

**Datasheet for #sbcw4993 DN**

Recommendations:

Please read the starter kit user manual, if available, and have a look at the FAQ at <http://www.alpeslasers.ch/alfaqa.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.

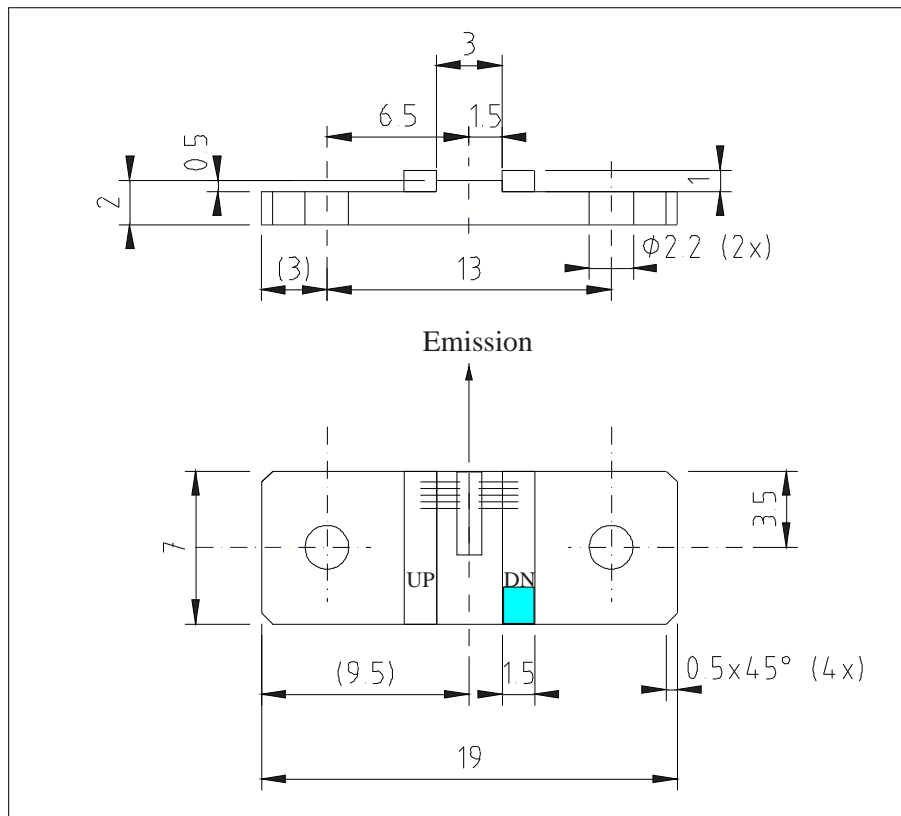


Figure 1: Support mounting for #sbcw4993 DN (please note that the laser is connected to the DN pad drawn in blue)

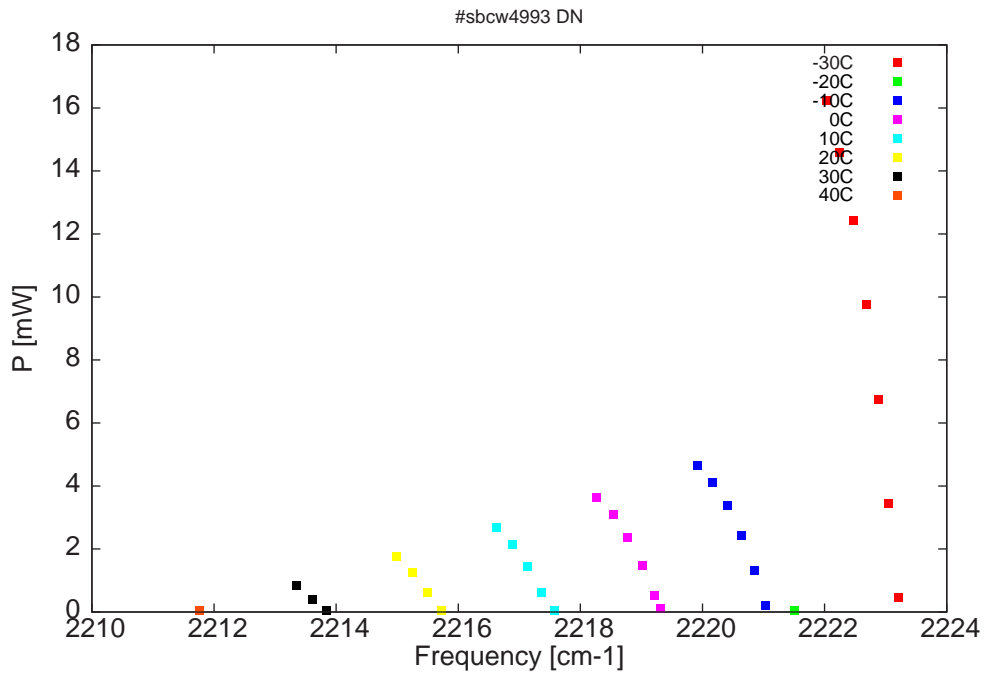


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

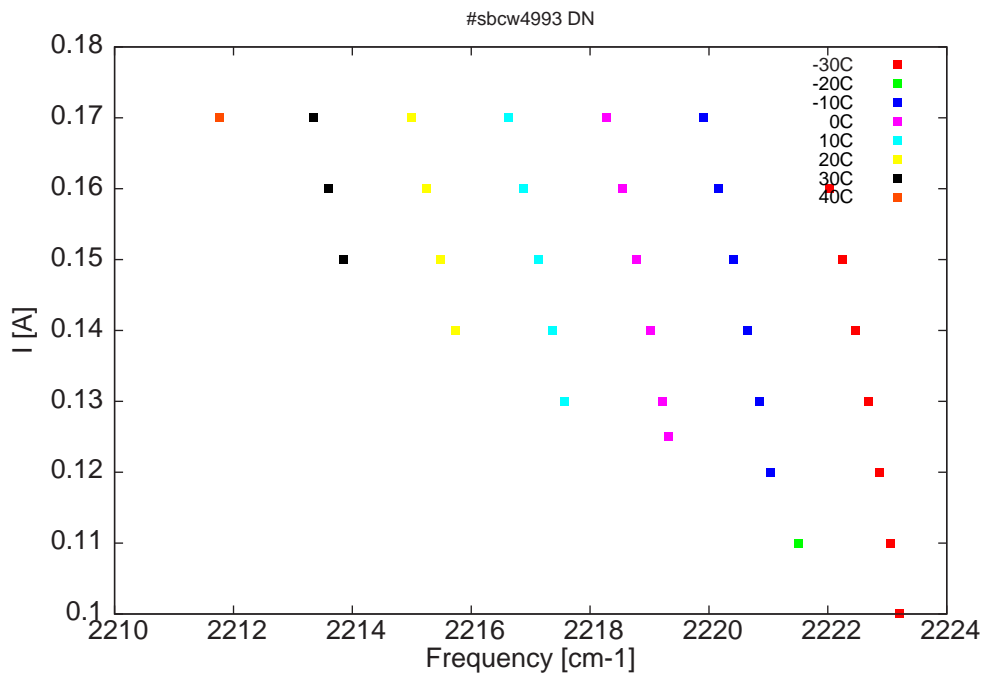


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

$\lambda$ [nm]	$\nu$ [cm <sup>-1</sup> ]	P[mW]	Temp[°C]	$U_{LASER}$ [V]	I[A]
4498	2223.2	0.5	-30	10	0.1
4498.3	2223.1	3.5	-30	10.1	0.11
4498.7	2222.9	6.8	-30	10.3	0.12
4499.1	2222.7	9.8	-30	10.5	0.13
4499.5	2222.5	12.4	-30	10.7	0.14
4500	2222.2	14.6	-30	10.9	0.15
4500.4	2222	16.2	-30	11	0.16
4501.5	2221.5	0.1	-20	10.1	0.11
4502.4	2221	0.2	-10	10.2	0.12
4502.8	2220.8	1.3	-10	10.4	0.13
4503.2	2220.6	2.4	-10	10.6	0.14
4503.7	2220.4	3.4	-10	10.7	0.15
4504.2	2220.2	4.1	-10	10.9	0.16
4504.7	2219.9	4.6	-10	11.1	0.17
4505.9	2219.3	0.1	0	10.2	0.13
4506.1	2219.2	0.5	0	10.3	0.13
4506.5	2219	1.5	0	10.5	0.14
4507	2218.8	2.4	0	10.7	0.15
4507.5	2218.5	3.1	0	10.9	0.16
4508	2218.3	3.6	0	11	0.17
4509.4	2217.6	0.1	10	10.3	0.13
4509.8	2217.4	0.6	10	10.4	0.14
4510.3	2217.1	1.4	10	10.6	0.15
4510.8	2216.9	2.2	10	10.8	0.16
4511.4	2216.6	2.7	10	11	0.17
4513.2	2215.7	0.1	20	10.4	0.14
4513.7	2215.5	0.6	20	10.5	0.15
4514.2	2215.2	1.2	20	10.7	0.16
4514.7	2215	1.8	20	10.9	0.17
4517	2213.8	0.1	30	10.5	0.15
4517.5	2213.6	0.4	30	10.7	0.16
4518	2213.3	0.8	30	10.9	0.17
4521.3	2211.8	0.1	40	10.9	0.17

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

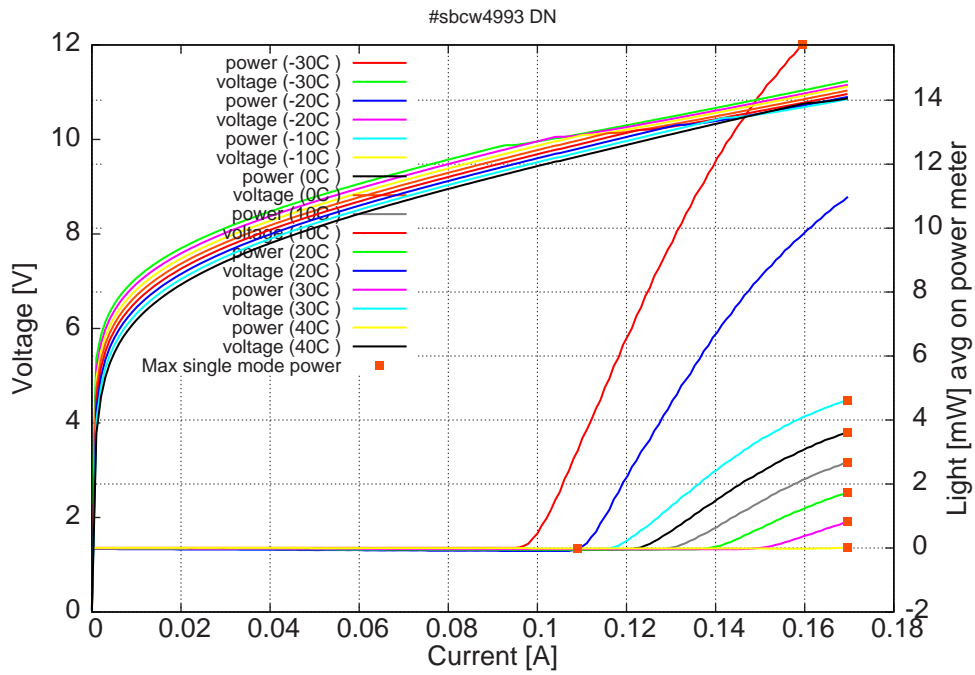


Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

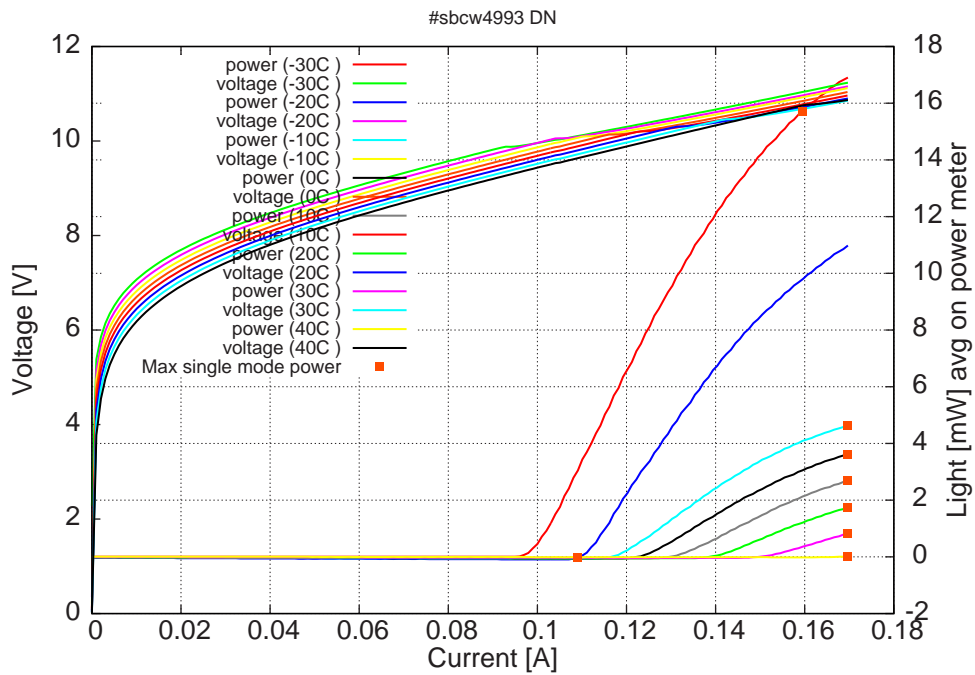
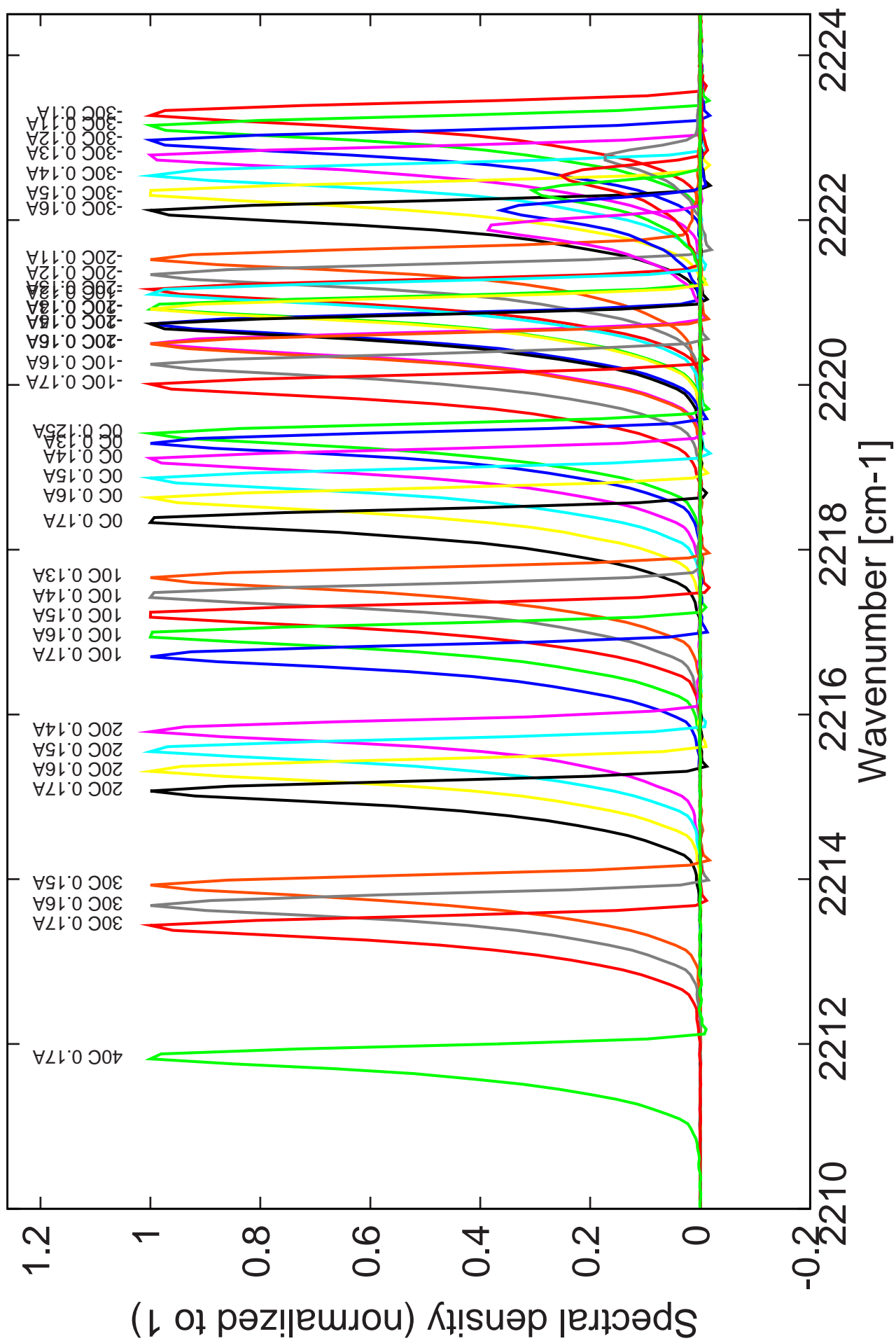


Figure 5: voltage and avg power vs current in continuous-wave operation (including the multimode region)

Note: at -30C:  $I_{th}=95\text{mA}$  /  $V_{th}= 9.9\text{V}$  (2-wires measurements). Maximum operation current: 0.16A between -30C and -20C, 0.17A between -10C and 40C.

Figure 4: spectra at different temperatures for various DC currents



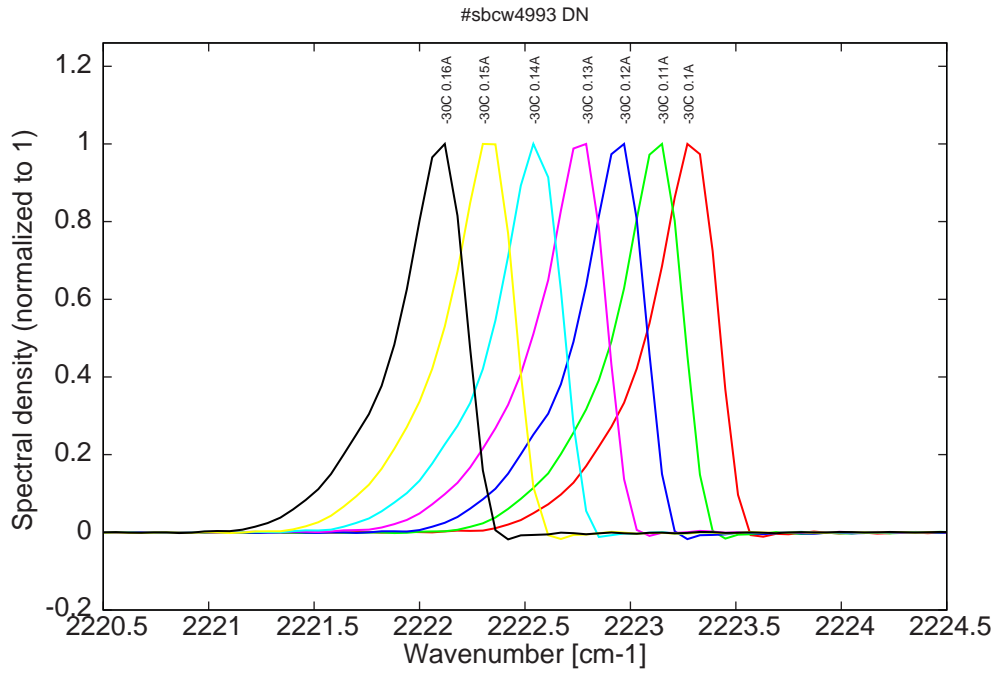


Figure 6: spectra at -30C for various DC currents (monomode on mode 1, see Fig. 2 & 3)

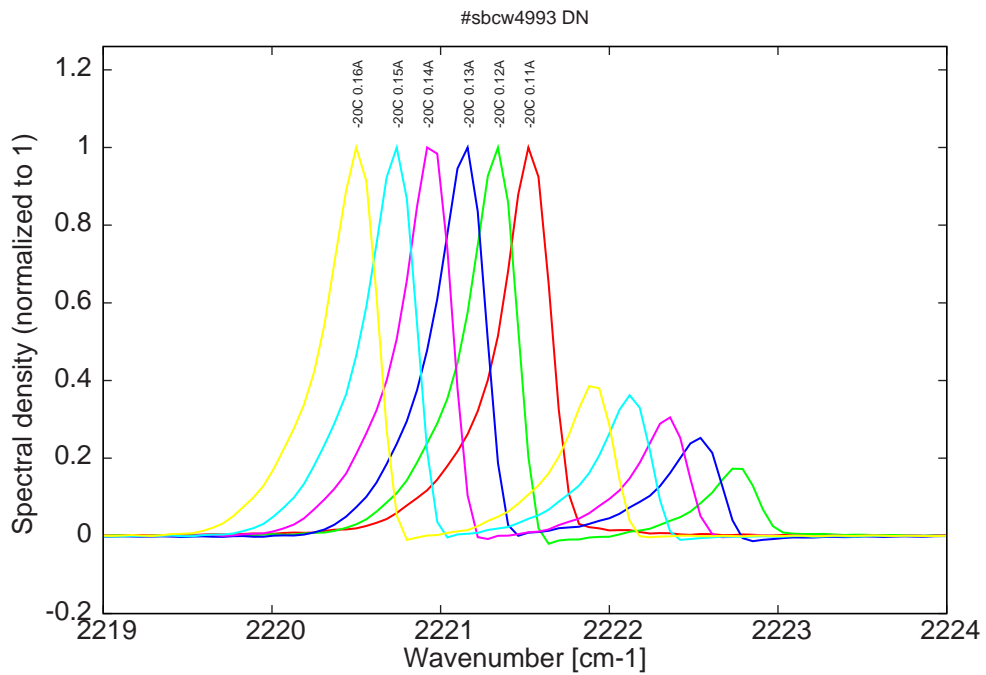


Figure 7: spectra at -20C for various DC currents (monomode on mode 1 up to 0.11A (threshold), then bimode, see Fig. 2 & 3)

Figure 7: spectra between -10C and 40C for various DC currents (monomode on mode 2, see Fig. 2 & 3)

