Quantum Cascade Solutions
Avenue des Pâquiers 1
CH-2072 St-Blaise
T: +41 32 729 95 10
F: +41 32 729 95 19

Datasheet for #sbcw12318 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 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 be used with a high compliance CW laser driver capable of reaching the operating current and voltage indicated in this datasheet, or up to 2.5A/20V.

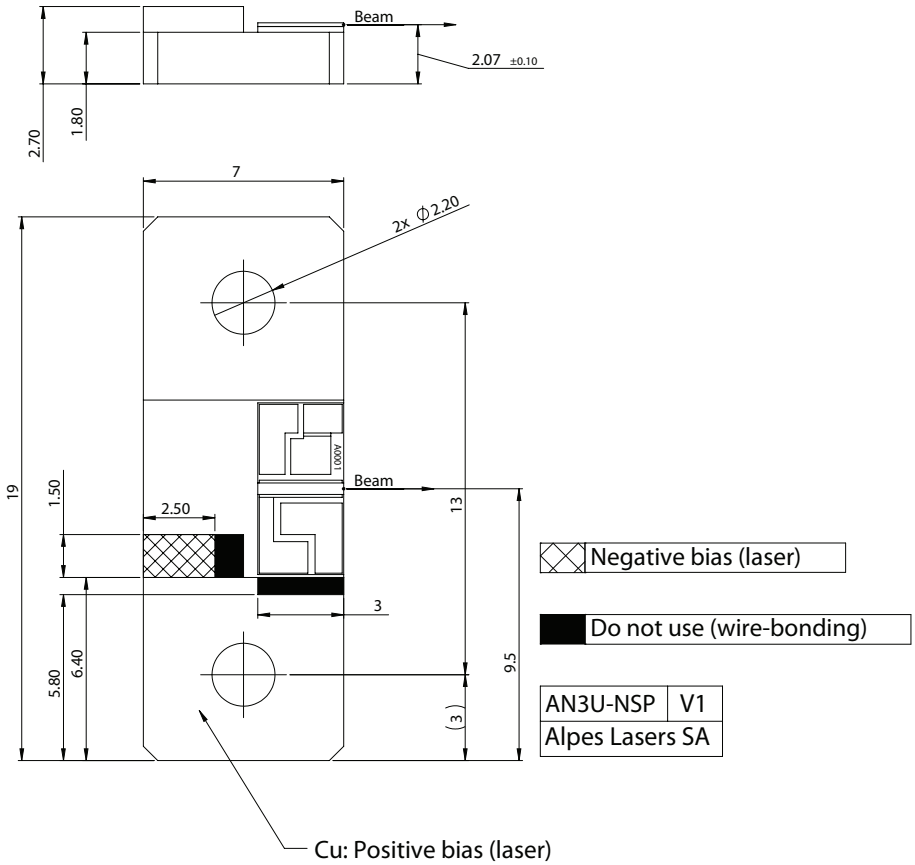

Figure 1: Mechanical and electrical interface for #sbcw12318 DN

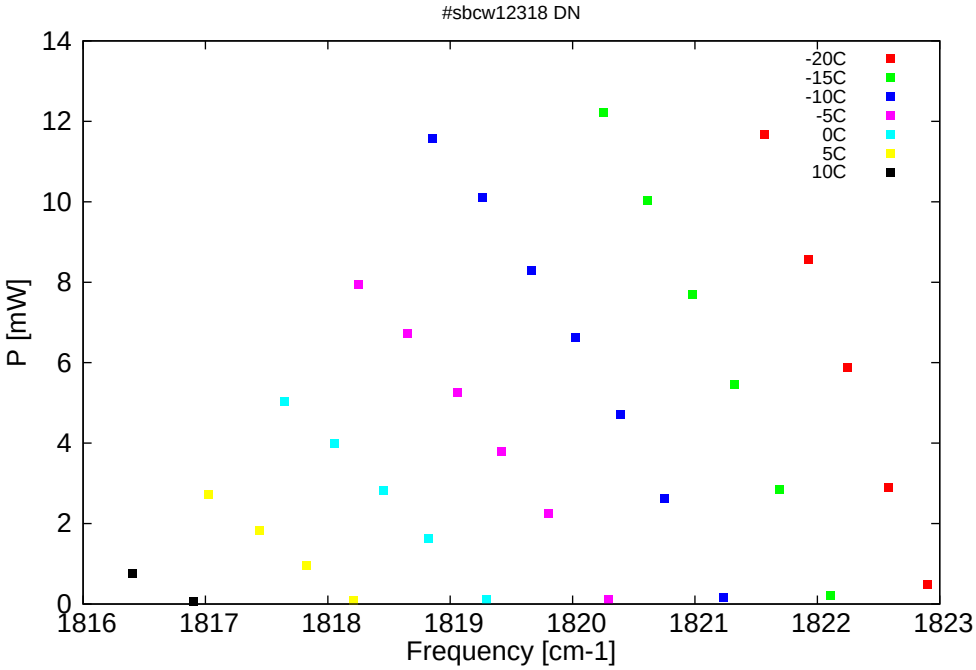

Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

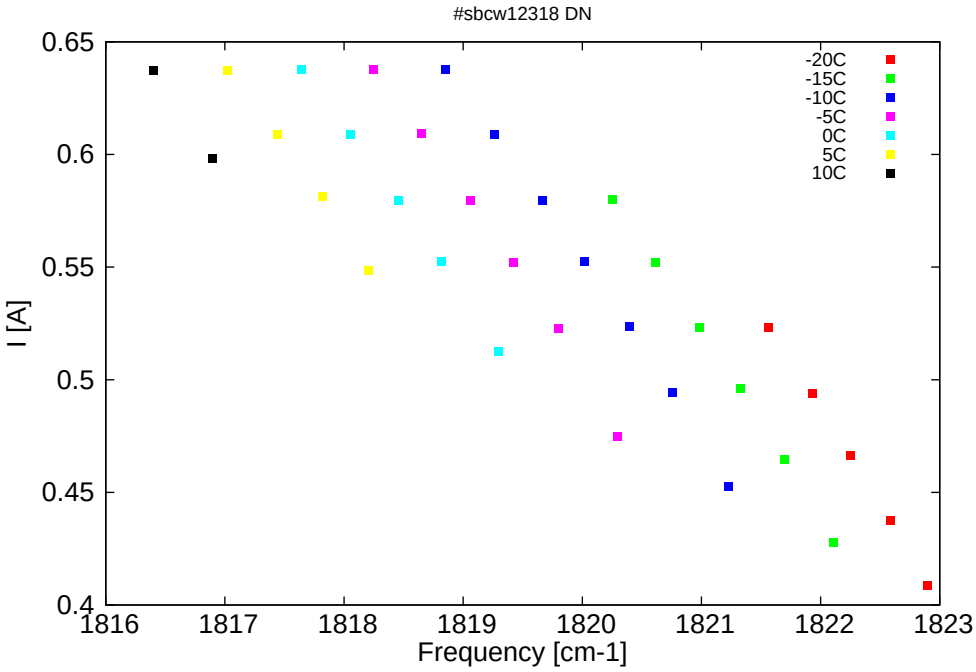

Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ[nm]	ν[cm^{-1}]	P[mW]	Temp[°C]	U$_{LASER}$[V]	I[A]
5485.8	1822.9	0.5	-20	8.98	0.409
5486.7	1822.6	2.9	-20	9.09	0.437
5487.7	1822.2	5.9	-20	9.2	0.467
5488.7	1821.9	8.6	-20	9.31	0.494
5489.8	1821.6	11.7	-20	9.42	0.523
5488.1	1822.1	0.2	-15	9.02	0.428
5489.4	1821.7	2.9	-15	9.16	0.464
5490.5	1821.3	5.4	-15	9.29	0.496
5491.5	1821	7.7	-15	9.39	0.523
5492.6	1820.6	10	-15	9.5	0.552
5493.7	1820.3	12.2	-15	9.61	0.58
5490.8	1821.2	0.2	-10	9.09	0.453
5492.2	1820.8	2.6	-10	9.25	0.494
5493.3	1820.4	4.7	-10	9.36	0.524
5494.4	1820	6.6	-10	9.47	0.553
5495.5	1819.7	8.3	-10	9.58	0.58
5496.7	1819.3	10.1	-10	9.69	0.609
5498	1818.9	11.6	-10	9.8	0.638
5493.6	1820.3	0.1	-5	9.17	0.475
5495.1	1819.8	2.2	-5	9.33	0.523
5496.3	1819.4	3.8	-5	9.44	0.552
5497.3	1819.1	5.3	-5	9.55	0.58
5498.6	1818.7	6.7	-5	9.66	0.609
5499.8	1818.3	8	-5	9.77	0.638
5496.6	1819.3	0.1	0	9.27	0.513
5498.1	1818.8	1.6	0	9.41	0.553
5499.2	1818.5	2.8	0	9.52	0.58
5500.4	1818.1	4	0	9.63	0.609
5501.6	1817.6	5	0	9.74	0.638
5499.9	1818.2	0.1	5	9.38	0.548
5501.1	1817.8	1	5	9.49	0.581
5502.2	1817.4	1.8	5	9.6	0.609
5503.5	1817	2.7	5	9.71	0.638
5503.9	1816.9	0.1	10	9.55	0.598
5505.4	1816.4	0.8	10	9.68	0.637

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

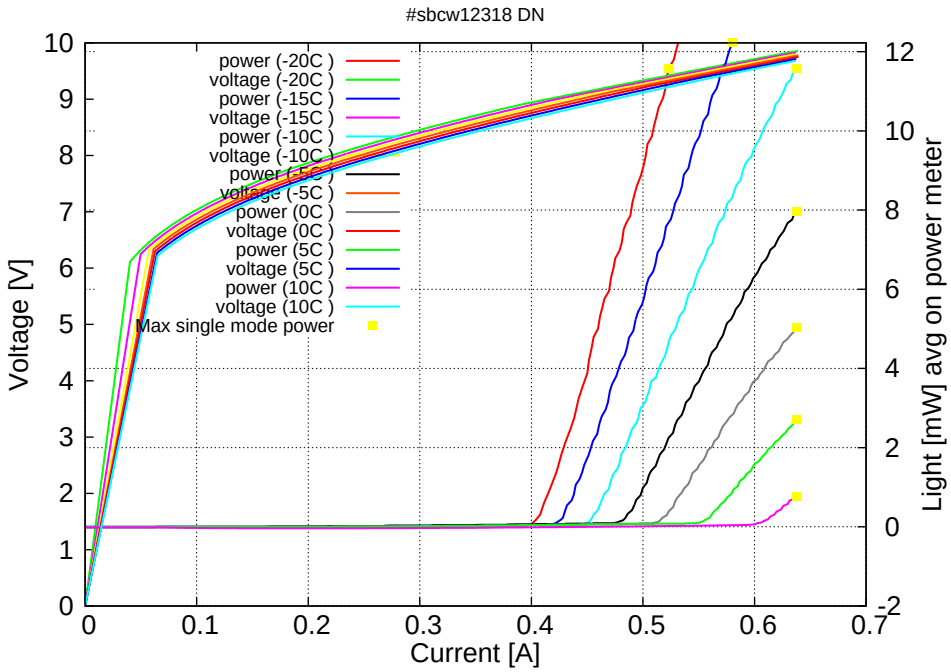

Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

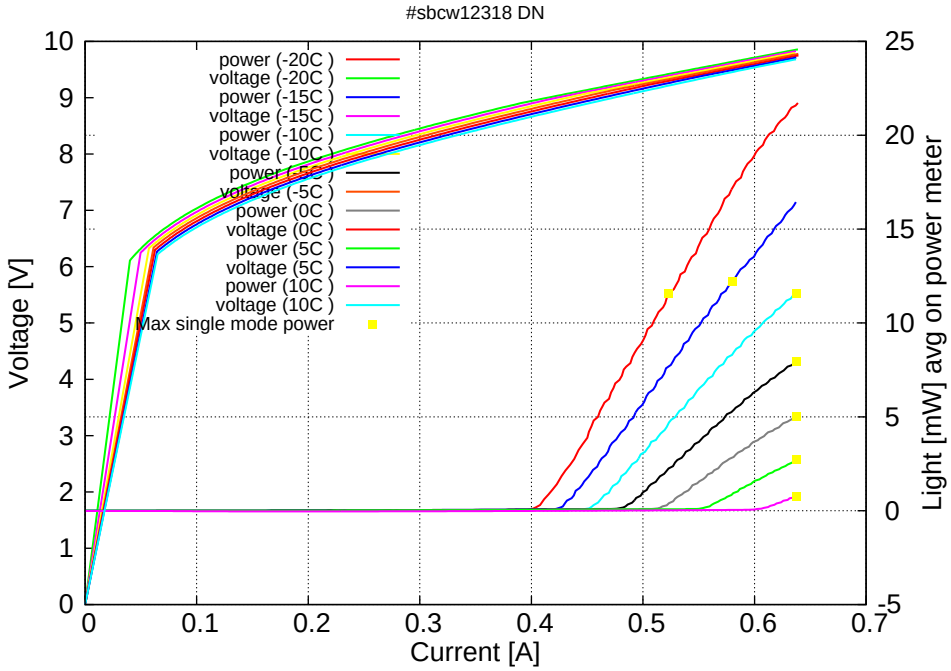

Figure 5: voltage and avg power vs current in continuous-wave operation (including the multimode region)

Note: at -20C: Ith=0.40A / Vth=8.9V (2-wires measurements). Maximum operation current: 0.640A for all temperatures.

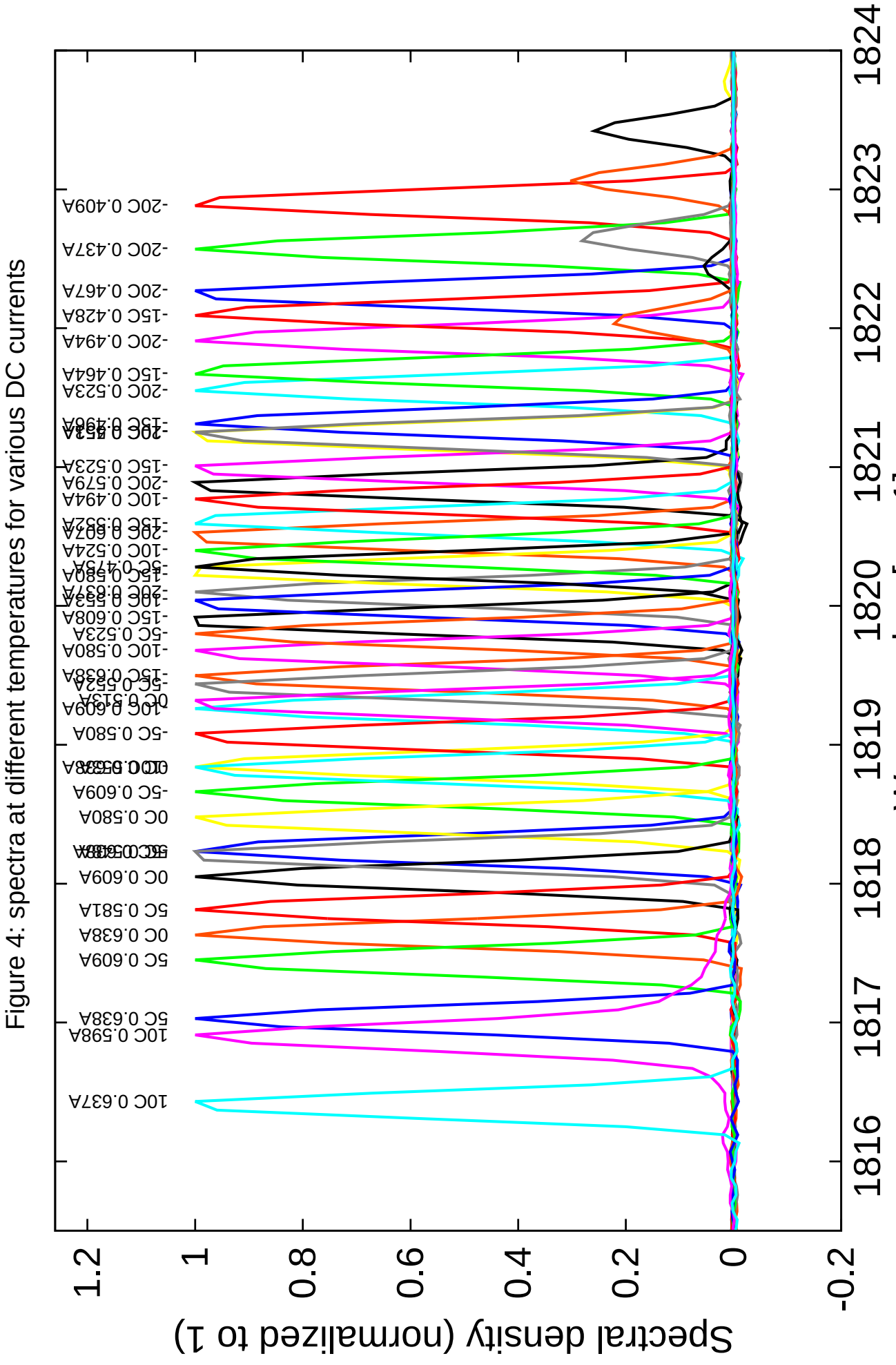

Figure 4: spectra at different temperatures for various DC currents

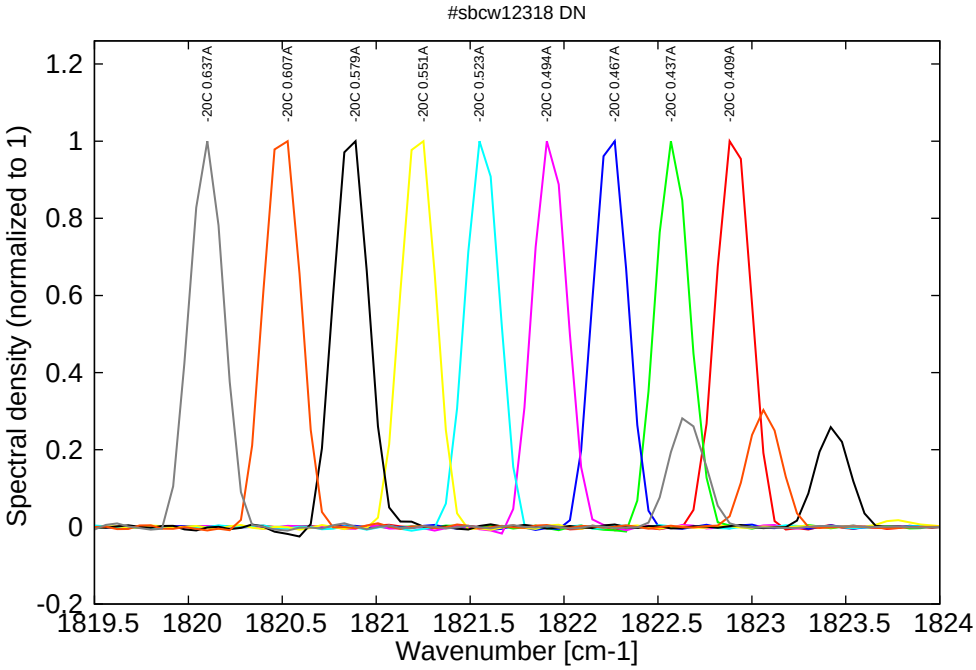

Figure 6: spectra at -20C for various DC currents, monomode up to 0.523A then becomes bimode

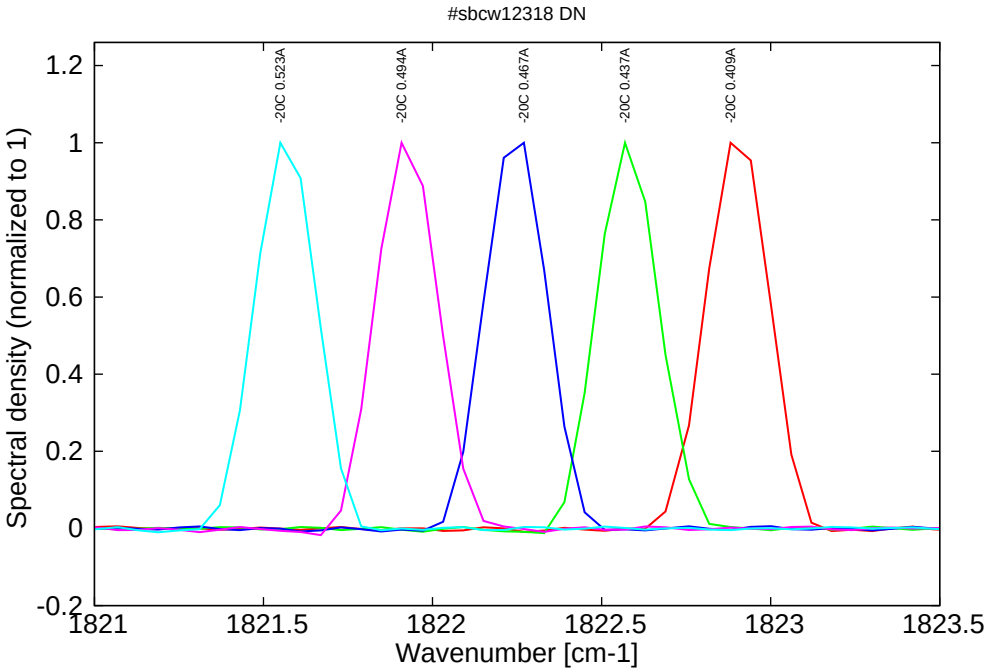

Figure 7: spectra at -20C for various DC currents, monomode range

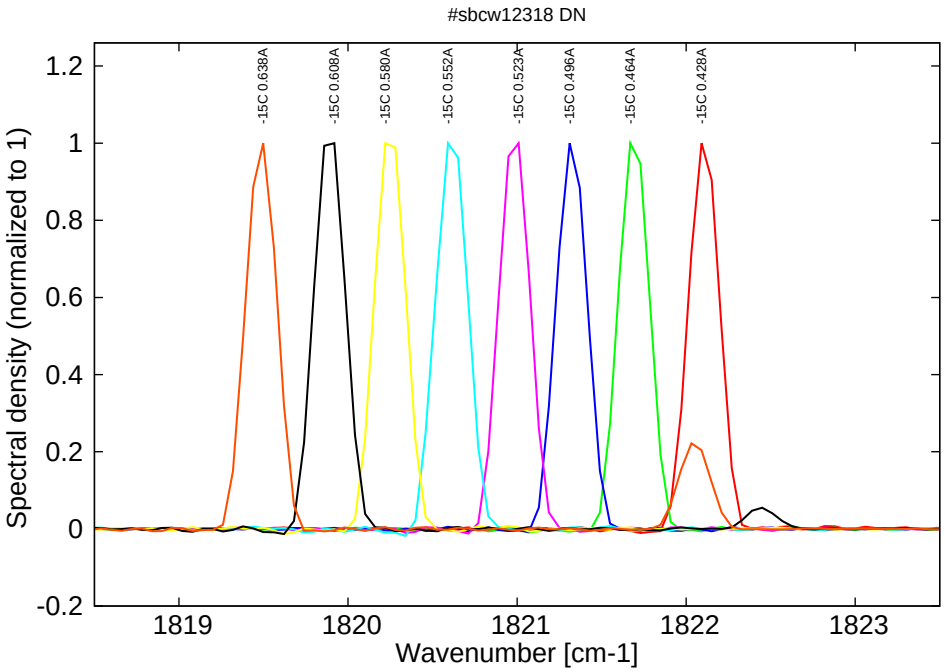

Figure 8: spectra at -15C for various DC currents, monomode up to 0.58A then becomes bimode

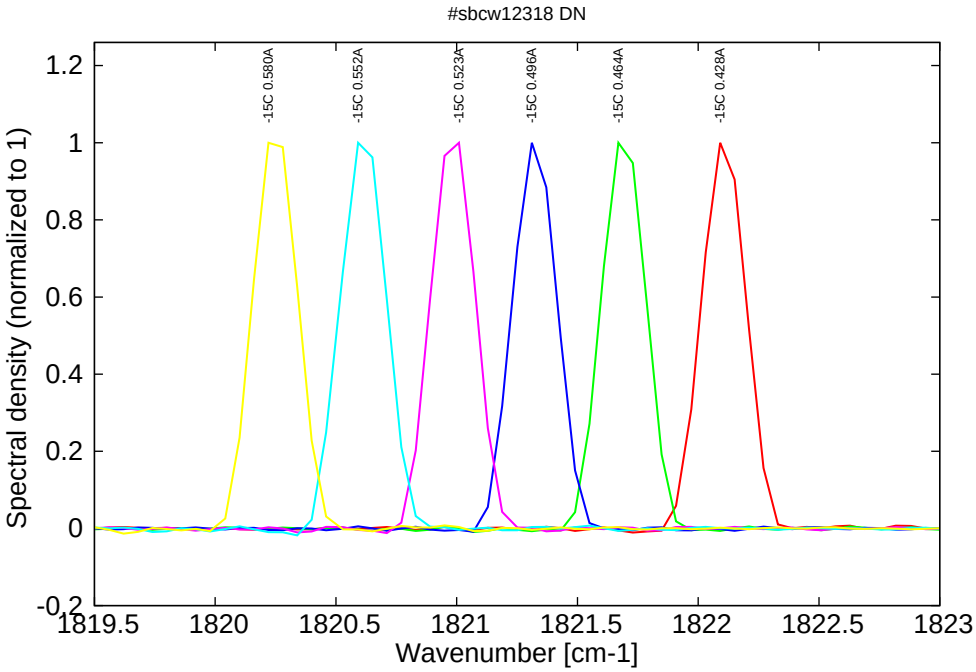

Figure 9: spectra at -15C for various DC currents, monomode range

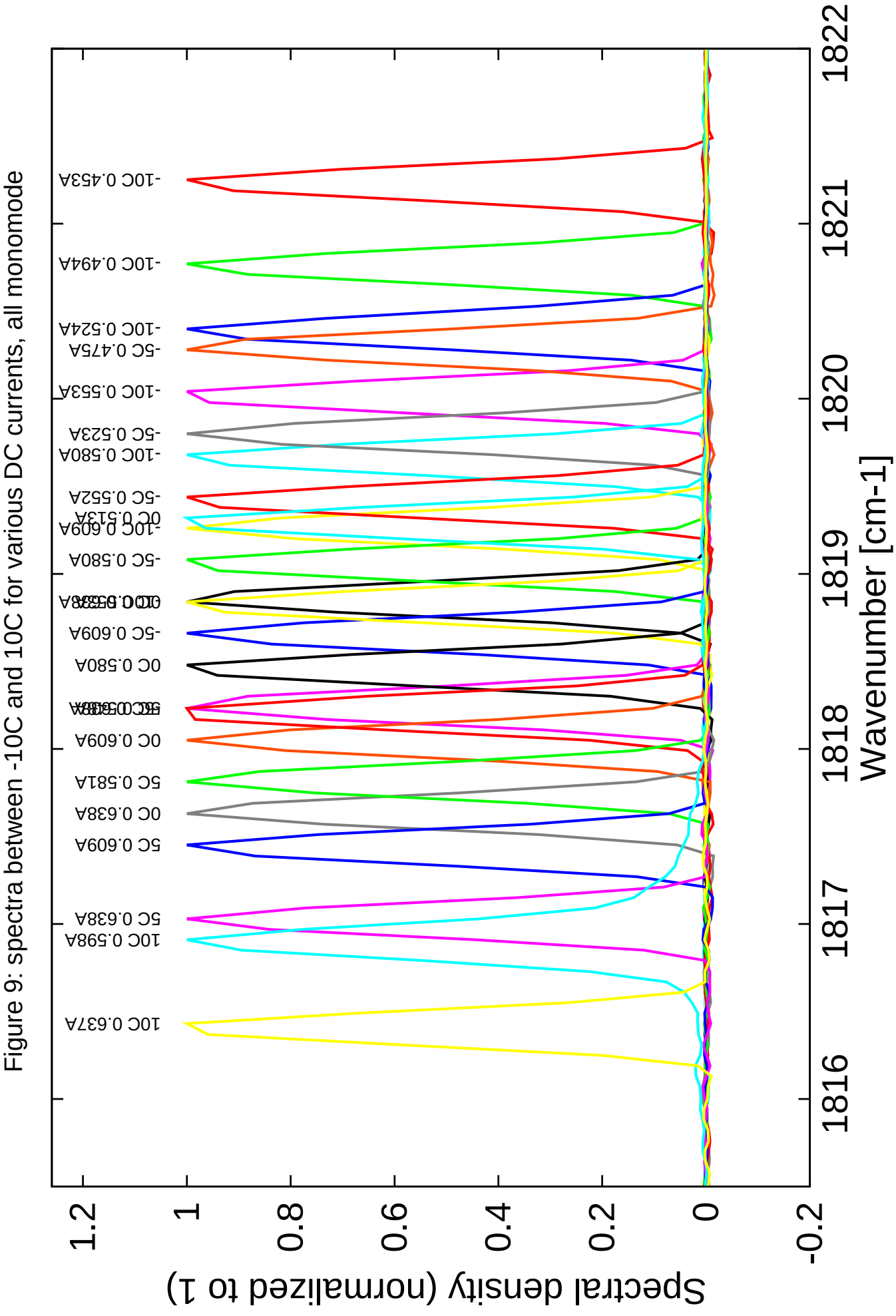

Figure 9: spectra between -10C and 10C for various DC currents, all monomode