

Datasheet for #sb1759 UP

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 longer pulses, higher repetition rate, higher voltage or higher current than specified in this document may cause damage. It will result in loss of warranty, unless agreed upon with Alpes Lasers!

WARNING: Beware of the polarity of the laser. This laser has to be powered with negative bias on the laser contact (= bonding pad, corresponding to the label "laser" on the LLH) and the positive bias on the base contact (= submount, corresponding to the label "base" on the LLH).

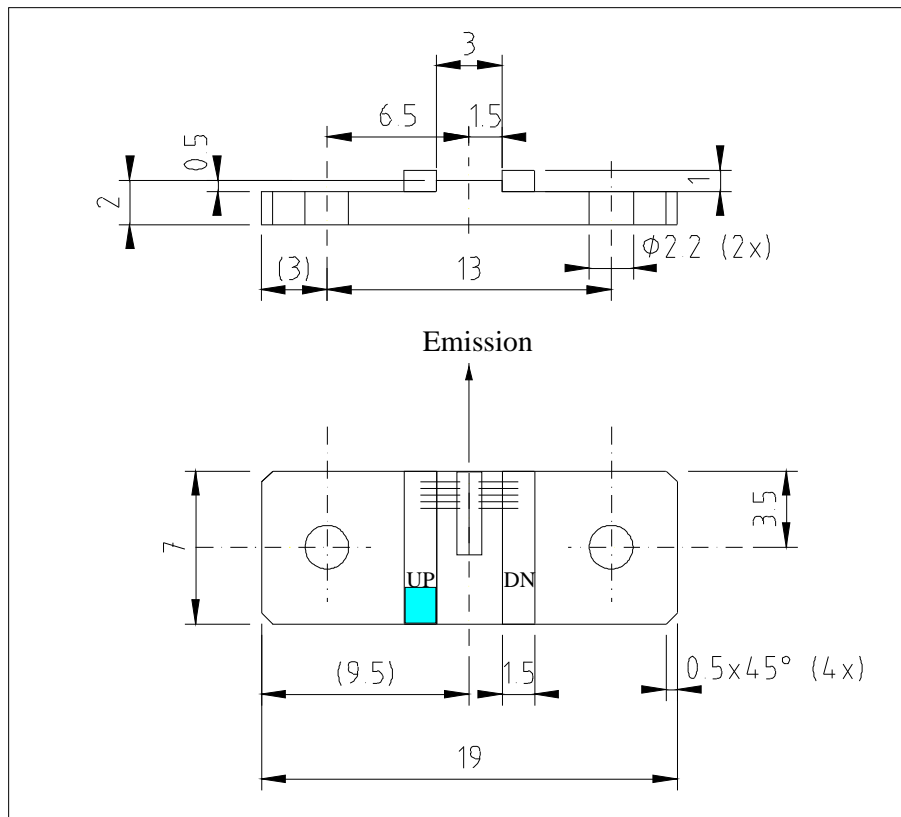


Figure 1: Support mounting for #sb1759 UP (please note that the laser is connected to the UP pad drawn in blue)

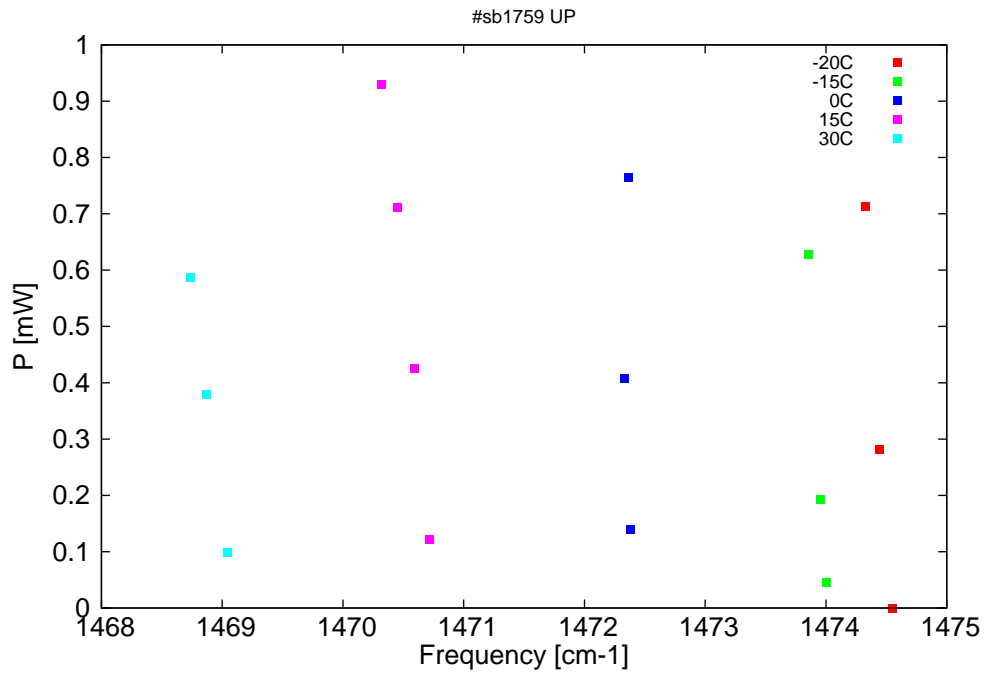


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

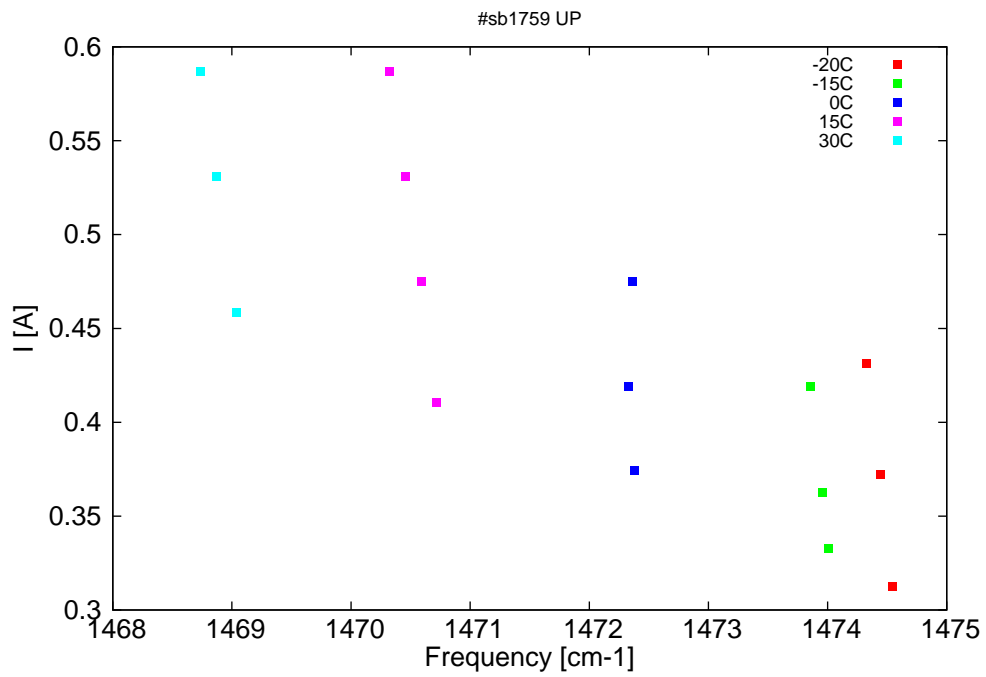


Figure 3: Peak current as a function of singlemode emission frequencies and temperatures

| λ [nm] | ν [cm ⁻¹] | P[mW] | Temp[°C] | U_{pulse} [V] | I_{pulse} [A] |
|----------------|---------------------------|-------|----------|-----------------|-----------------|
| 6781.7 | 1474.5 | 0 | -20 | 10.6 | 0.31 |
| 6782.2 | 1474.4 | 0.3 | -20 | 11 | 0.37 |
| 6782.7 | 1474.3 | 0.7 | -20 | 11.4 | 0.43 |
| 6784.2 | 1474 | 0 | -15 | 10.7 | 0.33 |
| 6784.5 | 1474 | 0.2 | -15 | 10.9 | 0.36 |
| 6784.9 | 1473.9 | 0.6 | -15 | 11.2 | 0.42 |
| 6791.7 | 1472.4 | 0.1 | 0 | 10.8 | 0.37 |
| 6792 | 1472.3 | 0.4 | 0 | 11.1 | 0.42 |
| 6791.8 | 1472.4 | 0.8 | 0 | 11.4 | 0.47 |
| 6799.4 | 1470.7 | 0.1 | 15 | 10.9 | 0.41 |
| 6800 | 1470.6 | 0.4 | 15 | 11.3 | 0.47 |
| 6800.6 | 1470.5 | 0.7 | 15 | 11.7 | 0.53 |
| 6801.2 | 1470.3 | 0.9 | 15 | 12 | 0.59 |
| 6807.2 | 1469 | 0.1 | 30 | 11.1 | 0.46 |
| 6807.9 | 1468.9 | 0.4 | 30 | 11.5 | 0.53 |
| 6808.6 | 1468.7 | 0.6 | 30 | 11.9 | 0.59 |

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

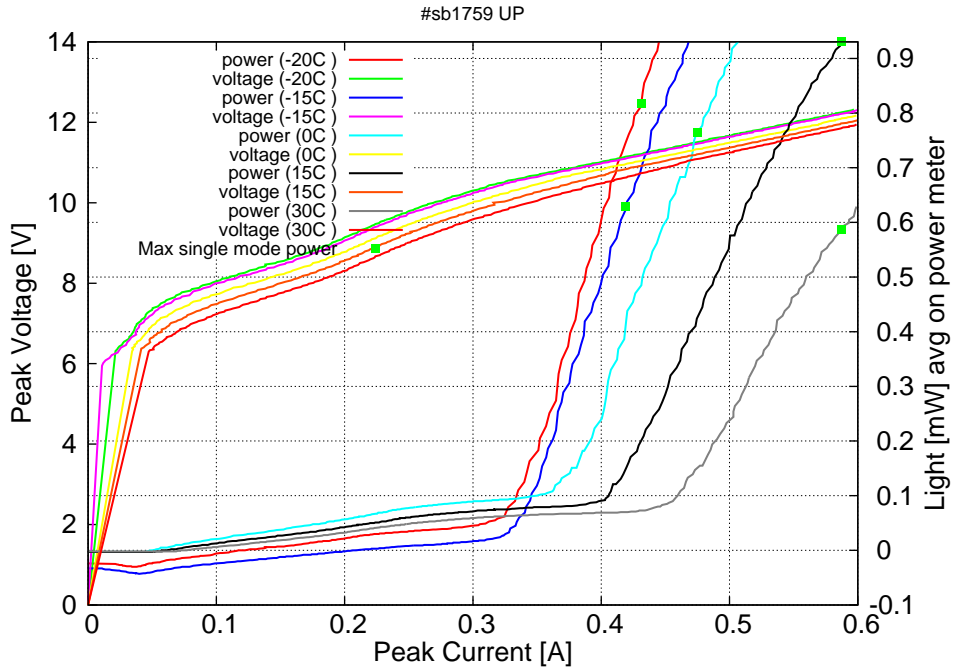


Figure 4: Peak voltage and average power vs peak current at 2% duty-cycle (200ns pulses on the laser) (the solid squares indicate the maximum singlemode emitted power)

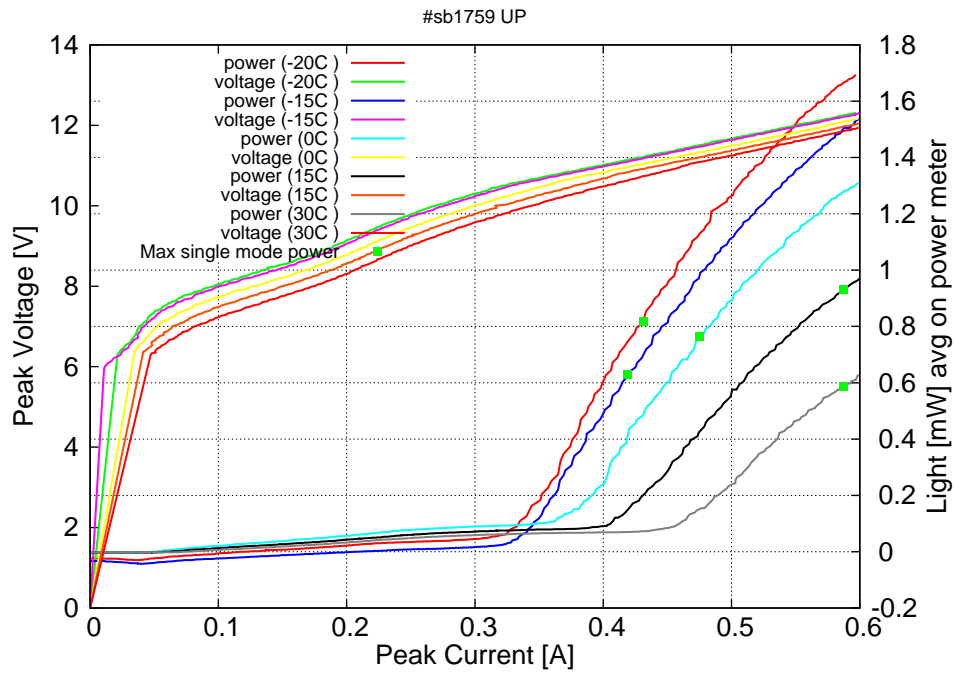
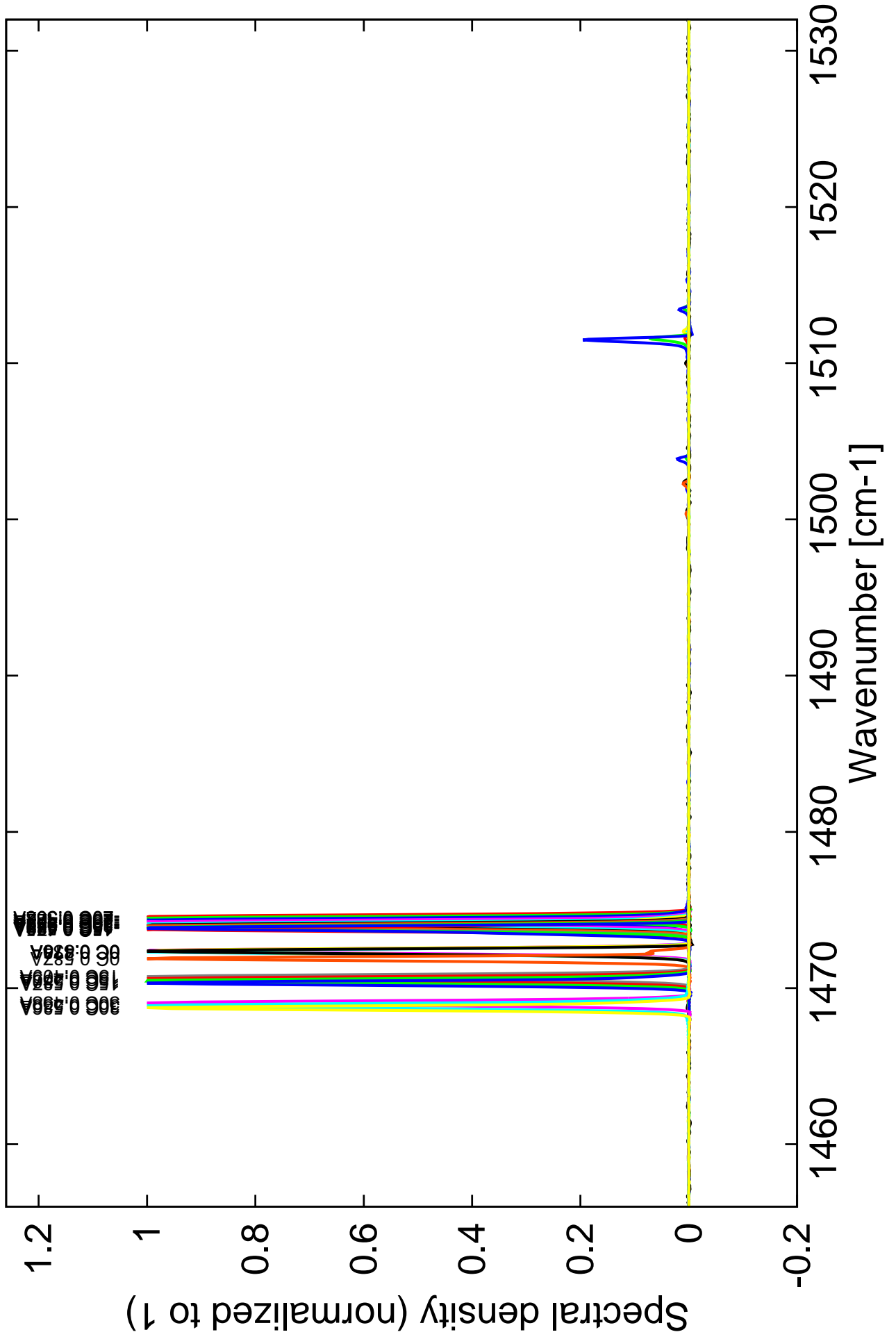


Figure 5: Peak voltage and average power vs peak current at 2% duty-cycle (200ns pulses on the laser) (including the multimode region)

Figure 4: spectra at different temperatures for various peak currents



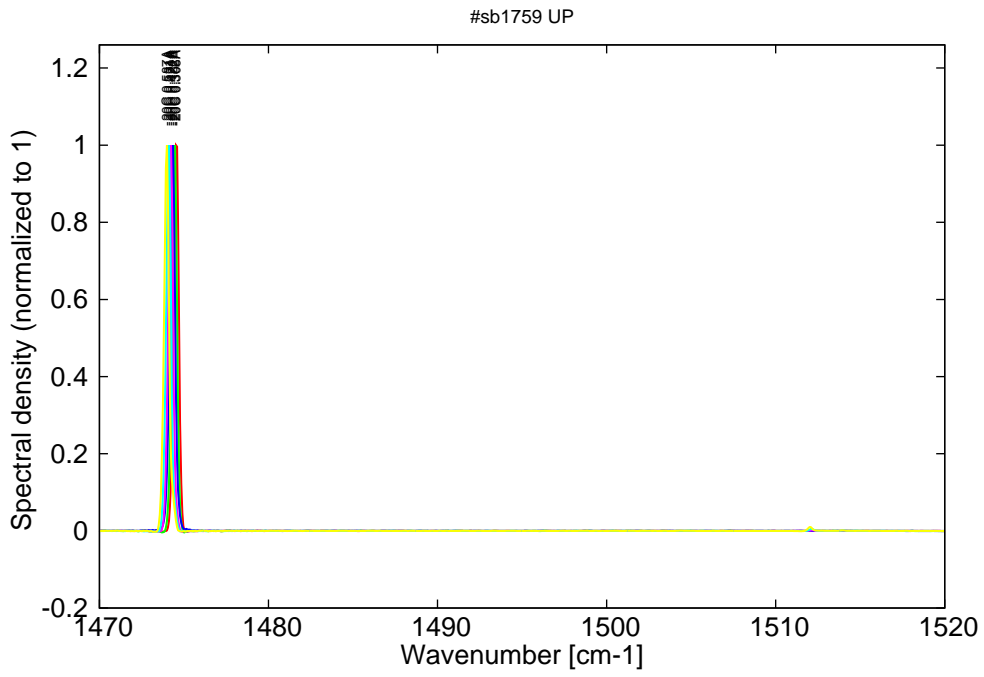


Figure 6: spectra at -20C for various DC currents (monomode up to 0.420A, then becomes multi)

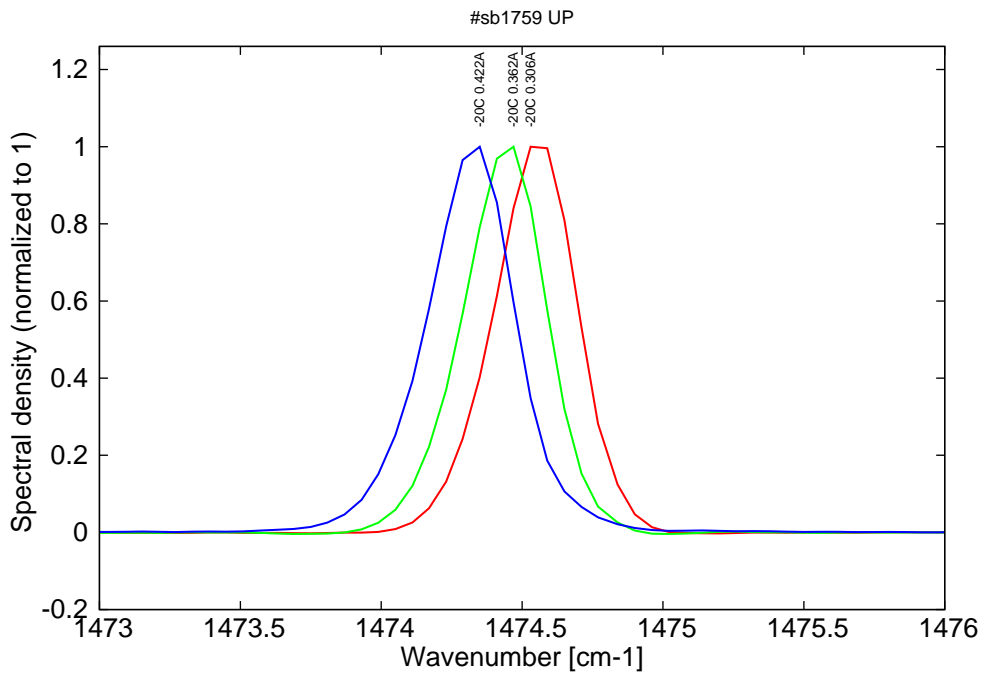


Figure 7: spectra at -20C for various DC currents (monomode range)

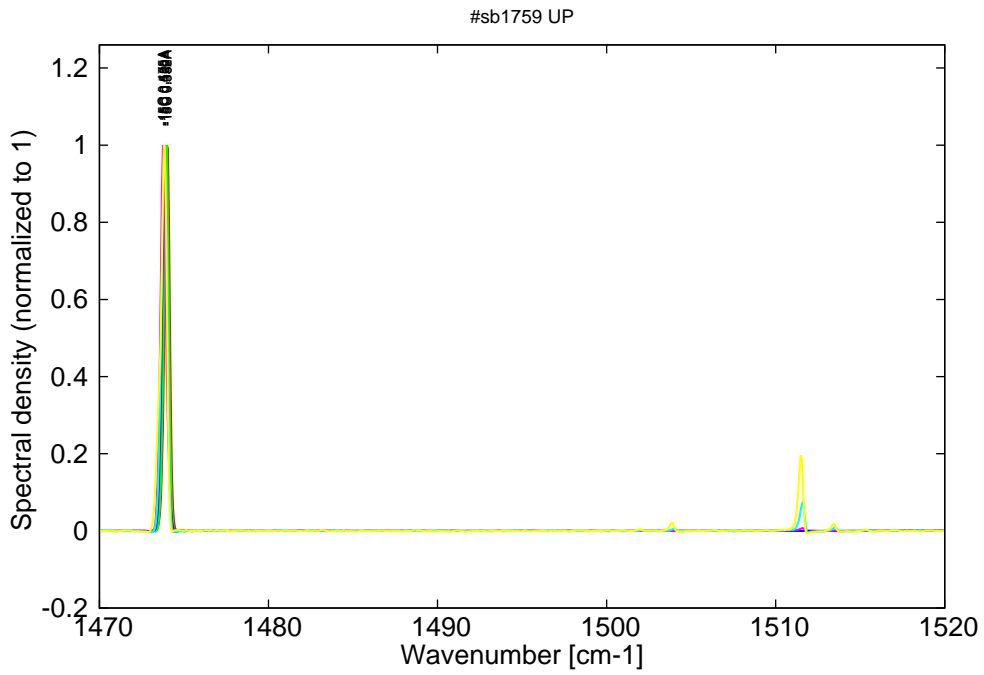


Figure 8: spectra at -15C for various DC currents (monomode up to 0.420A, then becomes multi)

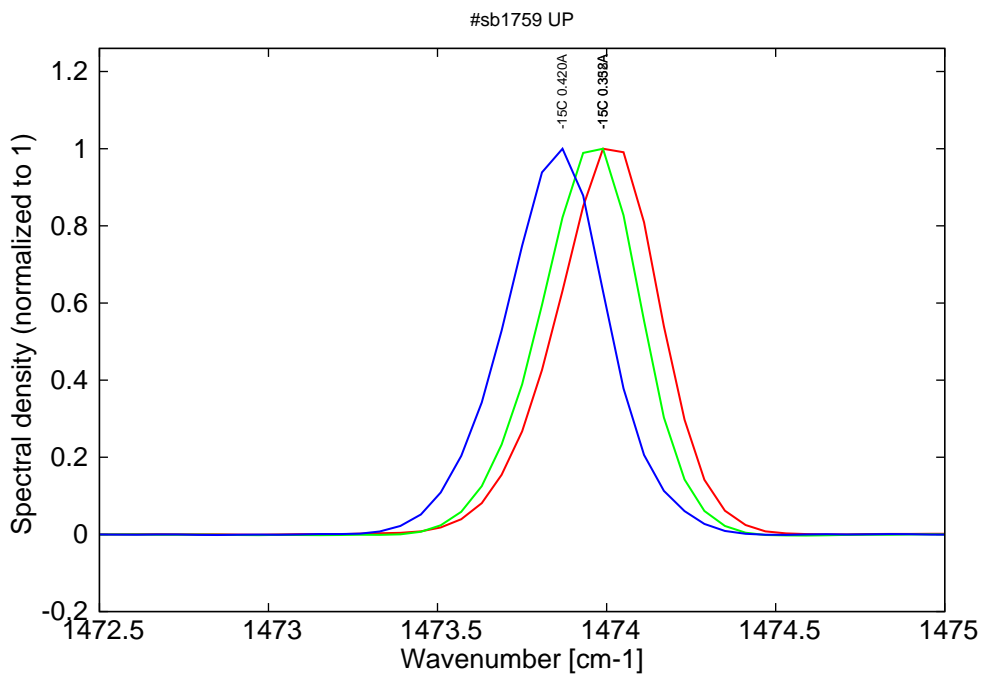


Figure 9: spectra at -15C for various DC currents (monomode range)

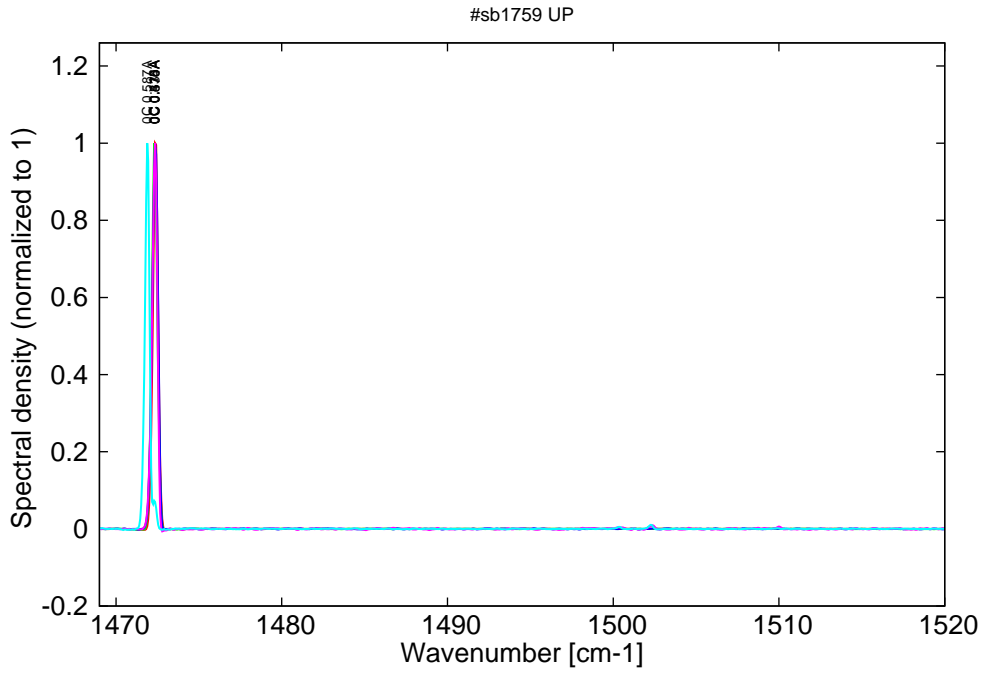


Figure 10: spectra at 0C for various DC currents (monomode up to 0.475A, then becomes multi)

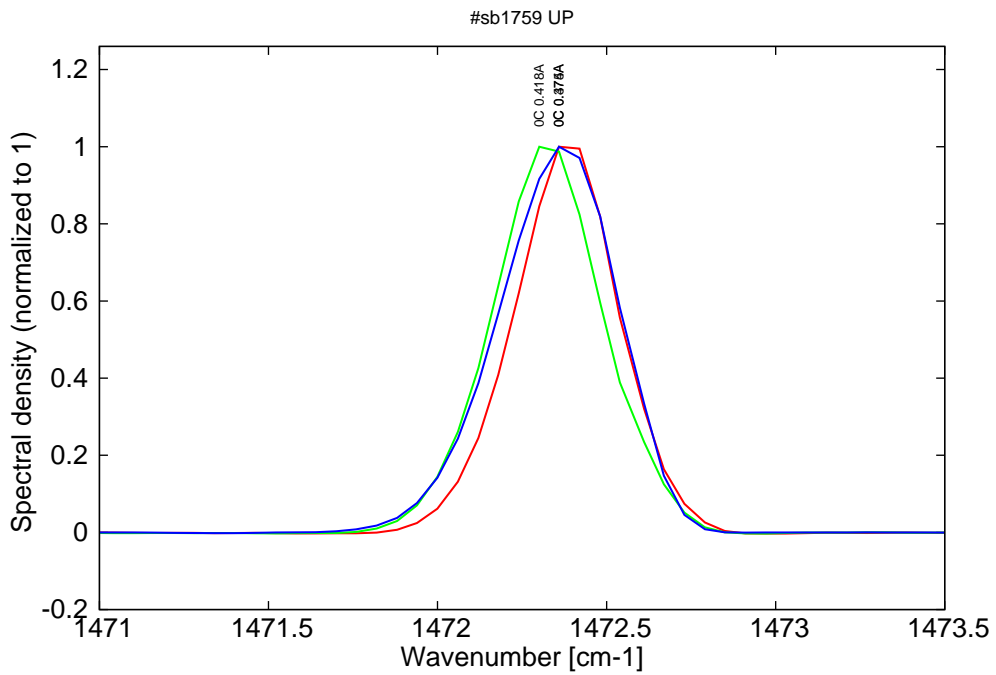


Figure 11: spectra at 0C for various DC currents (monomode range)

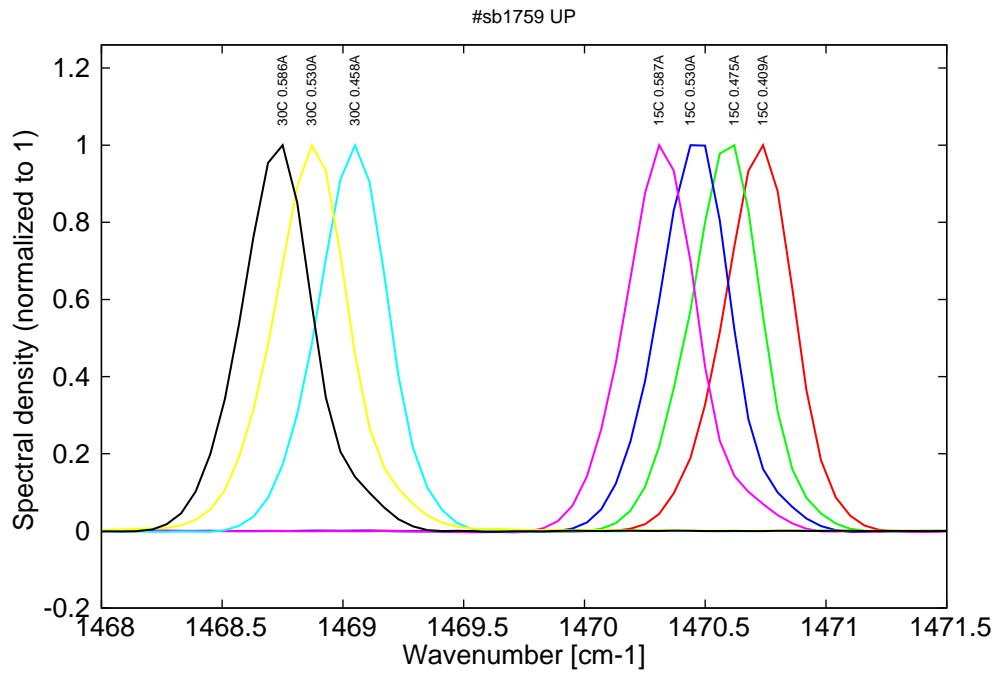


Figure 12: spectra at 15C and 30C for various DC currents (all monomode)