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 #sbcw1204 UP

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 use with a power-supply ILX Lightwave LDX-3232 or equivalent.

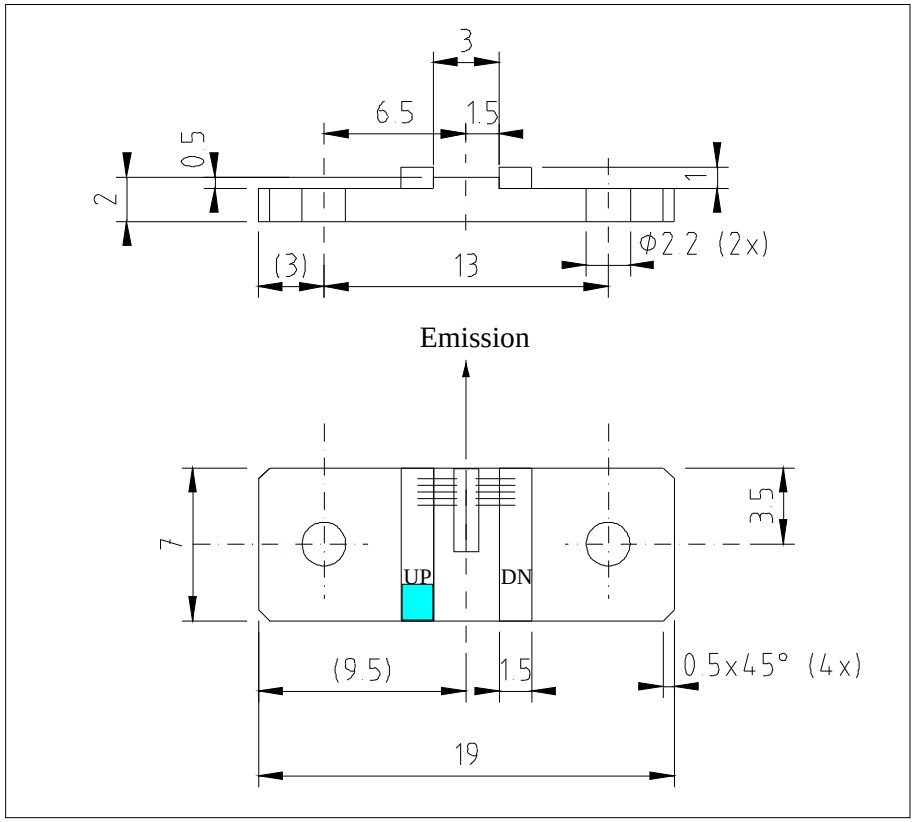

Figure 1: Mechanical and electrical interface for #sbcw1204 UP (please note that the laser is connected to the UP pad drawn in blue)

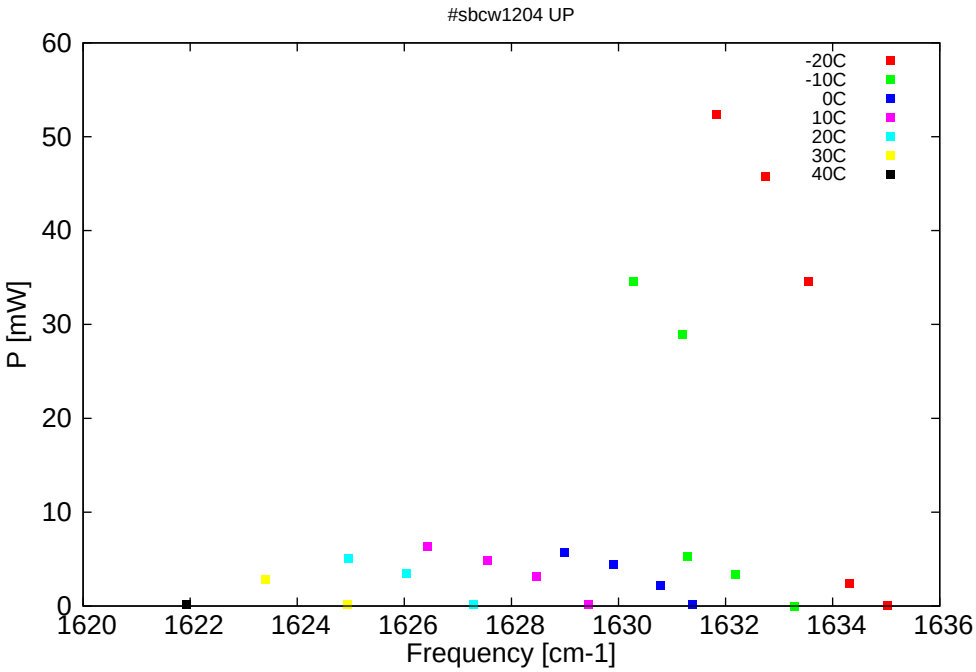

Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

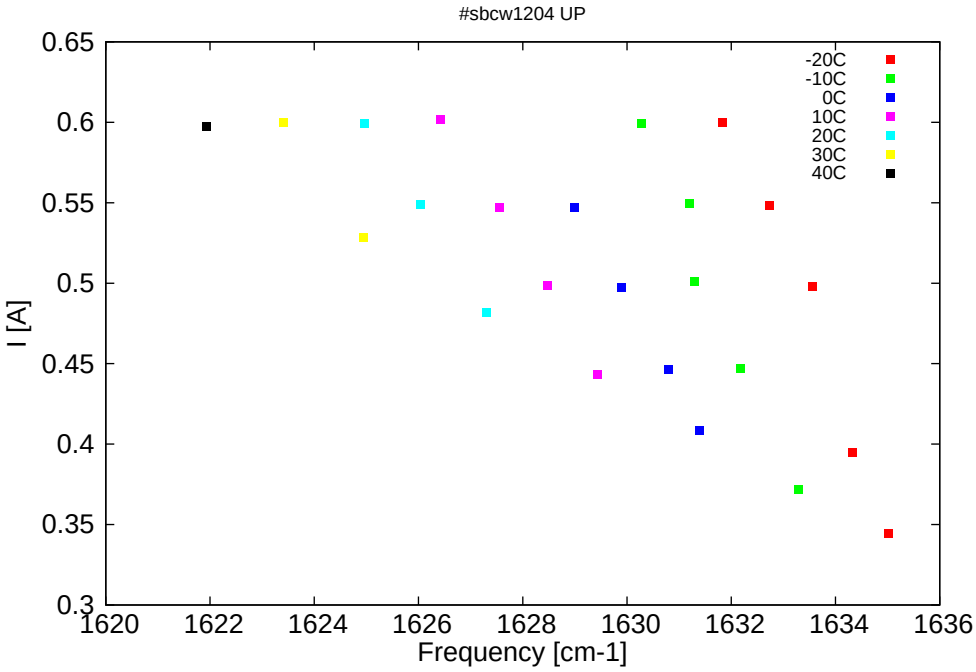

Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ[nm]	ν[cm^{-1}]	P[mW]	Temp[°C]	U$_{LASER}$[V]	I[A]
6116.1	1635	0	-20	6.5	0.34
6118.7	1634.3	2.4	-20	6.7	0.4
6121.6	1633.6	34.6	-20	7	0.5
6124.7	1632.7	45.8	-20	7.2	0.55
6128.1	1631.8	52.4	-20	7.3	0.6
6122.6	1633.3	0	-10	6.5	0.37
6126.8	1632.2	3.4	-10	6.8	0.45
6130.1	1631.3	5.3	-10	7	0.5
6130.5	1631.2	28.9	-10	7.1	0.55
6133.9	1630.3	34.6	-10	7.3	0.6
6129.7	1631.4	0.1	0	6.6	0.41
6132	1630.8	2.1	0	6.8	0.45
6135.3	1629.9	4.4	0	6.9	0.5
6138.7	1629	5.7	0	7.1	0.55
6137.1	1629.4	0.2	10	6.7	0.44
6140.7	1628.5	3.1	10	6.9	0.5
6144.2	1627.6	4.8	10	7.1	0.55
6148.5	1626.4	6.3	10	7.3	0.6
6145.1	1627.3	0.2	20	6.8	0.48
6149.9	1626	3.5	20	7.1	0.55
6154	1625	5	20	7.3	0.6
6154.1	1624.9	0.2	30	7	0.53
6159.9	1623.4	2.8	30	7.3	0.6
6165.5	1621.9	0.2	40	7.2	0.6

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

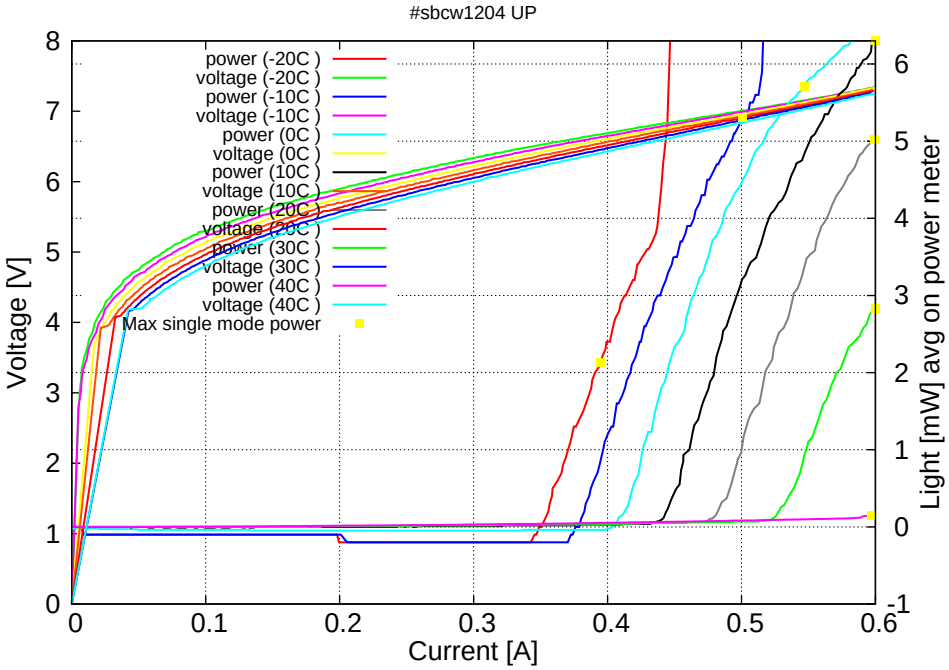

Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

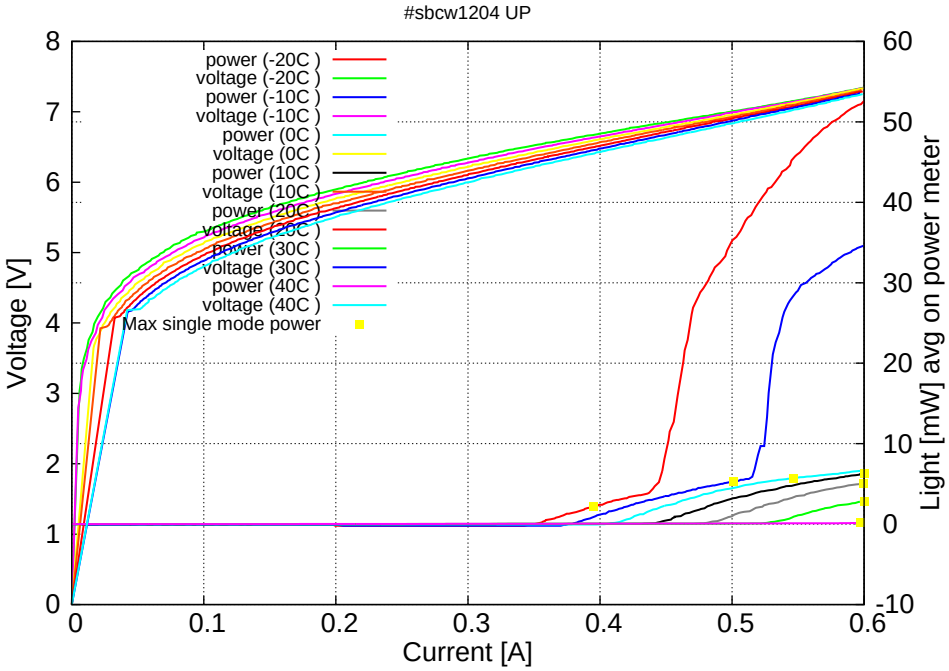

Figure 5: voltage and avg power vs current in continuous-wave operation (including the multimode region)

Note: at -20C: Ith=0.34A / Vth=6.5V (2-wires measurements). Maximum operation current: 0.6A for all temperatures.

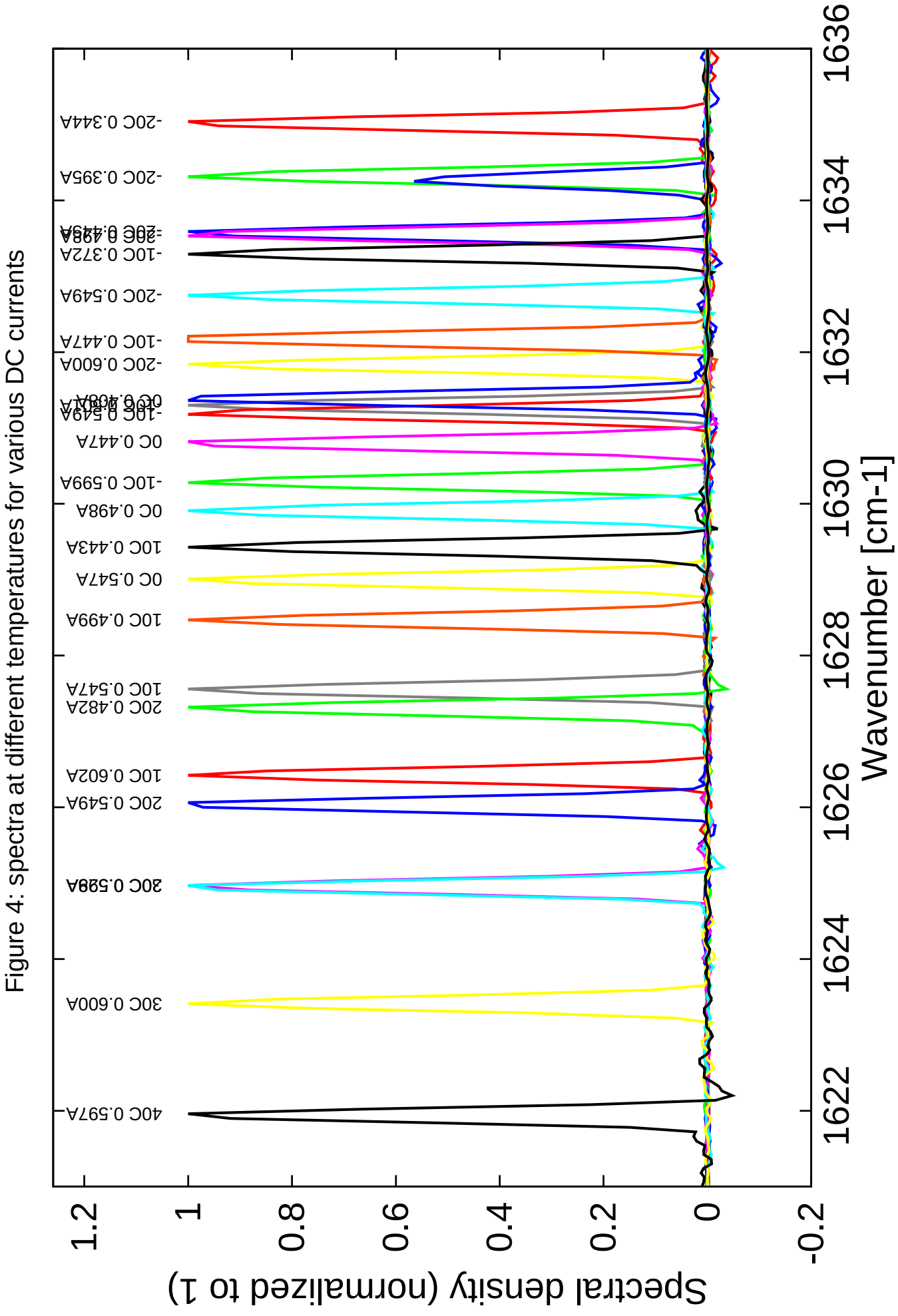

Figure 4: spectra at different temperatures for various DC currents

#sbcw1204 UP

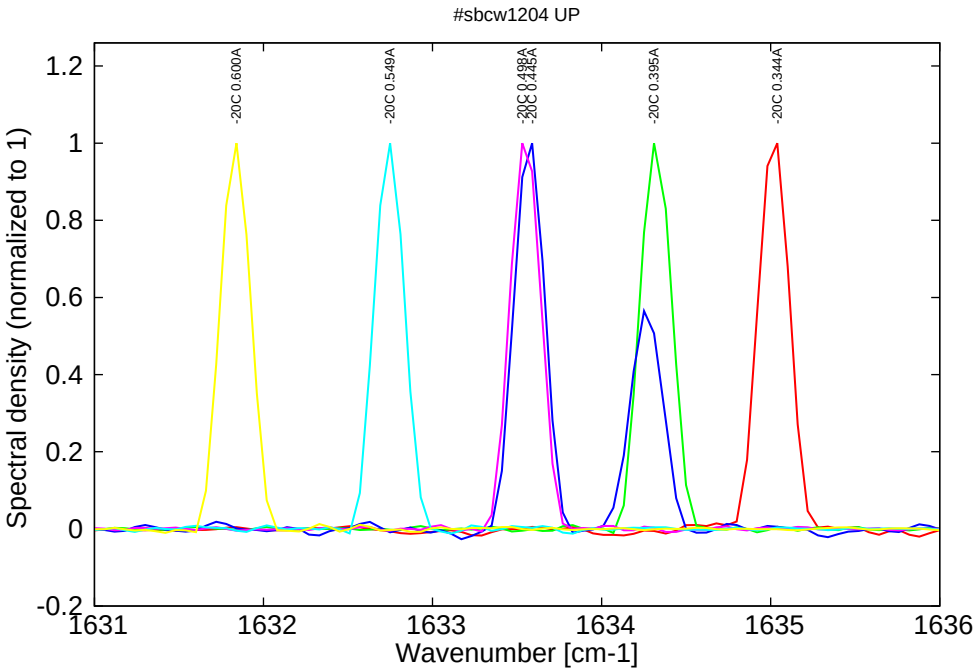

Figure 6: Spectra at -20C for various DC currents (monomode on mode 1 up to 0.395A, bimode at 0.445A then becomes monomode on mode 2)

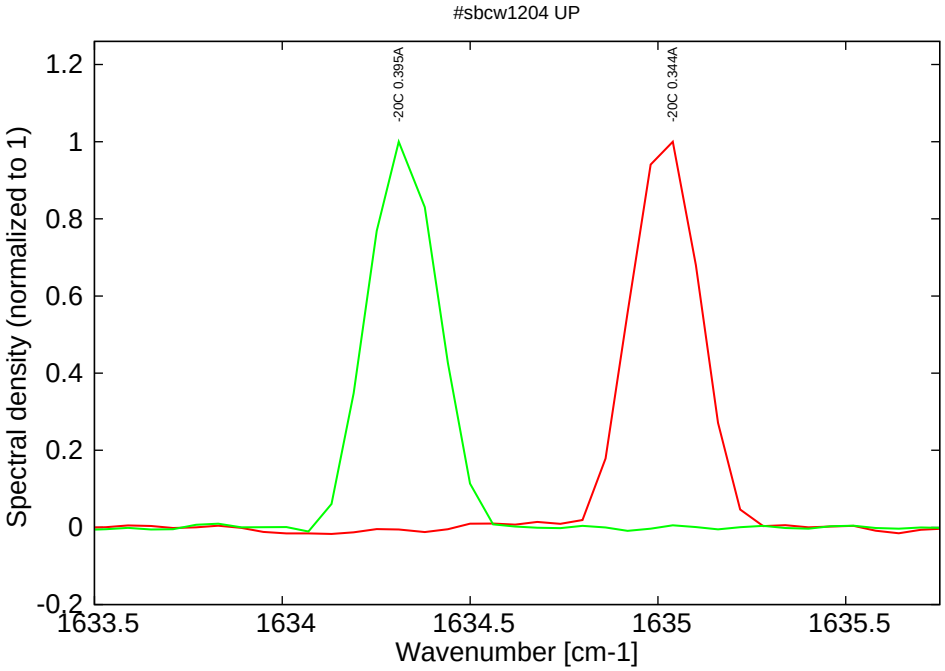

Figure 7: Spectra at -20C for various DC currents (monomode on mode 1 range)

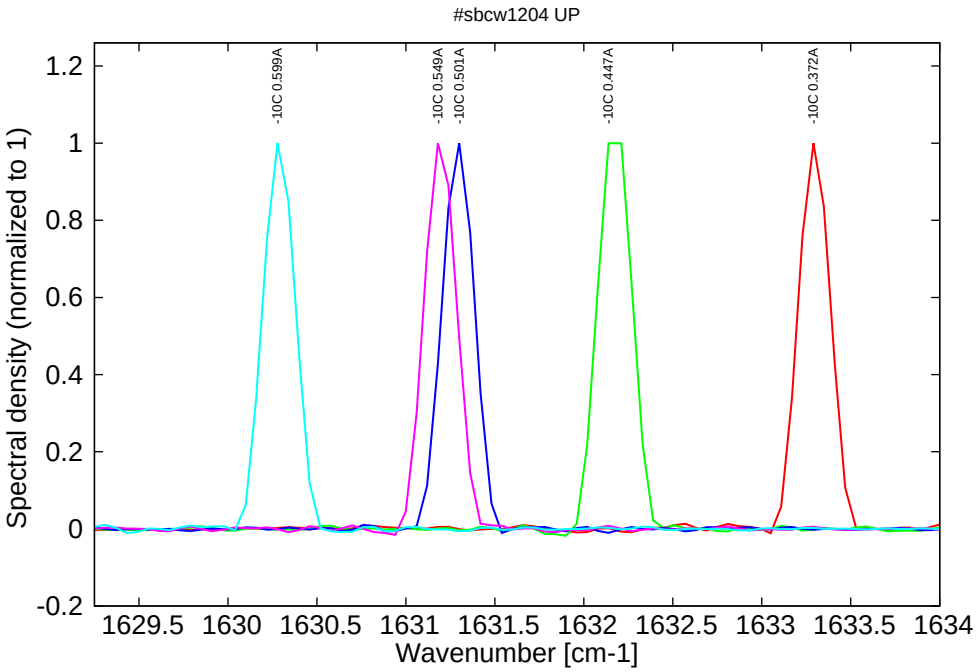

Figure 8: Spectra at -10C for various DC currents (monomode on mode 1 up to 0.501A then becomes monomode on mode 2)

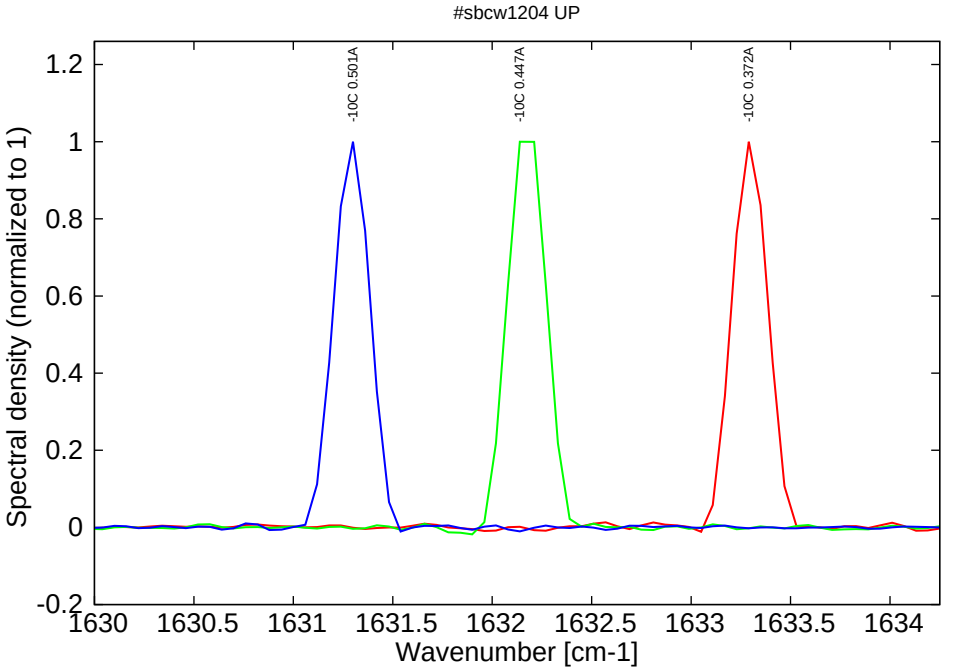

Figure 9: Spectra at -10C for various DC currents (monomode on mode 1 range)

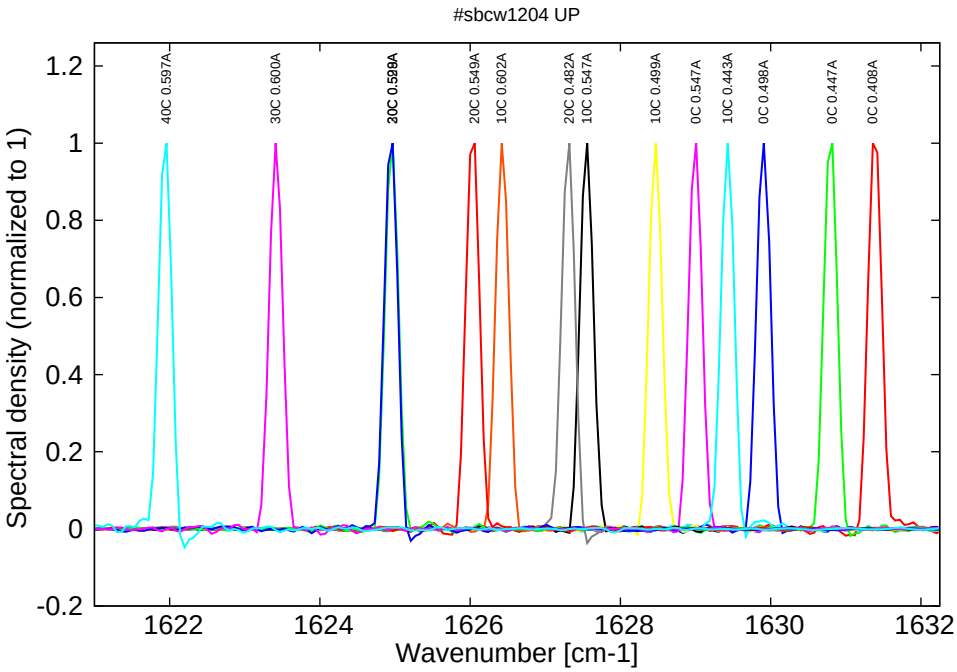

Figure 10: Spectra from 0C to 40C for various DC currents (all monomode on mode 1)