

**Datasheet for #sbcw1045 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 #sbcw1045 DN (please note that the laser is connected to the DN pad drawn in blue)

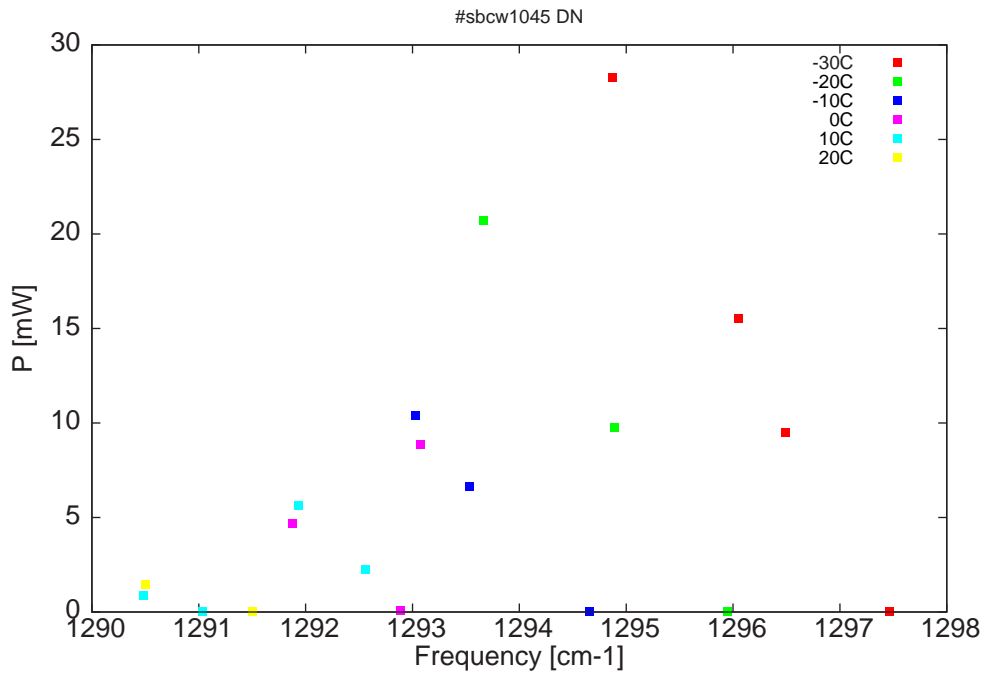


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

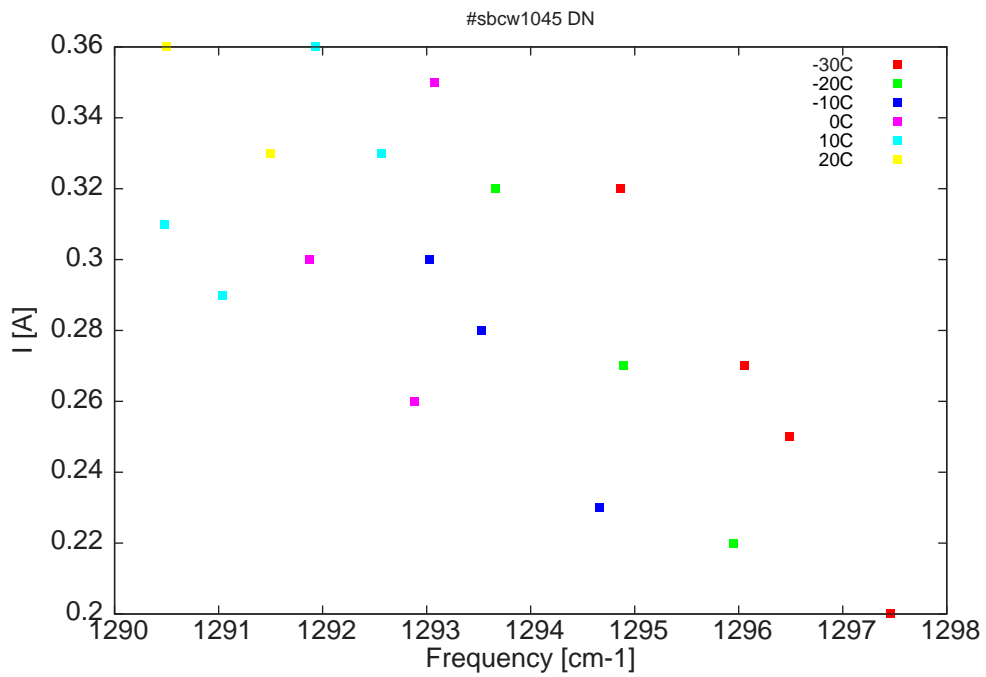


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

$\lambda$ [nm]	$\nu$ [cm <sup>-1</sup> ]	P[mW]	Temp[°C]	$U_{LASER}$ [V]	I[A]
7707.4	1297.5	0.1	-30	9.1	0.2
7713.2	1296.5	9.5	-30	9.5	0.25
7715.7	1296.1	15.5	-30	9.7	0.27
7722.8	1294.9	28.3	-30	10.2	0.32
7716.4	1295.9	0.1	-20	9.2	0.22
7722.7	1294.9	9.8	-20	9.7	0.27
7730	1293.7	20.7	-20	10.2	0.32
7724	1294.7	0.1	-10	9.2	0.23
7730.8	1293.5	6.6	-10	9.7	0.28
7733.8	1293	10.4	-10	9.9	0.3
7734.6	1292.9	0.1	0	9.5	0.26
7740.7	1291.9	4.7	0	9.9	0.3
7733.5	1293.1	8.9	0	10.4	0.35
7745.7	1291	0.1	10	9.8	0.29
7749	1290.5	0.9	10	10	0.31
7736.6	1292.6	2.3	10	10.2	0.33
7740.3	1291.9	5.7	10	10.5	0.36
7742.9	1291.5	0.1	20	10.2	0.33
7748.9	1290.5	1.4	20	10.5	0.36

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

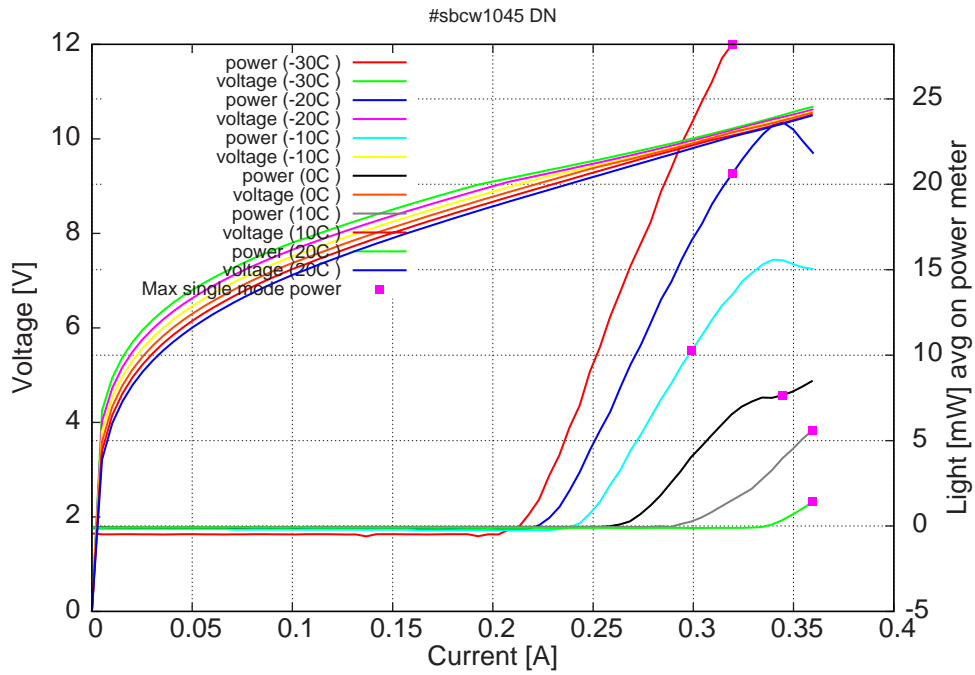


Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

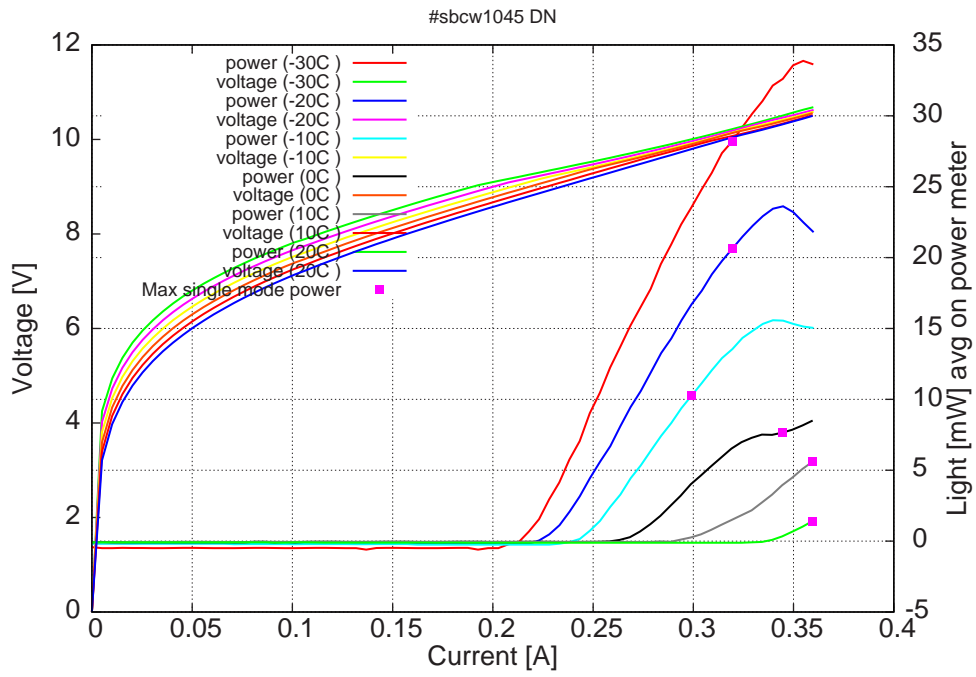
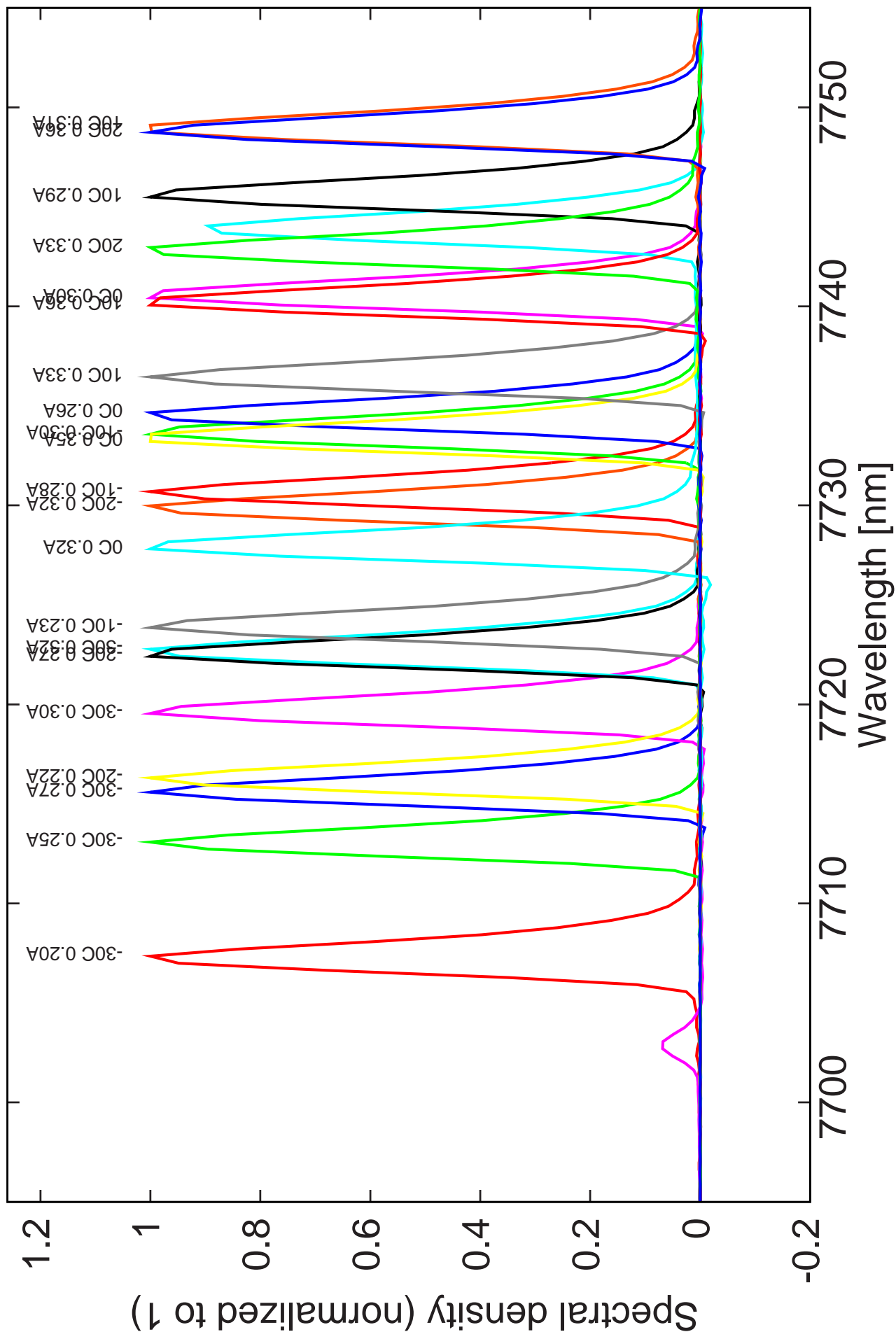


Figure 5: voltage and avg power vs current in continuous-wave operation (including the multimode region)

Note: at -30C:  $I_{th}=200\text{mA}$  /  $V_{th}= 9.12\text{V}$  (2-wires measurements). Maximum operation current: 0.32A between -30C and -10C and 0.36A between 0C and 20C.

Figure 4: spectra at -30C, -20C, -10C, 0C, 10C and 20C for various DC currents



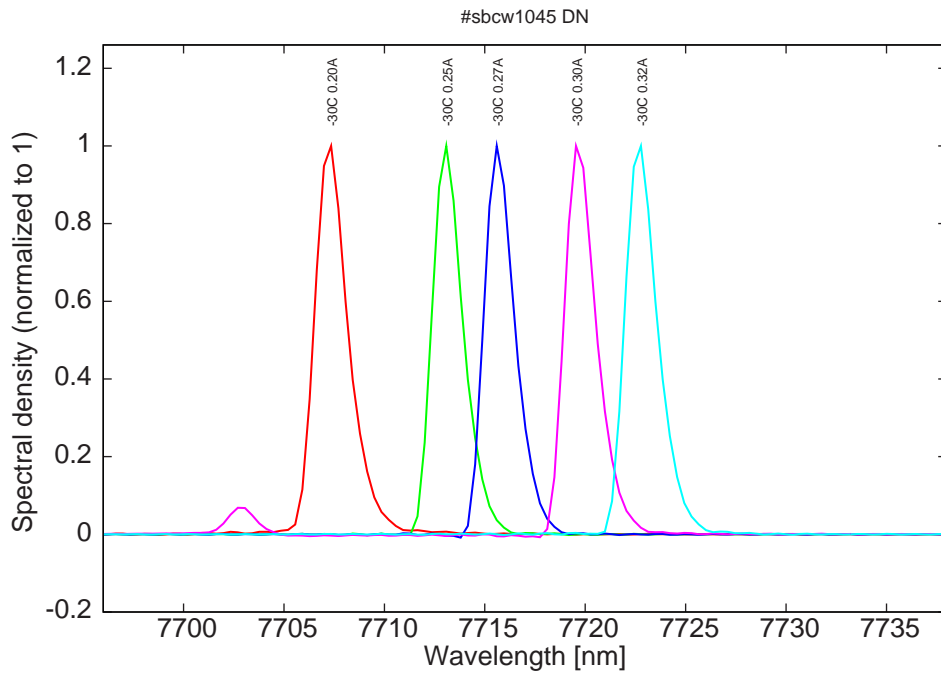


Figure 6: spectra at -30C for various DC currents (become monomode again at 0.32A)

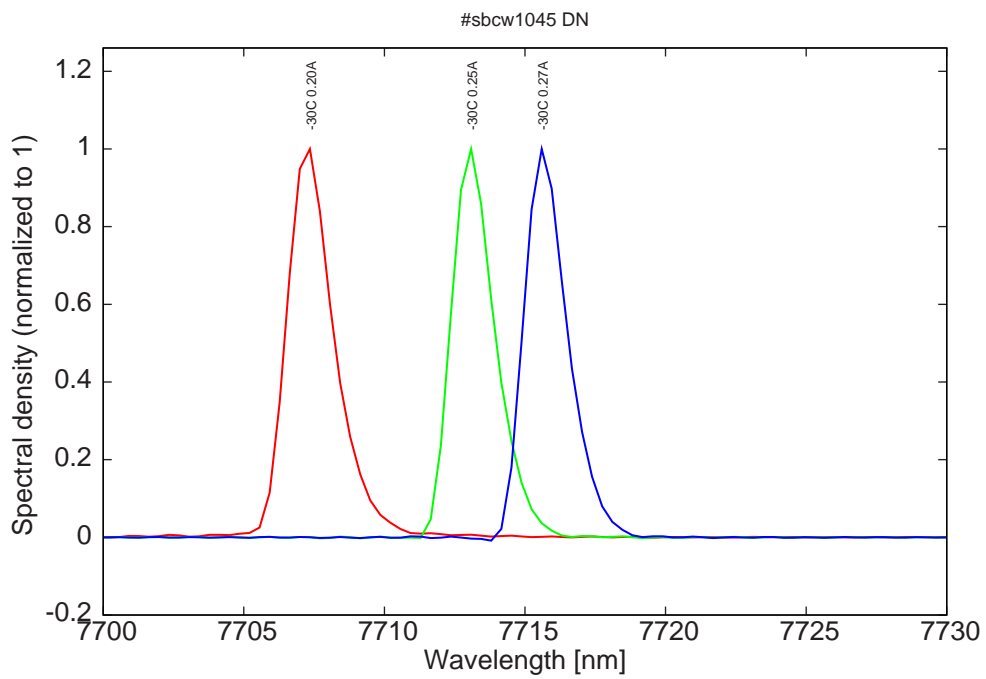


Figure 7: spectra at -30C for various DC currents (monomode range)

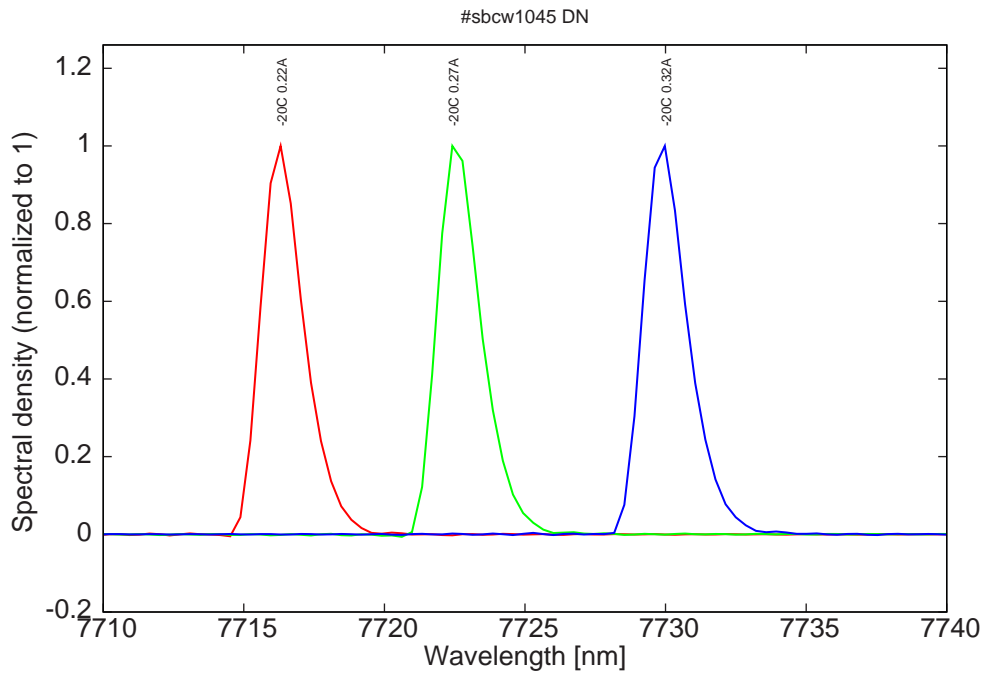


Figure 8: spectra at -20C for various DC currents

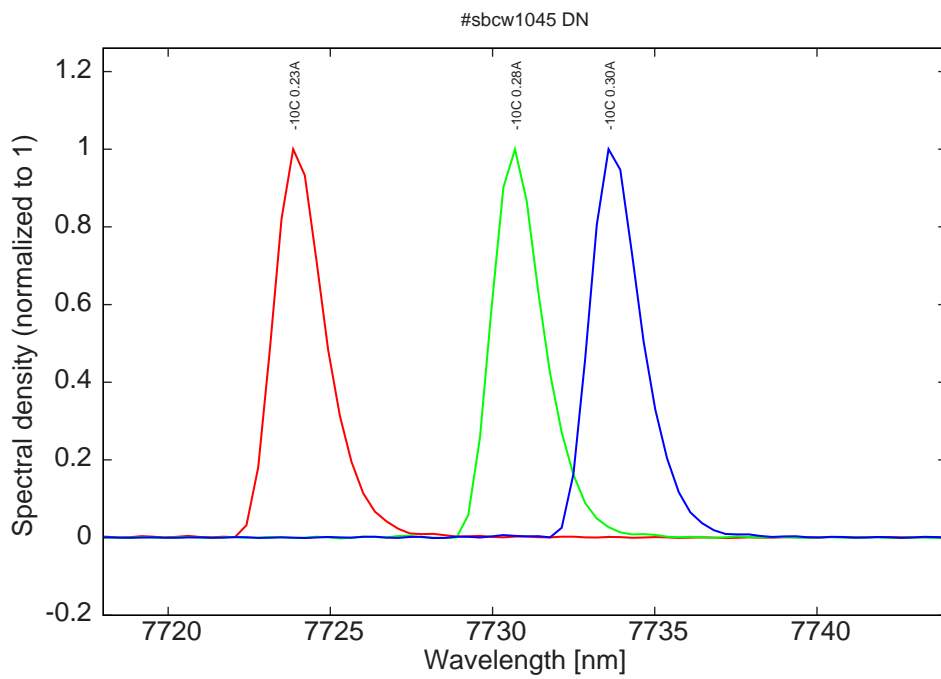


Figure 9: spectra at -10C for various DC currents

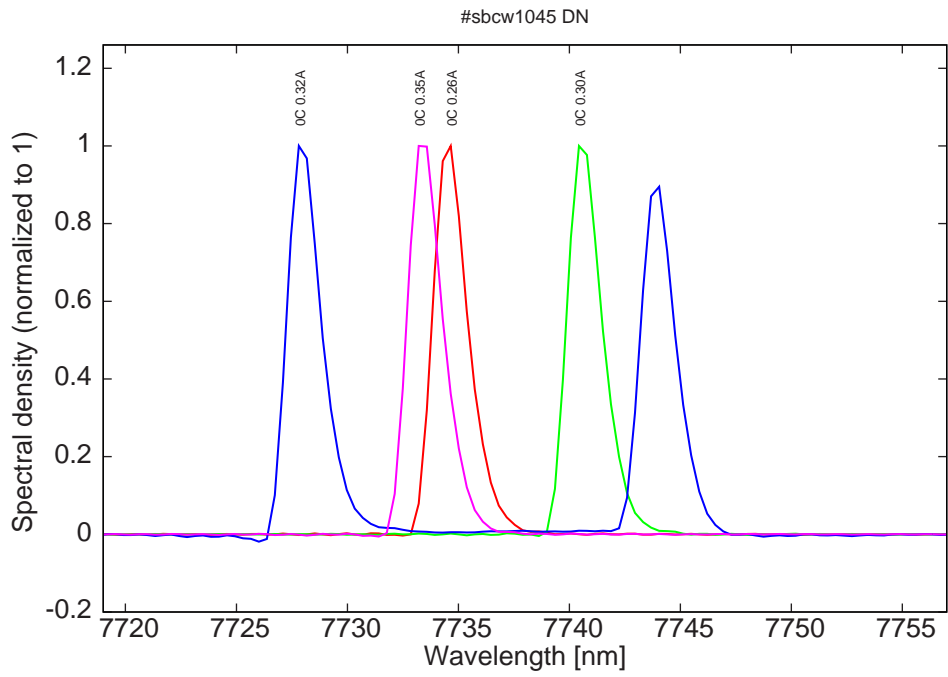


Figure 10: spectra at 0C for various DC currents (become monomode again at 0.35A, but with mode jumping)

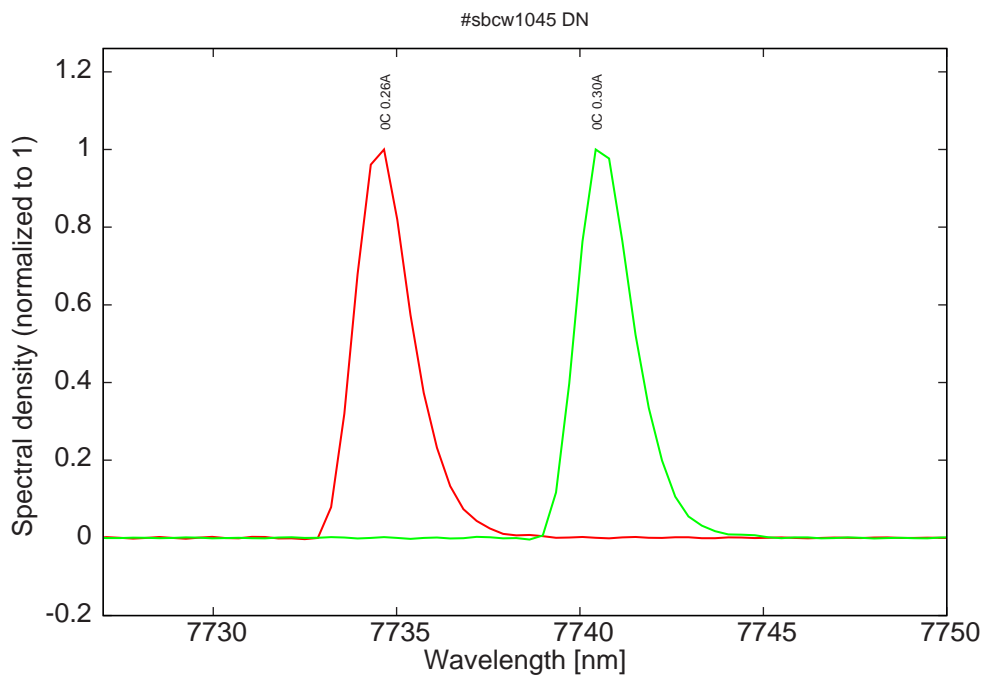


Figure 11: spectra at 0C for various DC currents (monomode range)

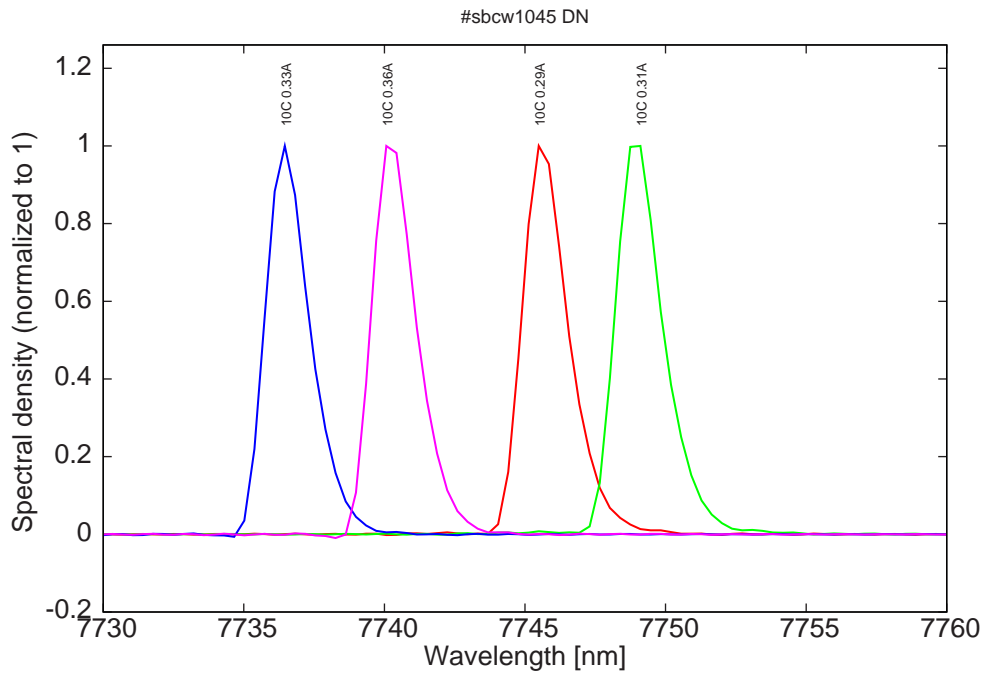


Figure 12: spectra at 10C for various DC currents (all monomode, but with mode jumping for current higher than 0.33A)

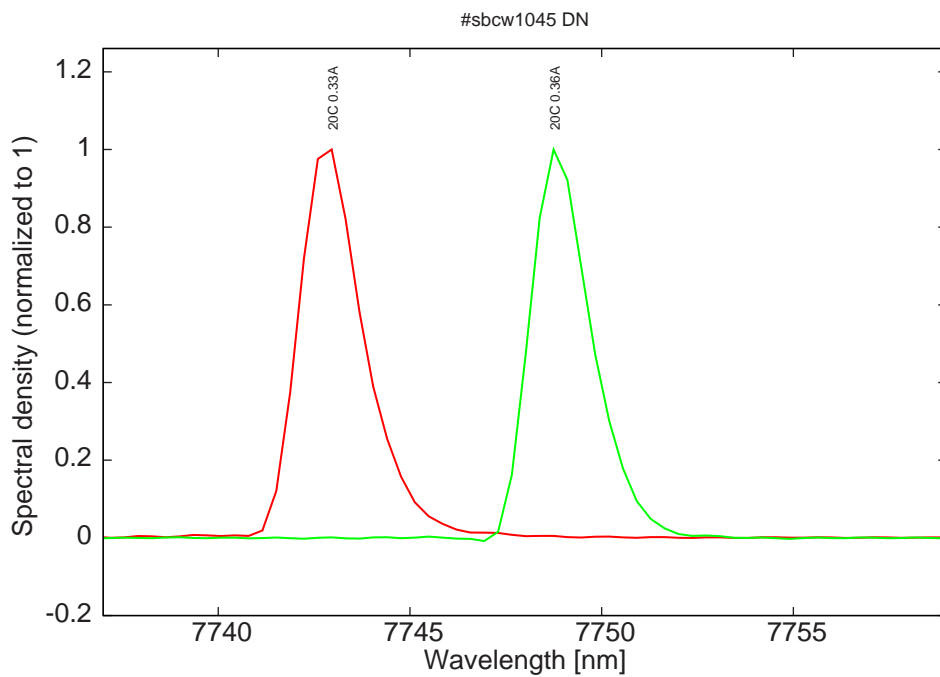


Figure 13: spectra at 20C for various DC currents (same mode compared to spectra at 10C at high current)