

**Datasheet for #sb2021 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/alfaq.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 #sb2021 DN (please note that the laser is connected to the DN pad drawn in blue)

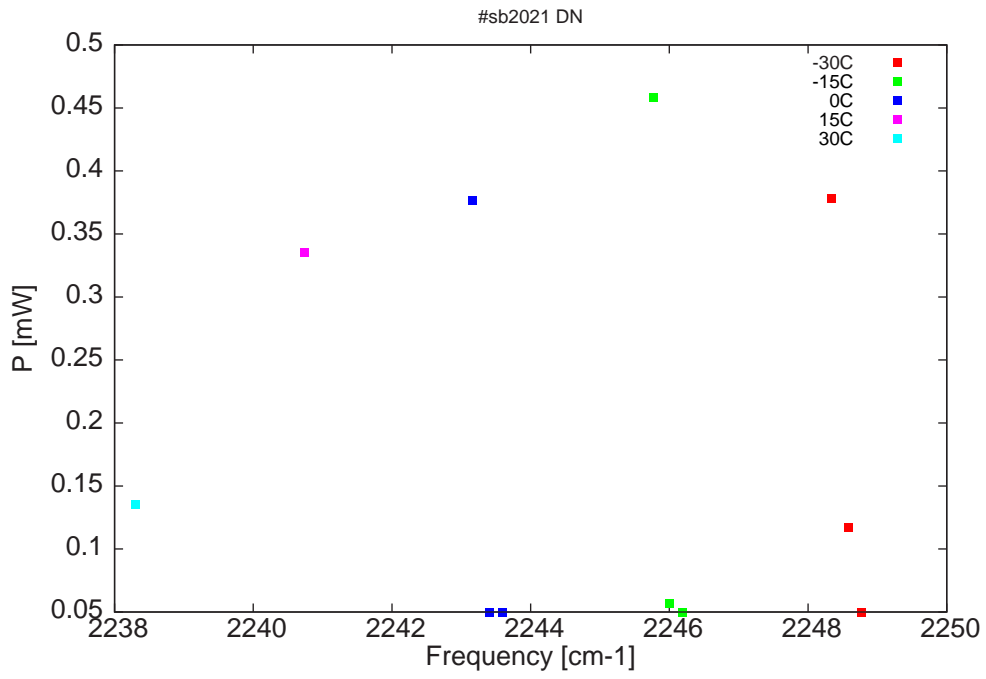


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

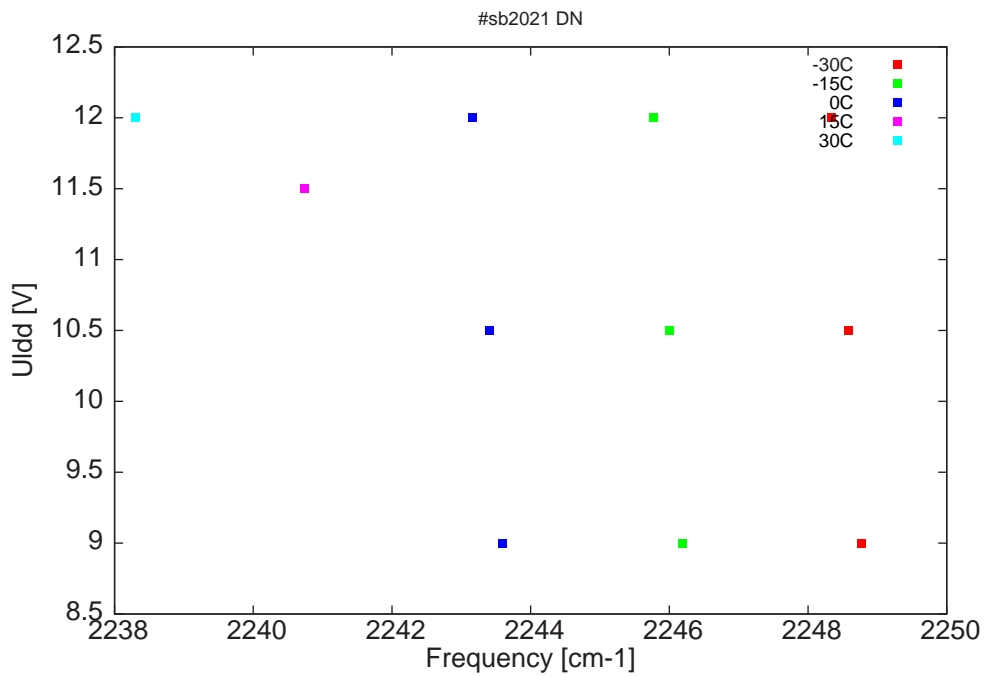


Figure 3: DC voltage fed to LDD ( $U_{ldd}$ ) as a function of the singlemode emission frequencies and temperatures

$\lambda$ [nm]	$\nu$ [cm <sup>-1</sup> ]	P[mW]	Temp[°C]	$U_{LDD}$ [V]	$I_{pulse}$ [A]
4446.9	2248.8	0.1	-30	9	0.12
4447.3	2248.6	0.1	-30	10.5	0.23
4447.7	2248.3	0.4	-30	12	0.35
4452	2246.2	0.1	-15	9	0.13
4452.4	2246	0.1	-15	10.5	0.24
4452.8	2245.8	0.5	-15	12	0.38
4457.1	2243.6	0.1	0	9	0.13
4457.5	2243.4	0.1	0	10.5	0.24
4458	2243.2	0.4	0	12	0.37
4462.8	2240.7	0.3	15	11.5	0.32
4467.7	2238.3	0.1	30	12	0.37

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

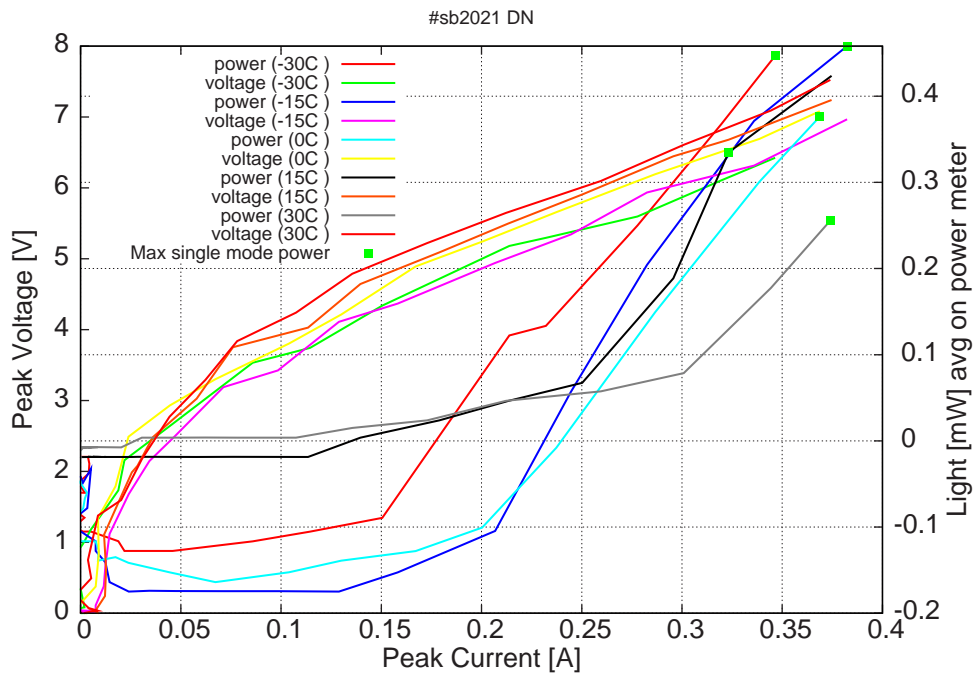


Figure 4: peak voltage and average power vs peak current at 2% duty-cycle (50ns pulses on the laser, 2.5 $\mu$ s period) (the solid squares indicate the maximum singlemode emitted power)

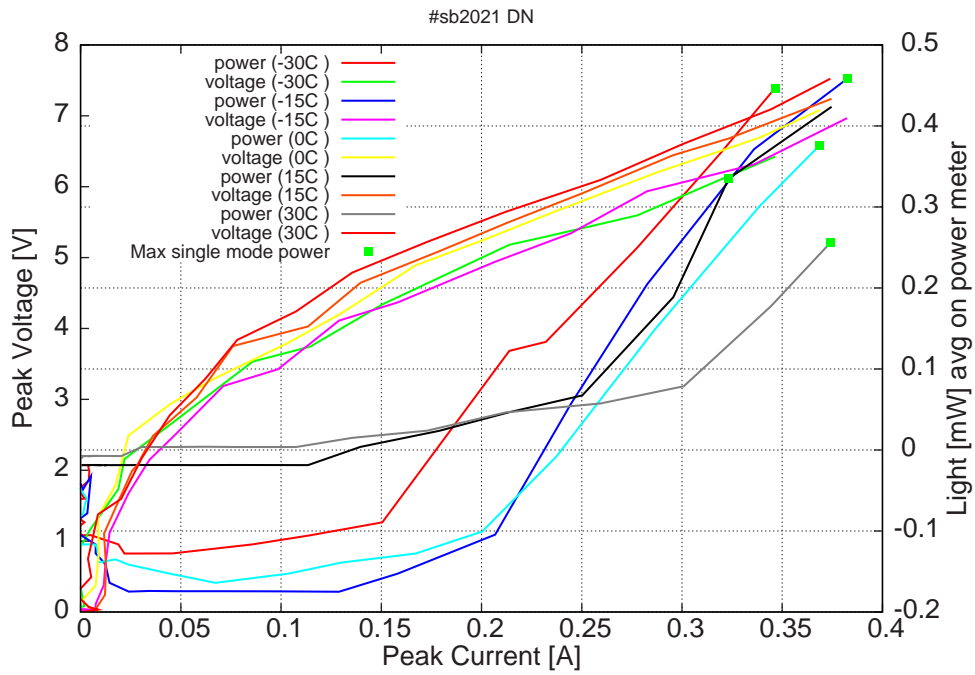


Figure 5: peak voltage and average power vs peak current at 2% duty-cycle (50ns pulses on the laser,  $2.5\mu\text{s}$  period) (including the multimode region)

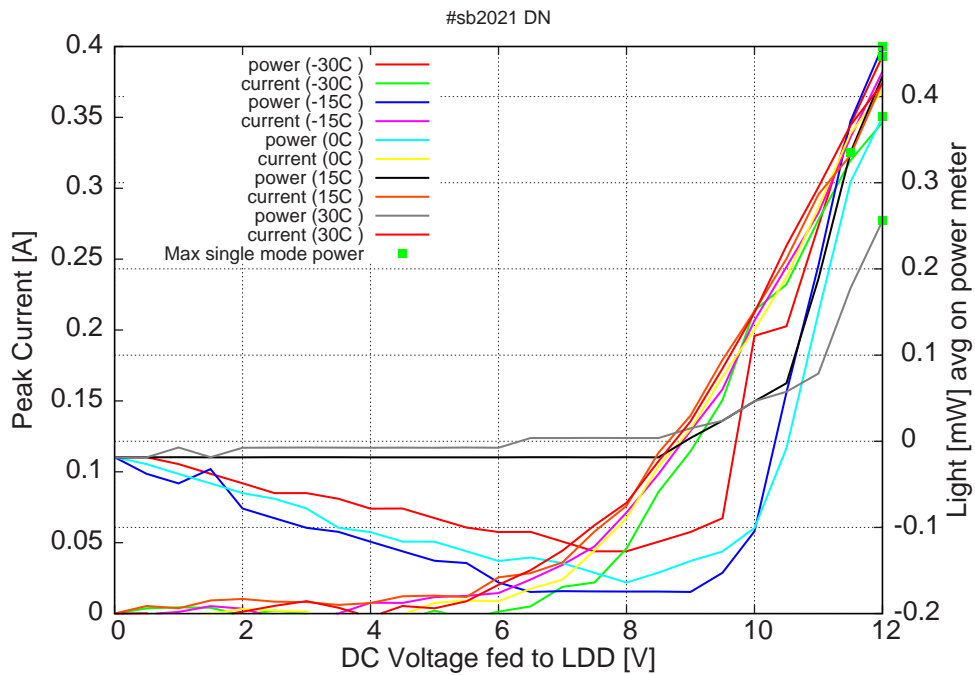


Figure 6: peak current and average power vs LDD voltage at 2% duty-cycle (50ns pulses on the laser,  $2.5\mu\text{s}$  period) (the solid squares indicate the maximum singlemode emitted power)

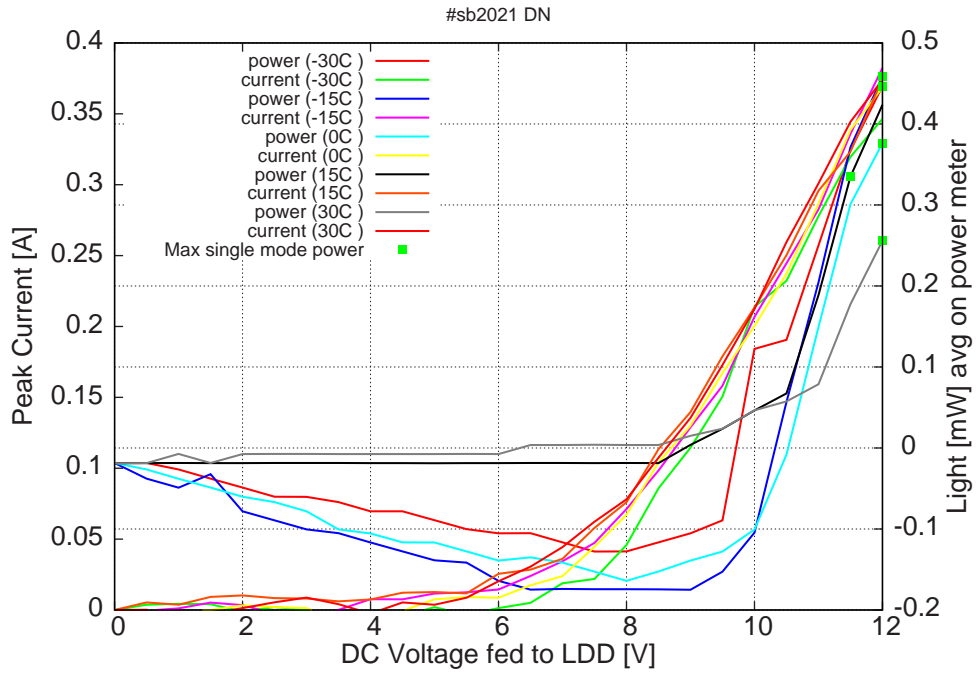


Figure 7: peak current and average power vs LDD voltage at 2% duty-cycle (50ns pulses on the laser, 2.5 $\mu$ s period) (including the multimode region)

Figure 6: spectra at different temperatures for various LDD voltage (22ns pulses on the laser)

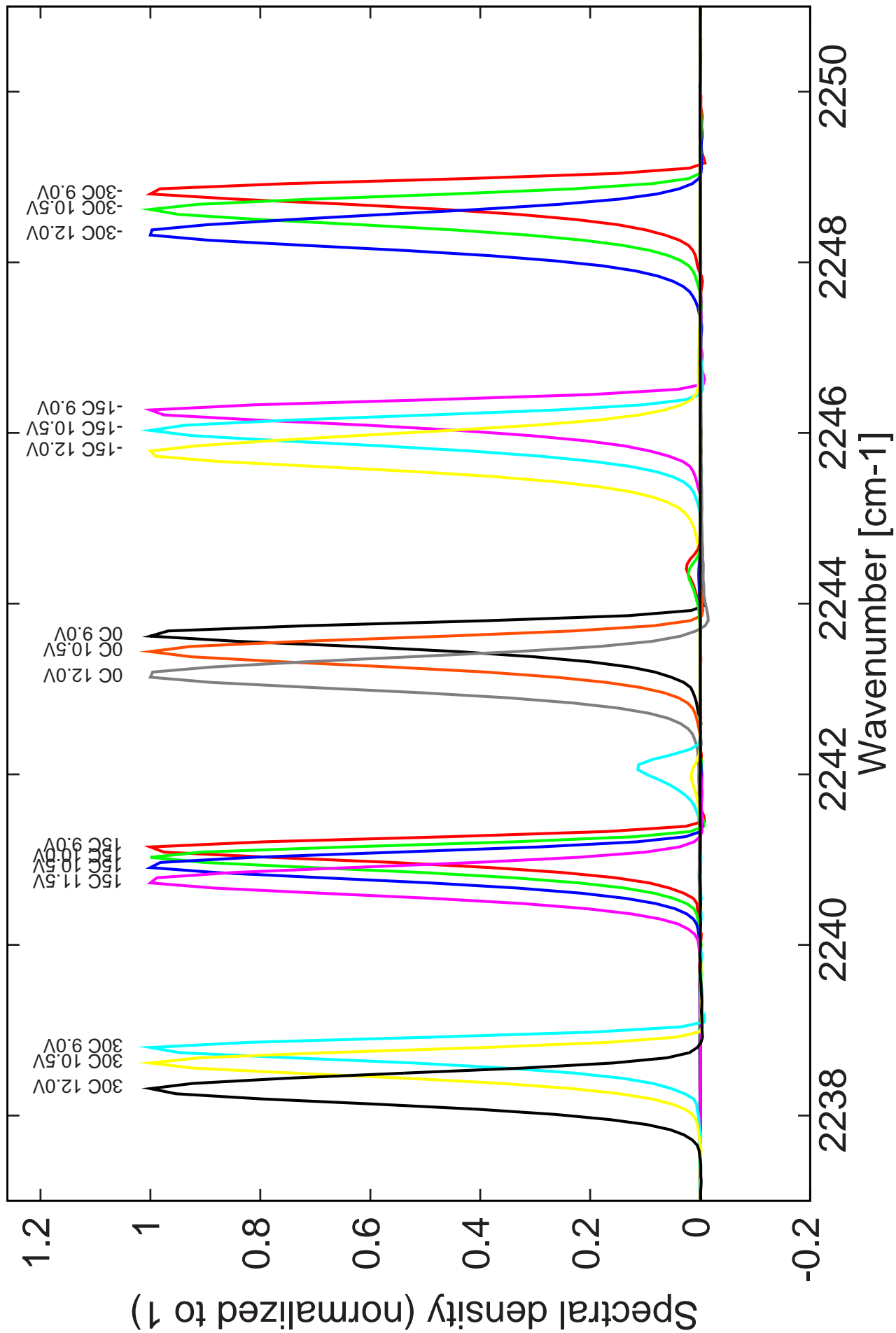
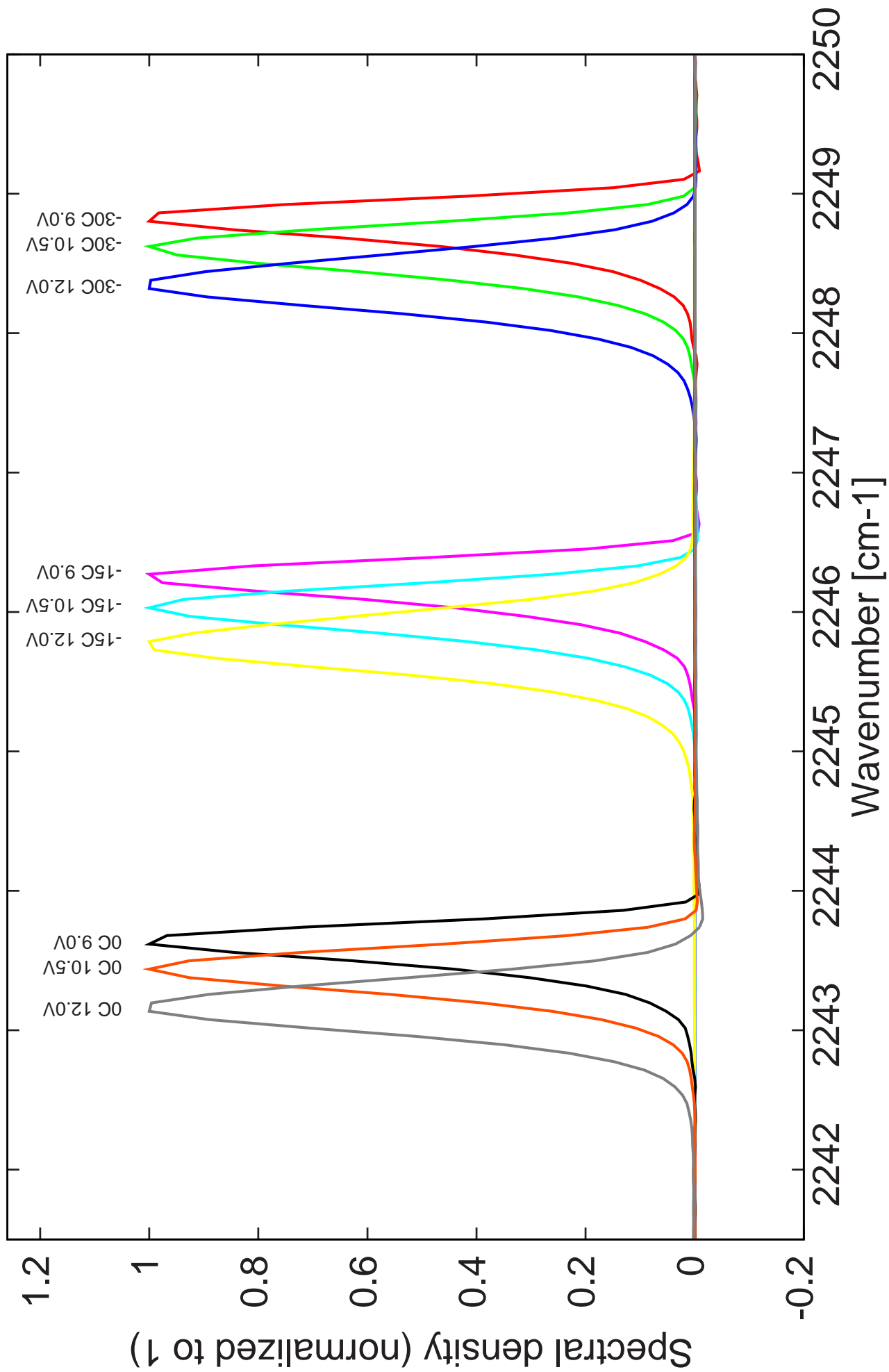


Figure 7: spectra between -30C and 0C for various LDD voltage (22ns pulses on the laser); all monomode



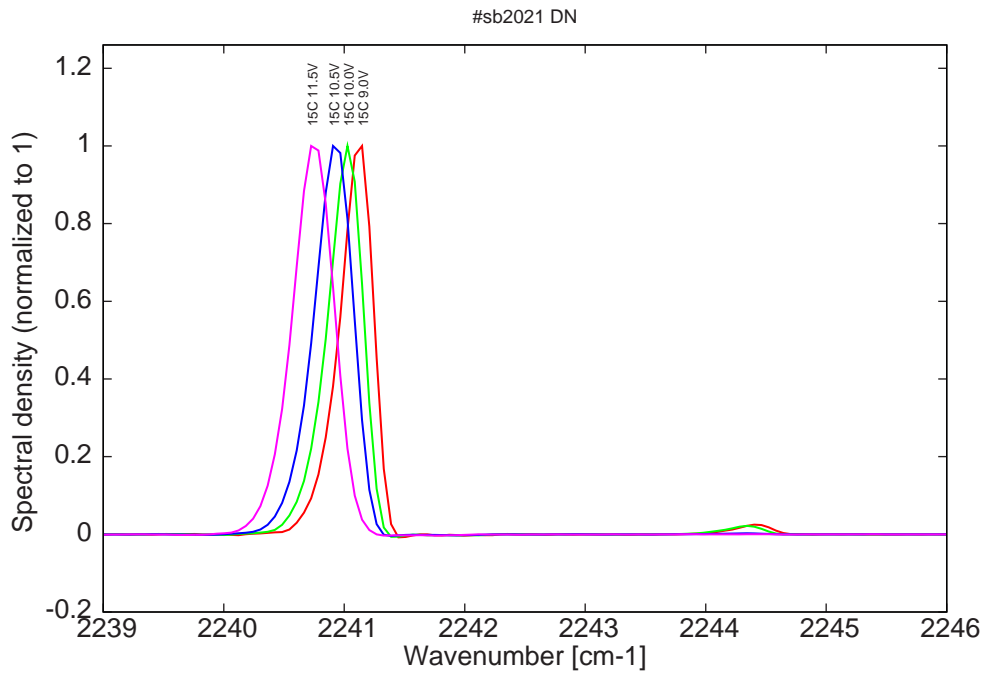


Figure 8: spectra at 15C for various LDD voltage; bimode and monomode at 11.5V on LDD but on another mode compared to lower temperatures (see Fig. 1)

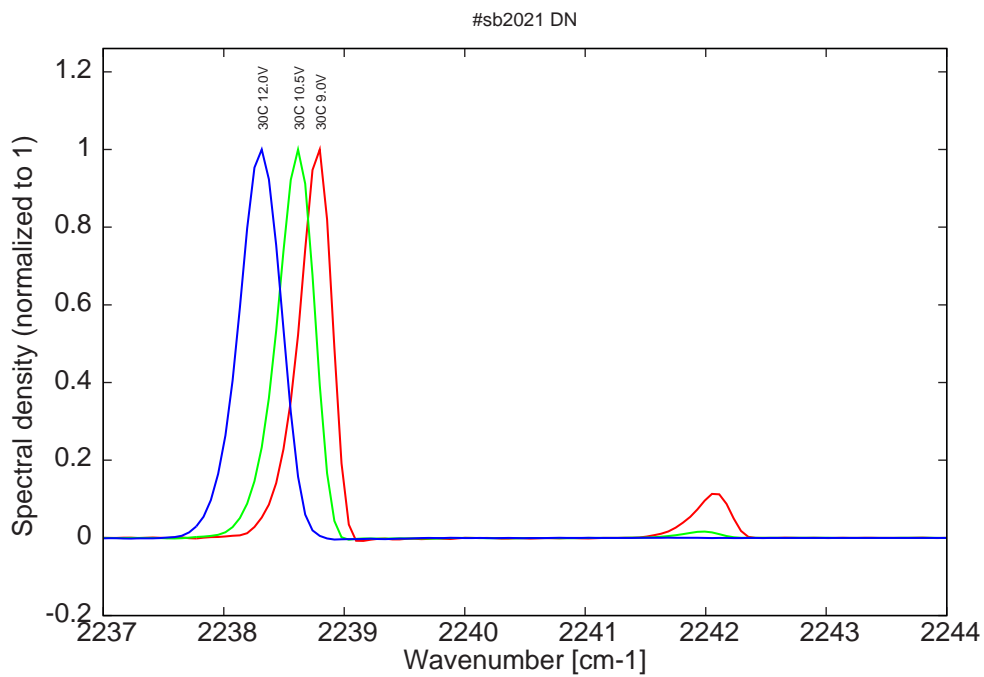


Figure 9: spectra at 30C for various LDD voltage; bimode and monomode at 12.0V on LDD but on another mode compared to lower temperatures (see Fig. 1)