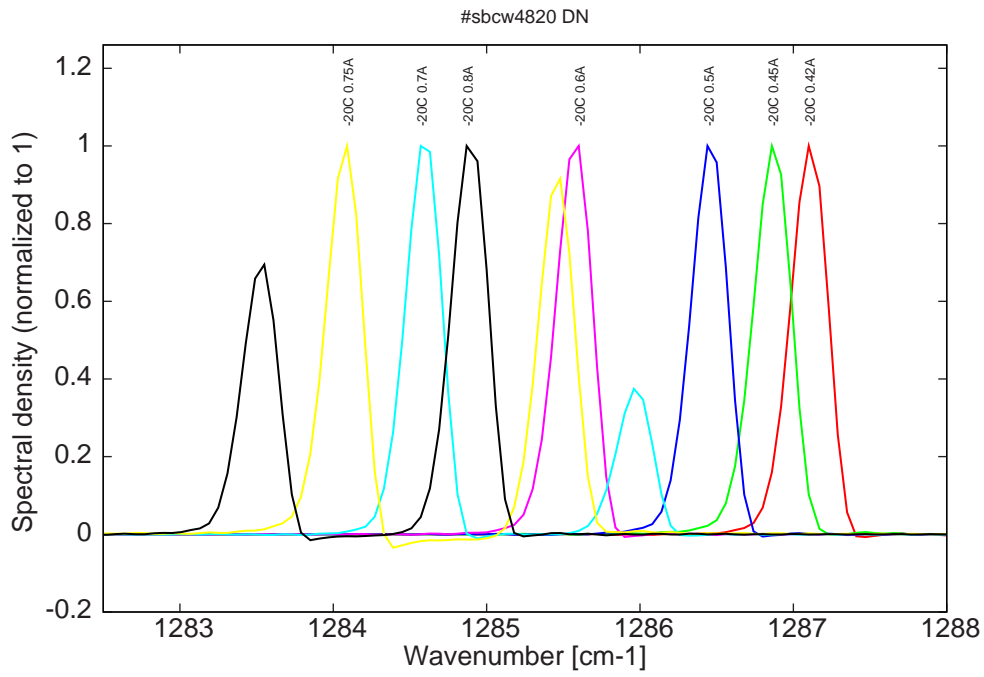


Figure 8: spectra at -20C for various DC currents (monomode up to 0.6A, then becomes bimode)

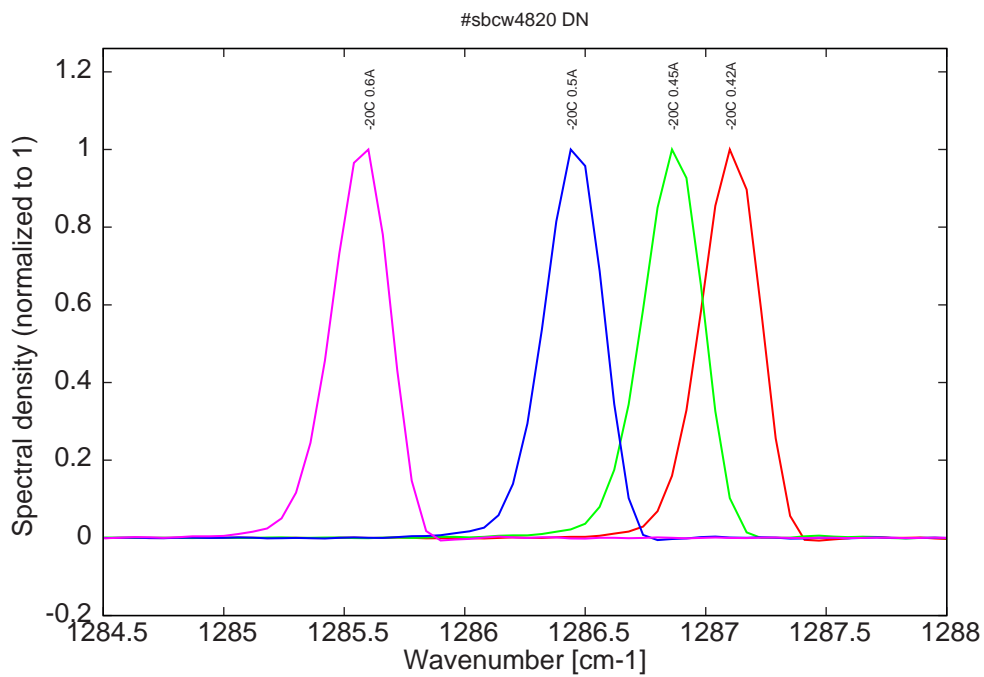


Figure 9: spectra at -20C for various DC currents (monomode range)

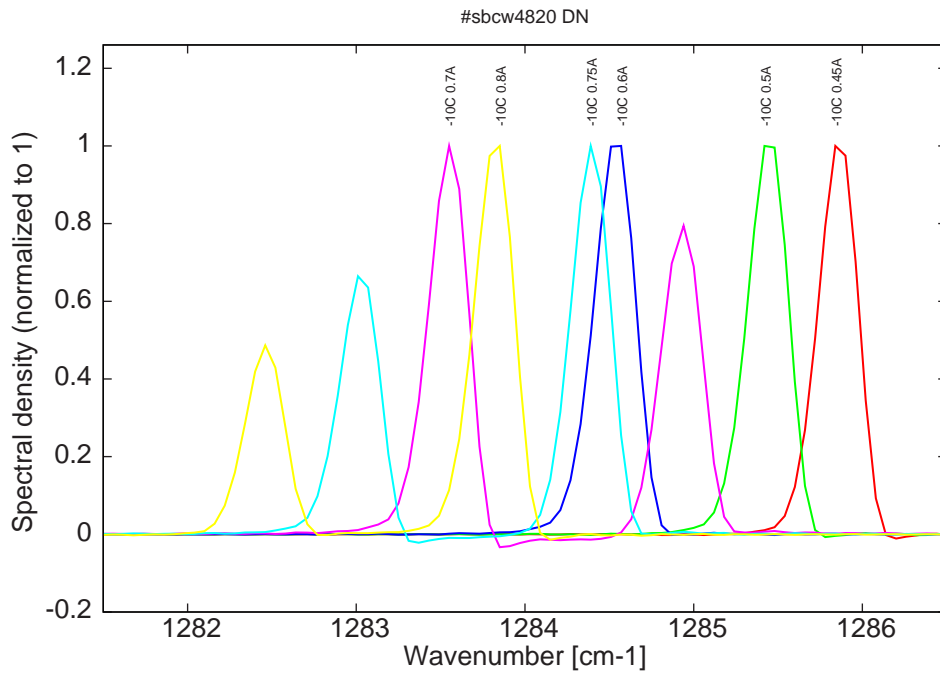


Figure 10: spectra at -10C for various DC currents (monomode up to 0.6A, then becomes bimode)

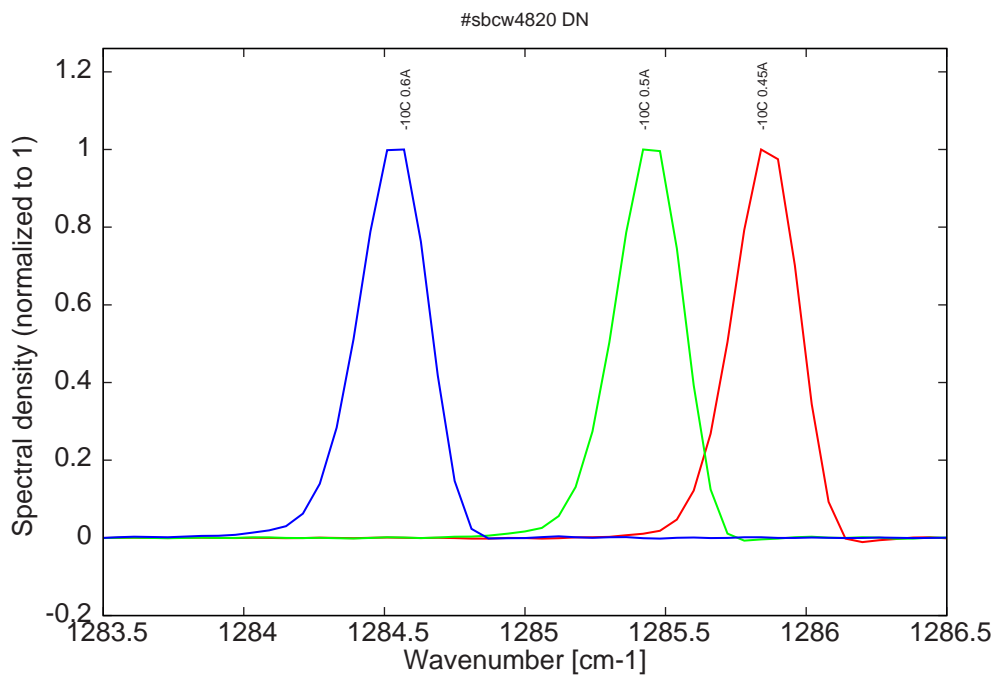


Figure 11: spectra at -10C for various DC currents (monomode range)



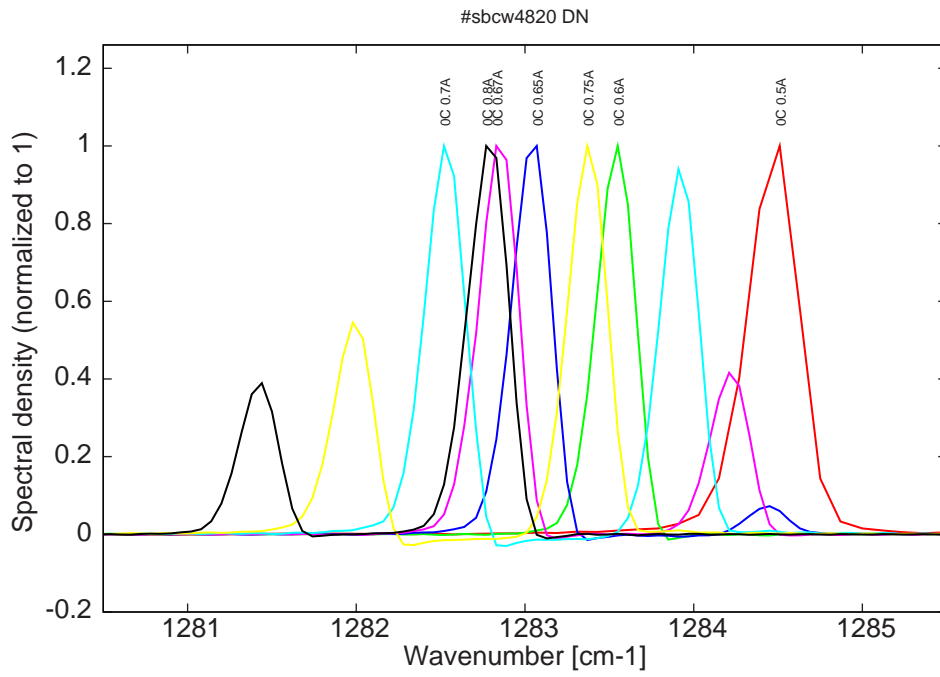


Figure 12: spectra at 0C for various DC currents (monomode up to 0.6A, then becomes bimode)

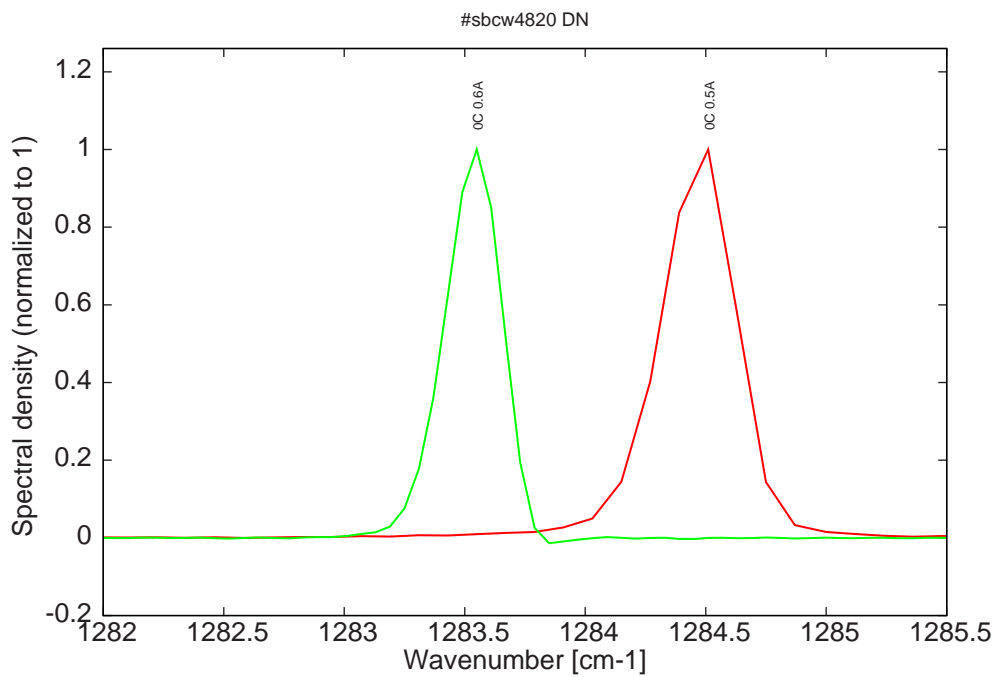


Figure 13: spectra at 0C for various DC currents (monomode range)

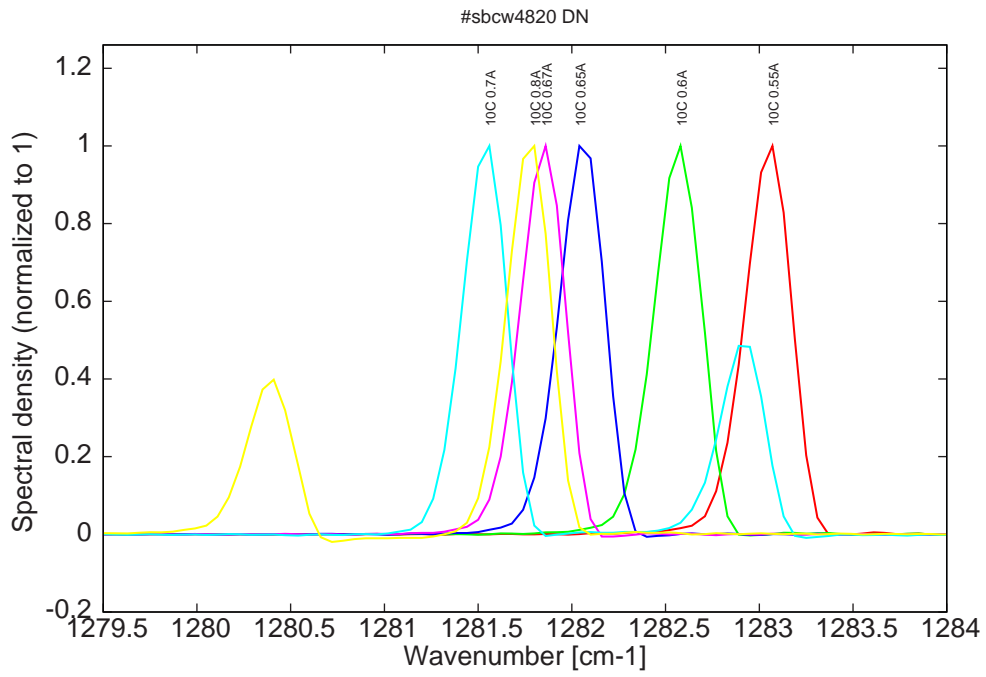


Figure 14: spectra at 10C for various DC currents (monomode up to 0.67A, then becomes bimode)

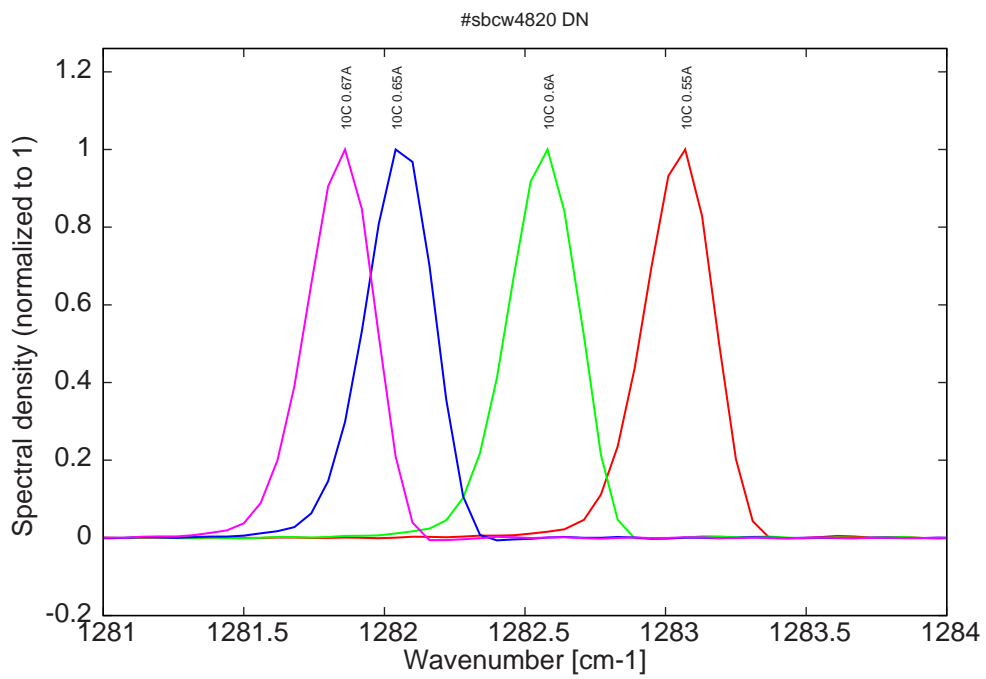


Figure 15: spectra at 10C for various DC currents (monomode range)

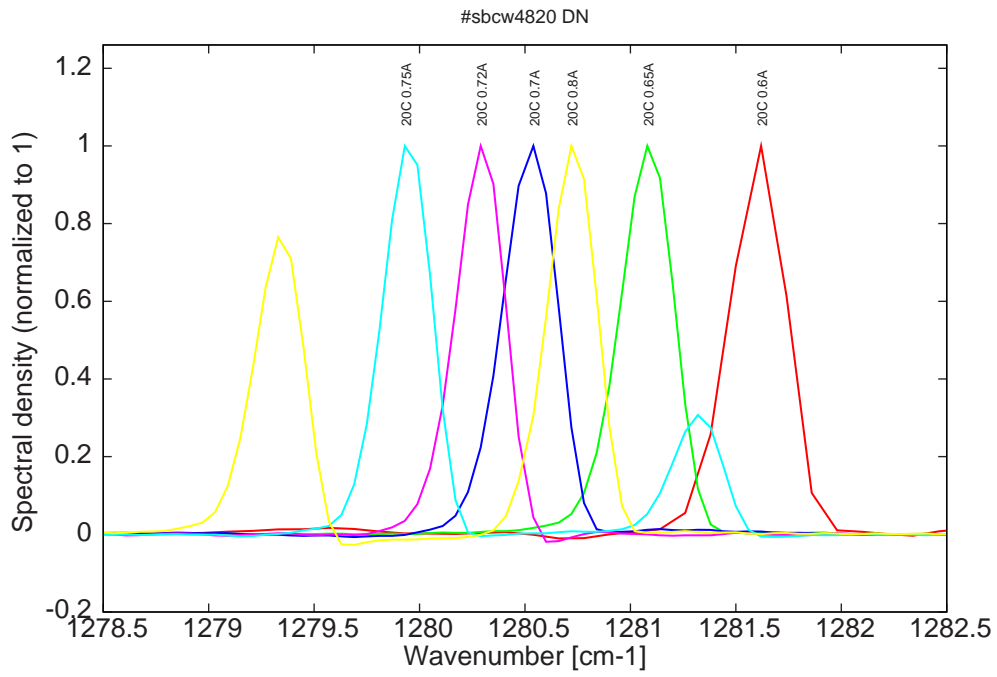


Figure 16: spectra at 20C for various DC currents (monomode up to 0.72A, then becomes bimode)

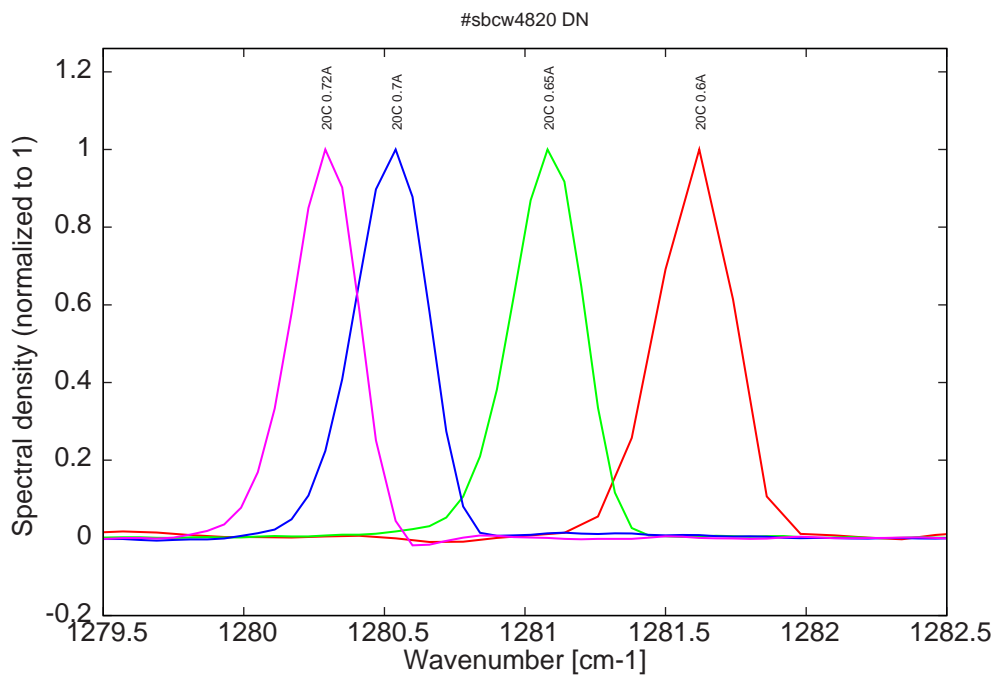


Figure 17: spectra at 20C for various DC currents (monomode range)

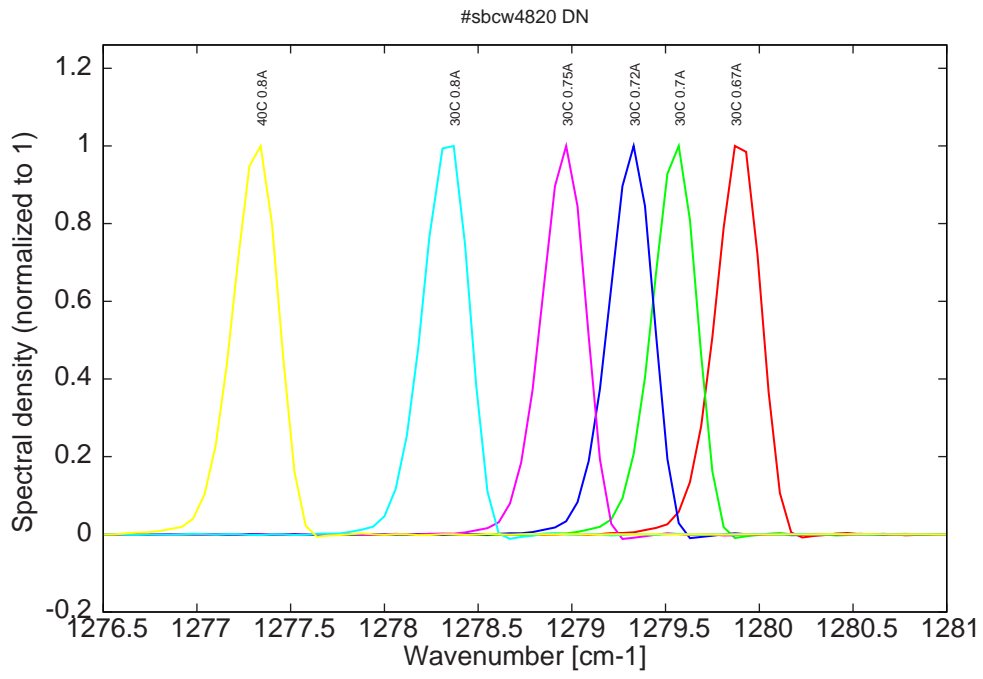


Figure 18: spectra between 30C and 40C for various DC currents (all monomode)