

Datasheet for #sbcw3894 DN

Recommendations:

Please read the starter kit user manual, if available, and have a look at the FAQ at <http://www.alpe lasers.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 #sbcw3894 DN (please note that the laser is connected to the DN pad drawn in blue)

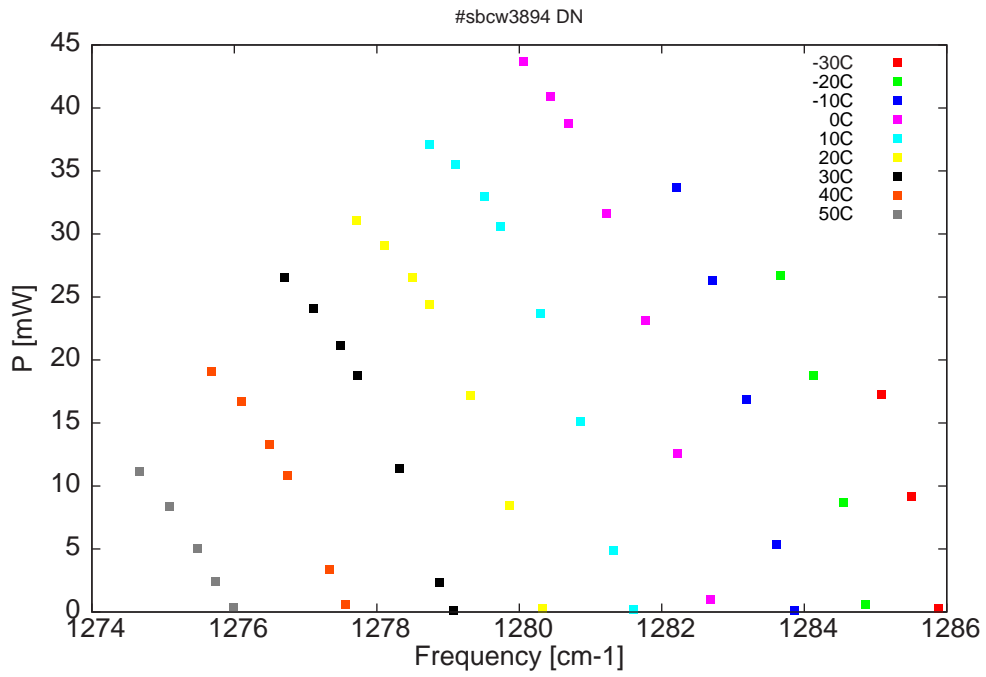


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

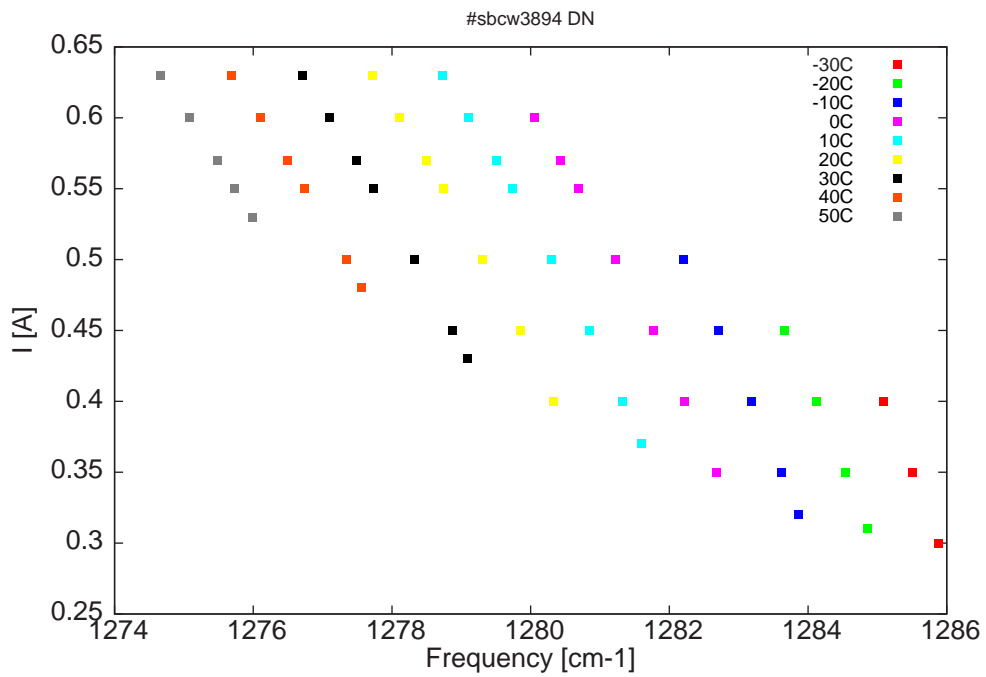


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ [nm]	ν [cm ⁻¹]	P[mW]	Temp[°C]	U_{LASER} [V]	I[A]
7776.7	1285.9	0.3	-30	8.3	0.3
7779.1	1285.5	9.2	-30	8.6	0.35
7781.6	1285.1	17.2	-30	8.8	0.4
7782.9	1284.9	0.6	-20	8.3	0.31
7784.9	1284.5	8.7	-20	8.5	0.35
7787.4	1284.1	18.7	-20	8.7	0.4
7790.2	1283.7	26.7	-20	8.9	0.45
7789	1283.9	0.1	-10	8.2	0.32
7790.5	1283.6	5.4	-10	8.4	0.35
7793.1	1283.2	16.9	-10	8.6	0.4
7796	1282.7	26.3	-10	8.8	0.45
7799.1	1282.2	33.7	-10	9.1	0.5
7796.1	1282.7	1	0	8.3	0.35
7799	1282.2	12.6	0	8.5	0.4
7801.7	1281.8	23.2	0	8.7	0.45
7805	1281.2	31.7	0	9	0.5
7808.3	1280.7	38.7	0	9.2	0.55
7809.8	1280.4	40.9	0	9.3	0.57
7812.1	1280.1	43.7	0	9.4	0.6
7802.7	1281.6	0.2	10	8.3	0.37
7804.4	1281.3	4.9	10	8.4	0.4
7807.3	1280.9	15.1	10	8.7	0.45
7810.6	1280.3	23.7	10	8.9	0.5
7814.1	1279.7	30.6	10	9.1	0.55
7815.5	1279.5	33	10	9.2	0.57
7818	1279.1	35.5	10	9.4	0.6
7820.2	1278.7	37.1	10	9.5	0.63
7810.5	1280.3	0.3	20	8.4	0.4
7813.4	1279.9	8.5	20	8.6	0.45
7816.7	1279.3	17.2	20	8.8	0.5
7820.2	1278.7	24.4	20	9.1	0.55
7821.7	1278.5	26.6	20	9.2	0.57
7824	1278.1	29.1	20	9.3	0.6
7826.5	1277.7	31.1	20	9.4	0.63
7818.1	1279.1	0.1	30	8.4	0.43
7819.4	1278.9	2.3	30	8.5	0.45
7822.7	1278.3	11.4	30	8.8	0.5
7826.4	1277.7	18.8	30	9	0.55
7827.9	1277.5	21.1	30	9.1	0.57
7830.2	1277.1	24.1	30	9.2	0.6
7832.7	1276.7	26.5	30	9.4	0.63
7827.4	1277.6	0.6	40	8.6	0.48
7828.8	1277.3	3.4	40	8.7	0.5
7832.4	1276.7	10.8	40	8.9	0.55
7834	1276.5	13.3	40	9	0.57
7836.4	1276.1	16.7	40	9.2	0.6
7838.9	1275.7	19.1	40	9.3	0.63
7837.1	1276	0.3	50	8.8	0.53
7838.6	1275.7	2.4	50	8.9	0.55

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

λ [nm]	ν [cm ⁻¹]	P[mW]	Temp[°C]	U_{LASER} [V]	I[A]
7840.2	1275.5	5	50	9	0.57
7842.6	1275.1	8.4	50	9.1	0.6
7845.2	1274.7	11.1	50	9.2	0.63

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

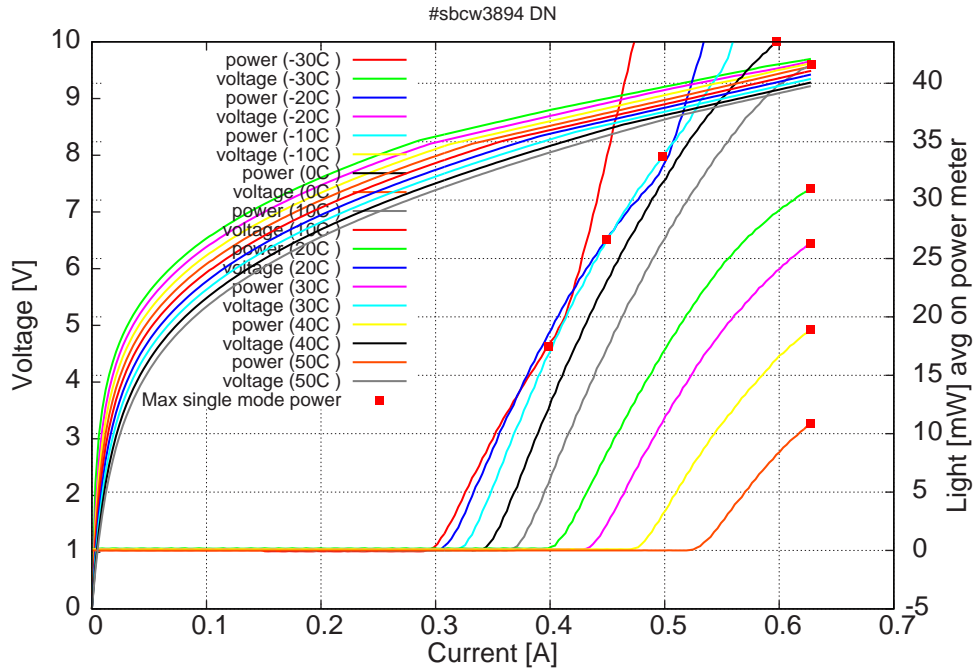


Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

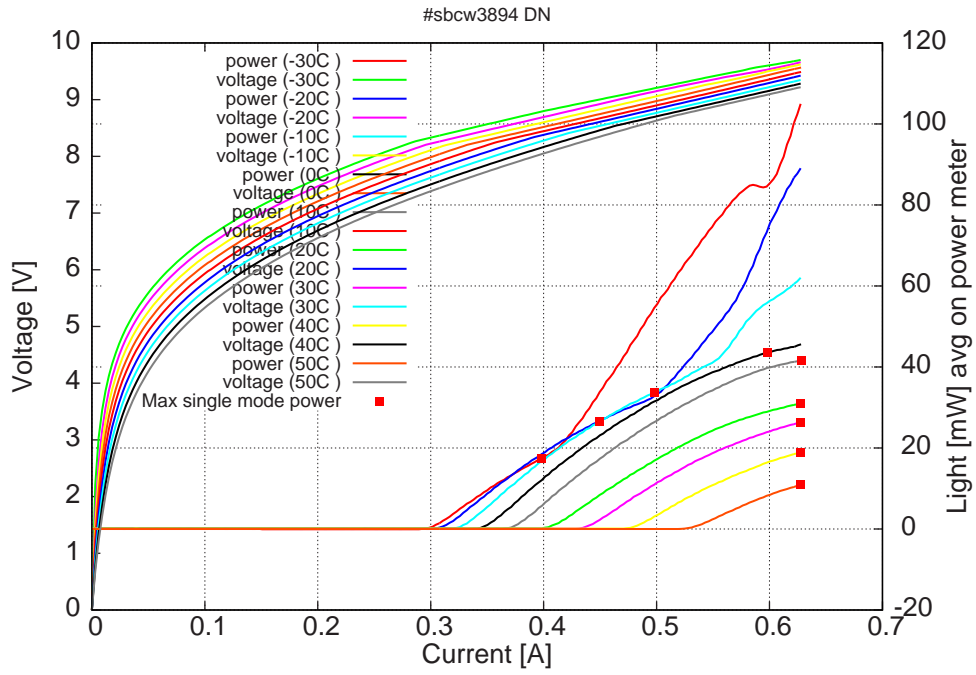
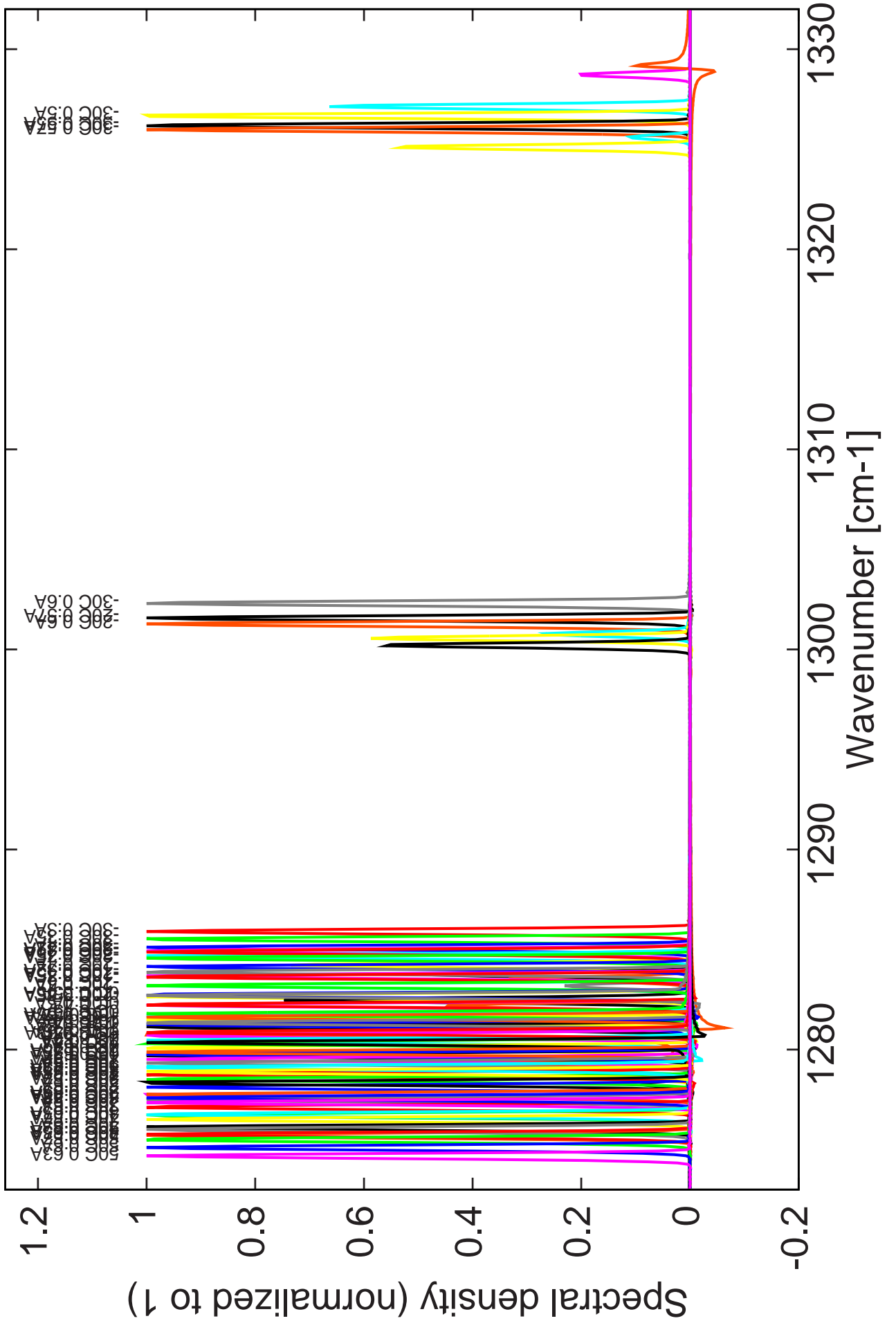


Figure 5: voltage and avg power vs current in continuous-wave operation (including the multimode region)

Note: at -30C: $I_{th}=300\text{mA}$ / $V_{th}= 8.3\text{V}$ (2-wires measurements).

Maximum operation current: 0.60A between -30C and -20C and 0.63A between -10C and 50C.

Figure 4: spectra at different temperatures for various DC currents.



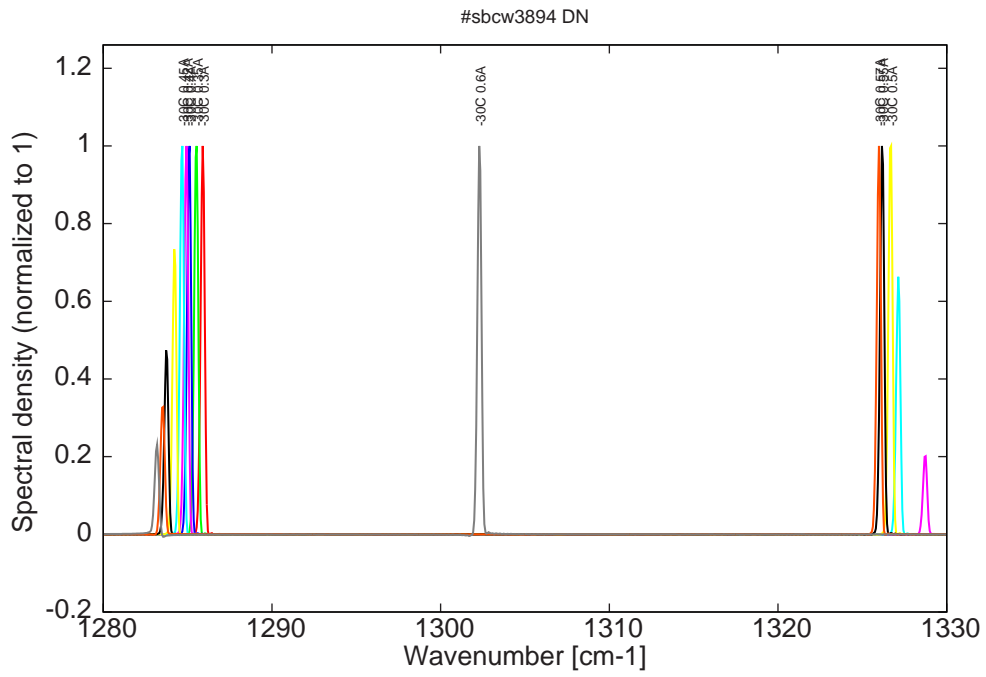


Figure 6: spectra at -30C for various DC currents (monomode up to 0.4A, then bimode)

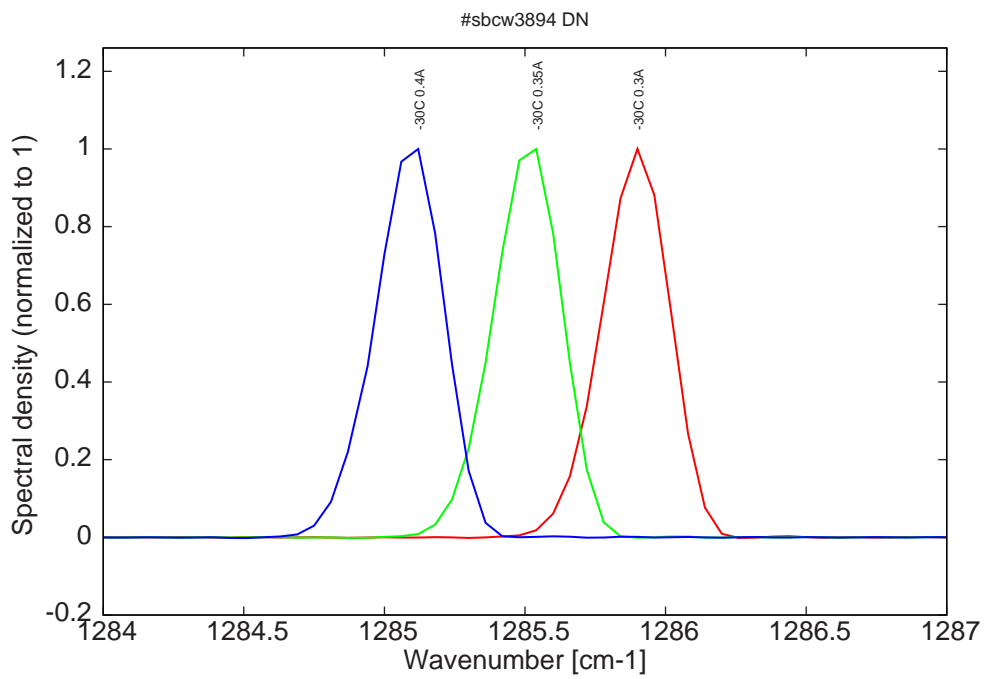


Figure 7: spectra at -30C for various DC currents (monomode range)

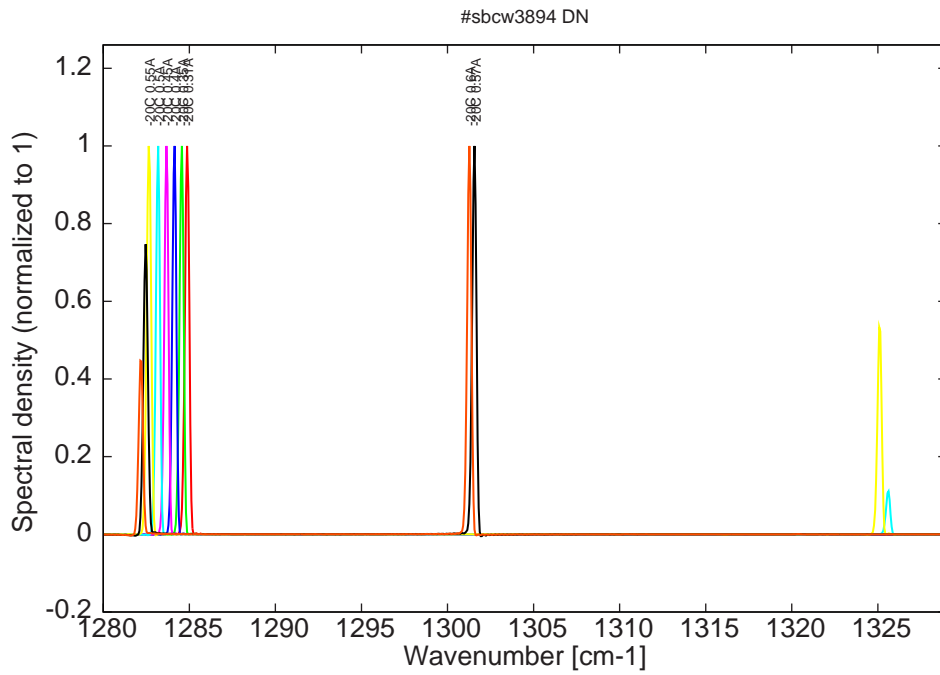


Figure 8: spectra at -20C for various DC currents (monomode up to 0.45A, then bimode)

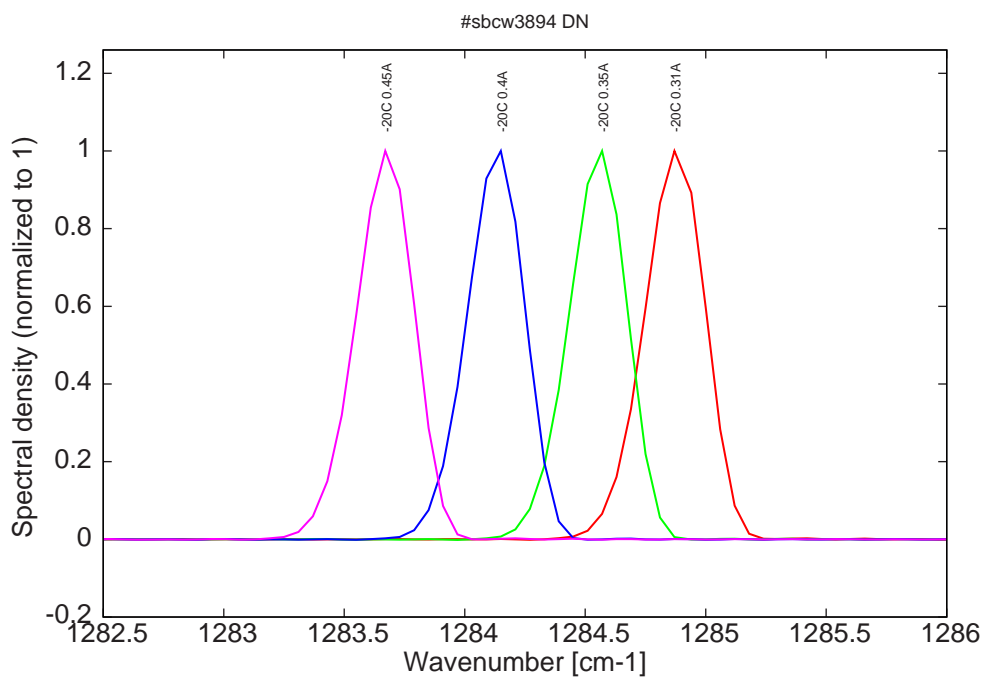


Figure 9: spectra at -20C for various DC currents (monomode range)

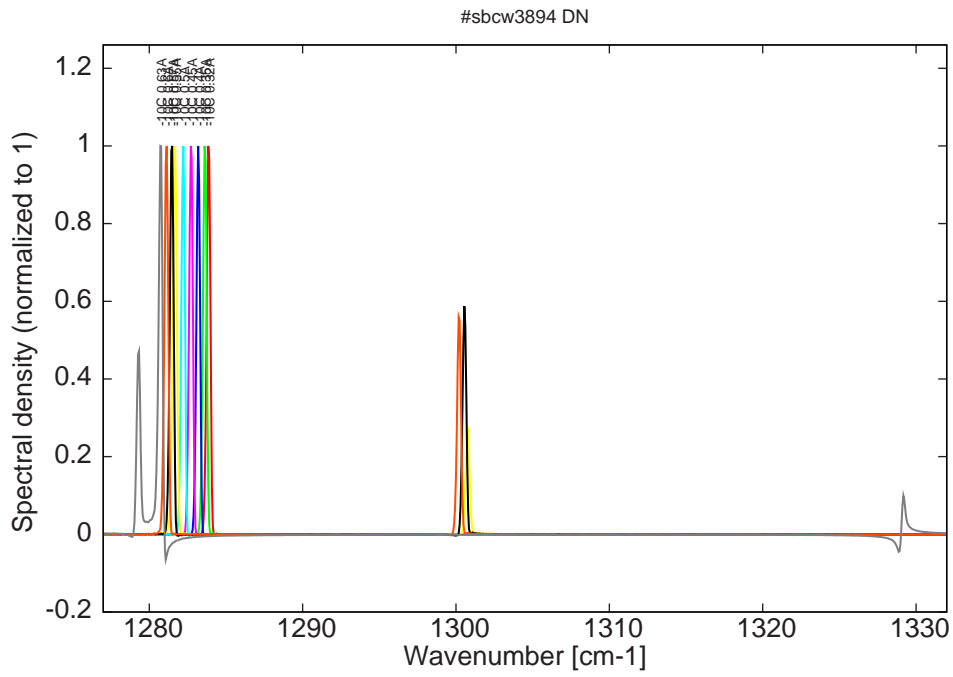


Figure 10: spectra at -10C for various DC currents (monomode up to 0.5A, then bimode)

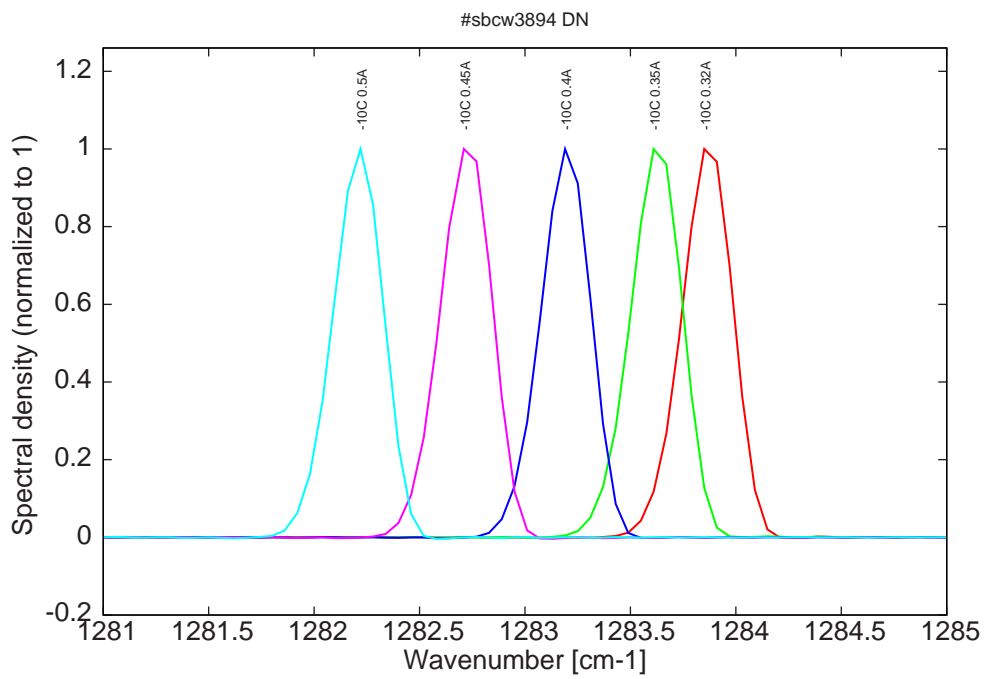


Figure 11: spectra at -10C for various DC currents (monomode range)

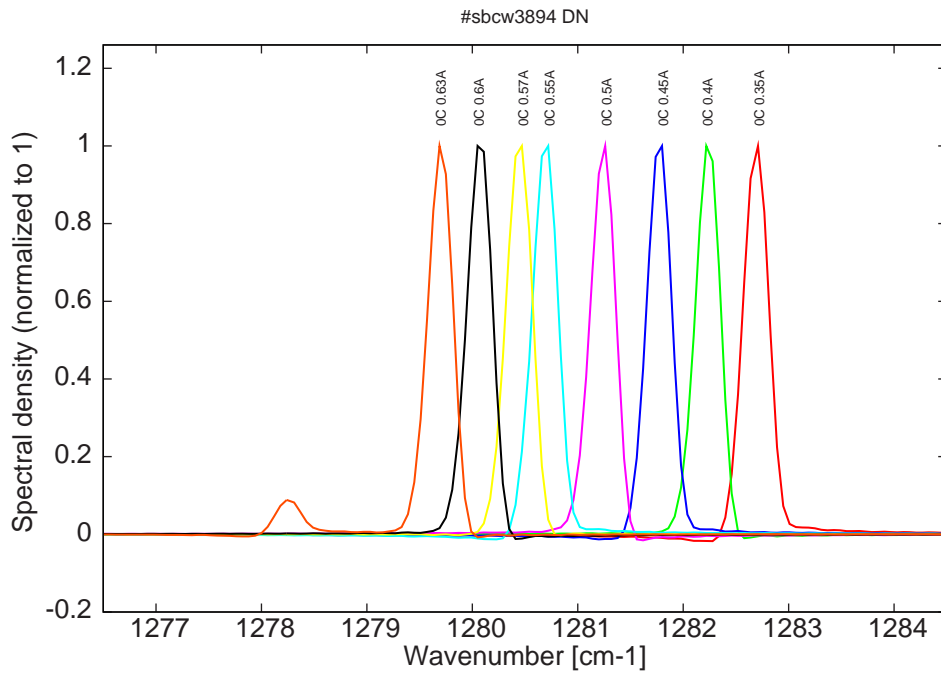


Figure 12: spectra at 0C for various DC currents (monomode up to 0.6A, then bimode)

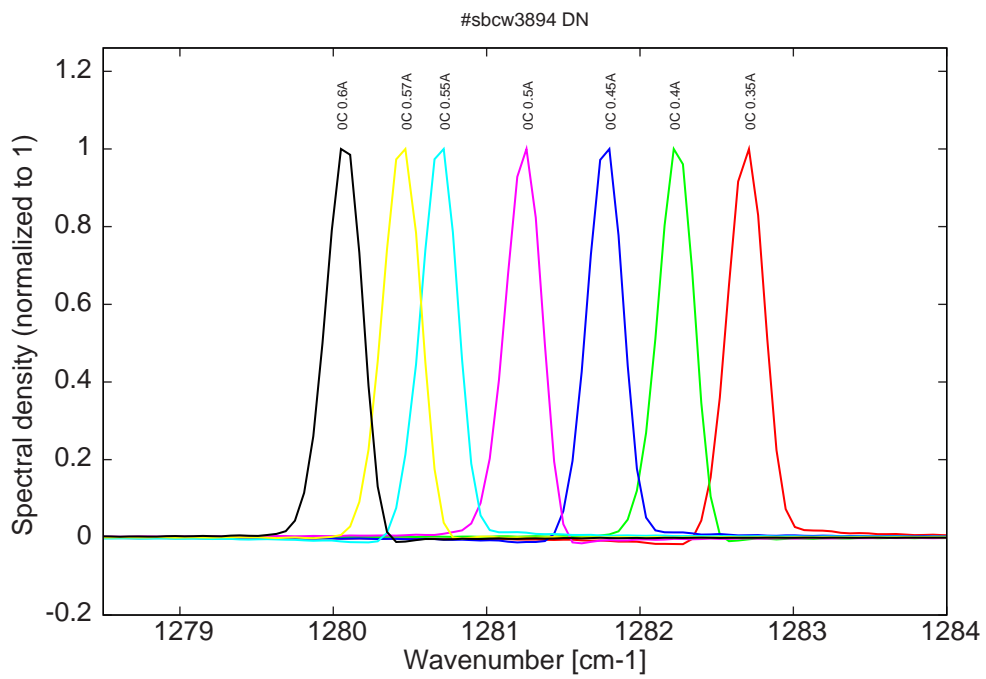


Figure 13: spectra at 0C for various DC currents (monomode range)

Figure 13: spectra between 10C and 50C for various DC currents (all monomode)

