

Datasheet for #sbcw2095 UP

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.

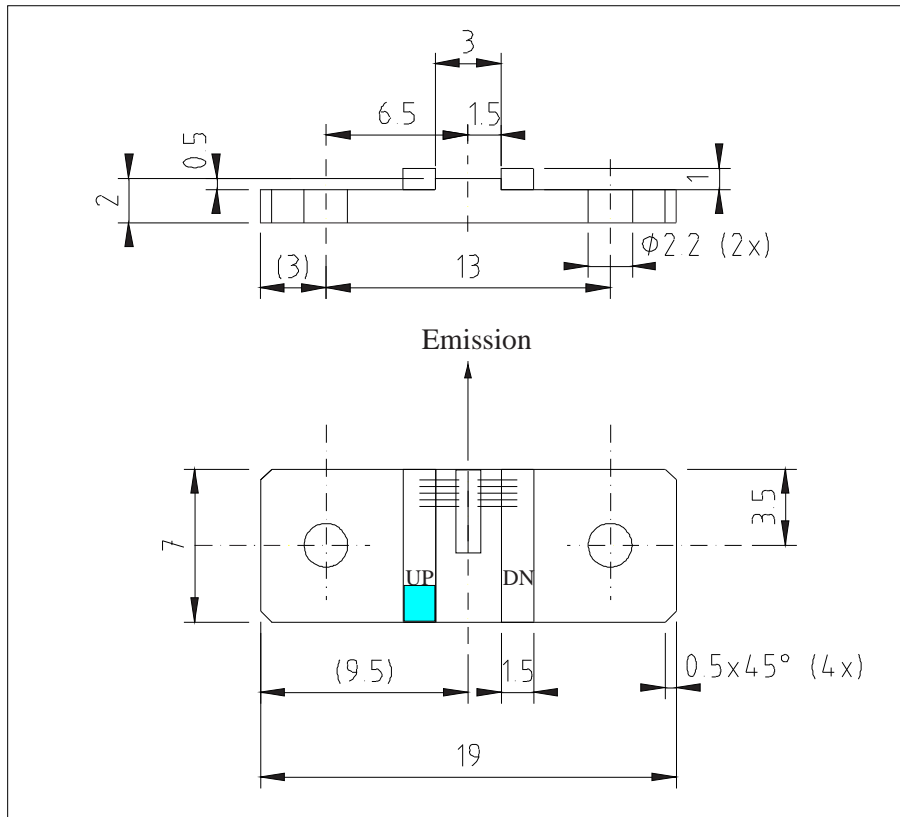


Figure 1: Support mounting for #sbcw2095 UP (please note that the laser is connected to the UP pad drawn in blue)

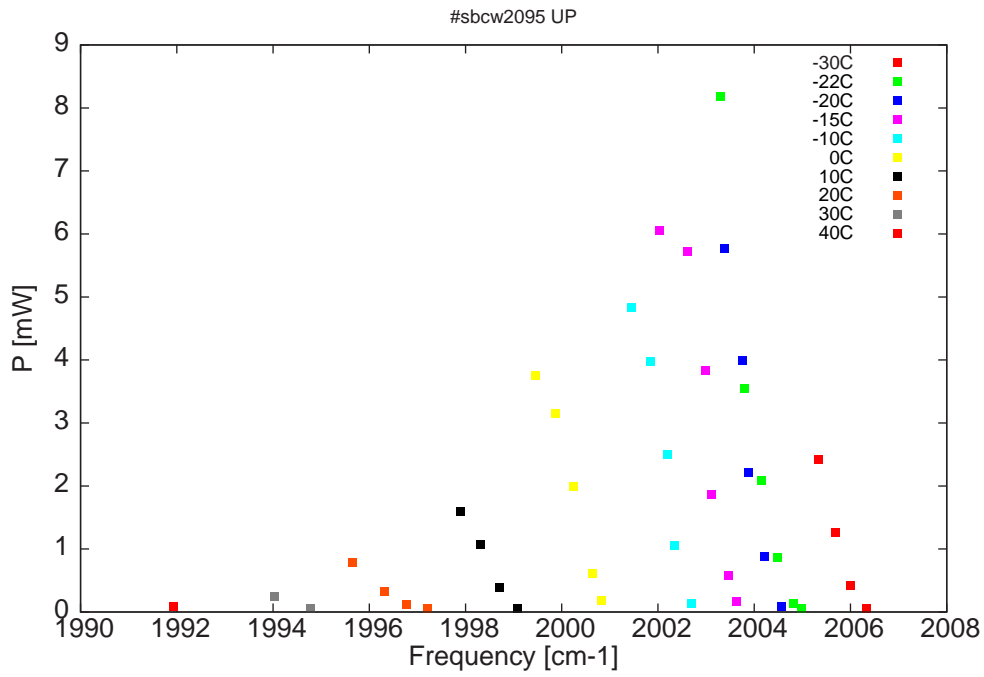


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

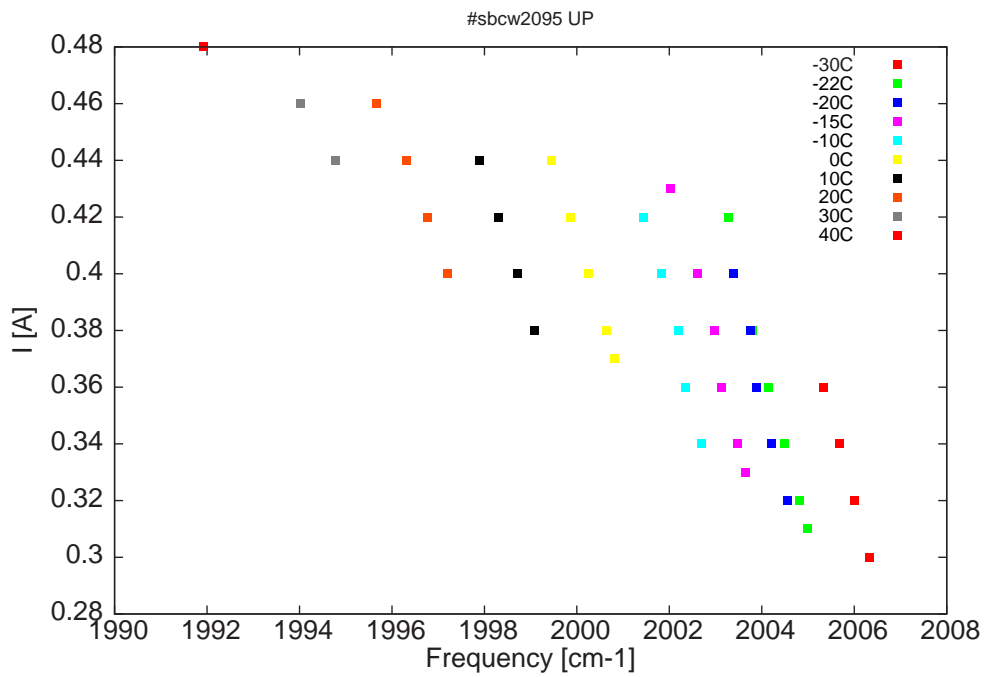


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

| λ [nm] | ν [cm ⁻¹] | P[mW] | Temp[°C] | U_{LASER} [V] | I[A] |
|----------------|---------------------------|-------|----------|-----------------|------|
| 4984.2 | 2006.3 | 0.1 | -30 | 10.3 | 0.3 |
| 4985 | 2006 | 0.4 | -30 | 10.5 | 0.32 |
| 4985.8 | 2005.7 | 1.3 | -30 | 10.6 | 0.34 |
| 4986.7 | 2005.3 | 2.4 | -30 | 10.7 | 0.36 |
| 4987.6 | 2005 | 0.1 | -22 | 10.2 | 0.31 |
| 4988 | 2004.8 | 0.1 | -22 | 10.3 | 0.32 |
| 4988.8 | 2004.5 | 0.9 | -22 | 10.4 | 0.34 |
| 4989.7 | 2004.1 | 2.1 | -22 | 10.6 | 0.36 |
| 4990.5 | 2003.8 | 3.5 | -22 | 10.7 | 0.38 |
| 4991.8 | 2003.3 | 8.2 | -22 | 11 | 0.42 |
| 4988.6 | 2004.6 | 0.1 | -20 | 10.2 | 0.32 |
| 4989.5 | 2004.2 | 0.9 | -20 | 10.4 | 0.34 |
| 4990.3 | 2003.9 | 2.2 | -20 | 10.5 | 0.36 |
| 4990.7 | 2003.7 | 4 | -20 | 10.7 | 0.38 |
| 4991.6 | 2003.4 | 5.8 | -20 | 10.8 | 0.4 |
| 4990.9 | 2003.6 | 0.2 | -15 | 10.2 | 0.33 |
| 4991.3 | 2003.5 | 0.6 | -15 | 10.3 | 0.34 |
| 4992.2 | 2003.1 | 1.9 | -15 | 10.4 | 0.36 |
| 4992.5 | 2003 | 3.8 | -15 | 10.6 | 0.38 |
| 4993.5 | 2002.6 | 5.7 | -15 | 10.7 | 0.4 |
| 4994.9 | 2002 | 6.1 | -15 | 10.9 | 0.43 |
| 4993.2 | 2002.7 | 0.1 | -10 | 10.2 | 0.34 |
| 4994.2 | 2002.3 | 1.1 | -10 | 10.3 | 0.36 |
| 4994.5 | 2002.2 | 2.5 | -10 | 10.5 | 0.38 |
| 4995.4 | 2001.8 | 4 | -10 | 10.6 | 0.4 |
| 4996.4 | 2001.4 | 4.8 | -10 | 10.7 | 0.42 |
| 4997.9 | 2000.8 | 0.2 | 0 | 10.2 | 0.37 |
| 4998.4 | 2000.6 | 0.6 | 0 | 10.3 | 0.38 |
| 4999.4 | 2000.2 | 2 | 0 | 10.4 | 0.4 |
| 5000.3 | 1999.9 | 3.1 | 0 | 10.6 | 0.42 |
| 5001.4 | 1999.5 | 3.8 | 0 | 10.7 | 0.44 |
| 5002.3 | 1999.1 | 0.1 | 10 | 10.1 | 0.38 |
| 5003.2 | 1998.7 | 0.4 | 10 | 10.3 | 0.4 |
| 5004.2 | 1998.3 | 1.1 | 10 | 10.4 | 0.42 |
| 5005.3 | 1997.9 | 1.6 | 10 | 10.6 | 0.44 |
| 5007 | 1997.2 | 0.1 | 20 | 10.1 | 0.4 |
| 5008.1 | 1996.8 | 0.1 | 20 | 10.3 | 0.42 |
| 5009.2 | 1996.3 | 0.3 | 20 | 10.4 | 0.44 |
| 5010.9 | 1995.7 | 0.8 | 20 | 10.6 | 0.46 |
| 5013.1 | 1994.8 | 0.1 | 30 | 10.3 | 0.44 |
| 5015 | 1994 | 0.2 | 30 | 10.5 | 0.46 |
| 5020.2 | 1991.9 | 0.1 | 40 | 10.5 | 0.48 |

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

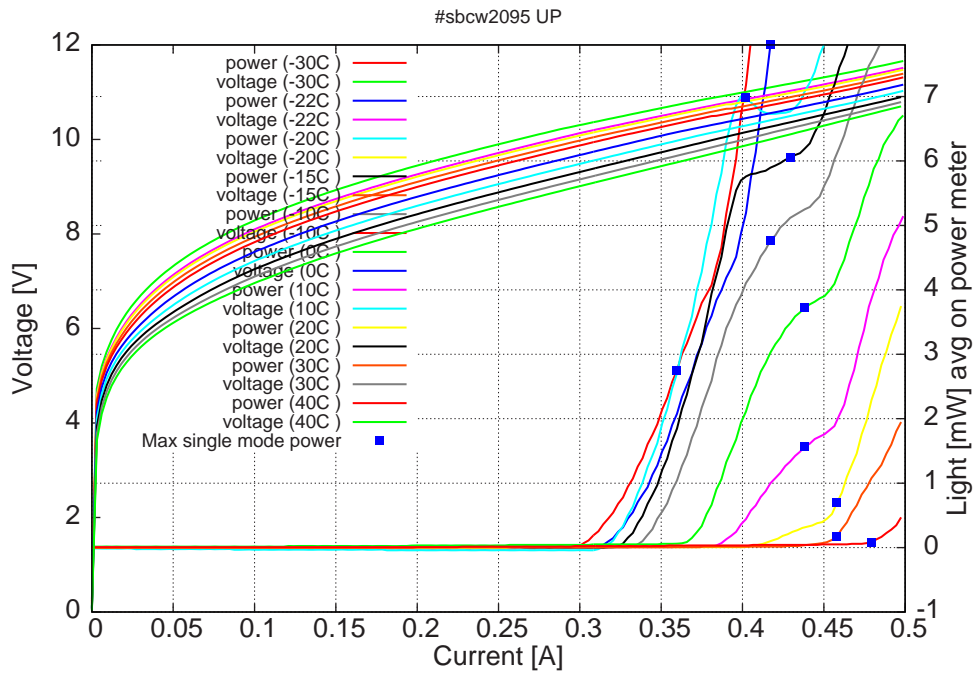


Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

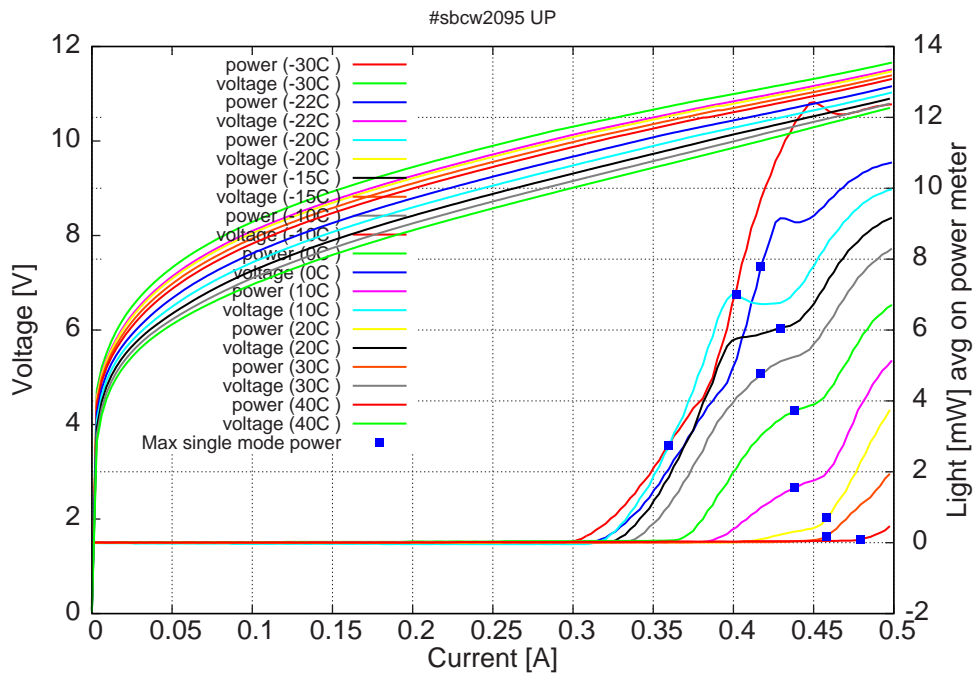
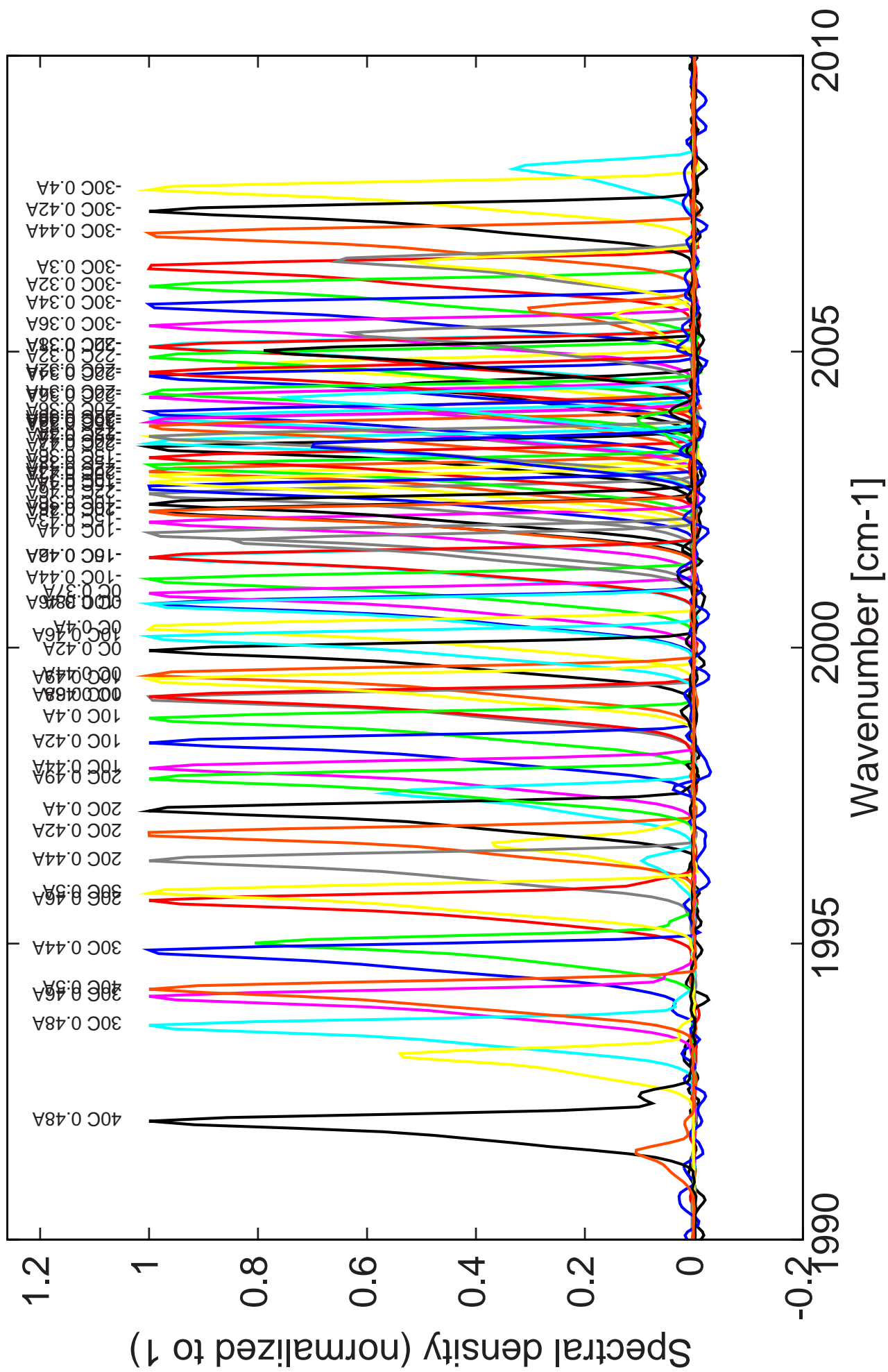


Figure 5: voltage and avg power vs current in continuous-wave operation (including the multimode region)

Note: at -30C: $I_{th}=300\text{mA}$ / $V_{th}= 10.3\text{V}$ (2-wires measurements). Maximum operation current: 0.46A between -30C and 0C, 0.49A between 10C and 20C, 0.50A between 30C and 40C.

Figure 4: spectra at different temperatures for various DC currents



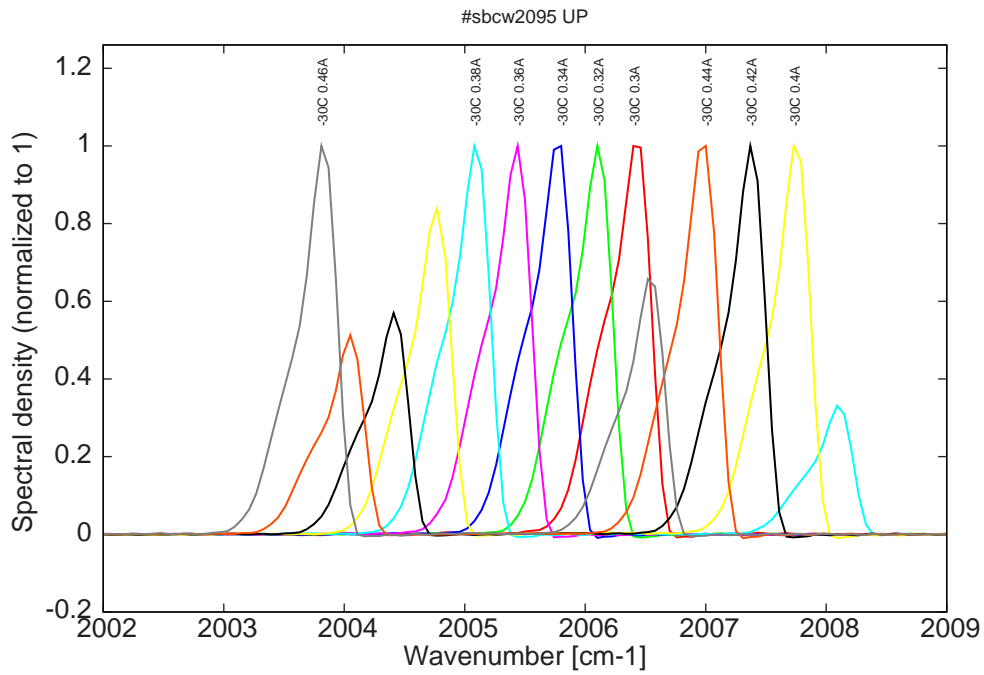


Figure 6: spectra at -30C for various DC currents (monomode up to 0.36A, then bimode, see Fig. 2 & 3)

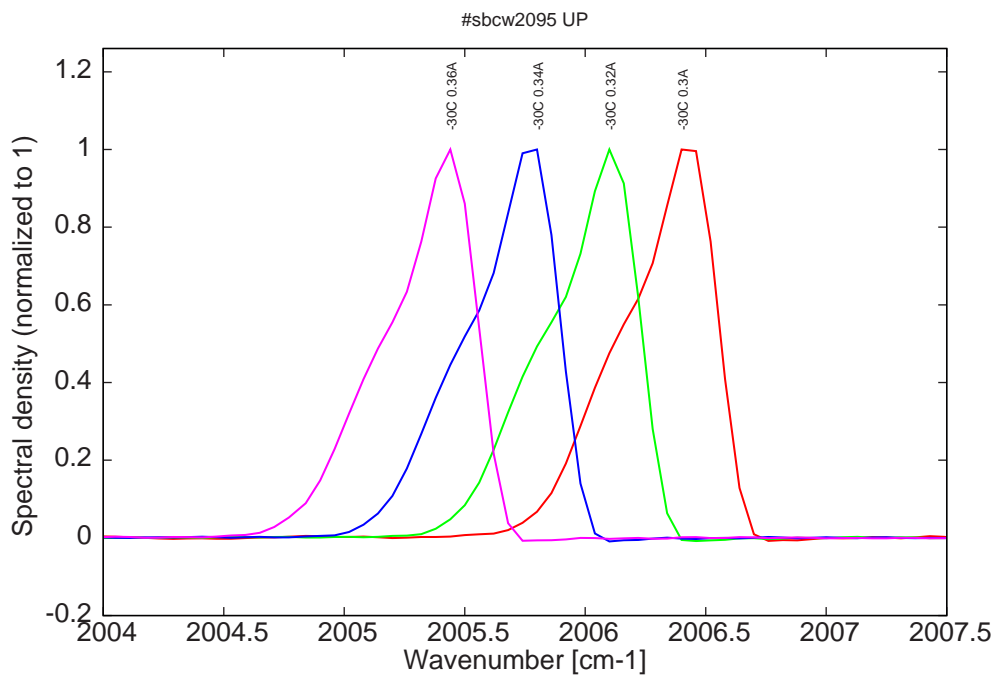


Figure 7: spectra at -30C for various DC currents (monomode range)

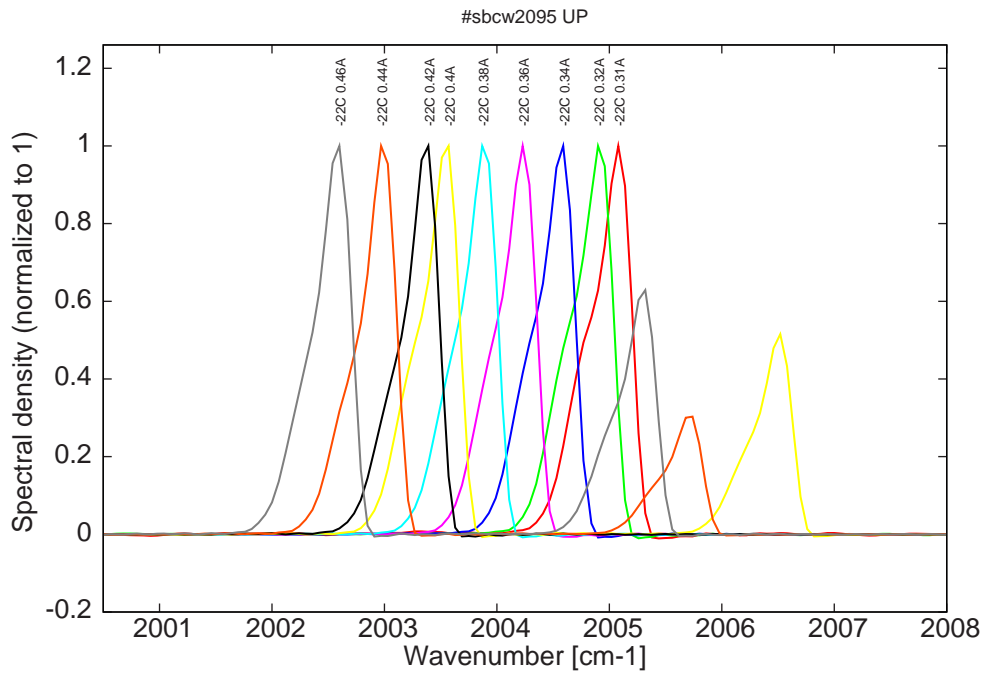


Figure 8: spectra at -22C for various DC currents (monomode up to 0.38A on mode 1, then bimode, then monomode on mode 2 for $I=0.42A$, then bimode, see Fig. 2 & 3)

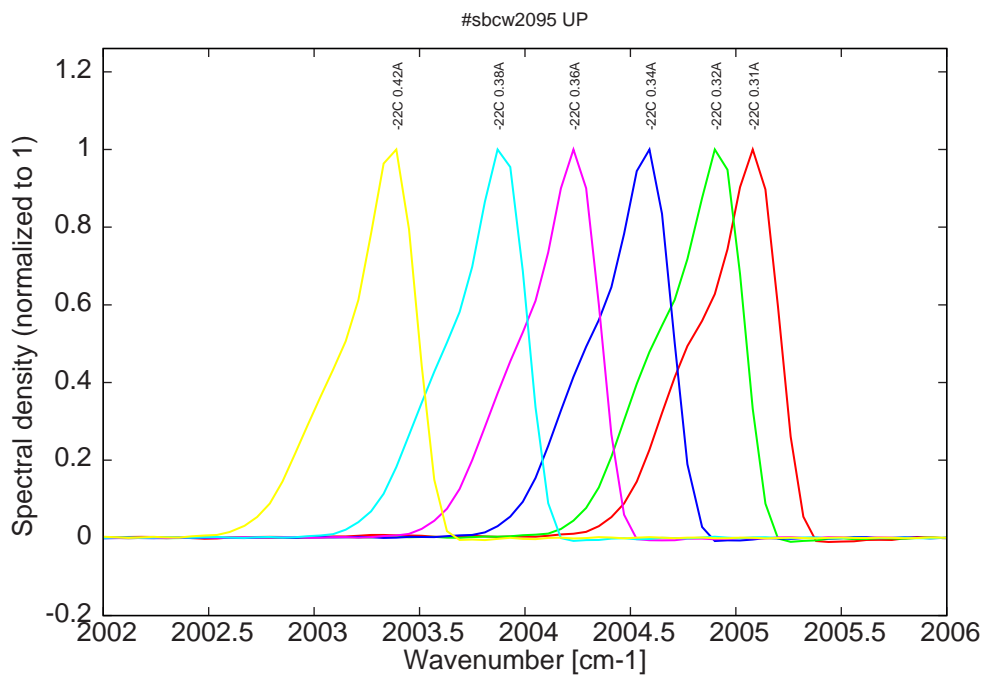


Figure 9: spectra at -22C for various DC currents (monomode range)

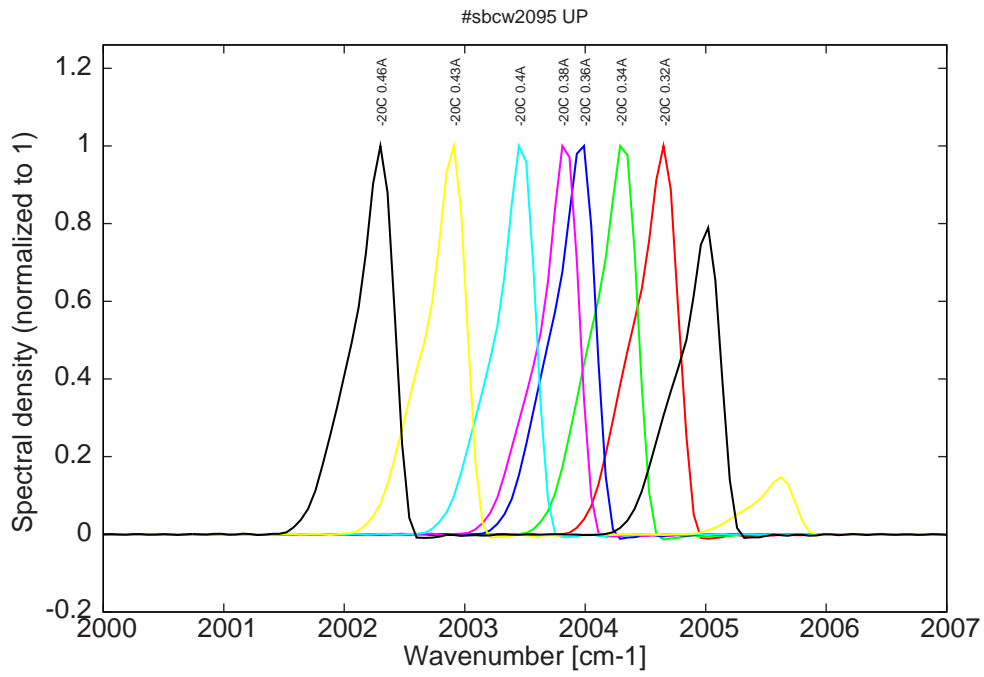


Figure 10: spectra at -20C for various DC currents (monomode on mode 1 up to 0.36A, then monomode on mode 2 up to 0.4A, then bimode, see Fig. 2 & 3)

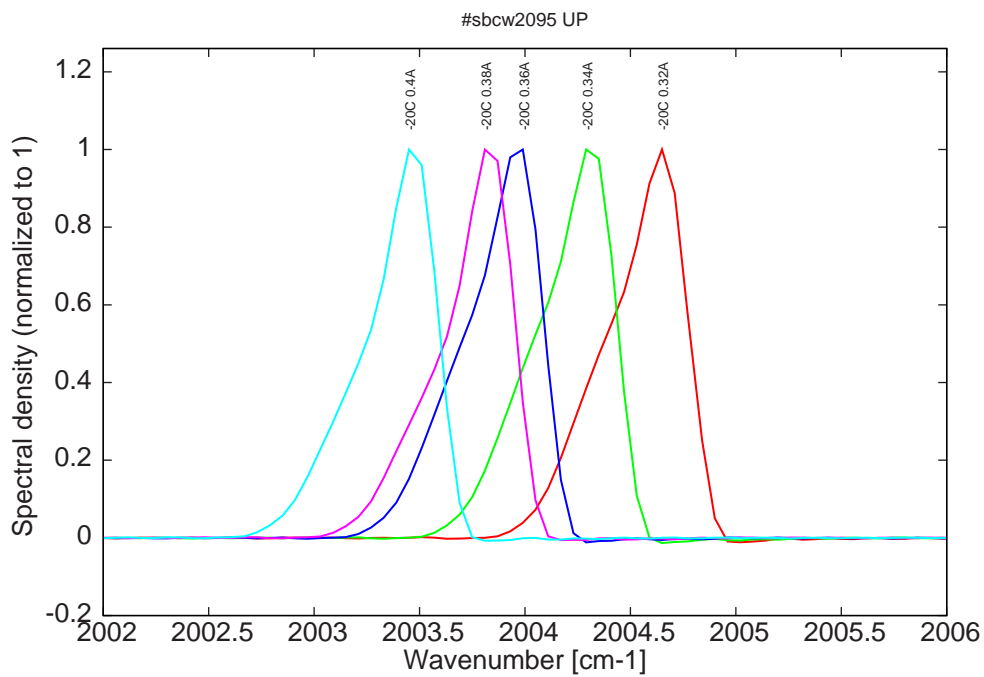


Figure 11: spectra at -20C for various DC currents (monomode range)

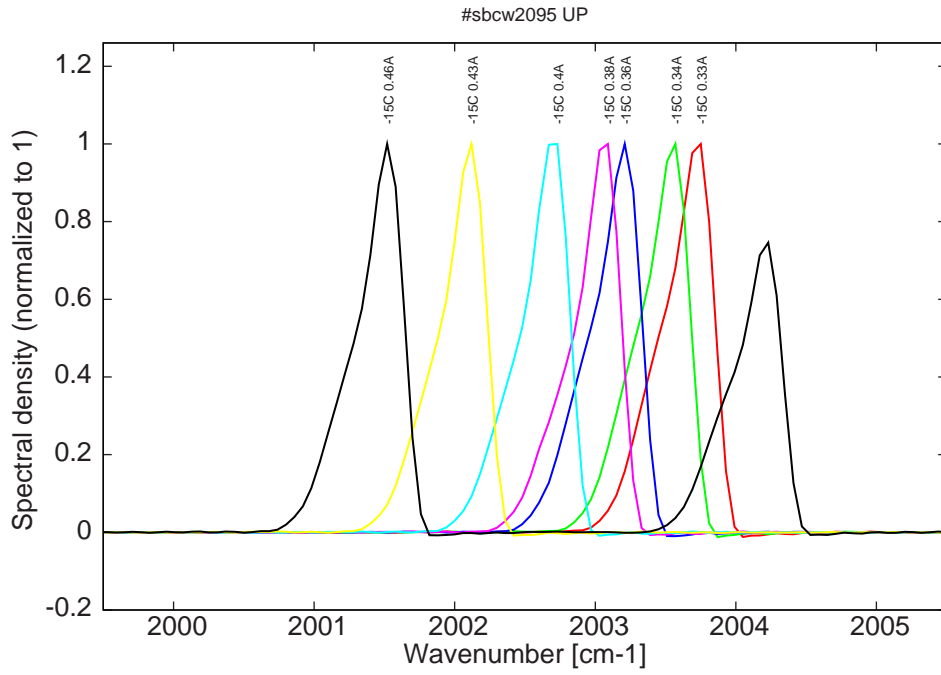


Figure 12: spectra at -15C for various DC currents (monomode on mode 1 up to 0.36A, then monomode on mode 2 up to 0.43A, then bimode, see Fig. 2 & 3)

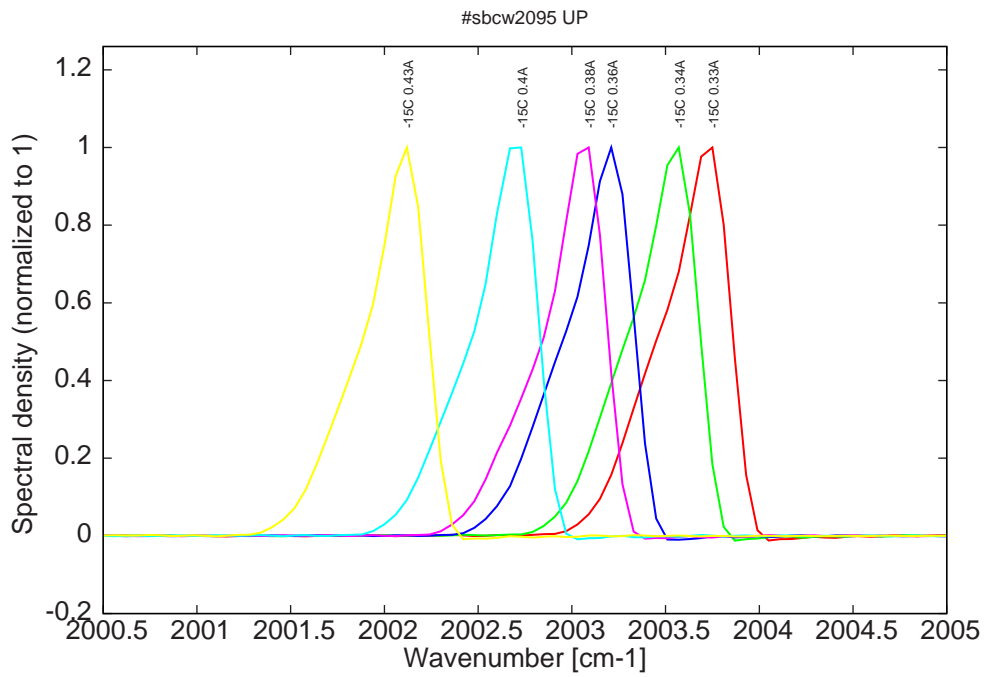


Figure 13: spectra at -15C for various DC currents (monomode range)

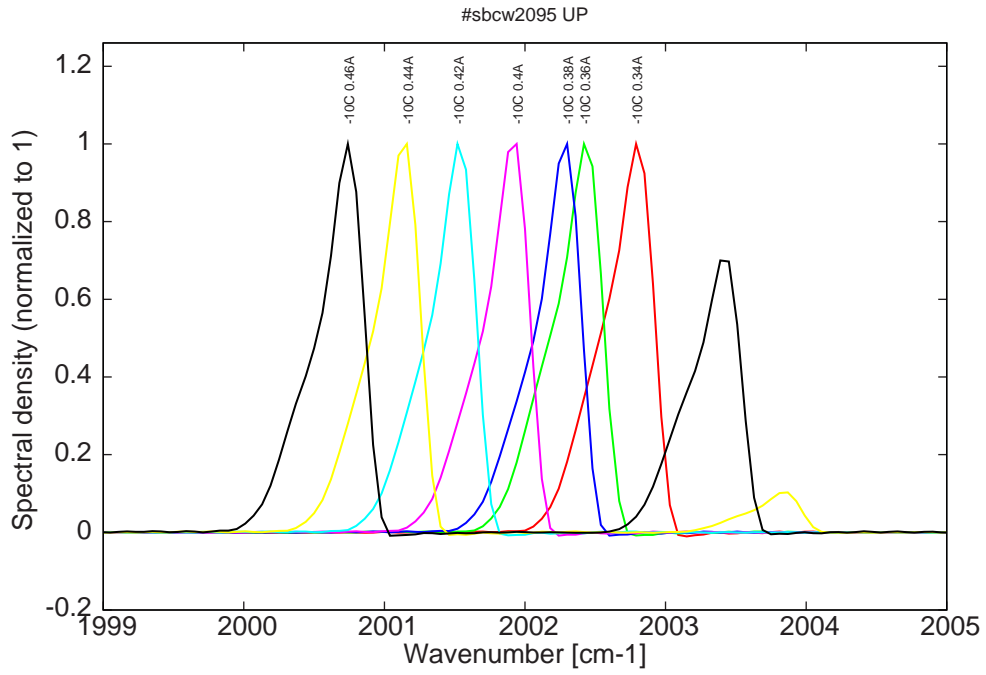


Figure 14: spectra at -10C for various DC currents (monomode on mode 1 up to 0.36A, then monomode on mode 2 up to 0.42A, then bimode, see Fig. 2 & 3)

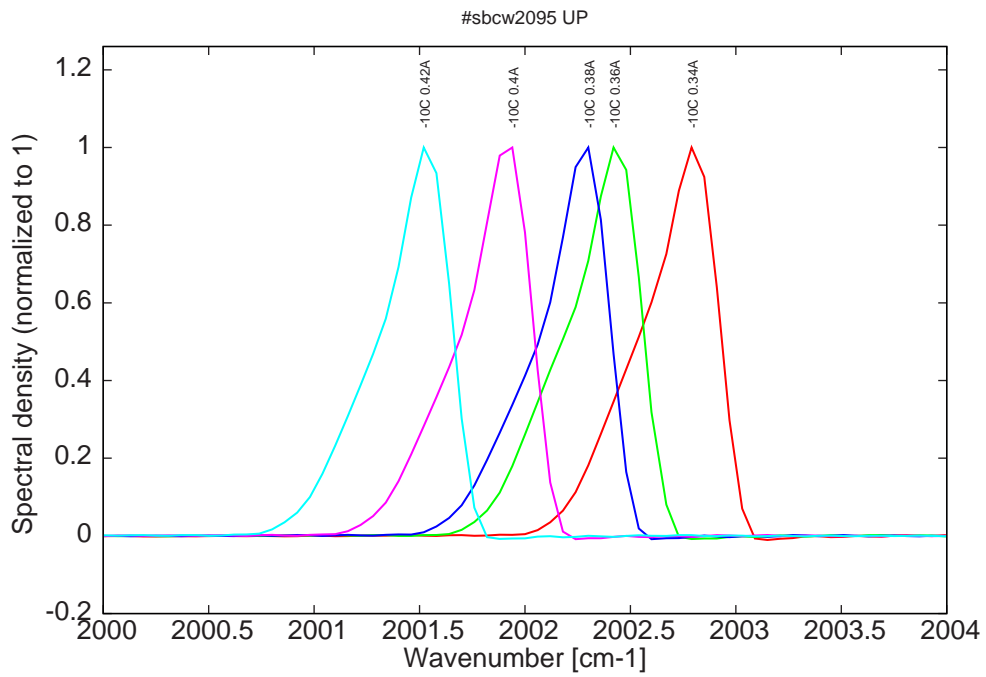


Figure 15: spectra at -10C for various DC currents (monomode range)

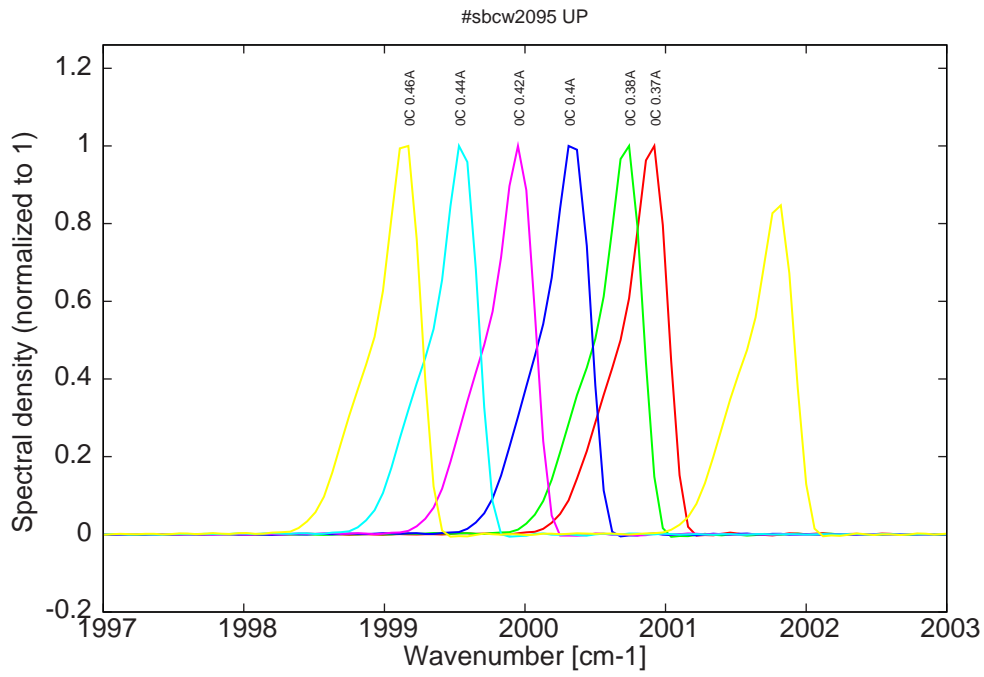


Figure 16: spectra at 0C for various DC currents (monomode on mode 2 up to 0.44A, then bimode, see Fig. 2 & 3)

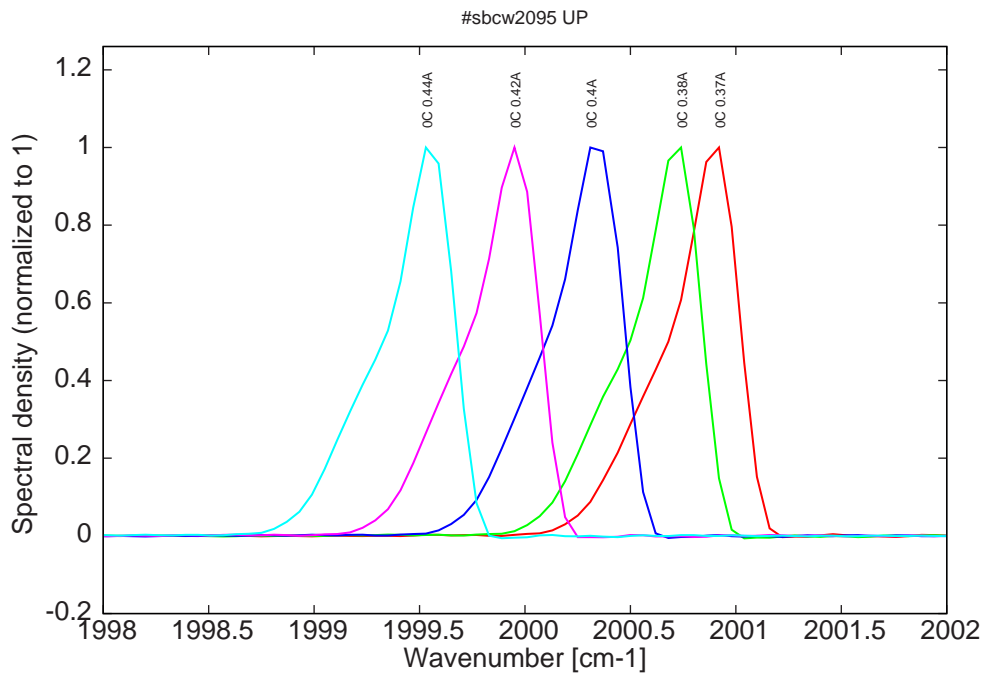


Figure 17: spectra at 0C for various DC currents (monomode range)

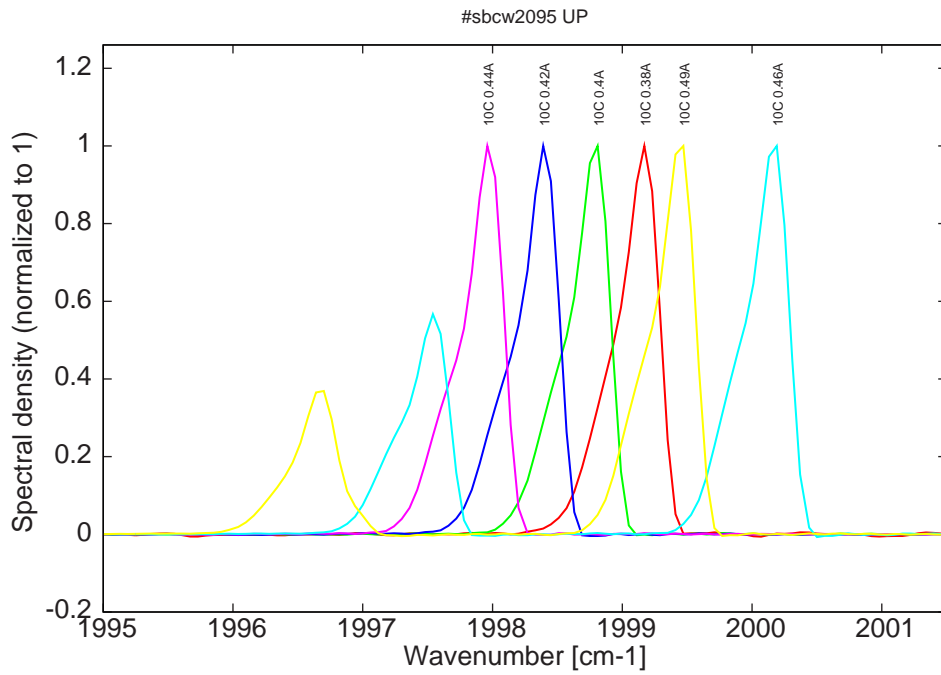


Figure 18: spectra at 10C for various DC currents (monomode on mode 2 up to 0.44A, then bimode, see Fig. 2 & 3)

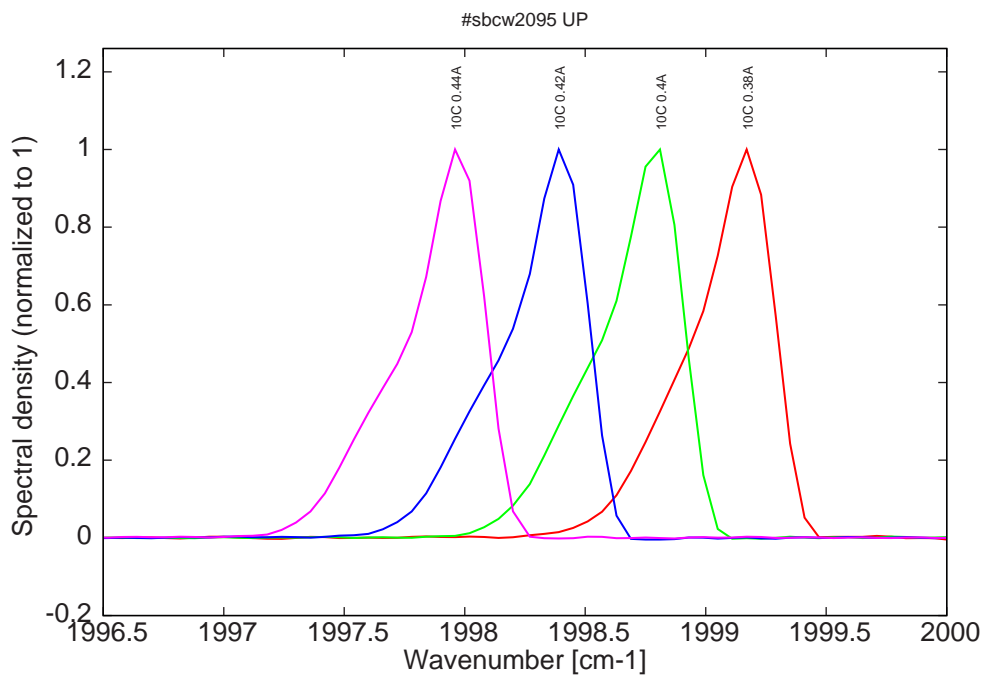


Figure 19: spectra at 10C for various DC currents (monomode range)

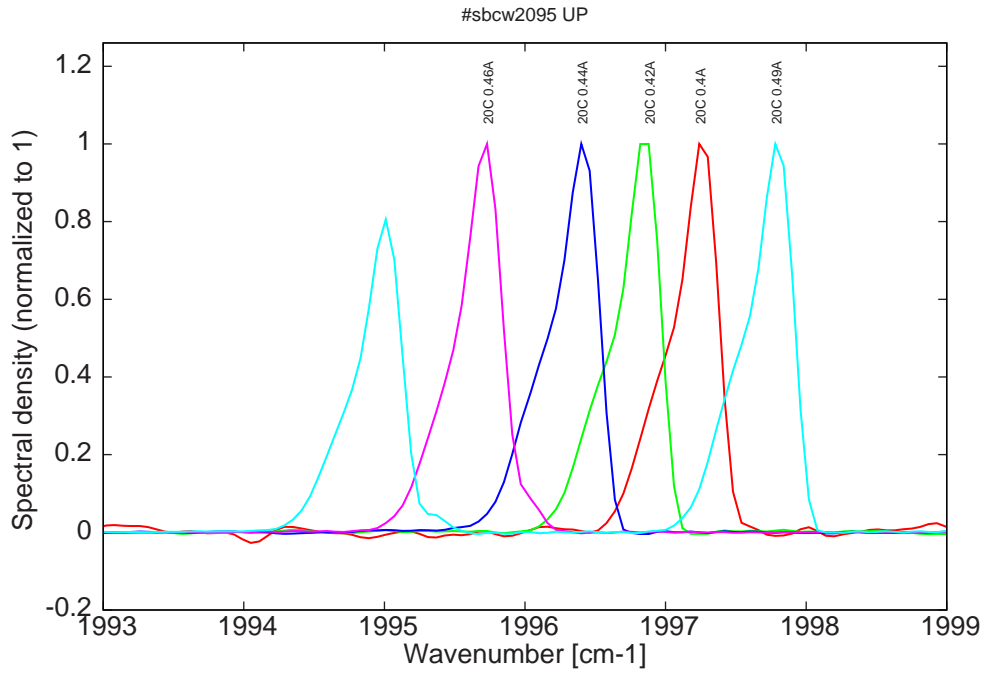


Figure 20: spectra at 20C for various DC currents (monomode on mode 2 up to 0.46A, then bimode, see Fig. 2 & 3)

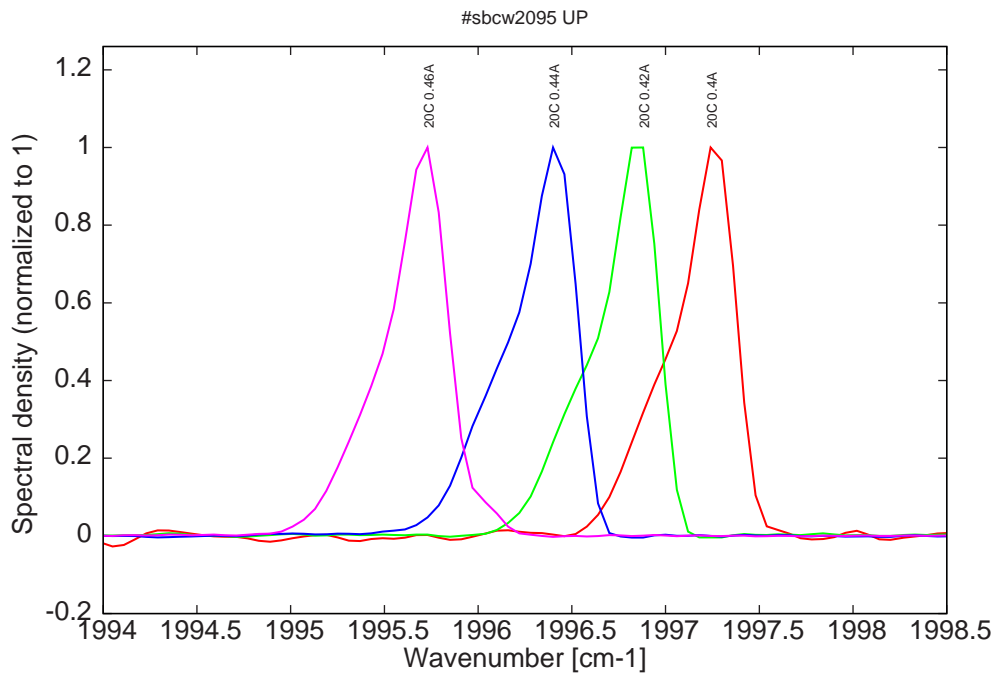


Figure 21: spectra at 20C for various DC currents (monomode range)

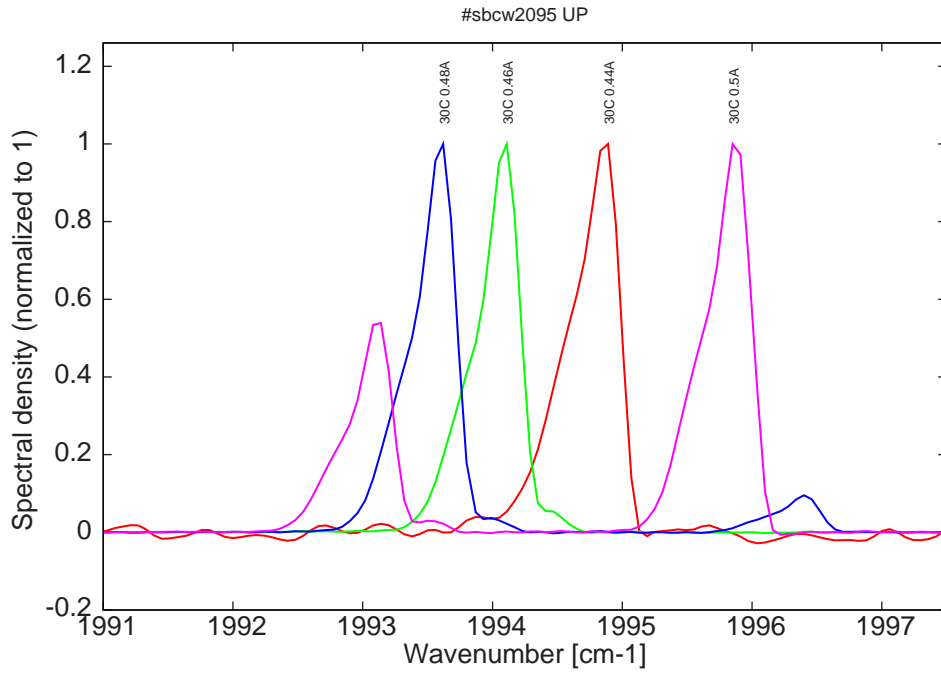


Figure 22: spectra at 30C for various DC currents (monomode on mode 2 up to 0.46A, then bimode, see Fig. 2 & 3)

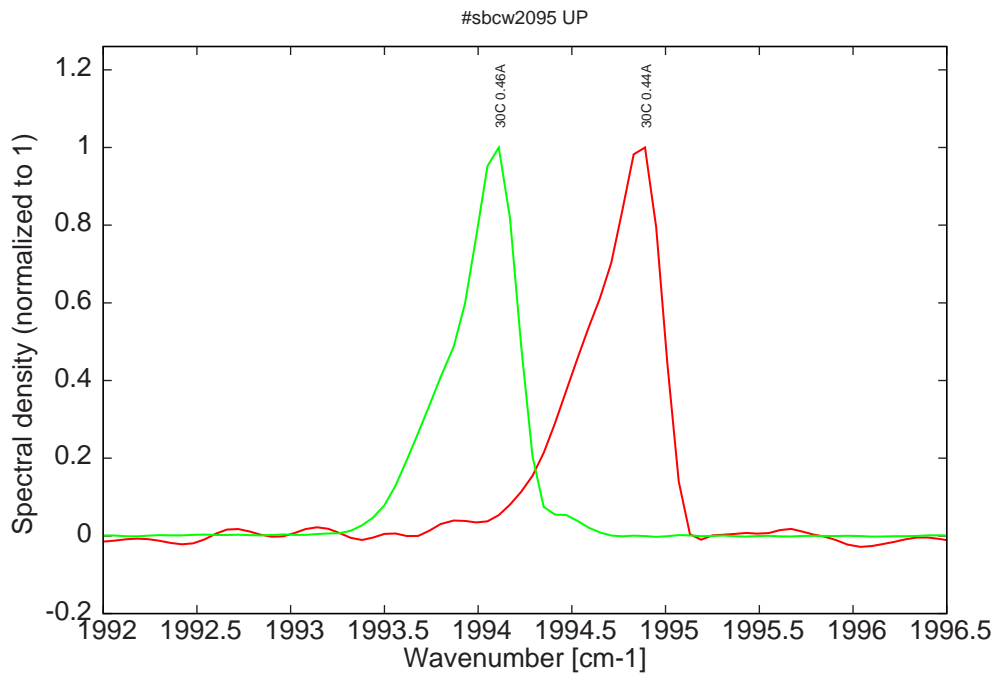


Figure 23: spectra at 30C for various DC currents (monomode range)

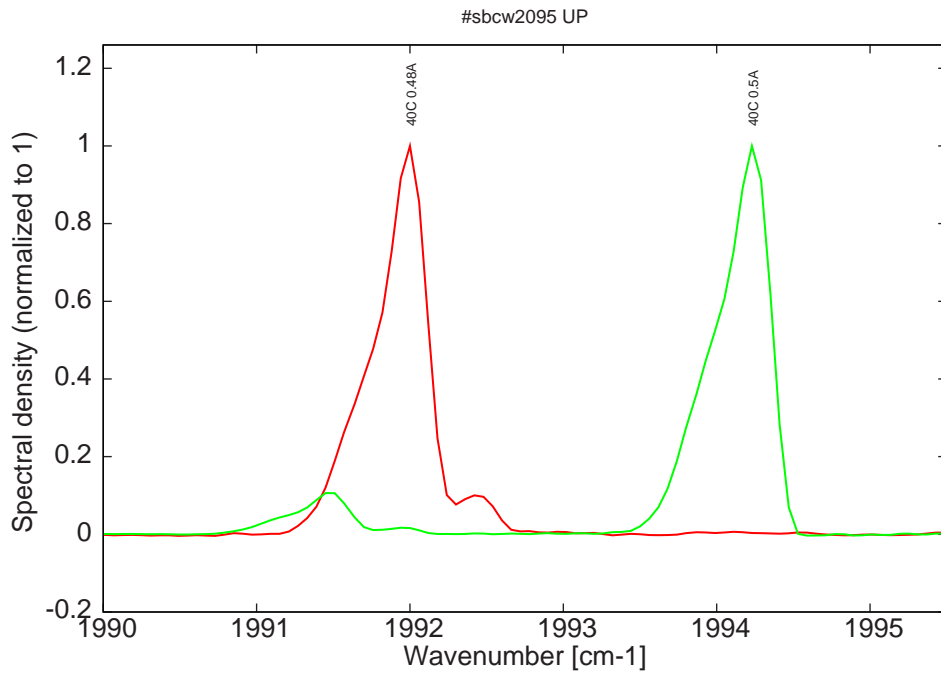


Figure 24: spectra at 40C for various DC currents (monomode on mode 2 up to 0.48A, then bimode, see Fig. 2 & 3)

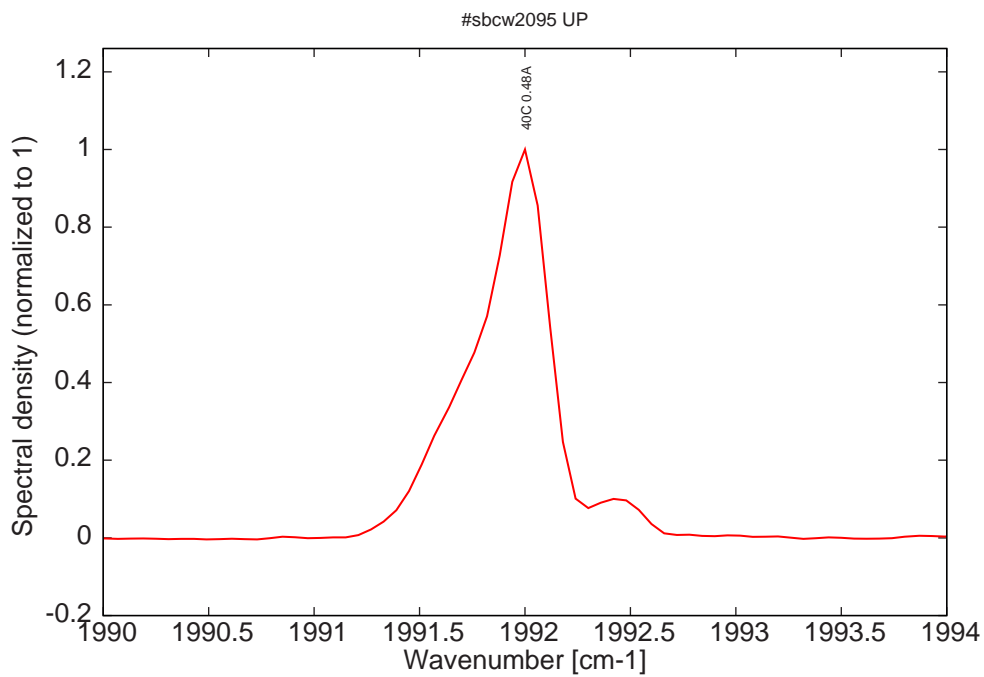


Figure 25: spectrum at 40C for various DC currents (monomode range)