

**Datasheet for #sbcw981 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 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.

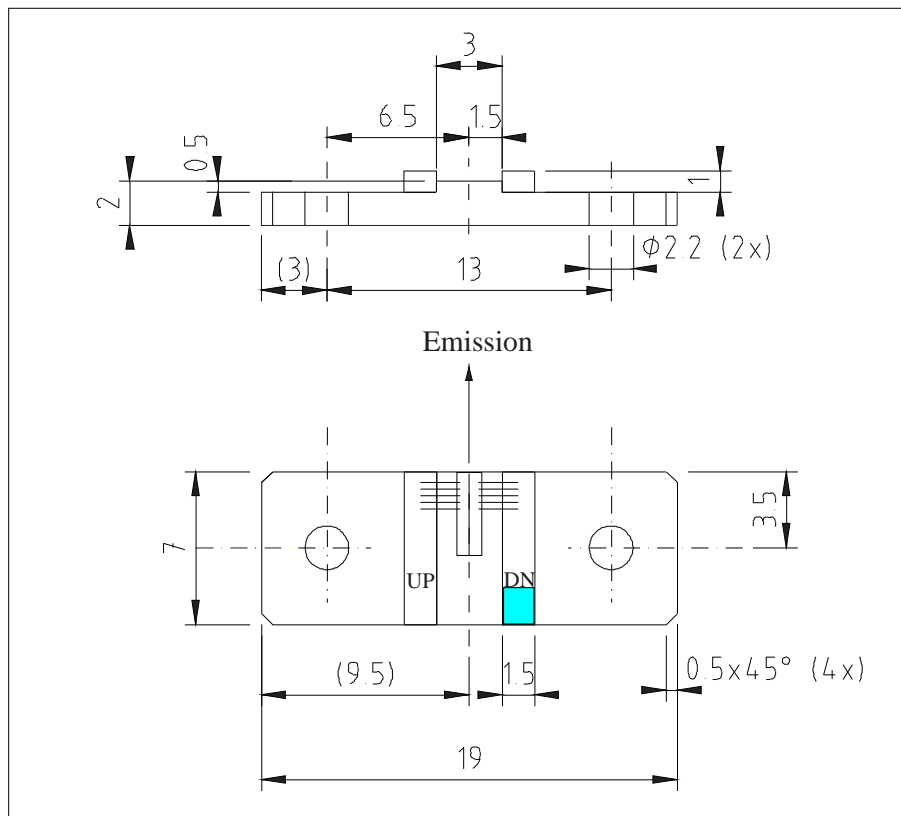


Figure 1: Support mounting for #sbcw981 DN (please note that the laser is connected to the DN pad drawn in blue)

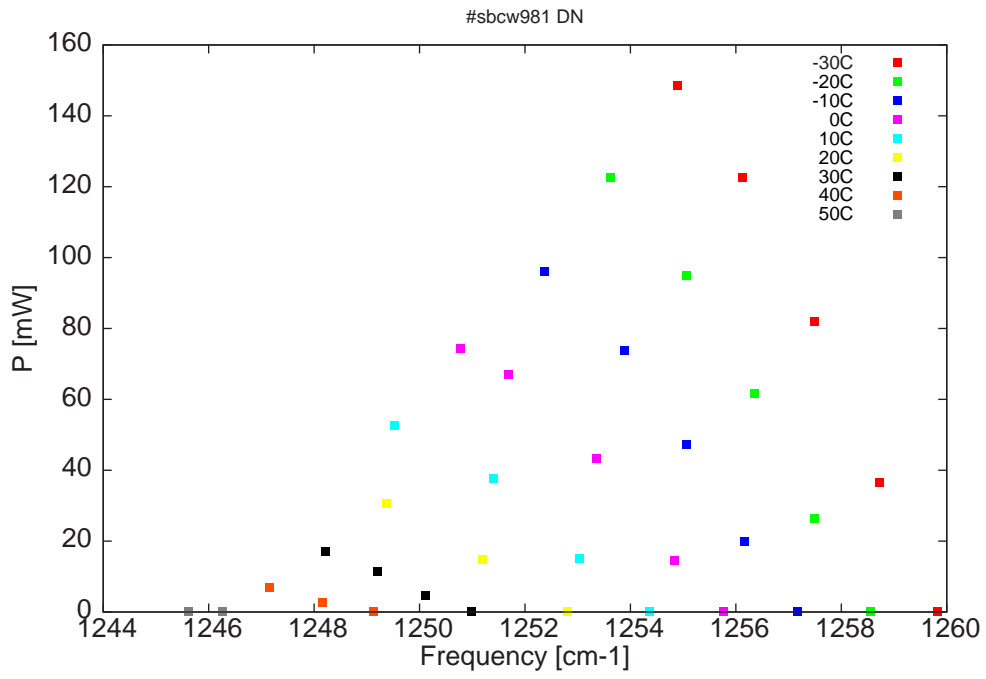


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

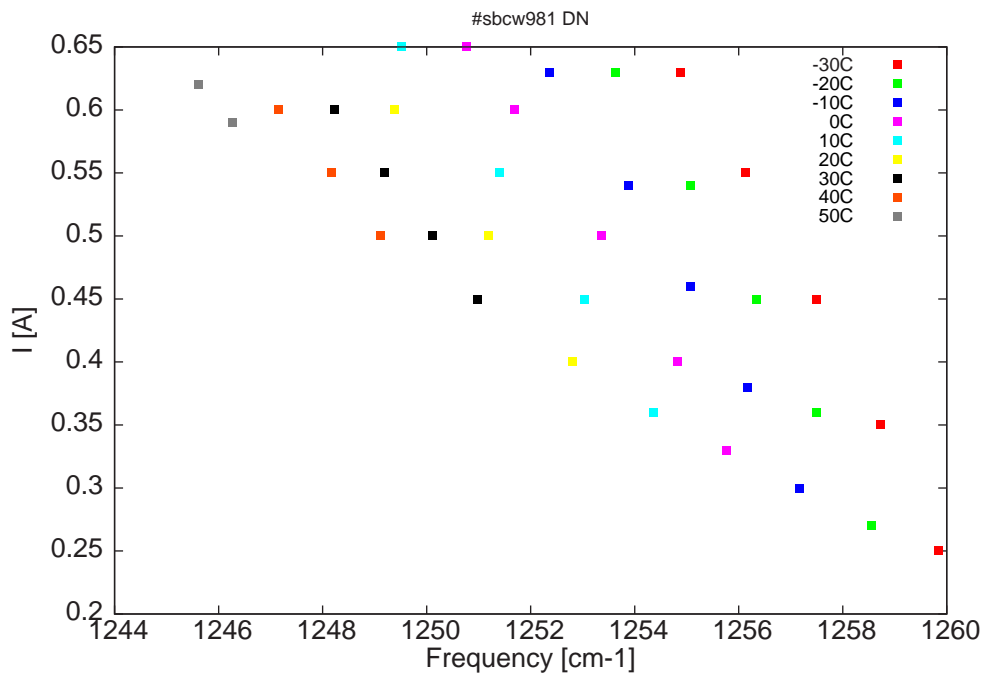


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

$\lambda$ [nm]	$\nu$ [cm <sup>-1</sup> ]	P[mW]	Temp[°C]	$U_{LASER}$ [V]	I[A]
7937.6	1259.8	0.1	-30	7.8	0.25
7944.6	1258.7	36.7	-30	8.2	0.35
7952.3	1257.5	81.9	-30	8.6	0.45
7961	1256.1	122.5	-30	8.9	0.55
7968.8	1254.9	148.7	-30	9.3	0.63
7945.6	1258.6	0.1	-20	7.8	0.27
7952.3	1257.5	26.3	-20	8.1	0.36
7959.6	1256.3	61.8	-20	8.5	0.45
7967.7	1255.1	94.8	-20	8.9	0.54
7976.9	1253.6	122.5	-20	9.2	0.63
7954.4	1257.2	0.1	-10	7.8	0.3
7960.8	1256.2	19.9	-10	8.2	0.38
7967.7	1255.1	47.1	-10	8.5	0.46
7975.3	1253.9	73.8	-10	8.8	0.54
7984.9	1252.4	96.2	-10	9.2	0.63
7963.3	1255.8	0.1	0	7.9	0.33
7969.2	1254.8	14.6	0	8.2	0.4
7978.5	1253.4	43.3	0	8.6	0.5
7989.2	1251.7	66.9	0	9	0.6
7995.1	1250.8	74.3	0	9.3	0.65
7972.2	1254.4	0.1	10	8	0.36
7980.6	1253	15.2	10	8.4	0.45
7991.1	1251.4	37.6	10	8.8	0.55
8003.1	1249.5	52.7	10	9.3	0.65
7982.1	1252.8	0.1	20	8.1	0.4
7992.4	1251.2	15	20	8.6	0.5
8004	1249.4	30.6	20	9	0.6
7993.7	1251	0.1	30	8.3	0.45
7999.3	1250.1	4.7	30	8.5	0.5
8005.1	1249.2	11.5	30	8.7	0.55
8011.4	1248.2	17.1	30	9	0.6
8005.6	1249.1	0.1	40	8.5	0.5
8011.8	1248.2	2.7	40	8.7	0.55
8018.3	1247.2	6.8	40	9	0.6
8023.9	1246.3	0.1	50	8.9	0.59
8028.1	1245.6	0.1	50	9	0.62

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

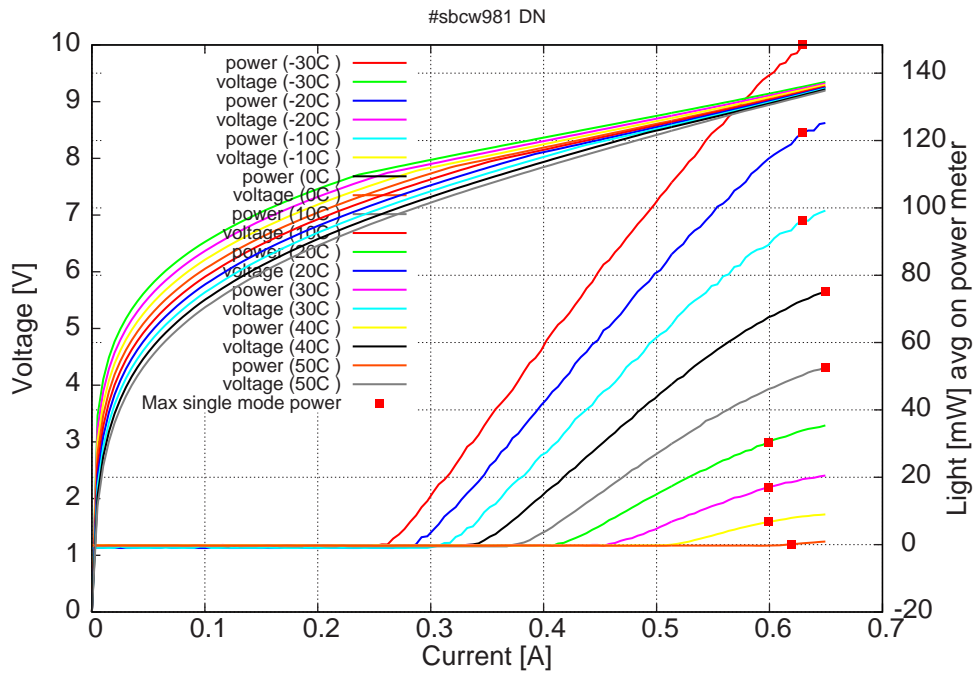


Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

Note: at -30C:  $I_{th}=250\text{mA}$  /  $V_{th}= 7.8\text{V}$  (2-wires measurements). Maximum operation current: 0.65A for all temperatures.

Figure 3: spectra at -30C, -20C, -10C and 0C for various DC currents

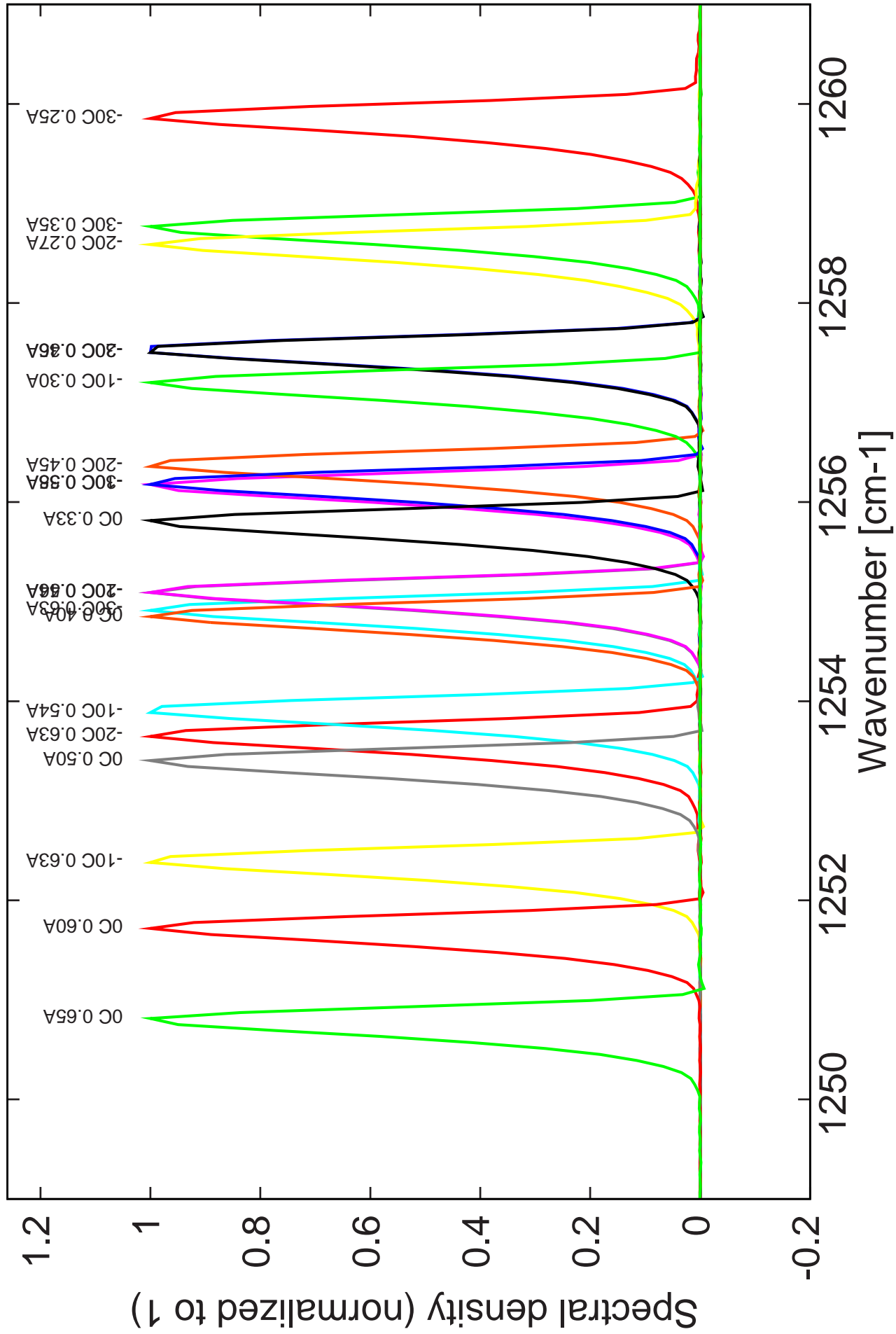
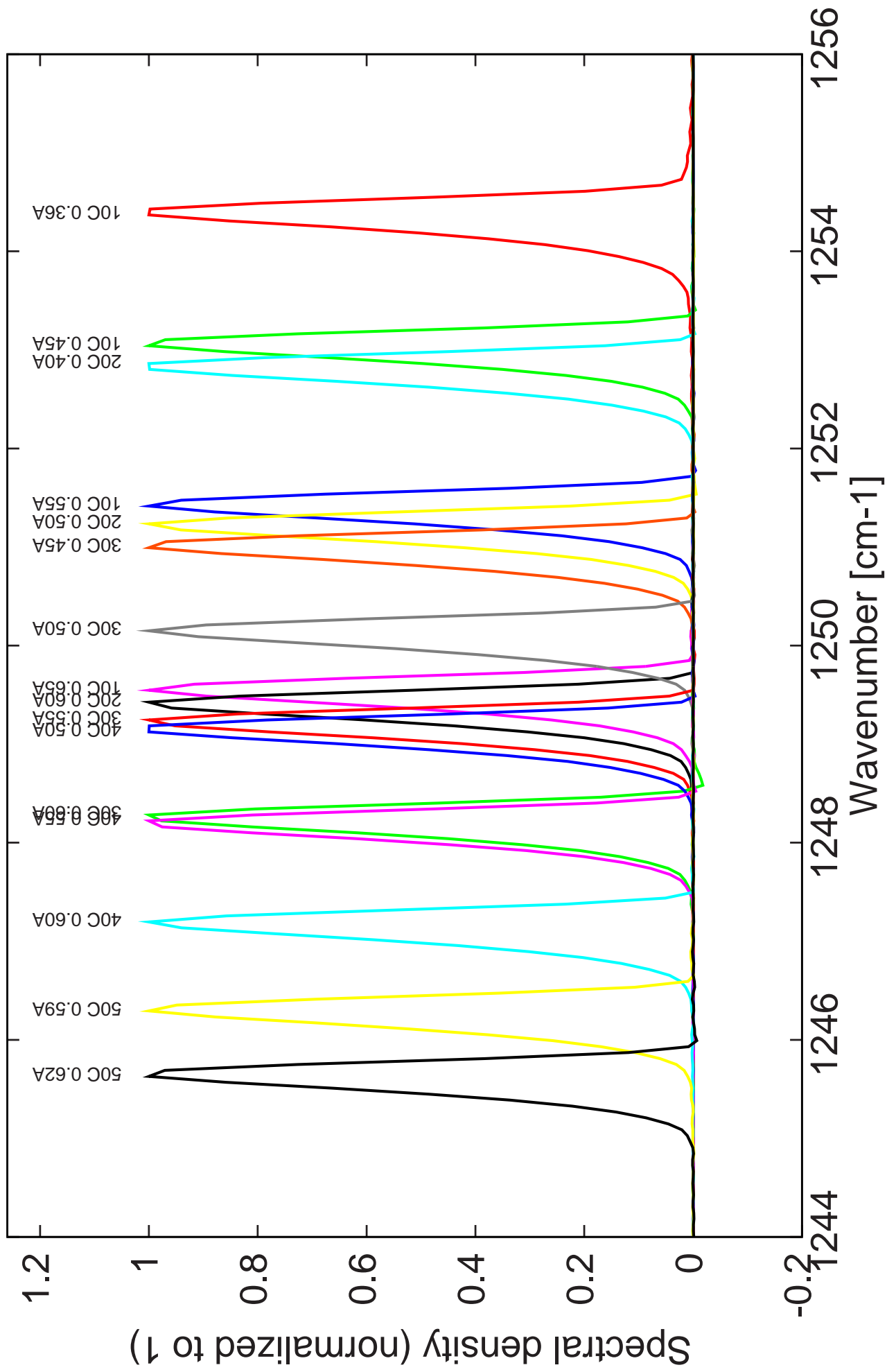


Figure 4: spectra at 10C, 20C, 30C, 40C and 50C for various DC currents



# PULSED DATA

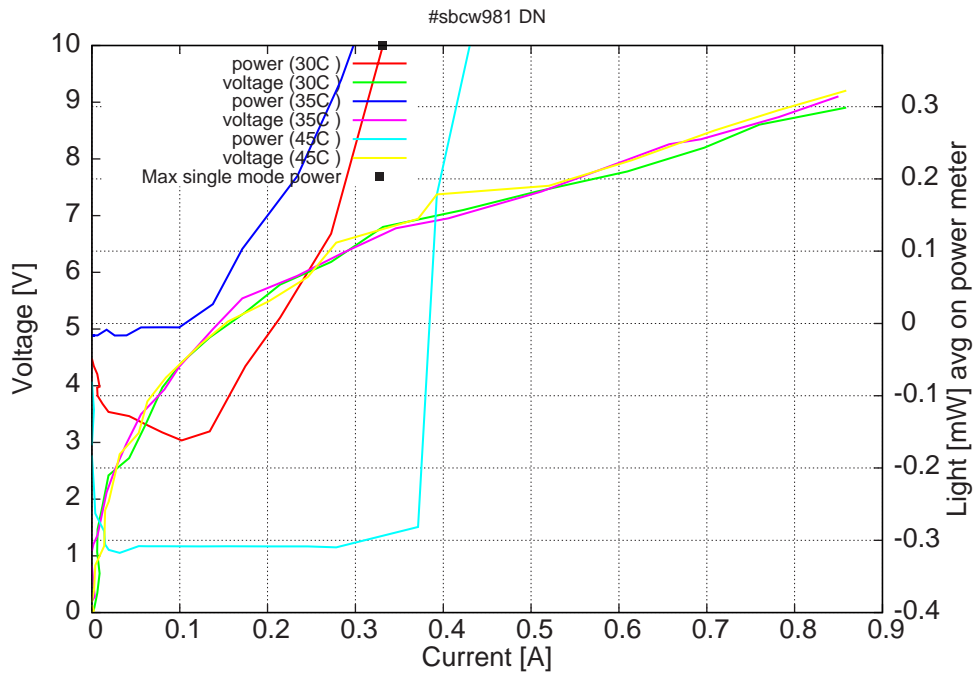


Figure 5: peak voltage and average power vs peak current at 2% duty-cycle (50ns pulses on the laser,  $2.5\mu\text{s}$  period) (the solid squares indicate the maximum singlemode emitted power)

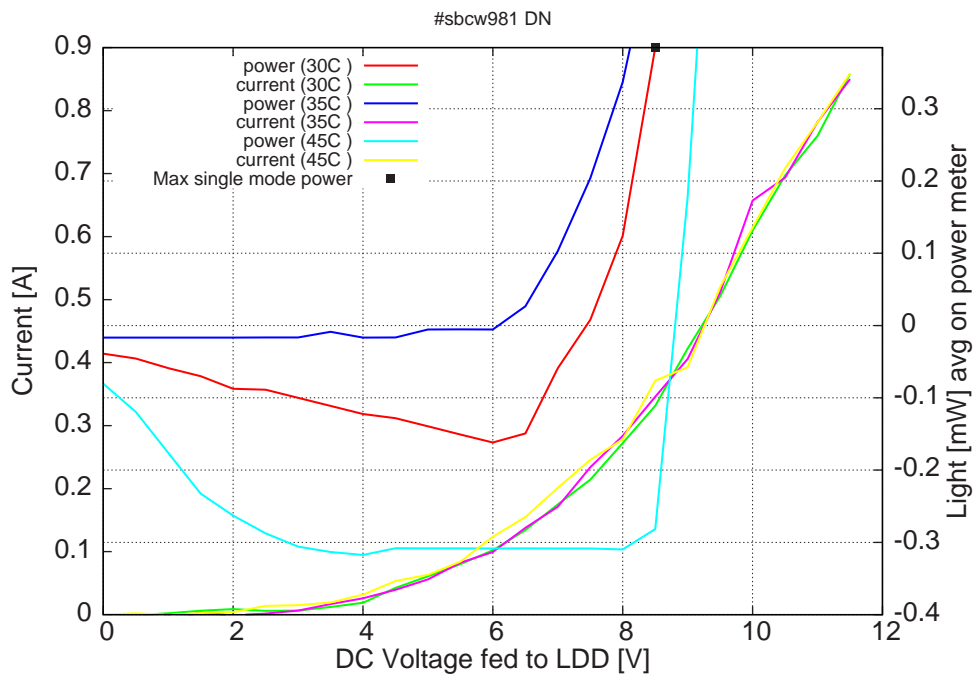


Figure 6: peak current and average power vs LDD voltage at 2% duty-cycle (the solid squares indicate the maximum singlemode emitted power)

Figure 7: spectra at 30C, 35C and 45C at 2% duty-cycle (SMSR > 25 dB over the gain spectrum)

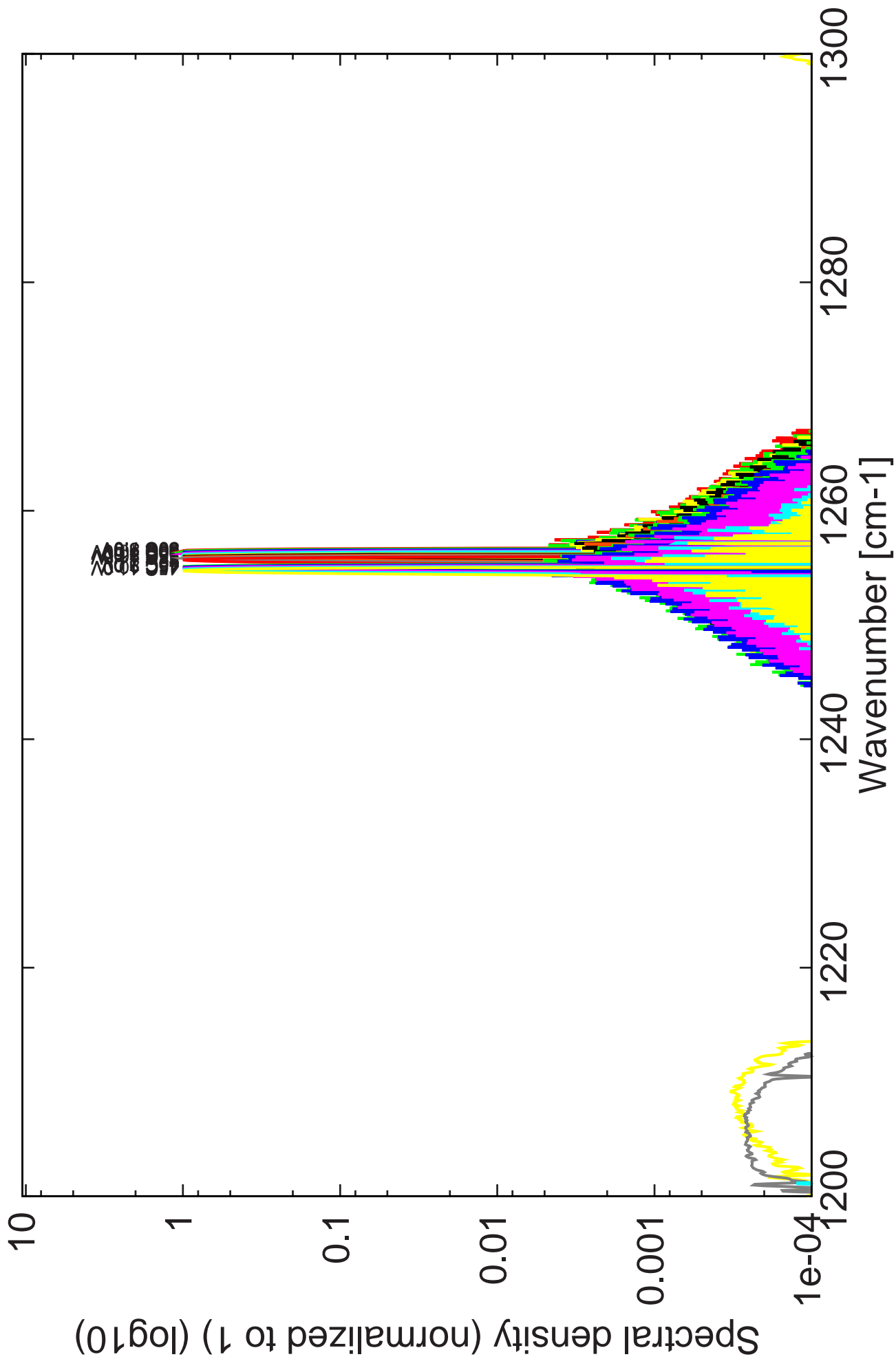
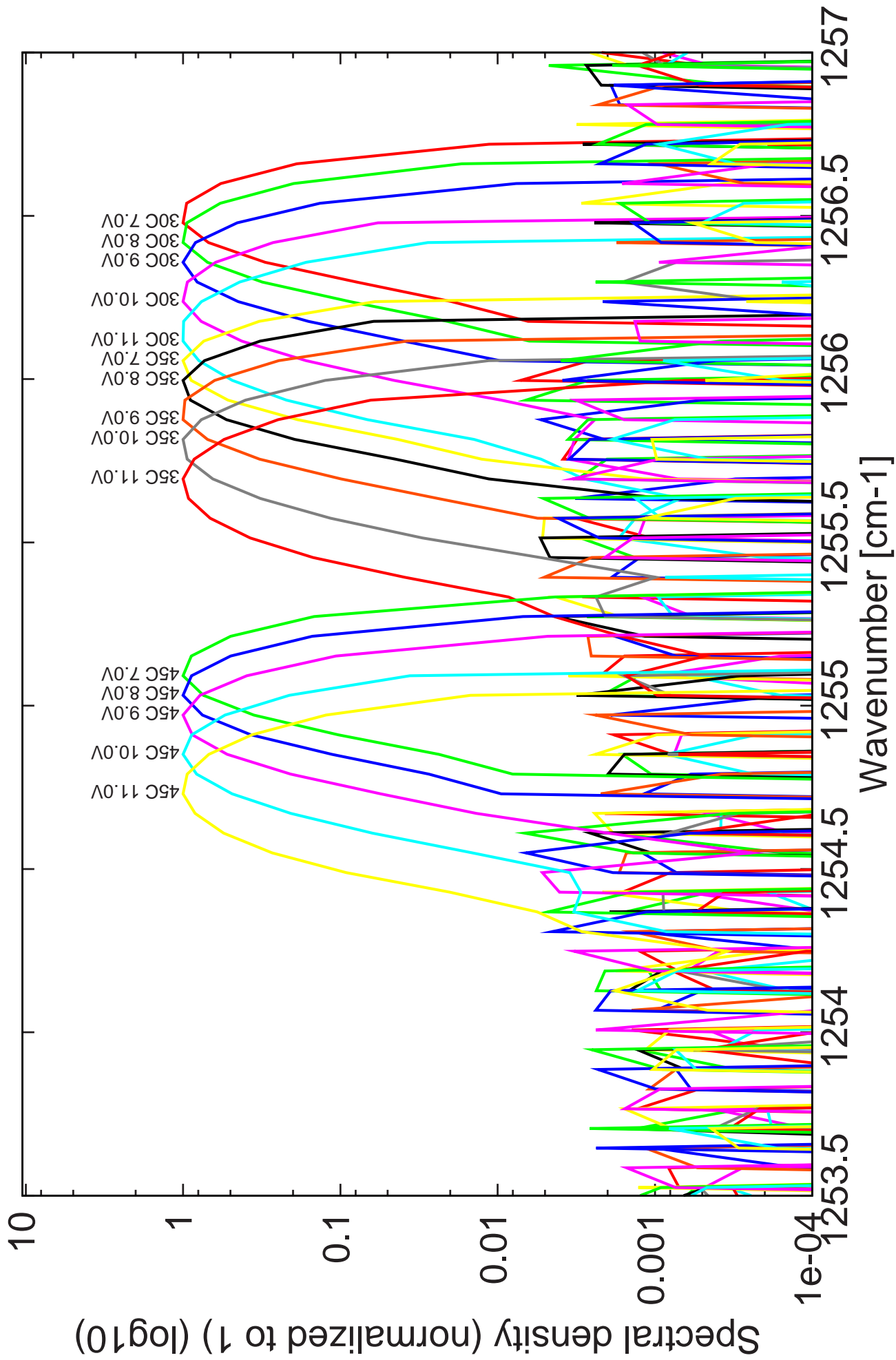


Figure 8: spectra at 30C, 35C and 45C at 2% duty-cycle (50ns pulses, 2.5us period) for various LDD voltages



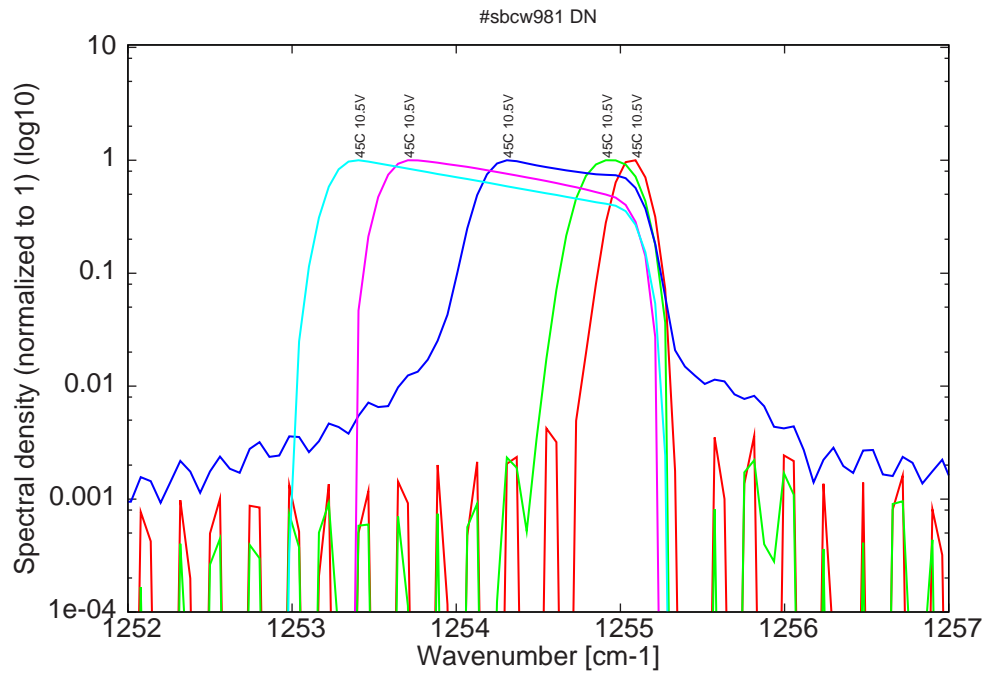


Figure 7: spectra at 45C and 10.5V on LDD at low duty-cycle (30, 100, 300, 600 and 800ns pulses on the laser, 300 $\mu$ s period)