Quantum Cascade Solutions
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Datasheet for #sbcw10050 DN

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 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 bias and positive bias on the specific zones drawn below. To use with an ILX Lightwave LDX-3232 laser driver, or equivalent.

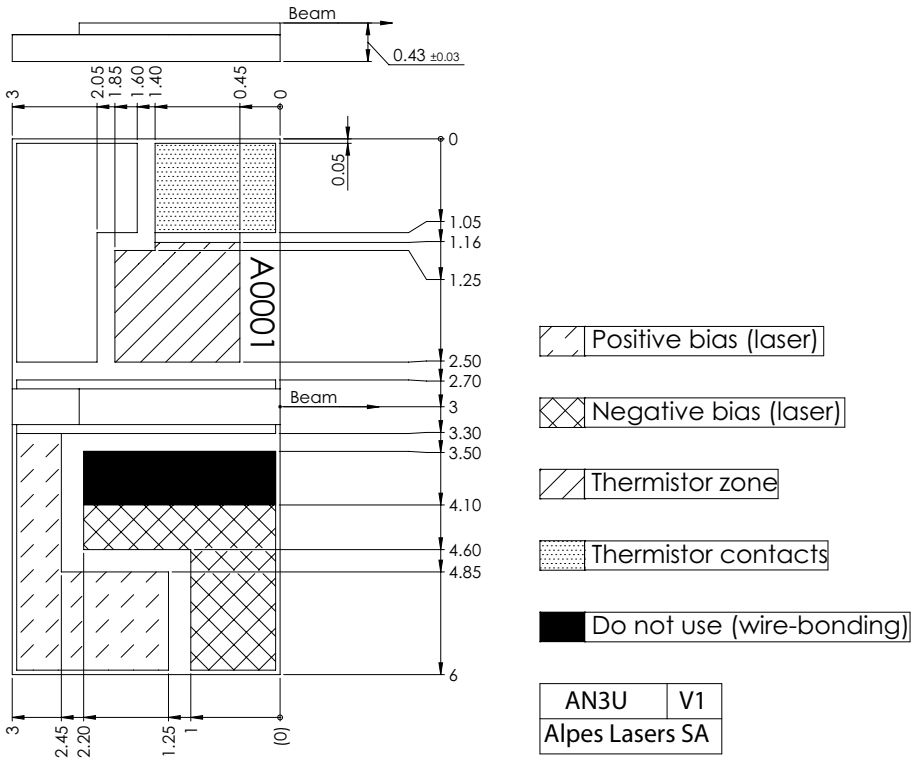

Figure 1: Mechanical and electrical interface for #sbcw10050 DN (please note that AlN submount numbering is A02UH)

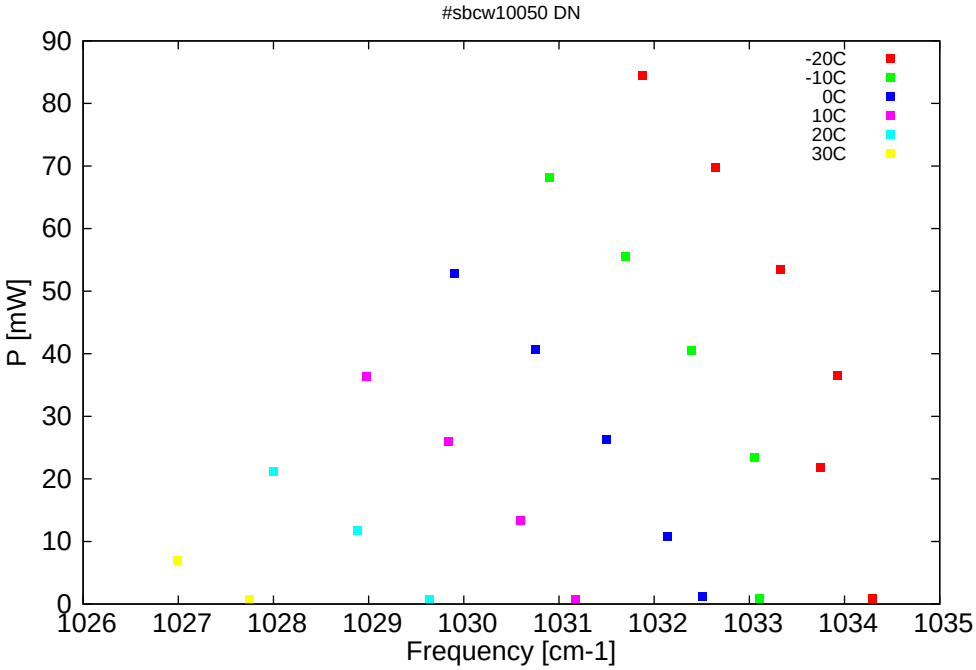

Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

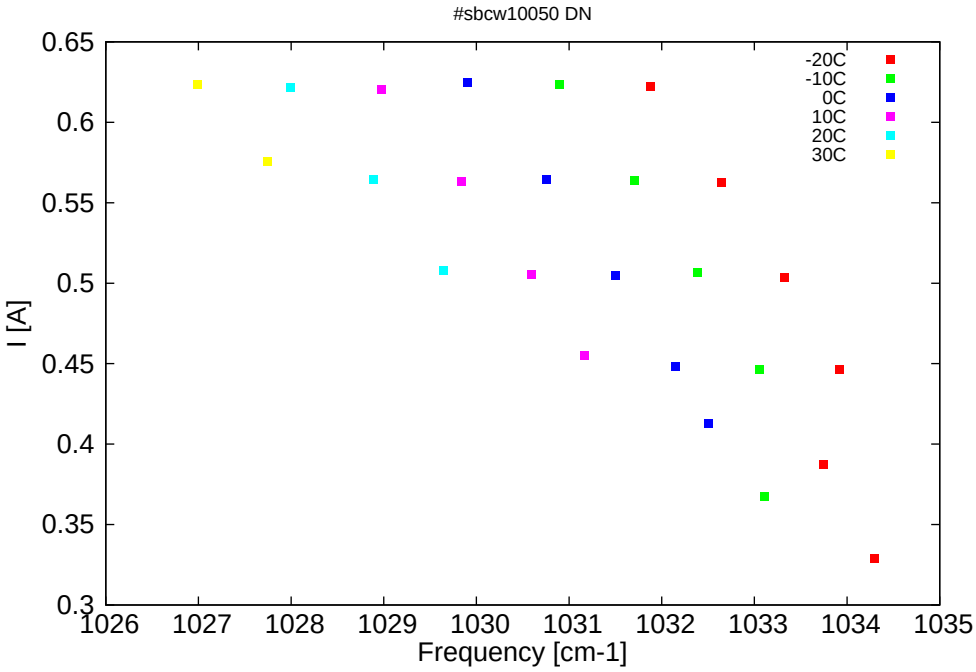

Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ[nm]	ν[cm^{-1}]	P[mW]	Temp[°C]	U$_{LASER}$[V]	I[A]
9668.4	1034.3	0.8	-20	9.1	0.33
9673.5	1033.7	21.8	-20	9.5	0.39
9671.9	1033.9	36.5	-20	9.8	0.45
9677.5	1033.3	53.5	-20	10.1	0.5
9683.9	1032.6	69.8	-20	10.4	0.56
9691	1031.9	84.4	-20	10.7	0.62
9679.6	1033.1	0.8	-10	9.2	0.37
9680.1	1033.1	23.4	-10	9.7	0.45
9686.3	1032.4	40.5	-10	10	0.51
9692.7	1031.7	55.6	-10	10.3	0.56
9700.3	1030.9	68.2	-10	10.7	0.62
9685.2	1032.5	1.3	0	9.4	0.41
9688.6	1032.1	10.8	0	9.6	0.45
9694.6	1031.5	26.3	0	9.9	0.5
9701.7	1030.8	40.7	0	10.3	0.56
9709.6	1029.9	52.8	0	10.6	0.62
9697.7	1031.2	0.7	10	9.6	0.46
9703.2	1030.6	13.3	10	9.9	0.51
9710.3	1029.8	26.1	10	10.2	0.56
9718.4	1029	36.4	10	10.5	0.62
9712.1	1029.6	0.7	20	9.8	0.51
9719.3	1028.9	11.7	20	10.1	0.56
9727.6	1028	21.2	20	10.5	0.62
9730	1027.7	0.8	30	10.1	0.58
9737.2	1027	6.9	30	10.4	0.62

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

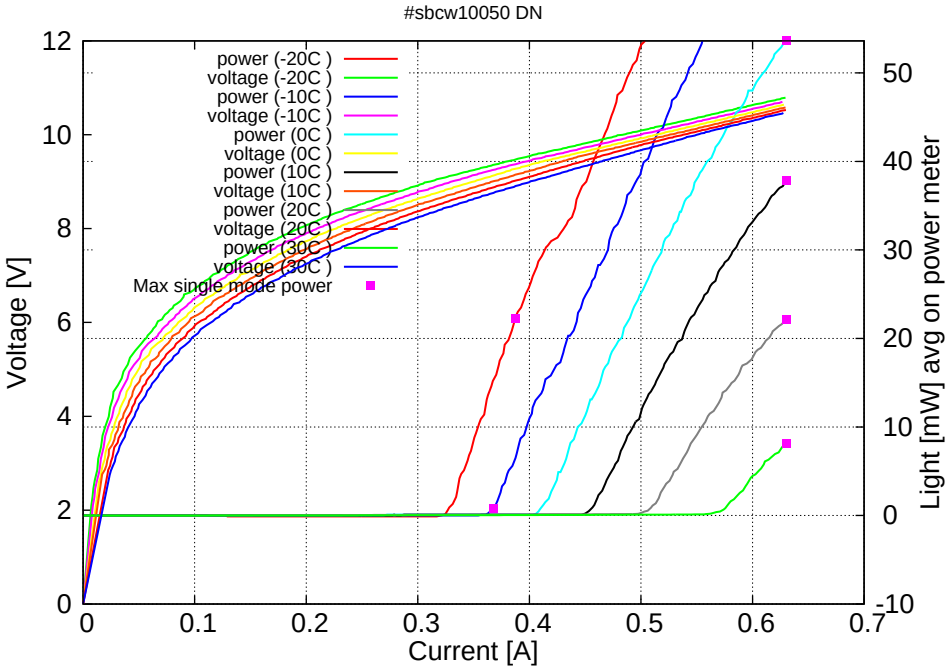

Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

Note: at -20C: Ith=0.32A / Vth=9.1V (2-wires measurements). Maximum operation current: 0.630A for all temperatures.

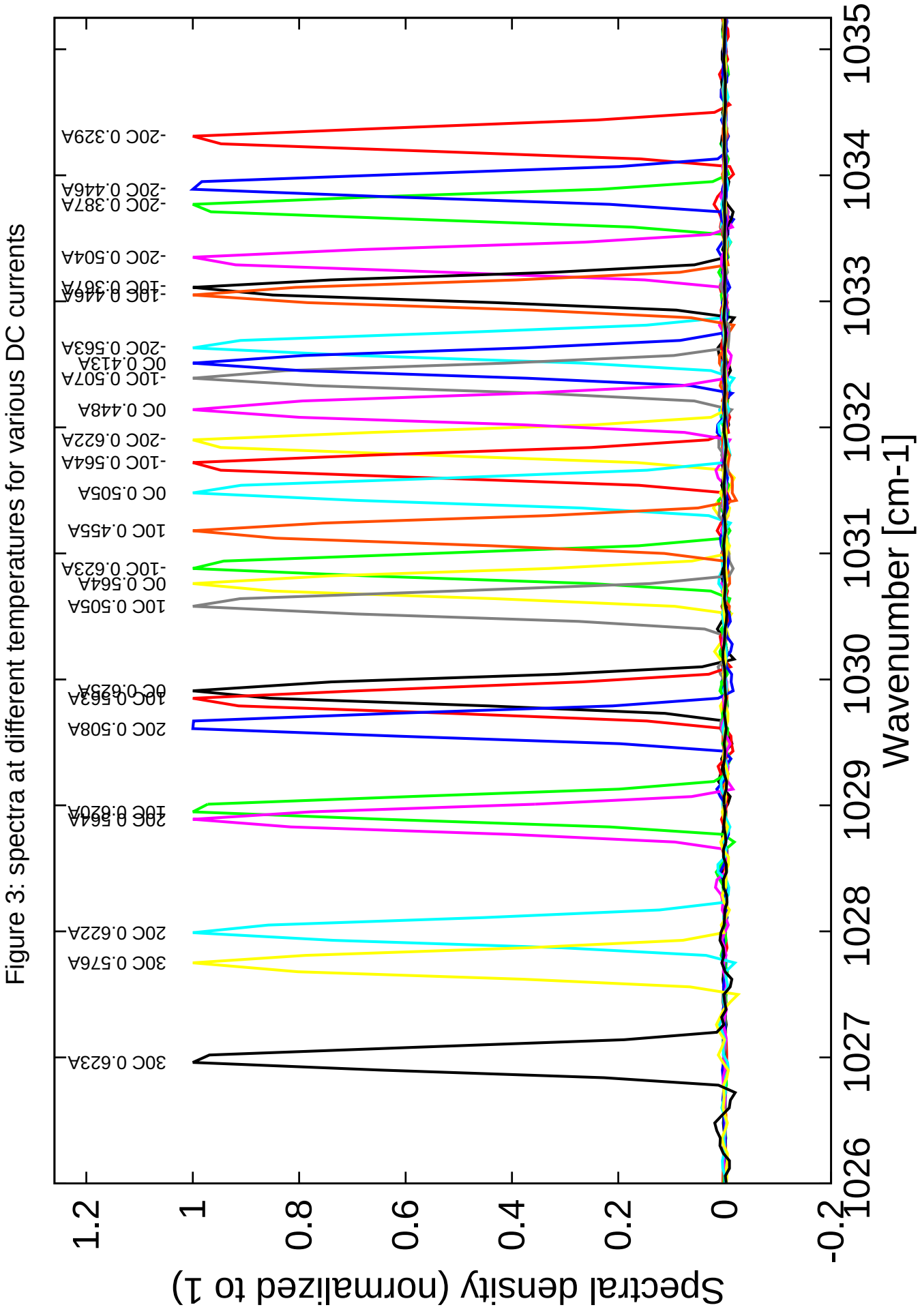

Figure 3: spectra at different temperatures for various DC currents

#sbcw10050 DN

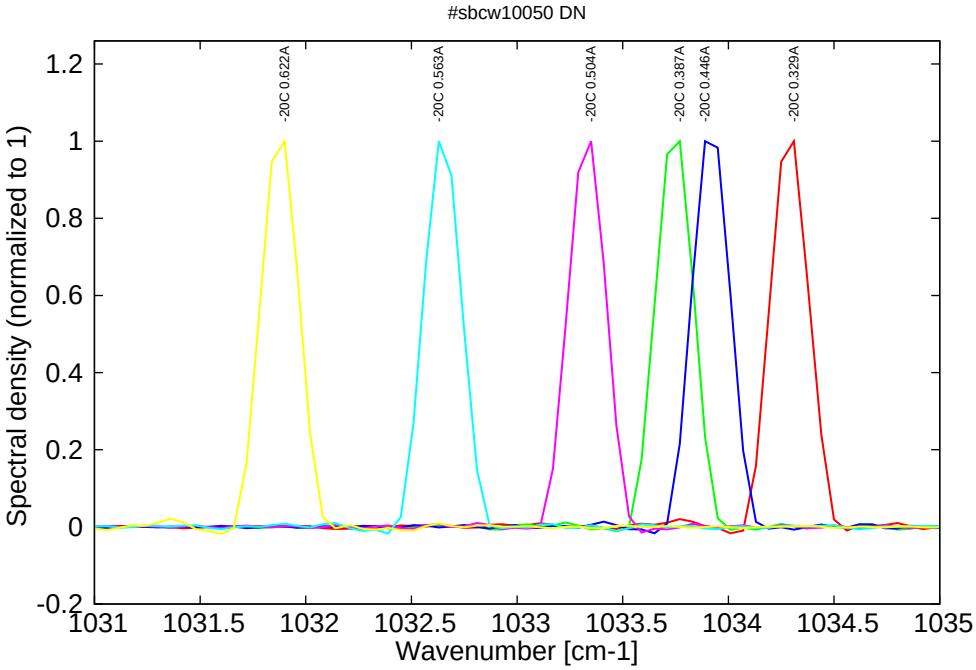

Figure 5: Spectra at -20C for various DC currents (monomode on mode 1 up to 0.387A then becomes monomode on mode 2)

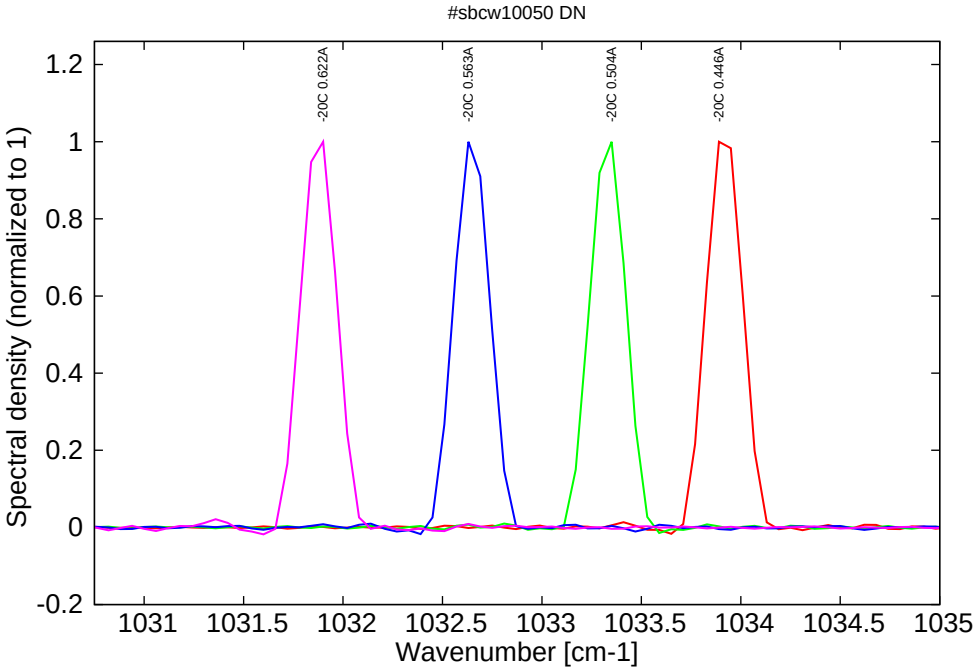

Figure 6: Spectra at -20C for various DC currents (all monomode on mode 2)

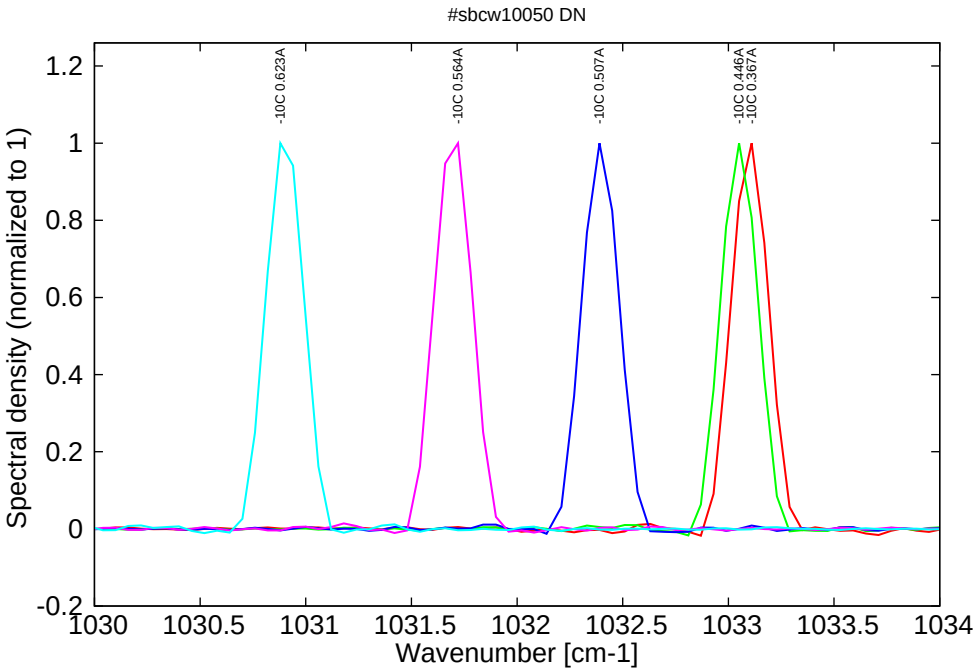

Figure 7: Spectra at -10C for various DC currents (monomode on mode 1 only at threshold then becomes monomode on mode 2)

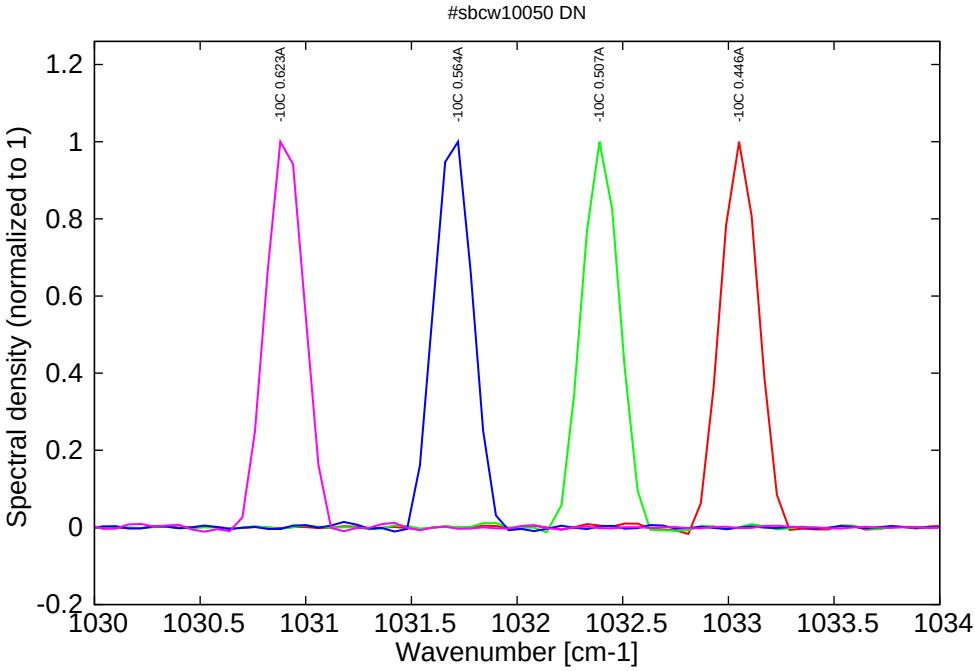

Figure 8: Spectra at -10C for various DC currents (all monomode on mode 2)

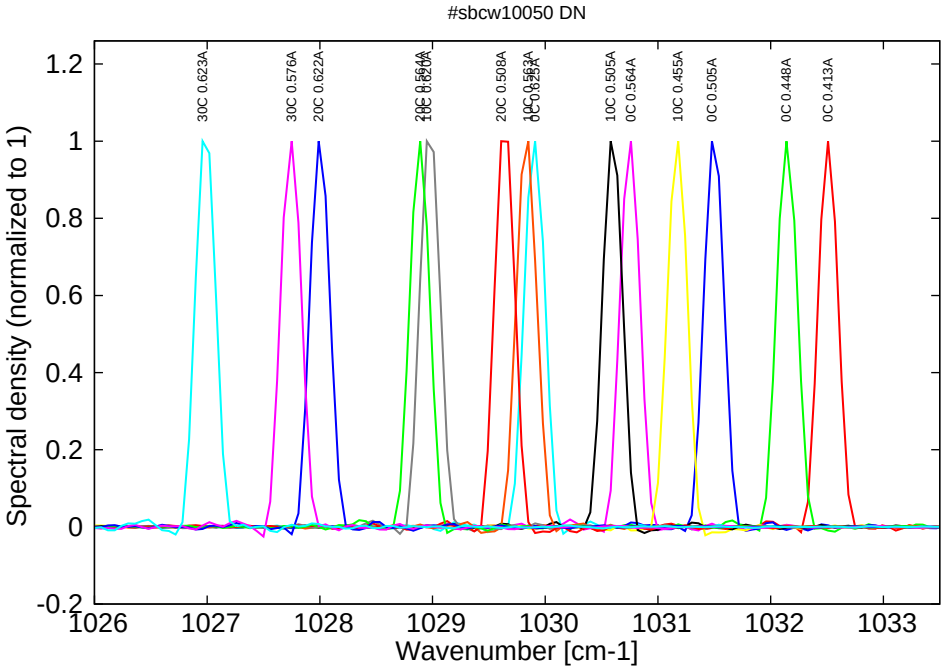

Figure 9: Spectra from 0C to 30C for various DC currents (all monomode on mode 2)