

**Datasheet for #sbcw12930 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 be used with a high compliance CW laser driver capable of reaching the operating current and voltage indicated in this datasheet, or up to 2.5A/20V.



Figure 1: Mechanical and electrical interface for #sbcw12930 DN

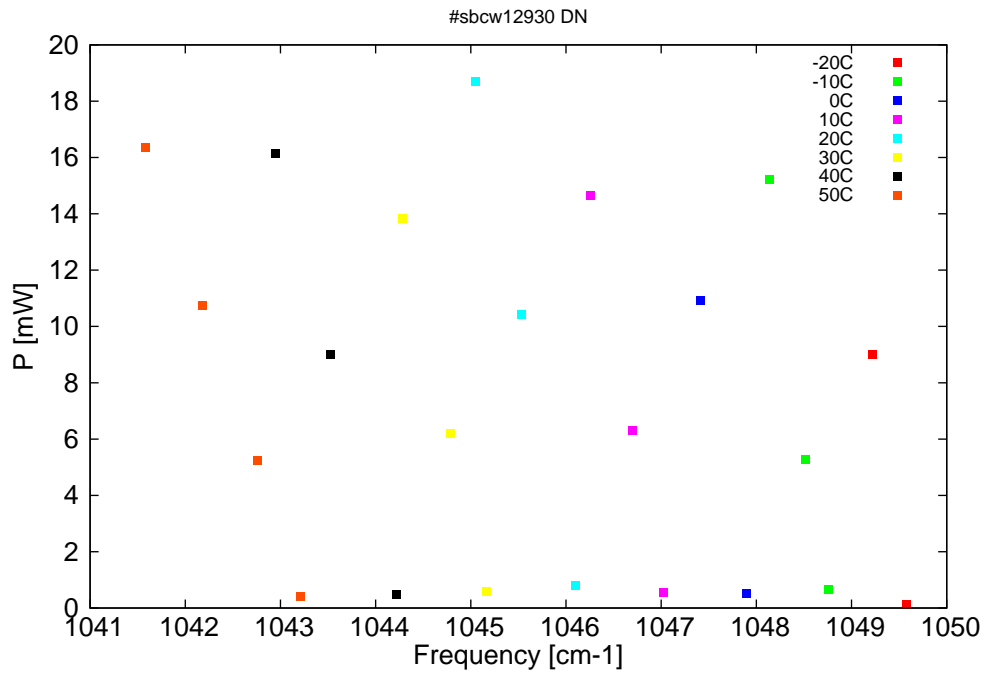


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

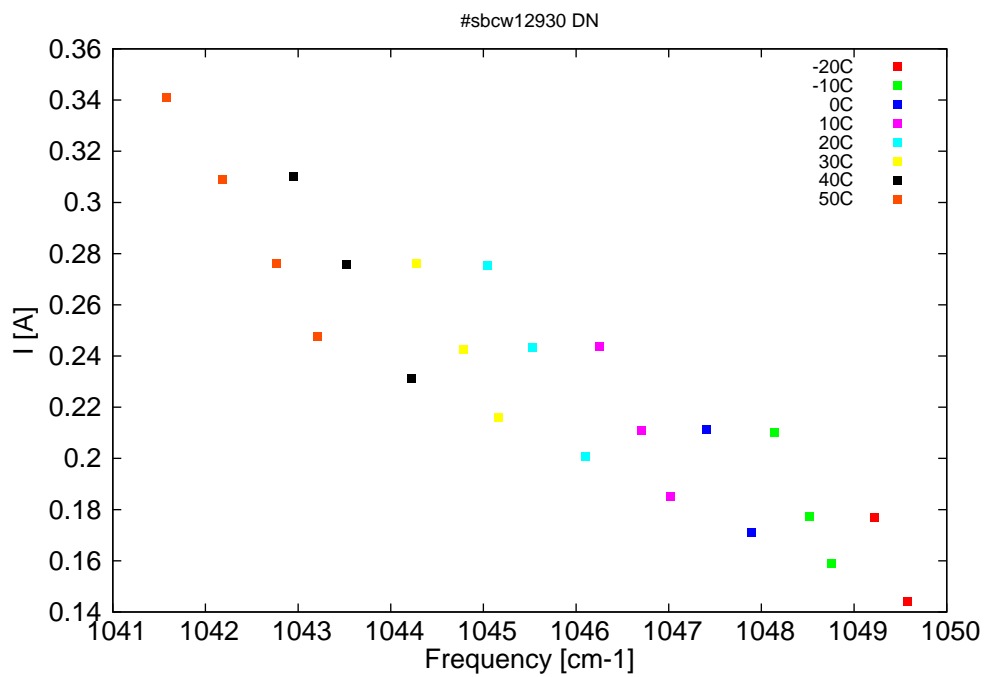


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

| $\lambda$ [nm] | $\nu$ [cm <sup>-1</sup> ] | P[mW] | Temp[°C] | $U_{LASER}$ [V] | I[A] |
|----------------|---------------------------|-------|----------|-----------------|------|
| 9527.6         | 1049.6                    | 0.1   | -20      | 8.8             | 0.14 |
| 9530.9         | 1049.2                    | 9     | -20      | 9.1             | 0.18 |
| 9535.1         | 1048.8                    | 0.7   | -10      | 8.8             | 0.16 |
| 9537.2         | 1048.5                    | 5.3   | -10      | 9.1             | 0.18 |
| 9540.7         | 1048.1                    | 15.2  | -10      | 9.4             | 0.21 |
| 9543           | 1047.9                    | 0.5   | 0        | 8.9             | 0.17 |
| 9547.4         | 1047.4                    | 10.9  | 0        | 9.4             | 0.21 |
| 9550.9         | 1047                      | 0.6   | 10       | 9               | 0.19 |
| 9553.8         | 1046.7                    | 6.3   | 10       | 9.3             | 0.21 |
| 9557.9         | 1046.3                    | 14.7  | 10       | 9.7             | 0.24 |
| 9559.3         | 1046.1                    | 0.8   | 20       | 9.1             | 0.2  |
| 9564.5         | 1045.5                    | 10.4  | 20       | 9.6             | 0.24 |
| 9568.9         | 1045                      | 18.7  | 20       | 9.9             | 0.28 |
| 9567.9         | 1045.2                    | 0.6   | 30       | 9.2             | 0.22 |
| 9571.3         | 1044.8                    | 6.2   | 30       | 9.5             | 0.24 |
| 9576           | 1044.3                    | 13.8  | 30       | 9.9             | 0.28 |
| 9576.5         | 1044.2                    | 0.5   | 40       | 9.3             | 0.23 |
| 9582.9         | 1043.5                    | 9     | 40       | 9.8             | 0.28 |
| 9588.2         | 1042.9                    | 16.2  | 40       | 10.2            | 0.31 |
| 9585.8         | 1043.2                    | 0.4   | 50       | 9.5             | 0.25 |
| 9589.9         | 1042.8                    | 5.2   | 50       | 9.8             | 0.28 |
| 9595.3         | 1042.2                    | 10.8  | 50       | 10.1            | 0.31 |
| 9600.8         | 1041.6                    | 16.4  | 50       | 10.5            | 0.34 |

Table 1: Singlemode optical output power as function of operating parameters.

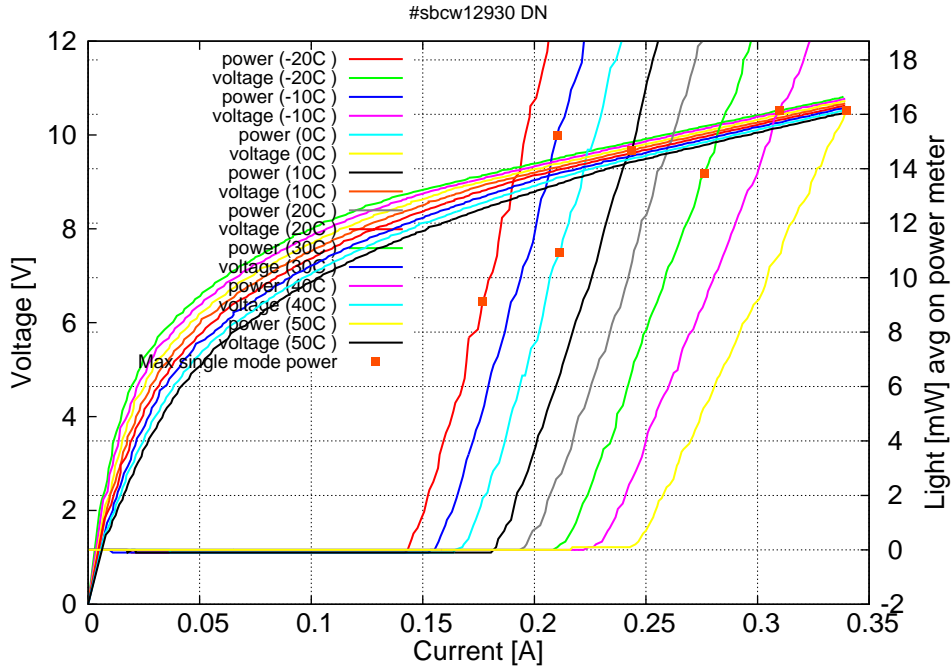


Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

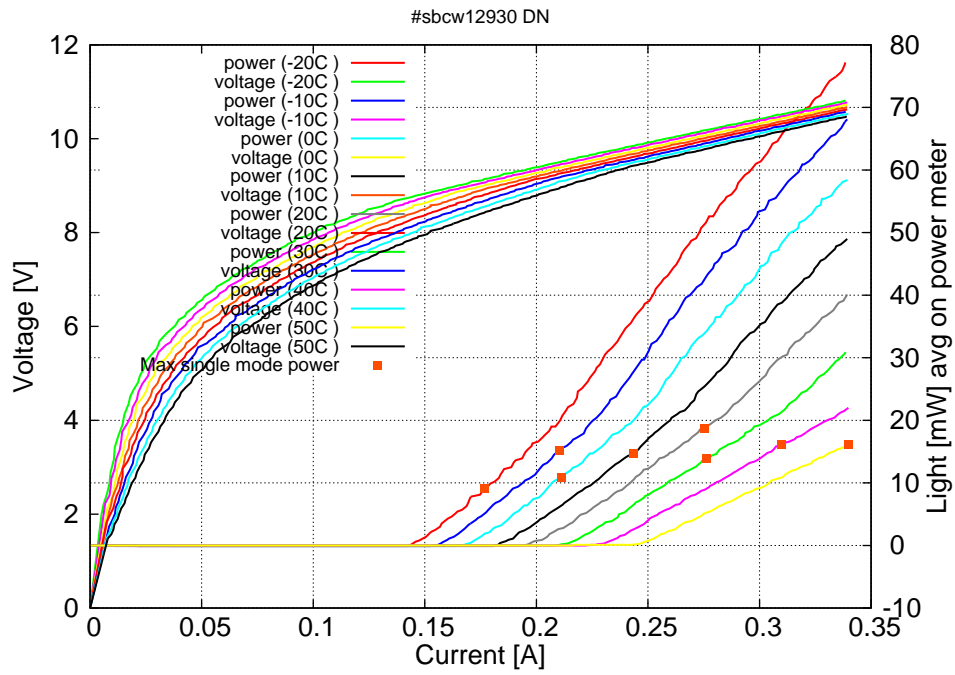


Figure 5: voltage and avg power vs current in continuous-wave operation (including the multimode region)

Note: at -20C:  $I_{th}=0.14A$  /  $V_{th}=8.8V$  (2-wires measurements). Maximum operation current: 0.34A for all temperatures.



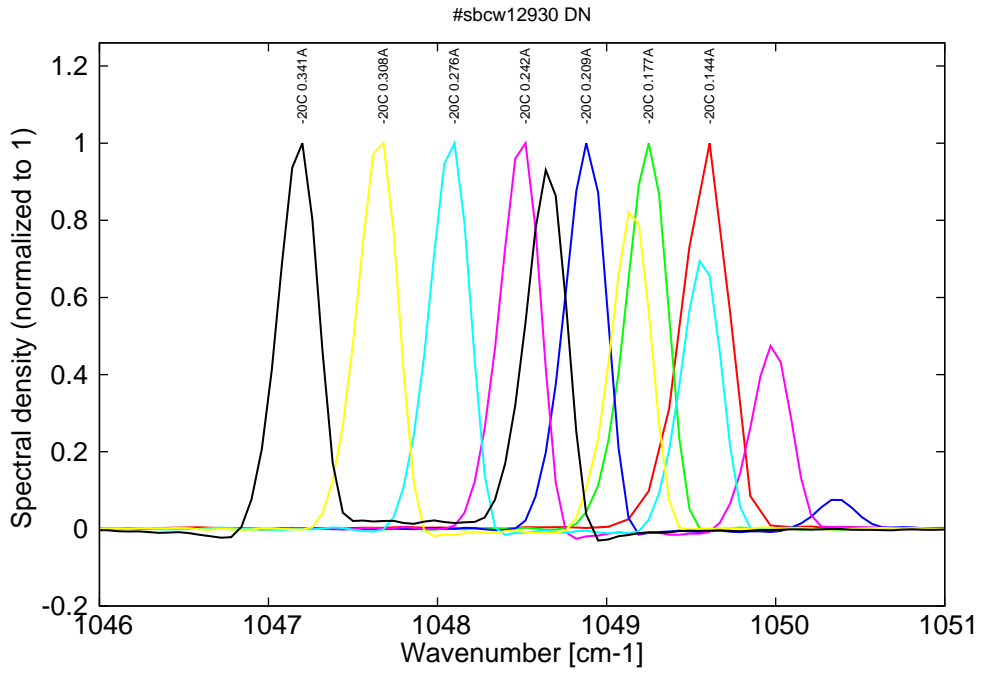


Figure 6: spectra at -20C for various DC currents (monomode up to 0.175A, then bimode)

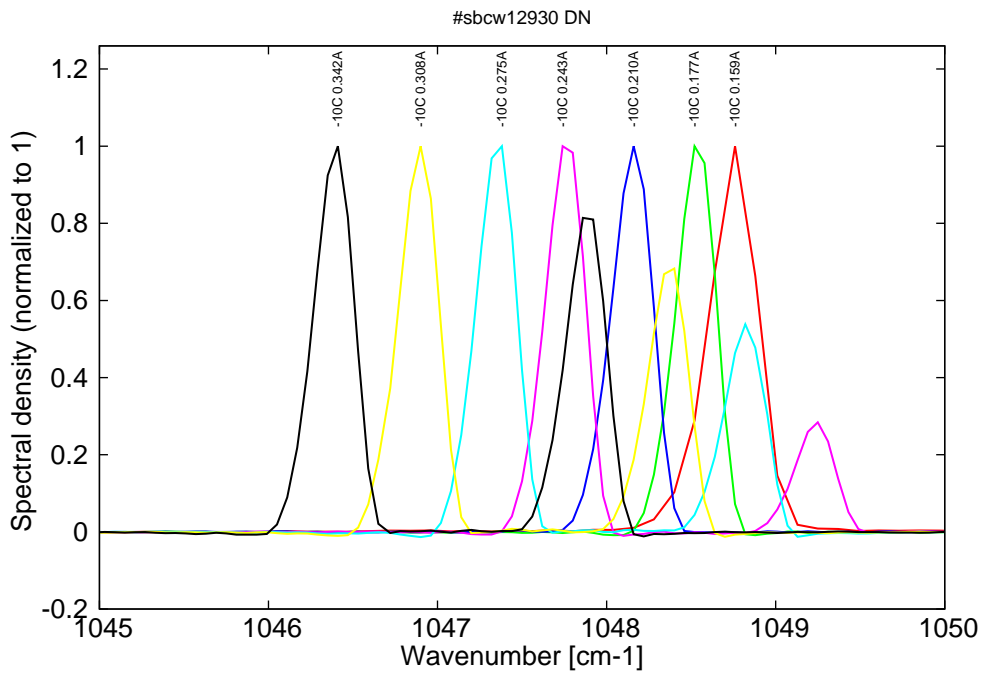


Figure 7: spectra at -10C for various DC currents (monomode up to 0.21A, then bimode)

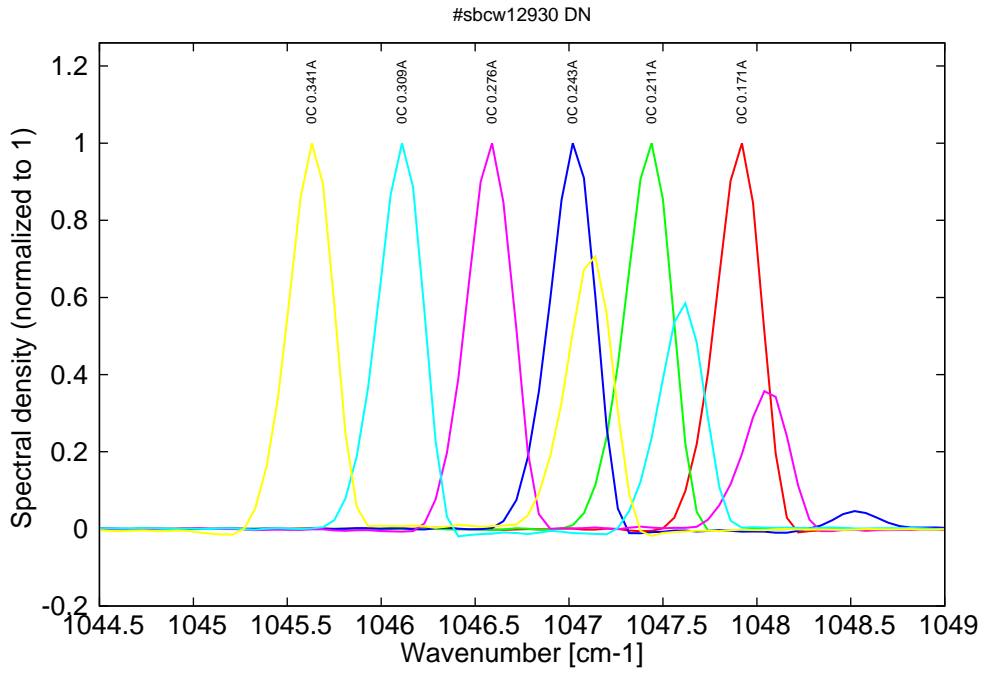


Figure 8: spectra at 0C for various DC currents (monomode up to 0.21A, then bimode)

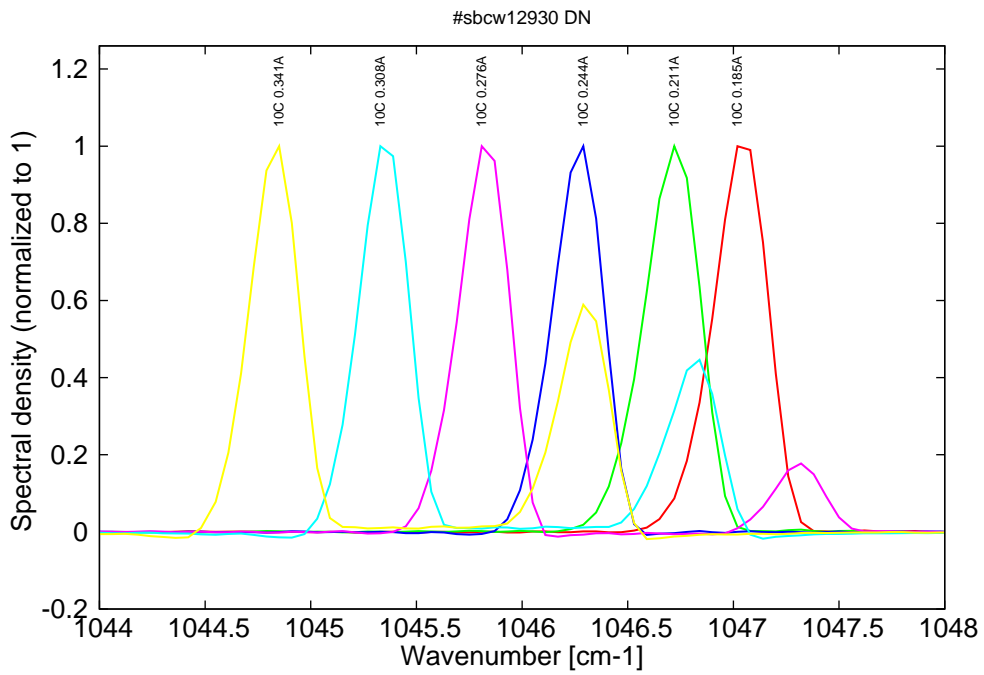


Figure 9: spectra at 10C for various DC currents (monomode up to 0.245A, then bimode)

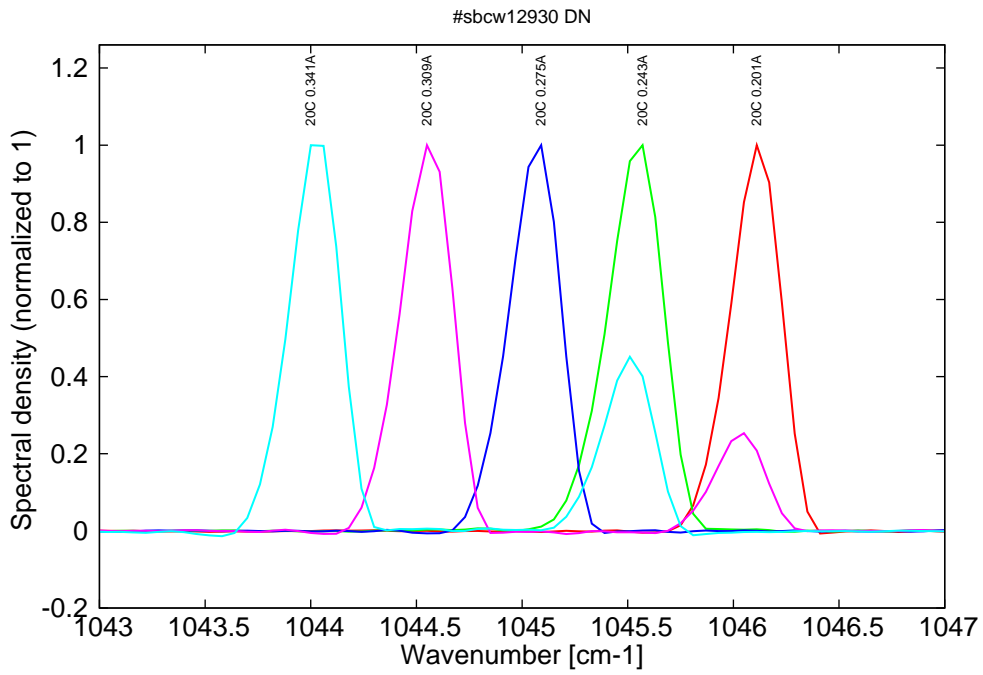


Figure 10: spectra at 20C for various DC currents (monomode up to 0.275A, then bimode)

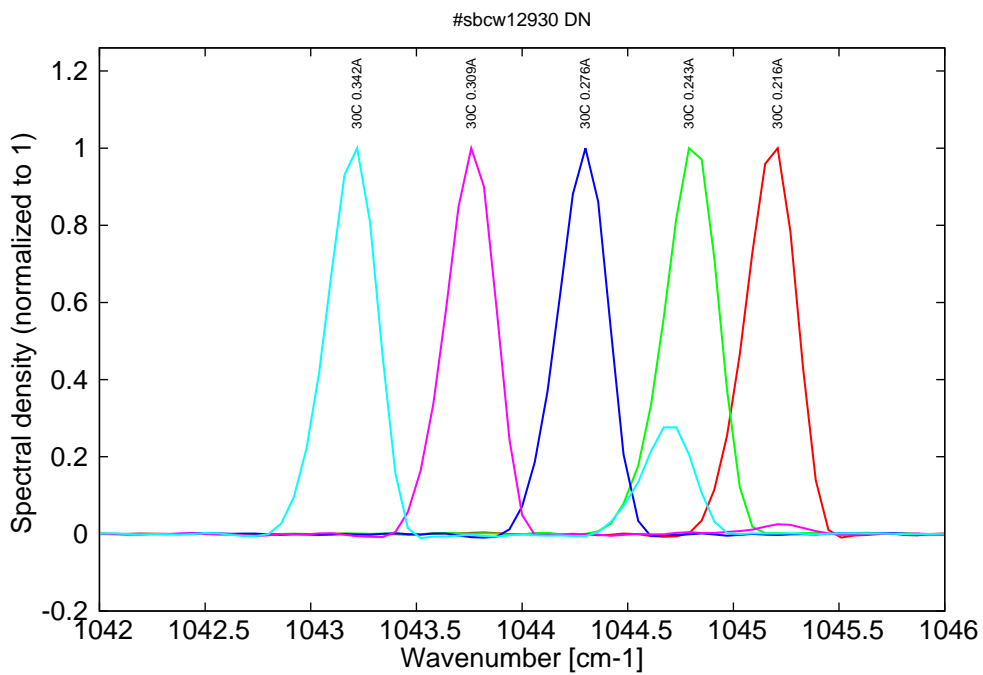


Figure 11: spectra at 30C for various DC currents (monomode up to 0.275A, then bimode)



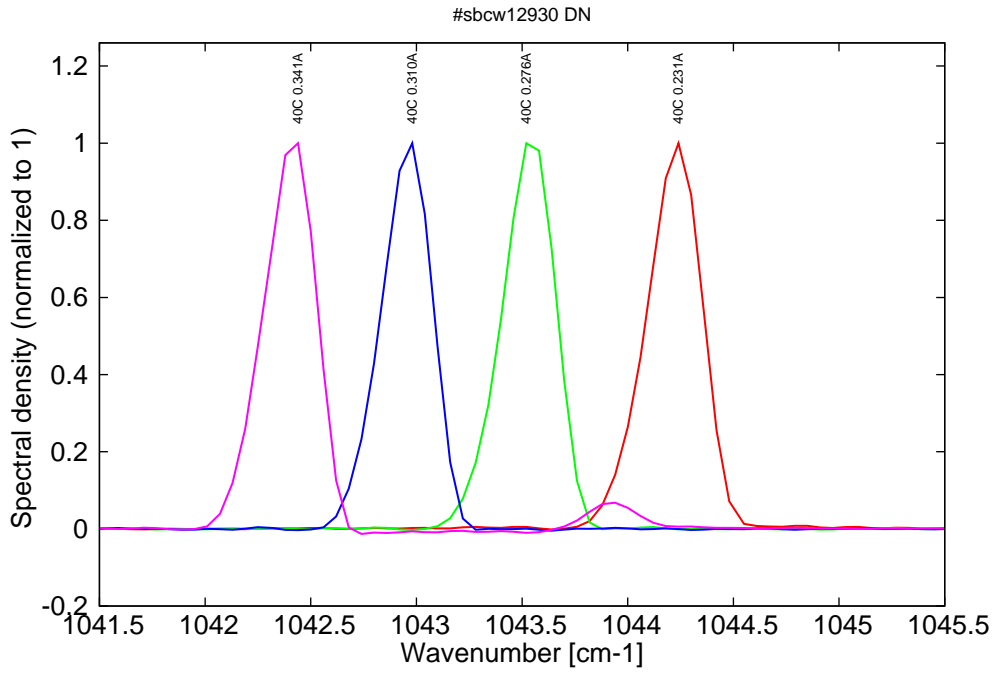


Figure 12: spectra at 40C for various DC currents (monomode up to 0.31A, then bimode)

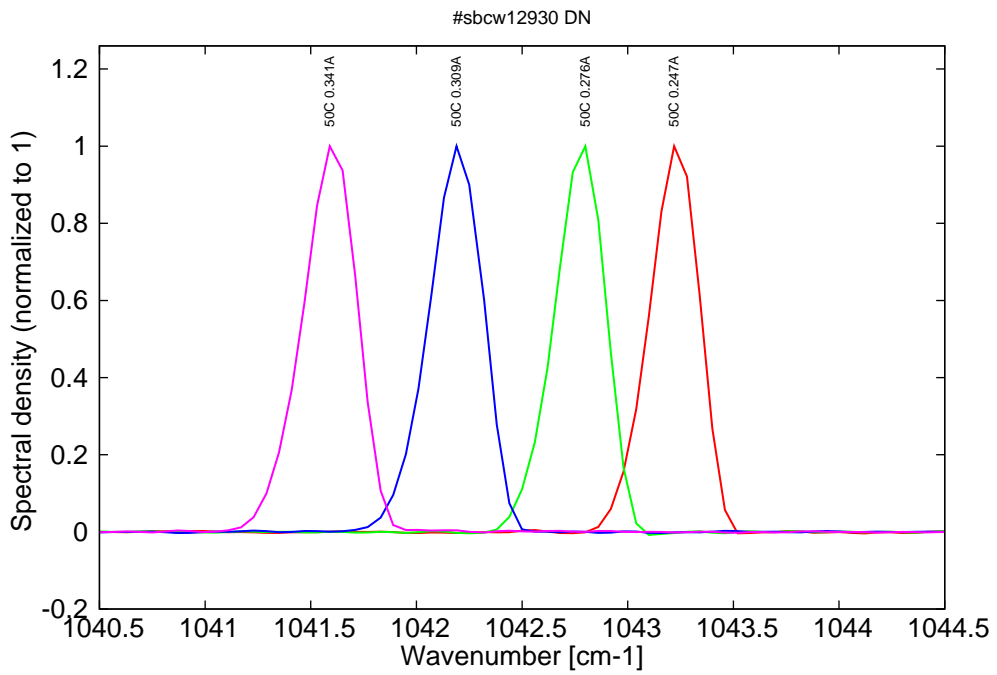


Figure 13: spectra at 50C for various DC currents (monomode up to 0.34A)