

**Datasheet for #sb1877 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/alfaqa.pdf>

**WARNING:** Operating the laser with longer pulses, shorter period, or higher voltage or current than specified in this document may cause damage and 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).

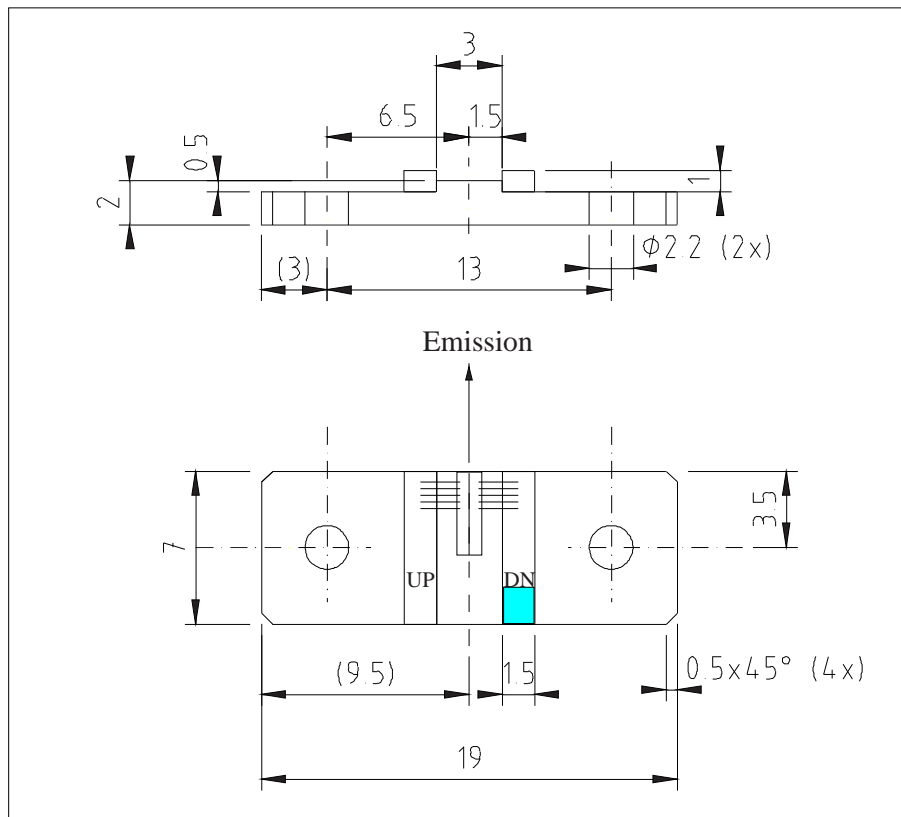


Figure 1: Support mounting for #sb1877 DN (please note that the laser is connected to the DN pad drawn in blue)

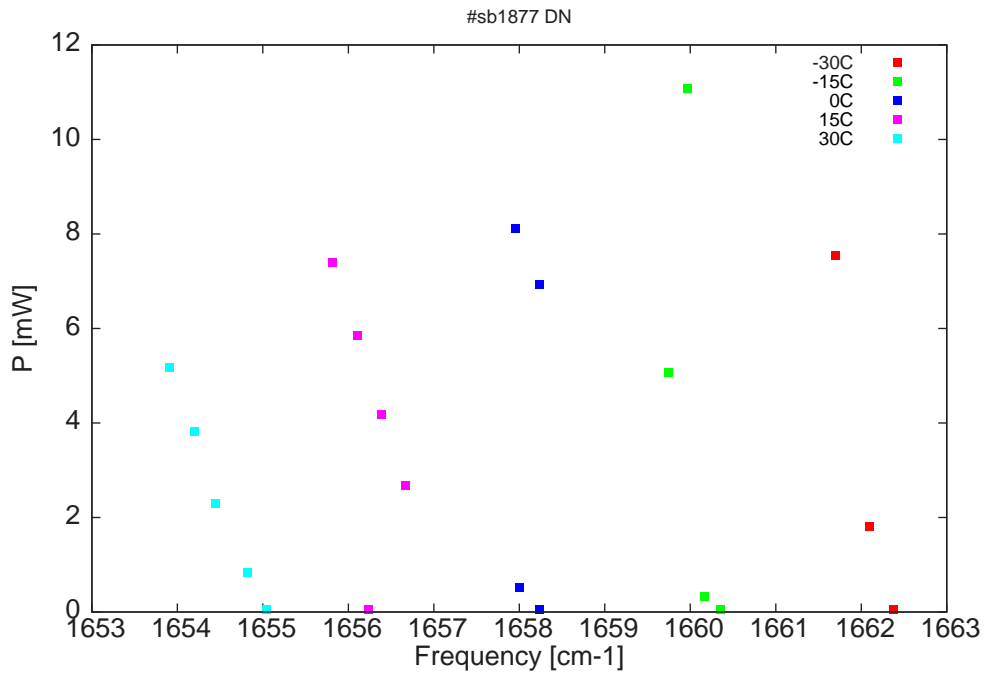


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

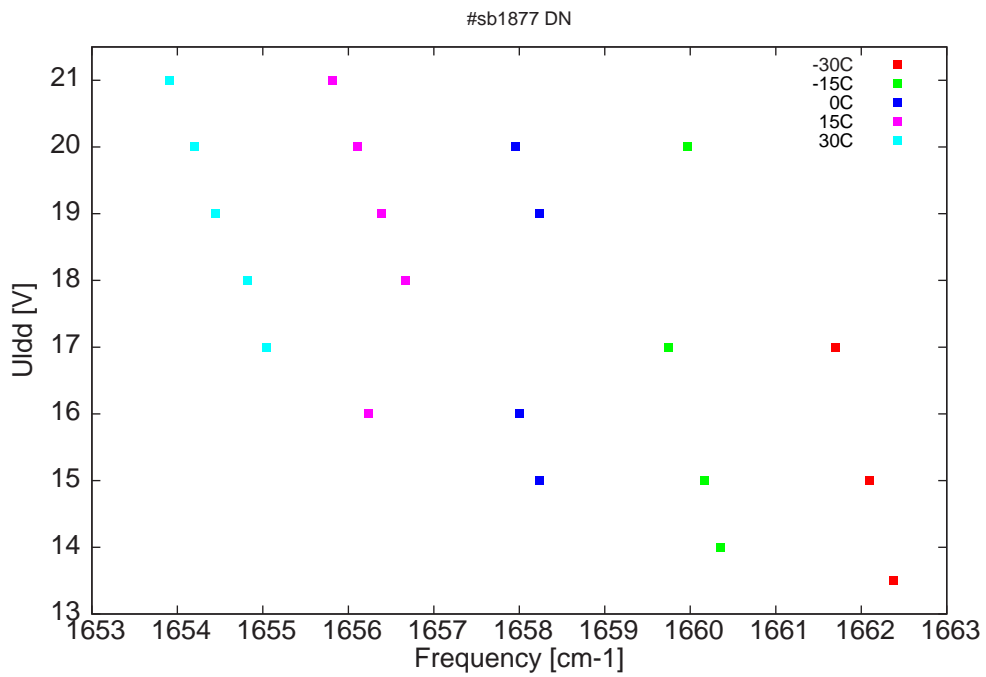


Figure 3: DC voltage fed to LDD ( $U_{ldd}$ ) as a function of the singlemode emission frequencies and temperatures

$\lambda$ [nm]	$\nu$ [cm <sup>-1</sup> ]	P[mW]	Temp[°C]	$U_{LDD}$ [V]	$I_{pulse}$ [A]
6015.5	1662.4	0.1	-30	13.5	3.06
6016.5	1662.1	1.8	-30	15	3.66
6017.9	1661.7	7.5	-30	17	4.52
6022.8	1660.4	0.1	-15	14	3.27
6023.5	1660.2	0.3	-15	15	3.72
6025	1659.7	5.1	-15	17	4.56
6024.2	1660	11.1	-15	20	5.75
6030.5	1658.2	0.1	0	15	3.74
6031.3	1658	0.5	0	16	4.13
6030.5	1658.2	6.9	0	19	5.33
6031.5	1658	8.1	0	20	5.81
6037.8	1656.2	0.1	15	16	4.12
6036.2	1656.7	2.7	15	18	4.92
6037.2	1656.4	4.2	15	19	5.28
6038.2	1656.1	5.9	15	20	5.72
6039.3	1655.8	7.4	15	21	6.18
6042.1	1655	0.1	30	17	4.53
6043	1654.8	0.8	30	18	4.96
6044.3	1654.5	2.3	30	19	5.34
6045.2	1654.2	3.8	30	20	5.72
6046.3	1653.9	5.2	30	21	6.15

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

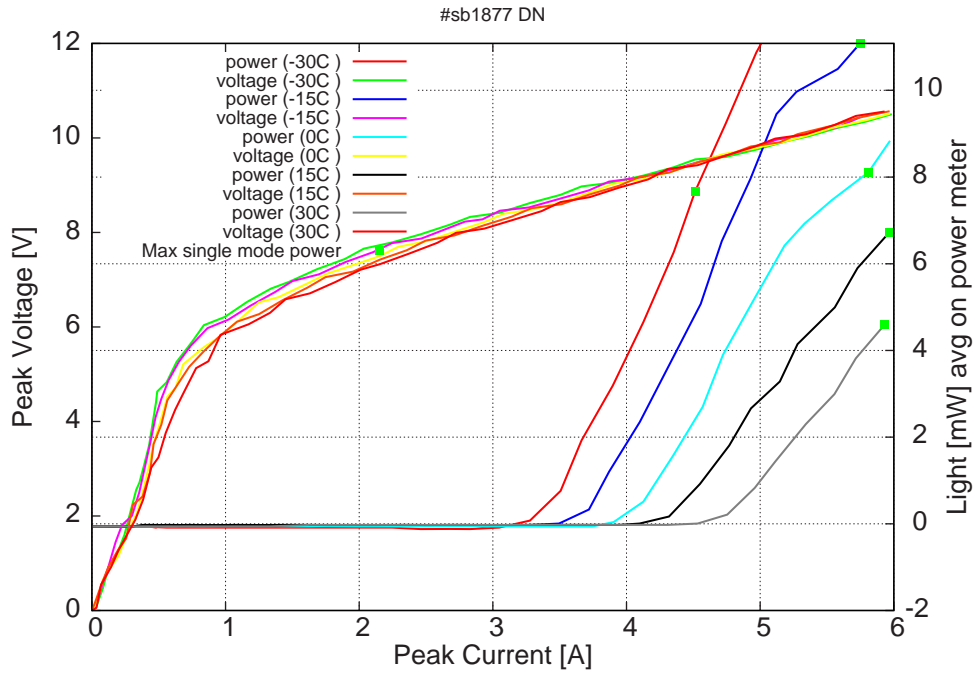


Figure 4: peak voltage and average power vs peak current at 2% duty-cycle (50ns pulses on the laser, 2.5 $\mu$ s period) (the solid squares indicate the maximum singlemode emitted power)

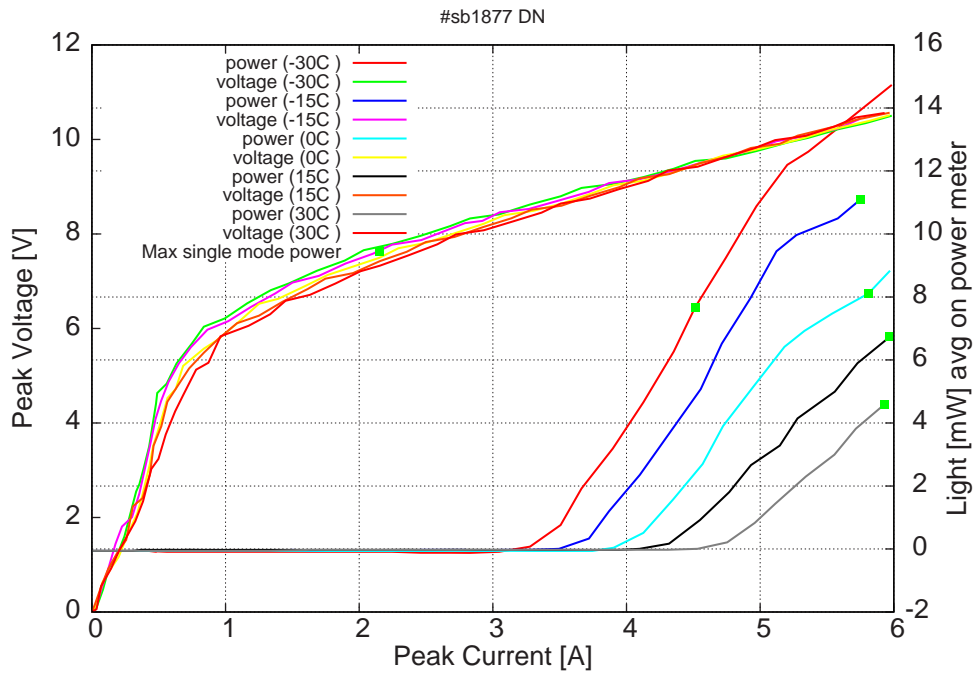


Figure 5: peak voltage and average power vs peak current at 2% duty-cycle (50ns pulses on the laser,  $2.5\mu\text{s}$  period) (including the multimode region)

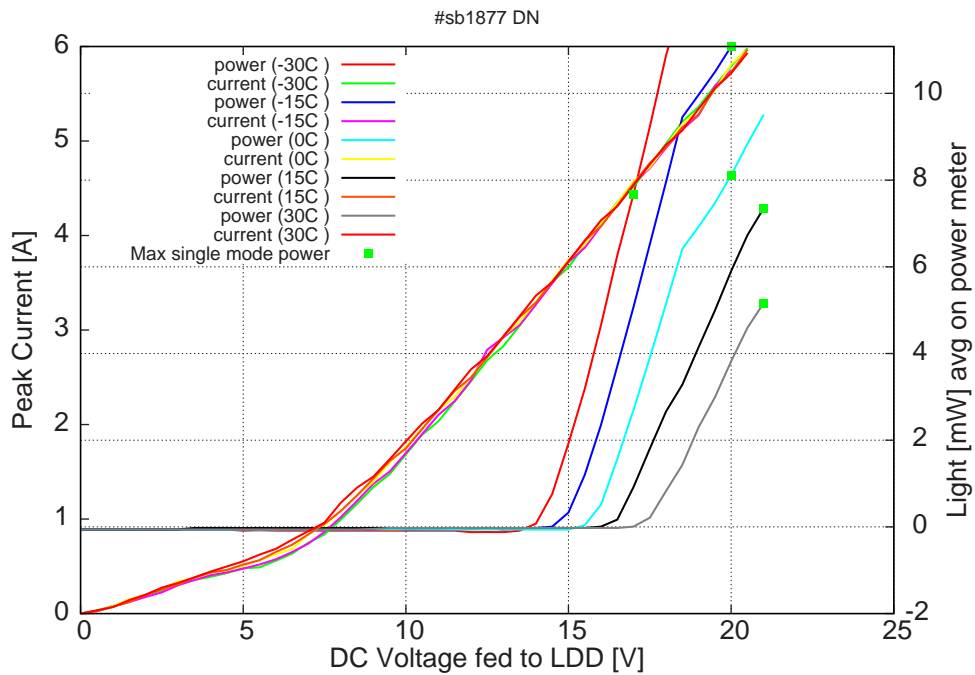


Figure 6: peak current and average power vs LDD voltage at 2% duty-cycle (50ns pulses on the laser,  $2.5\mu\text{s}$  period) (the solid squares indicate the maximum singlemode emitted power)

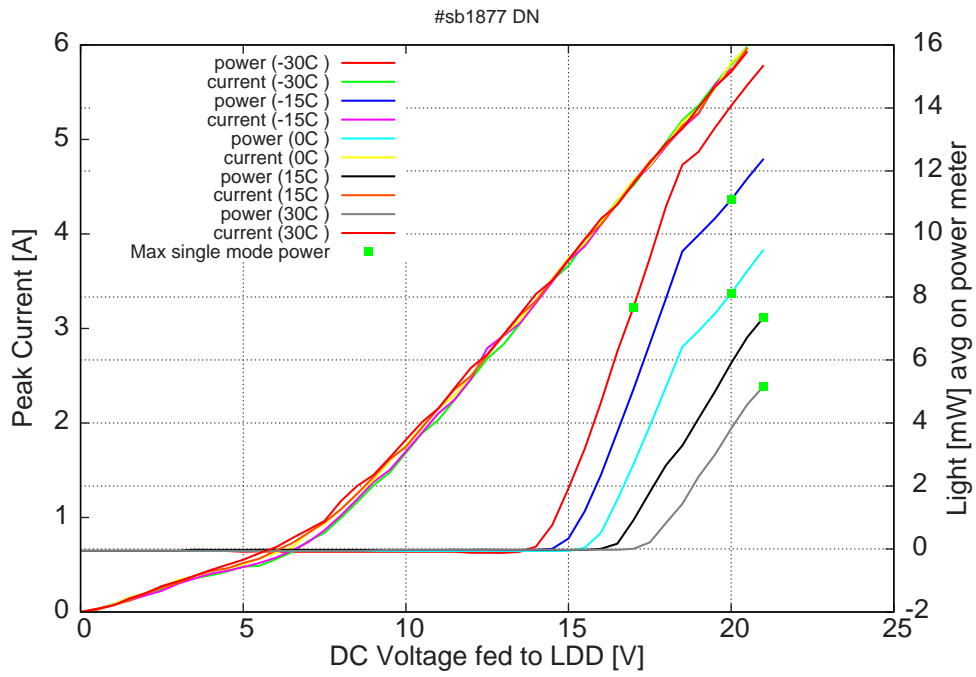
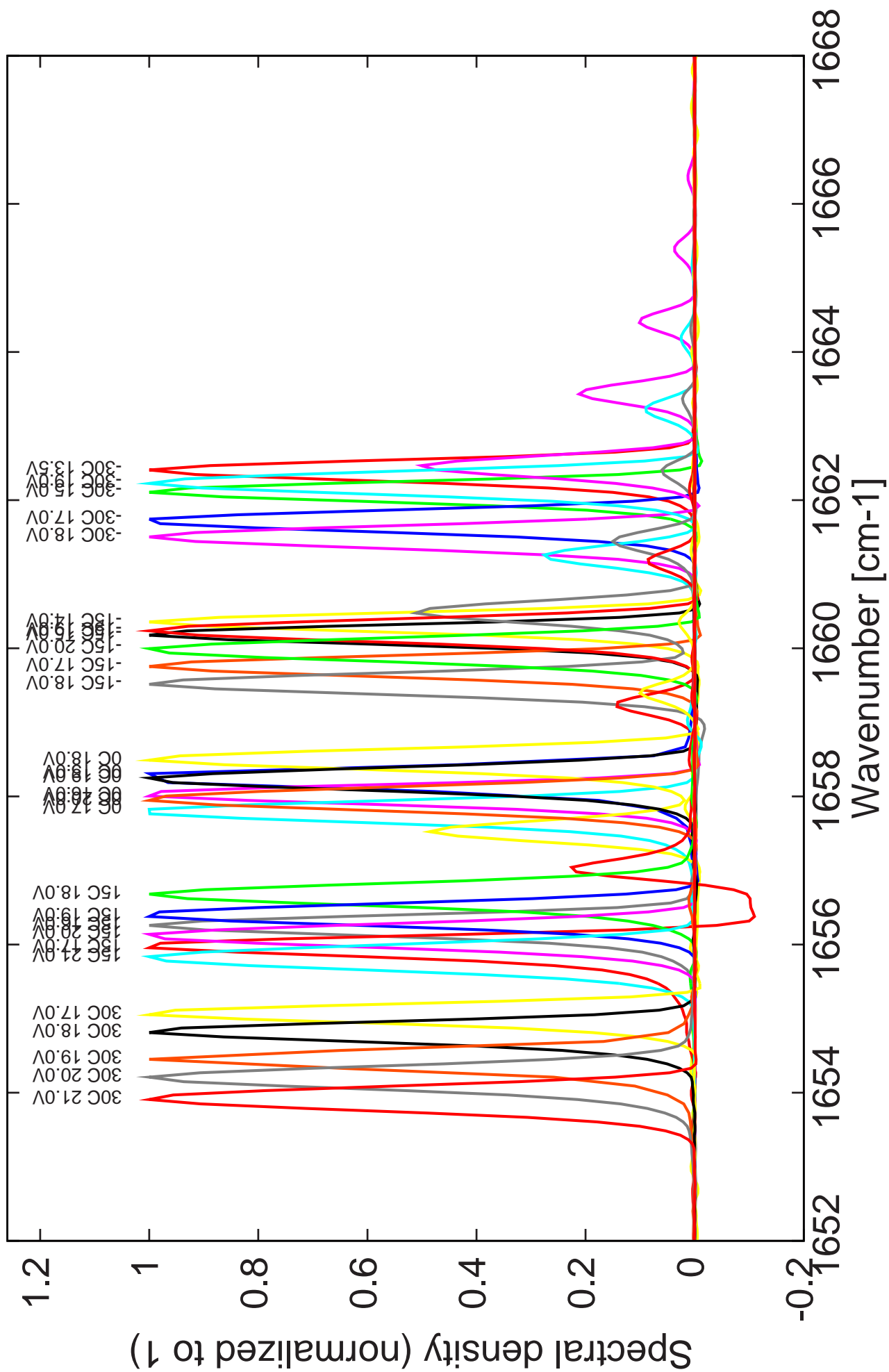


Figure 7: peak current and average power vs LDD voltage at 2% duty-cycle (50ns pulses on the laser, 2.5 $\mu$ s period) (including the multimode region)

Figure 6: spectra between -30C and 30C for various LDD voltages at 2% dc (22ns pulses, 1.1us period)



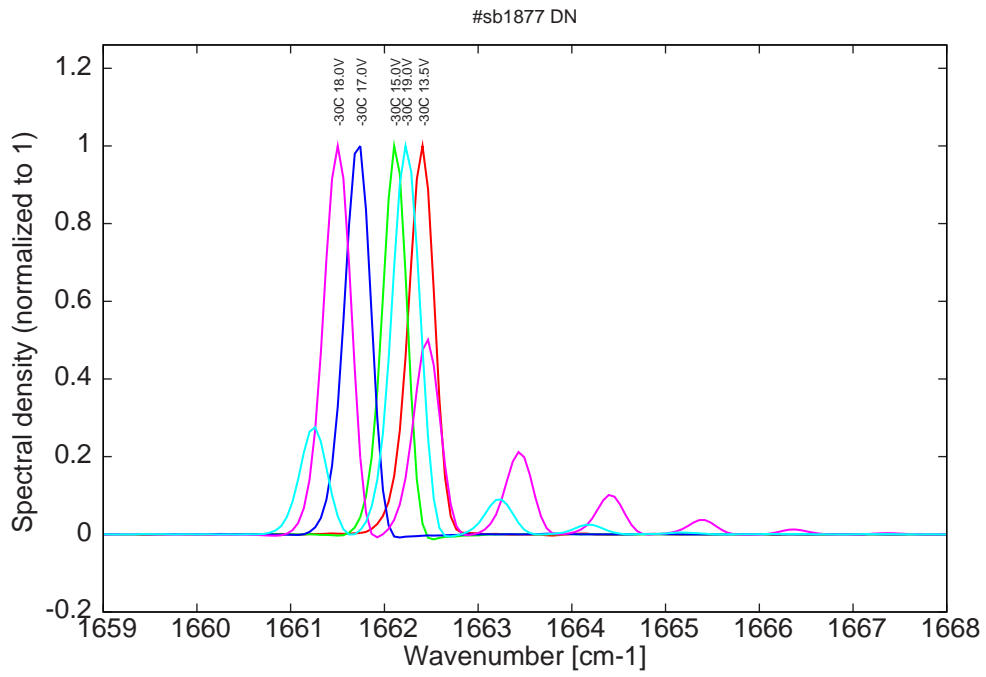


Figure 8: spectra at -30C for various LDD voltages at 2% dc (22ns pulses, 1.1us period)

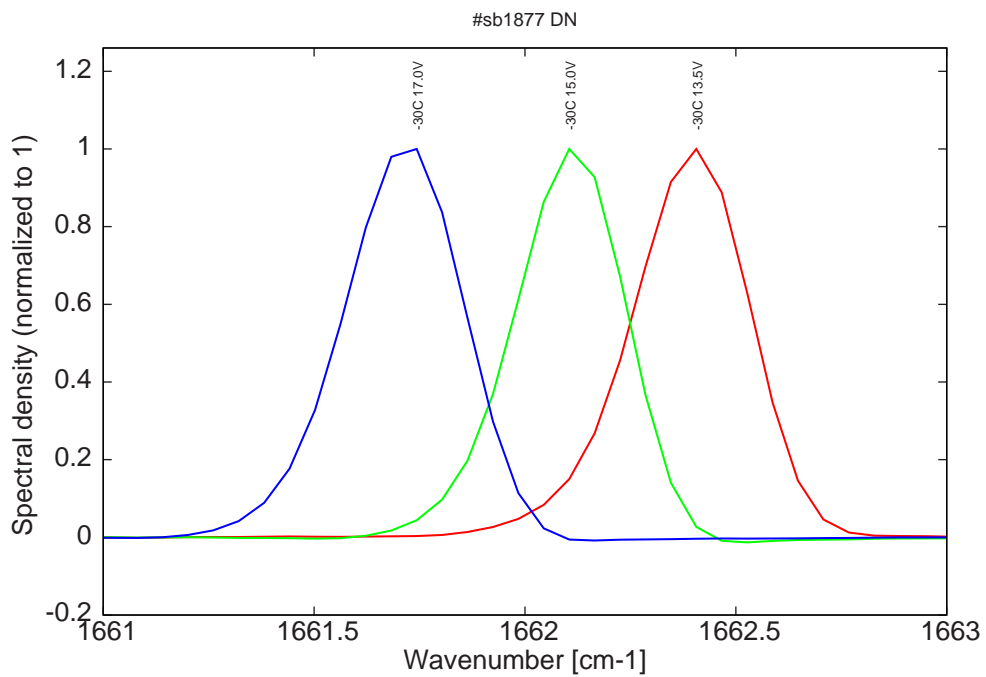


Figure 9: spectra at -30C for various LDD voltages at 2% dc (monomode range)

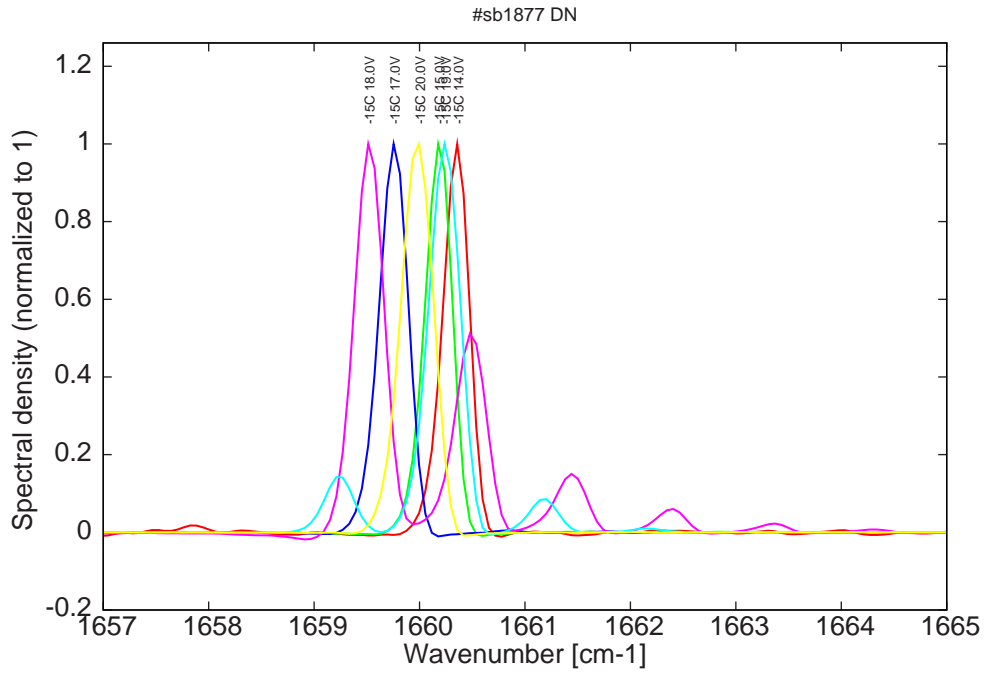


Figure 10: spectra at -15C for various LDD voltages at 2% dc (22ns pulses, 1.1us period); bimode/multimode at 18V and 19V on LDD

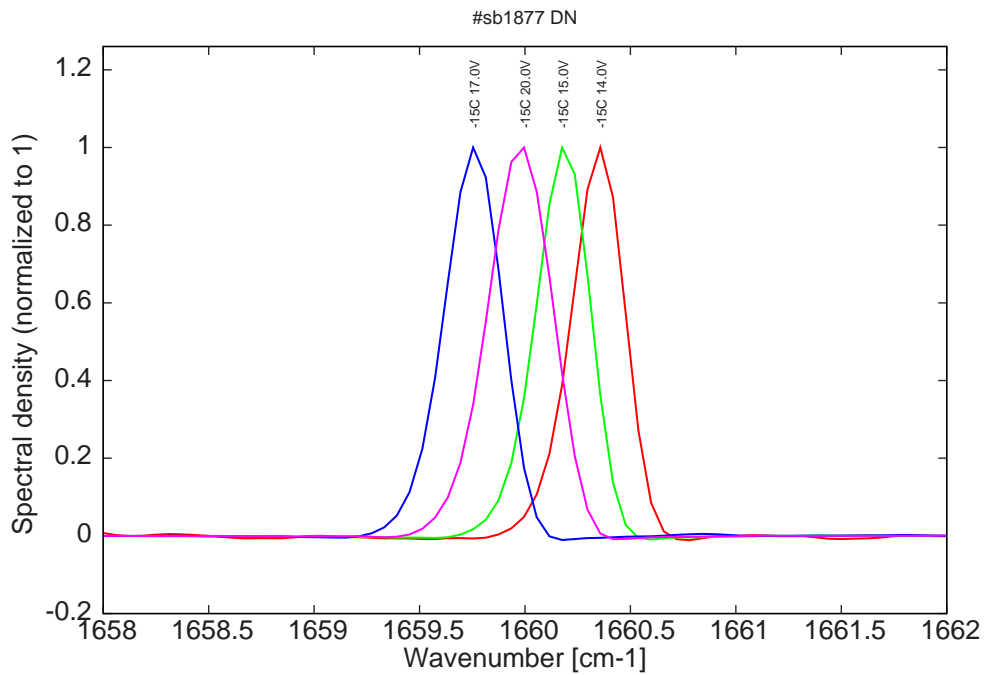


Figure 11: spectra at -15C for various LDD voltages at 2% dc (monomode range, with mode jumping for spectrum at 20V on LDD (see Fig. 1)



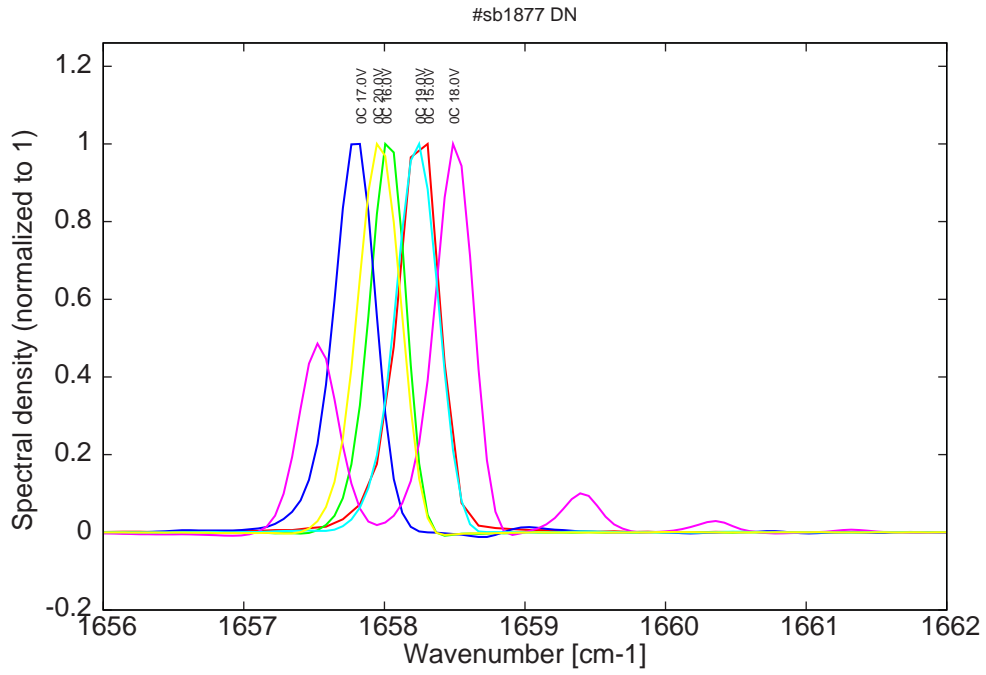


Figure 12: spectra at 0C for various LDD voltages at 2% dc (22ns pulses, 1.1us period); bimode/multimode at 17V and 18V on LDD

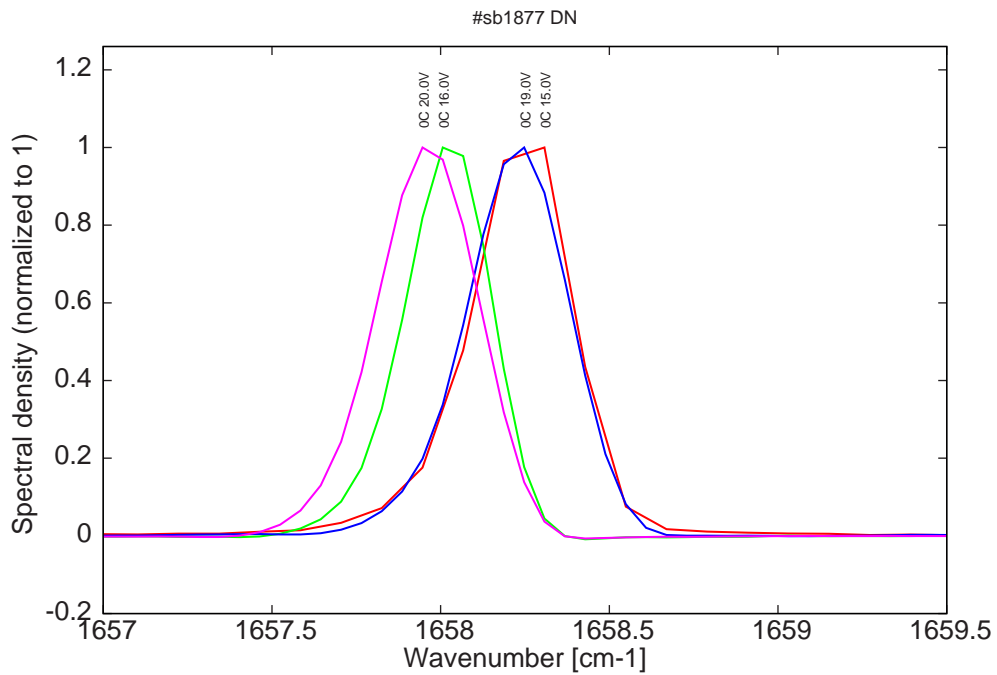


Figure 13: spectra at 0C for various LDD voltages at 2% dc (monomode range, with mode jumping for spectra at 19V and 20V on LDD, see Fig. 1)

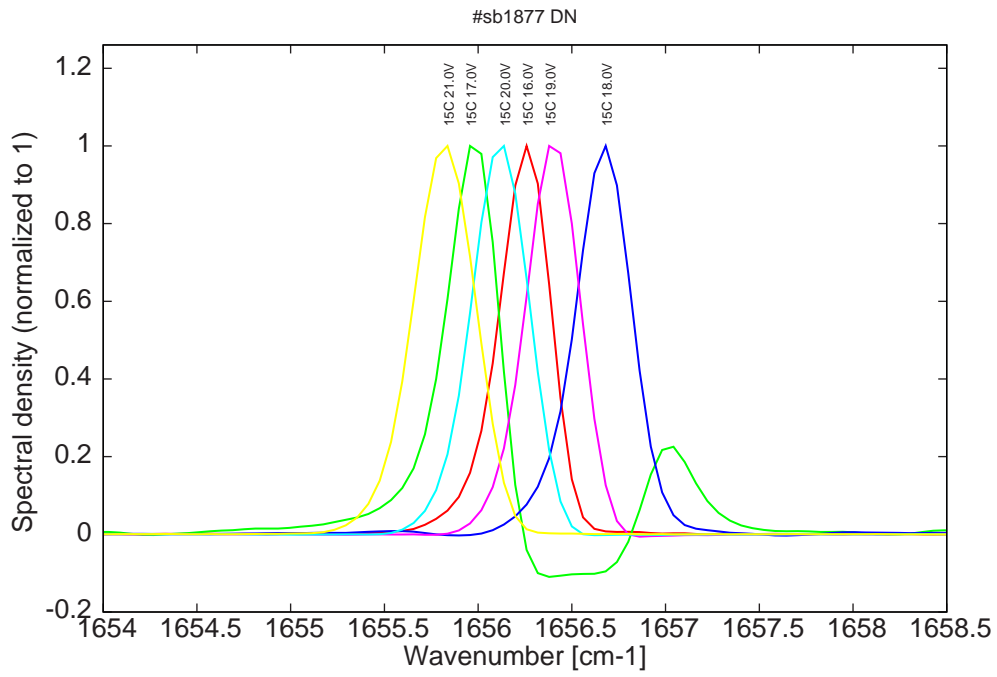


Figure 14: spectra at 15C for various LDD voltages at 2% dc (22ns pulses, 1.1us period); bimode at 17V on LDD

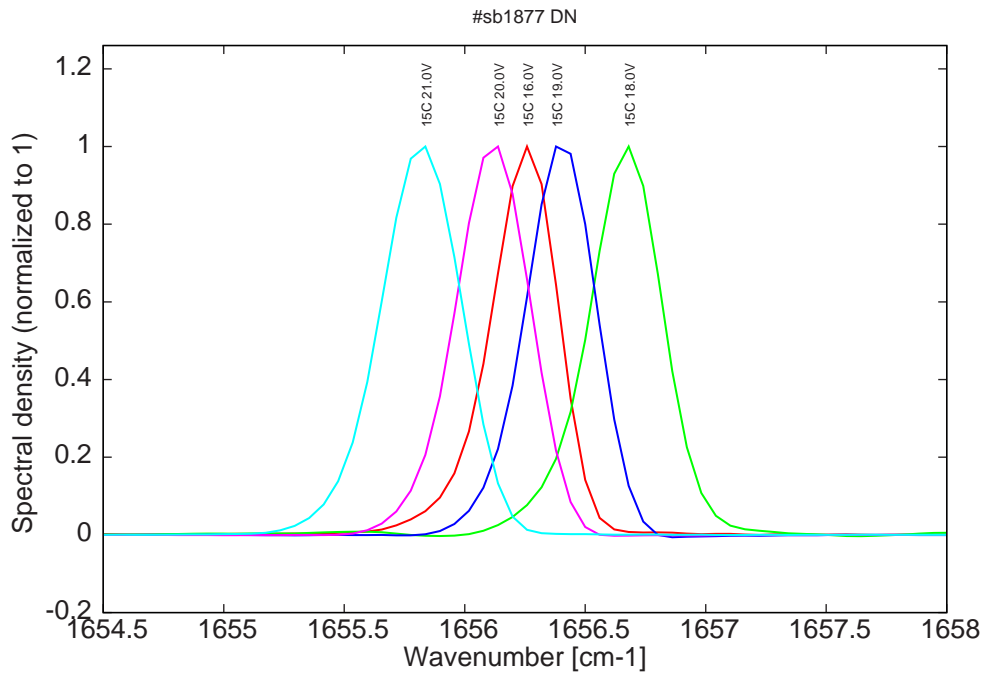


Figure 15: spectra at 15C for various LDD voltages at 2% dc (monomode range, with mode jumping for spectra for voltages on LDD > 16.0V, see Fig. 1)

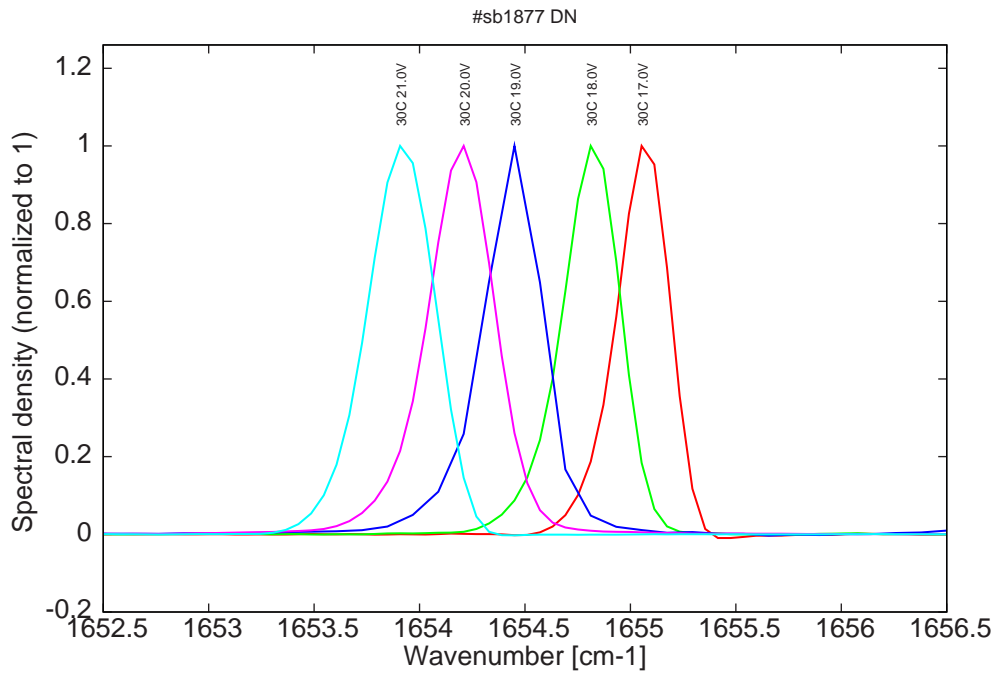


Figure 16: spectra at 30C for various LDD voltages at 2% dc (22ns pulses, 1.1us period); all monomode, but with mode jumping compared to other temperatures (see Fig. 1)