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Datasheet for #sb1815 UP

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).

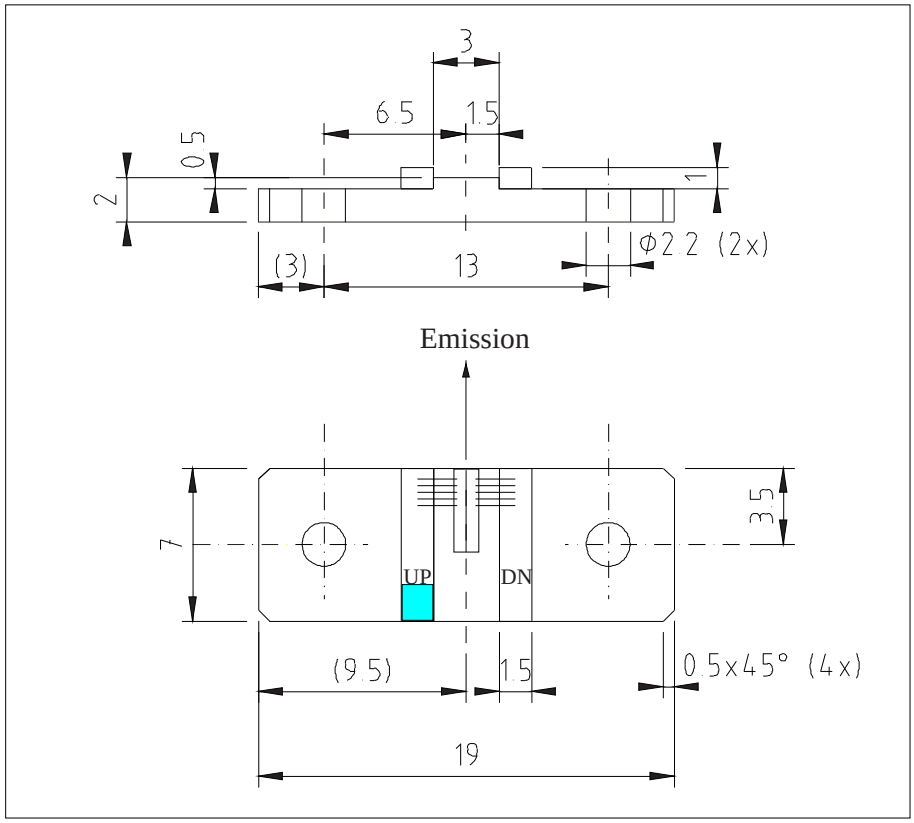

Figure 1: Support mounting for #sb1815 UP (please note that the laser is connected to the UP pad drawned in blue)

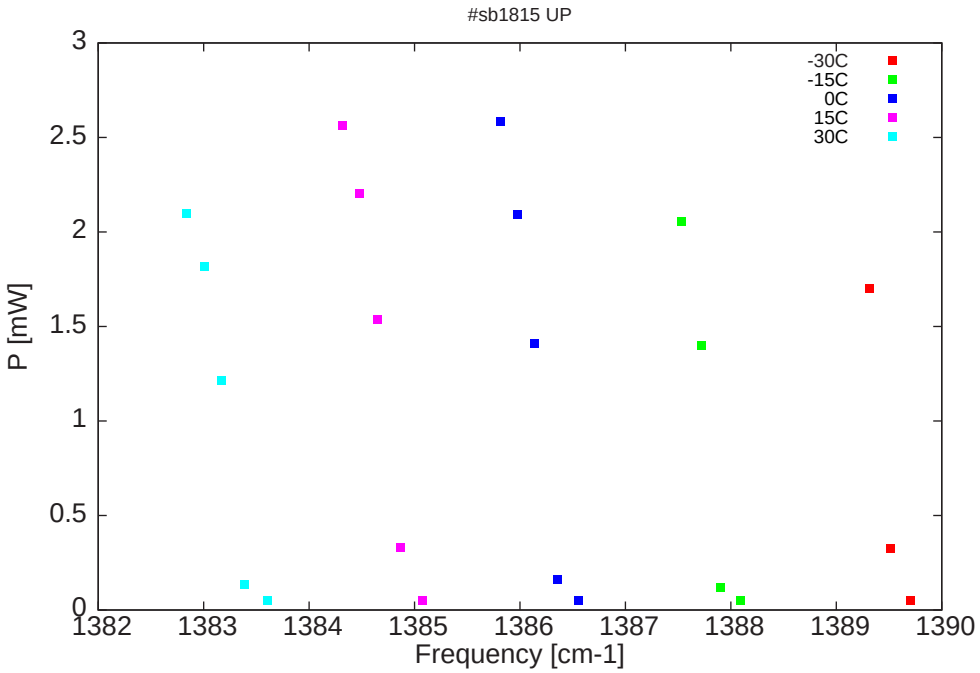

Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

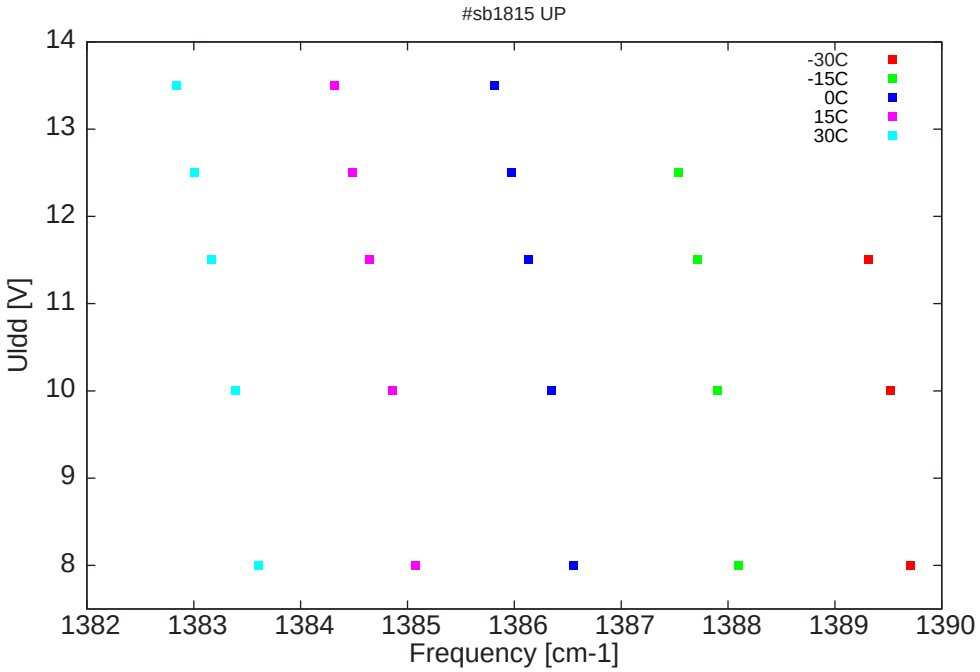

Figure 3: DC voltage fed to LDD (Uldd) as a function of the singlemode emission frequencies and temperatures

λ[nm]	ν[cm^{-1}]	P[mW]	Temp[°C]	U_{LDD}[V]	I_{pulse}[A]
7195.8	1389.7	0.1	-30	8	0.12
7196.7	1389.5	0.3	-30	10	0.32
7197.8	1389.3	1.7	-30	11.5	0.55
7204.1	1388.1	0.1	-15	8	0.14
7205.1	1387.9	0.1	-15	10	0.35
7206.1	1387.7	1.4	-15	11.5	0.58
7207	1387.5	2.1	-15	12.5	0.74
7212.1	1386.6	0.1	0	8	0.17
7213.2	1386.4	0.2	0	10	0.38
7214.3	1386.1	1.4	0	11.5	0.6
7215.1	1386	2.1	0	12.5	0.78
7216	1385.8	2.6	0	13.5	0.97
7219.8	1385.1	0.1	15	8	0.18
7220.9	1384.9	0.3	15	10	0.4
7222.1	1384.6	1.5	15	11.5	0.63
7222.9	1384.5	2.2	15	12.5	0.8
7223.8	1384.3	2.6	15	13.5	0.94
7227.5	1383.6	0.1	30	8	0.19
7228.6	1383.4	0.1	30	10	0.41
7229.8	1383.2	1.2	30	11.5	0.66
7230.6	1383	1.8	30	12.5	0.81
7231.5	1382.8	2.1	30	13.5	0.96

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

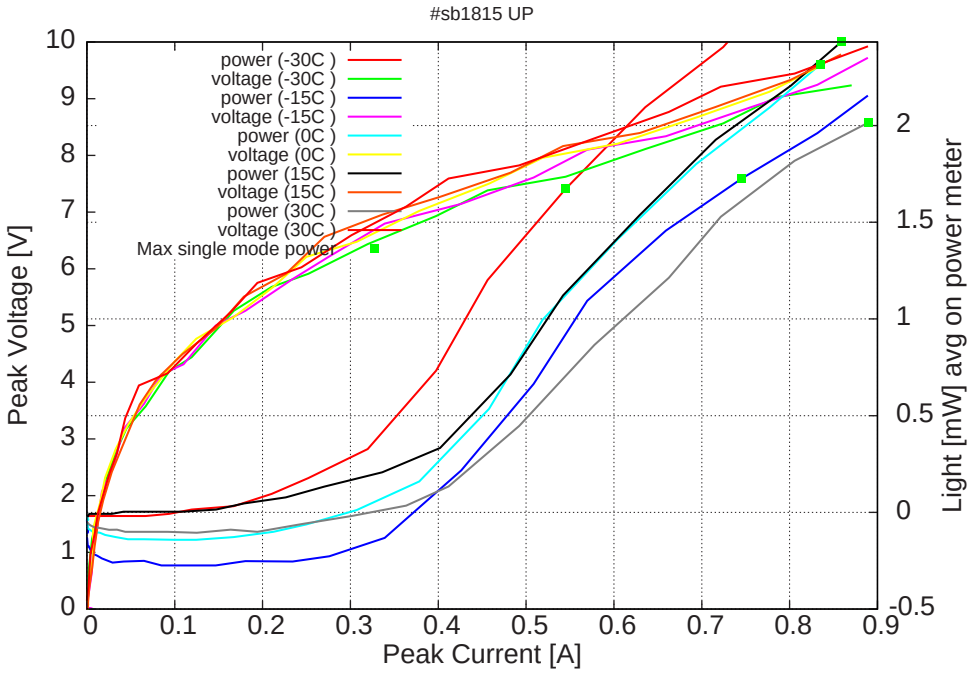

Figure 4: peak voltage and average power vs peak current at 2% duty-cycle (50ns pulses on the laser, 2.5μs period) (the solid squares indicate the maximum singlemode emitted power)

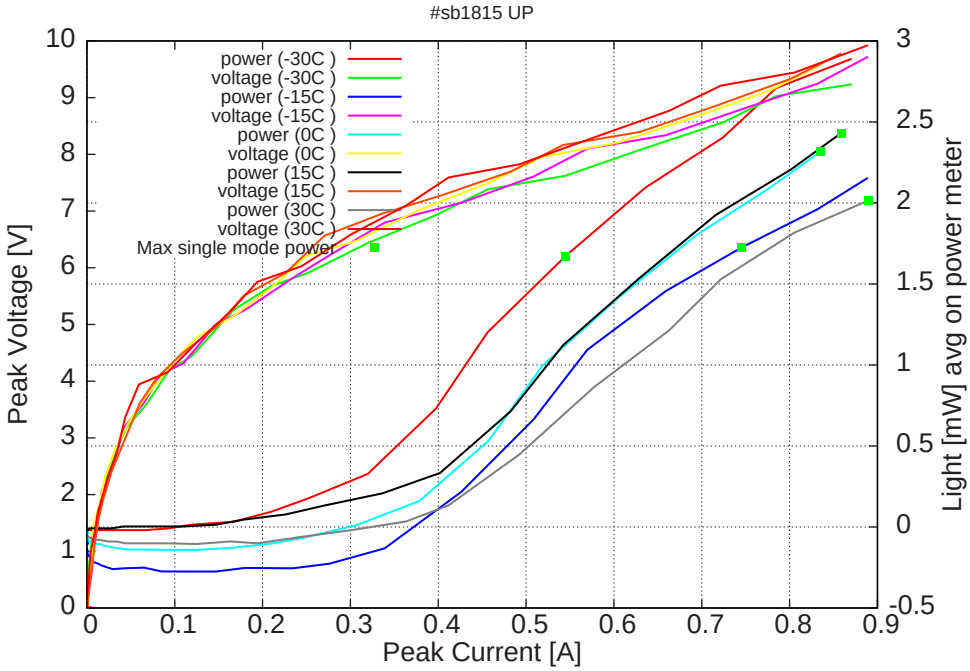

Figure 5: peak voltage and average power vs peak current at 2% duty-cycle (50ns pulses on the laser, 2.5μs period) (including the multimode region)

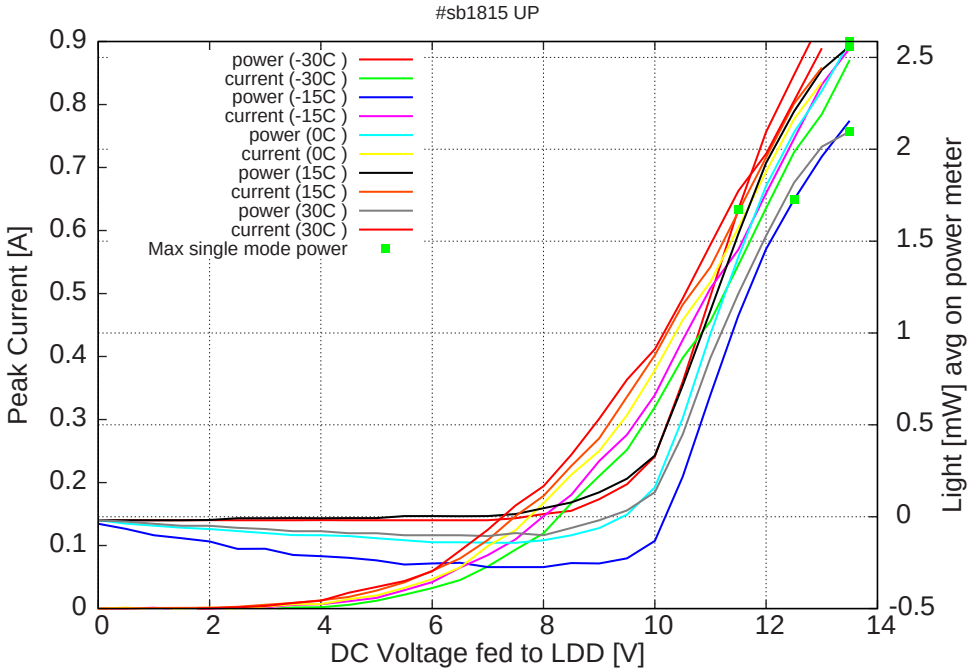

Figure 6: peak current and average power vs LDD voltage at 2% duty-cycle (50ns pulses on the laser, 2.5μs period) (the solid squares indicate the maximum singlemode emitted power)

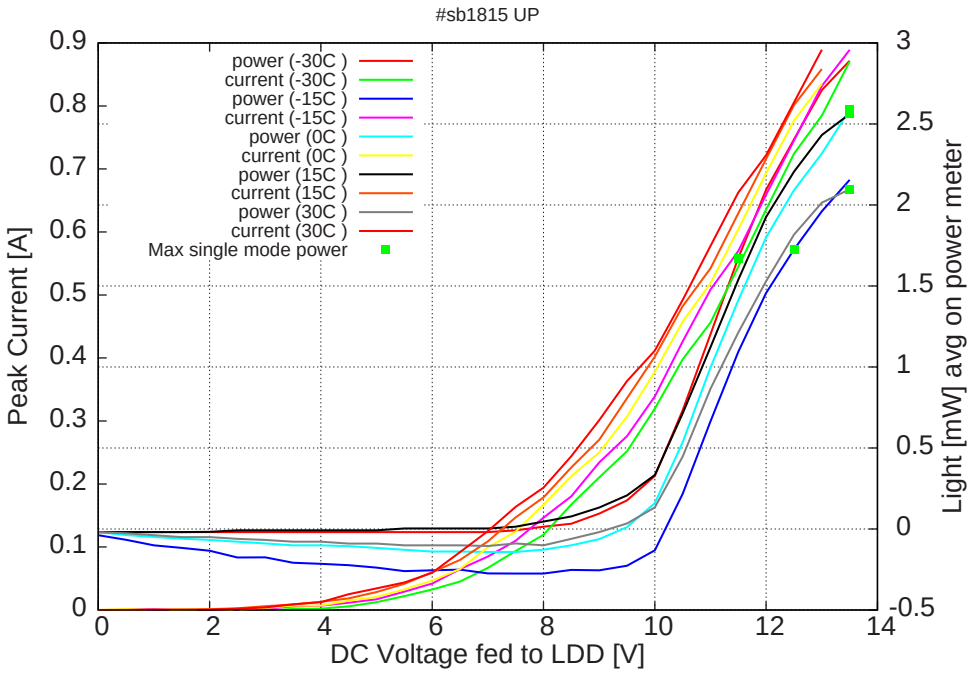

Figure 7: peak current and average power vs LDD voltage at 2% duty-cycle (50ns pulses on the laser, 2.5μs period) (including the multimode region)

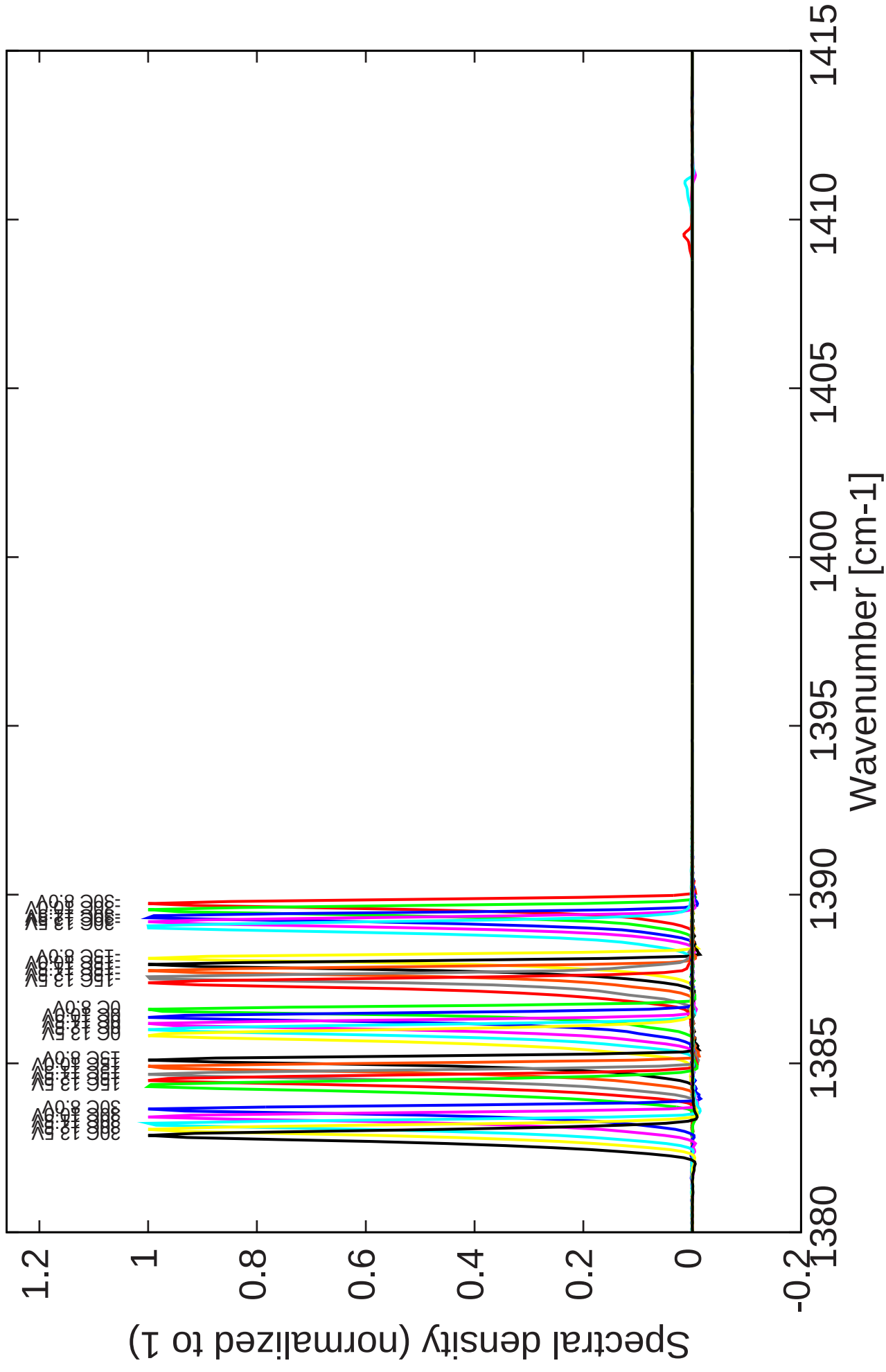

Figure 6: spectra at different temperature for various LDD voltages (22ns pulses, 1.1us period)

#sb1815 UP

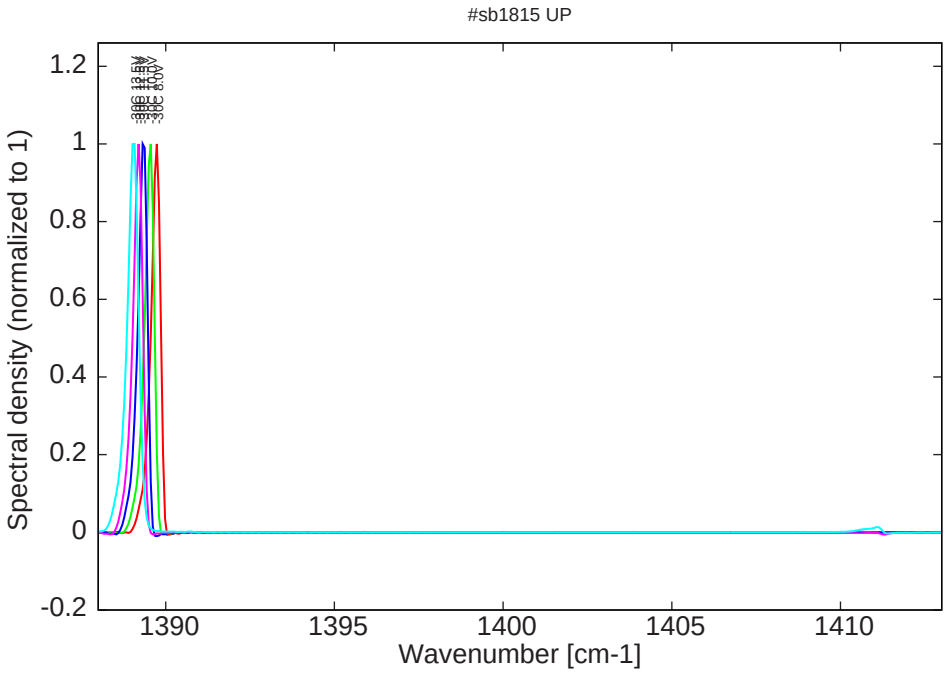

Figure 8: spectra at -30C for various LDD voltages; monomode up to 11.5V, small mode around 1411cm-1 (22ns pulses, 1.1μs period)

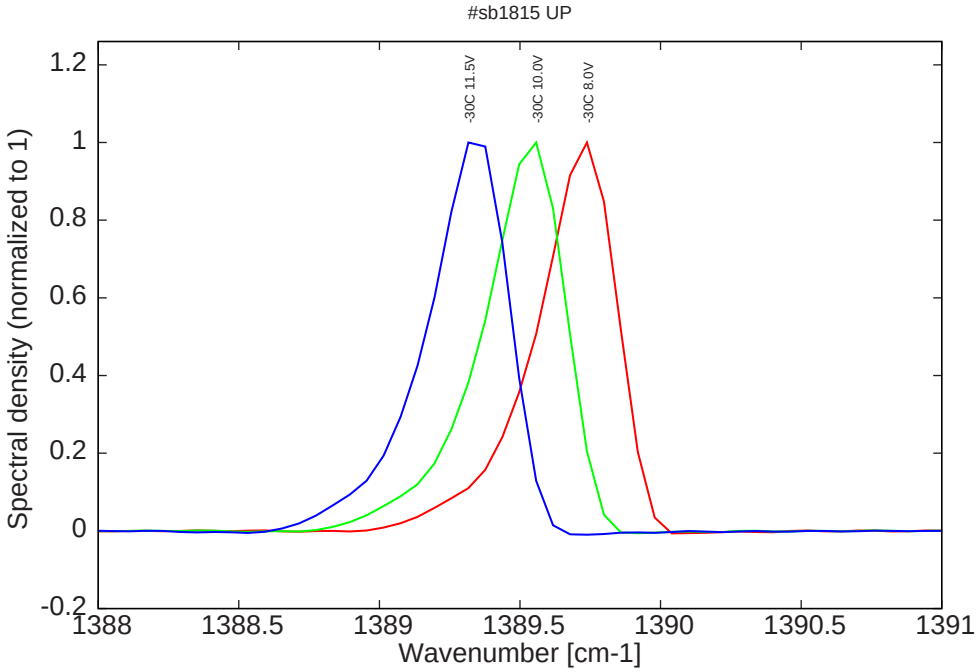

Figure 9: spectra at -30C for various LDD voltages; monomode range (22ns pulses, 1.1μs period)

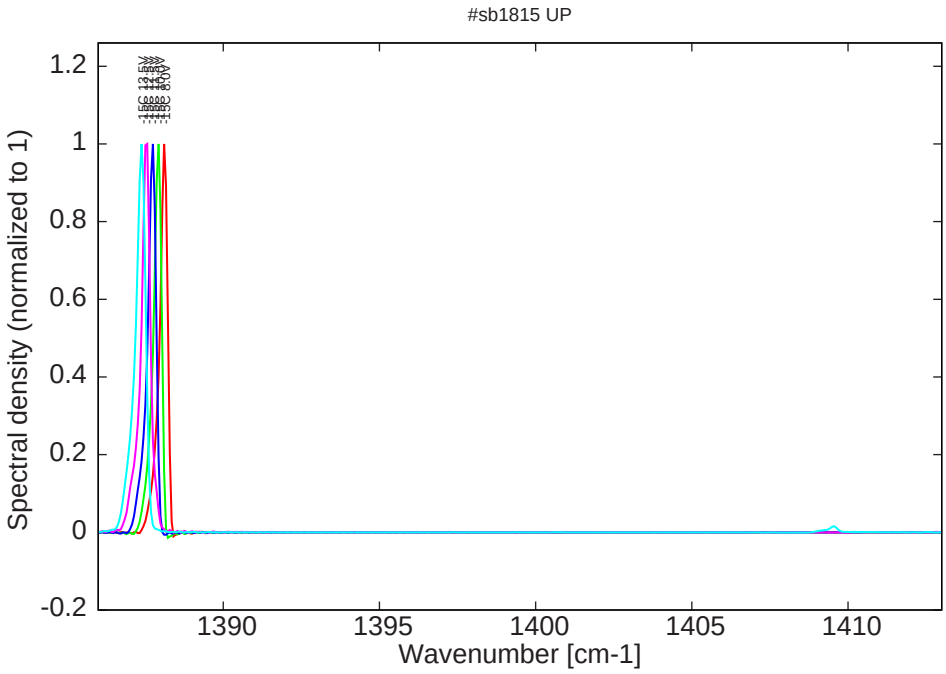

Figure 10: spectra at -15C for various LDD voltages; monomode up to 12.5V, small mode around 1410cm-1 (22ns pulses, 1.1μs period)

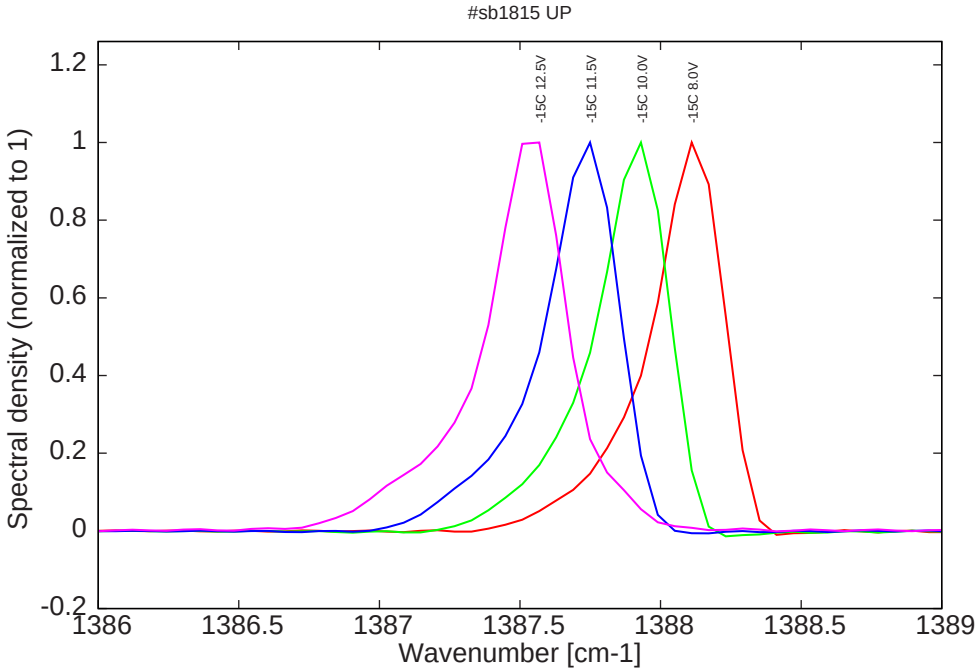

Figure 11: spectra at -15C for various LDD voltages; monomode range (22ns pulses, 1.1μs period)

Figure 11: spectra between 0C and 30C for various LDD voltages; all monomode (22ns pulses, 1.1us period)