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 #sbcw7475 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.

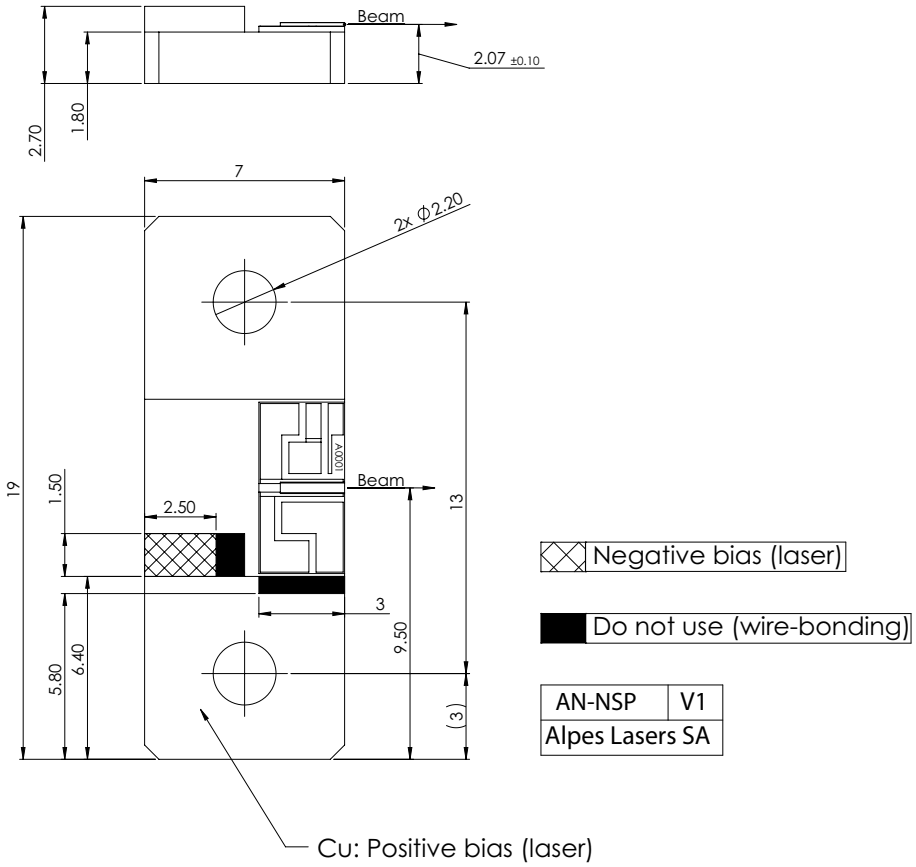

Figure 1: Mechanical and electrical interface for #sbcw7475 DN

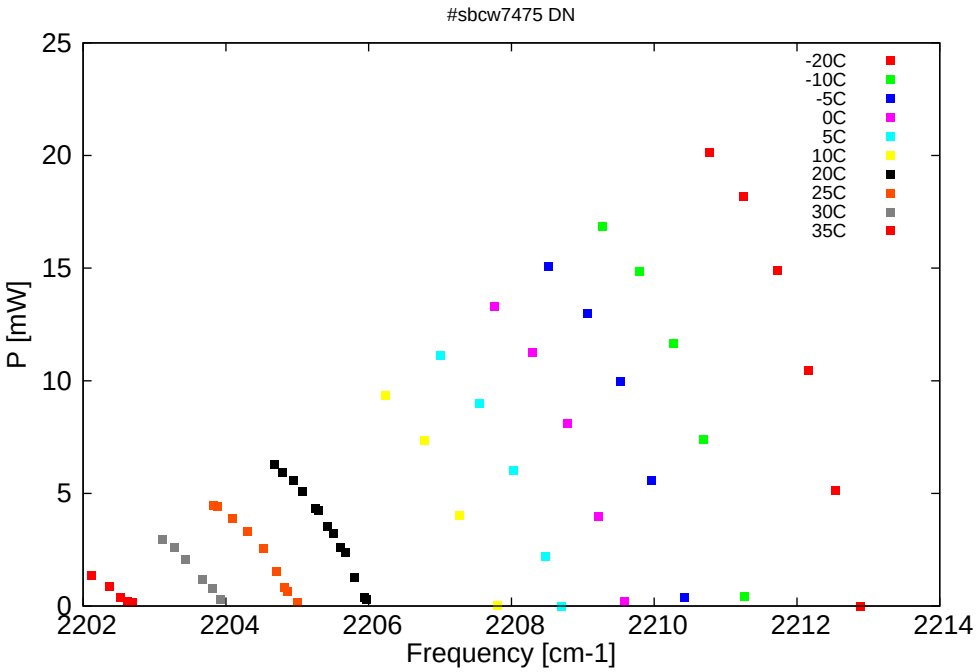

Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

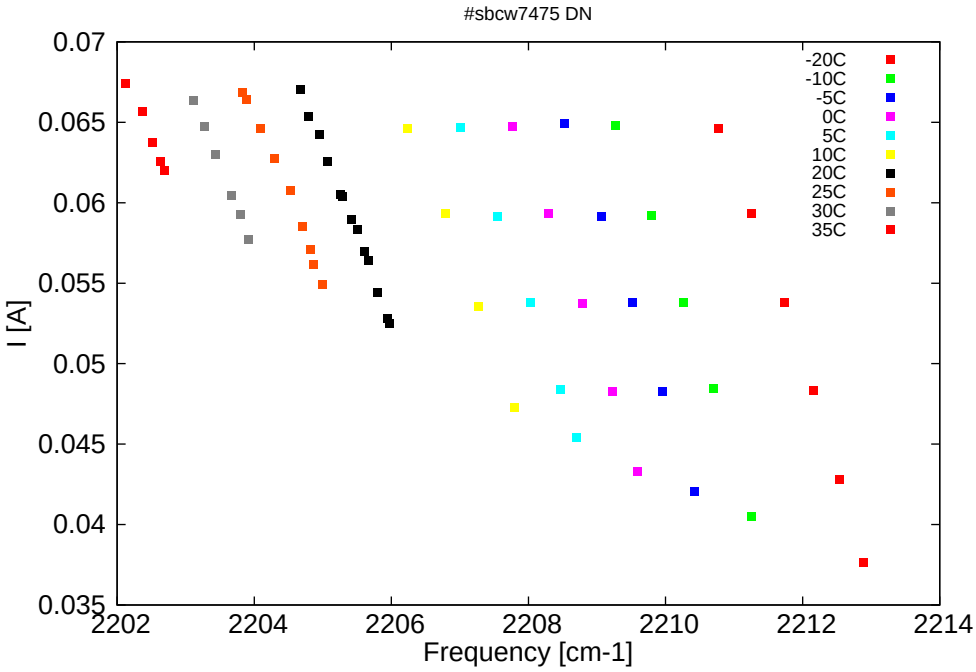

Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ[nm]	ν[cm^{-1}]	P[mW]	Temp[°C]	U$_{LASER}$[V]	I[A]
4519	2212.9	0	-20	9.59	0.038
4519.7	2212.5	5.1	-20	9.79	0.043
4520.5	2212.2	10.4	-20	10	0.048
4521.3	2211.7	14.9	-20	10.23	0.054
4522.3	2211.3	18.2	-20	10.47	0.059
4523.3	2210.8	20.1	-20	10.71	0.065
4522.3	2211.3	0.4	-10	9.66	0.04
4523.5	2210.7	7.4	-10	9.96	0.048
4524.3	2210.3	11.7	-10	10.18	0.054
4525.3	2209.8	14.8	-10	10.41	0.059
4526.4	2209.3	16.8	-10	10.66	0.065
4524	2210.4	0.4	-5	9.7	0.042
4525	2210	5.6	-5	9.94	0.048
4525.9	2209.5	9.9	-5	10.16	0.054
4526.8	2209.1	13	-5	10.39	0.059
4527.9	2208.5	15.1	-5	10.64	0.065
4525.7	2209.6	0.2	0	9.74	0.043
4526.5	2209.2	4	0	9.92	0.048
4527.4	2208.8	8.1	0	10.14	0.054
4528.4	2208.3	11.3	0	10.37	0.059
4529.5	2207.8	13.3	0	10.62	0.065
4527.5	2208.7	0	5	9.79	0.045
4528	2208.5	2.2	5	9.9	0.048
4528.9	2208	6	5	10.12	0.054
4529.9	2207.6	9	5	10.34	0.059
4531	2207	11.1	5	10.59	0.065
4529.4	2207.8	0	10	9.85	0.047
4530.5	2207.3	4	10	10.1	0.054
4531.5	2206.8	7.3	10	10.32	0.059
4532.6	2206.2	9.3	10	10.57	0.065
4533.1	2206	0.3	20	10.01	0.052
4533.2	2205.9	0.4	20	10.02	0.053
4533.5	2205.8	1.2	20	10.08	0.054
4533.8	2205.7	2.4	20	10.13	0.056
4533.9	2205.6	2.6	20	10.16	0.057
4534.1	2205.5	3.2	20	10.21	0.058
4534.3	2205.4	3.5	20	10.24	0.059
4534.5	2205.3	4.2	20	10.29	0.06
4534.6	2205.3	4.4	20	10.31	0.061
4535	2205.1	5.1	20	10.39	0.063
4535.3	2204.9	5.6	20	10.44	0.064
4535.6	2204.8	5.9	20	10.5	0.065
4535.8	2204.7	6.3	20	10.55	0.067
4535.1	2205	0.1	25	10.09	0.055
4535.4	2204.9	0.6	25	10.14	0.056
4535.5	2204.8	0.8	25	10.16	0.057
4535.7	2204.7	1.5	25	10.2	0.059
4536.1	2204.5	2.5	25	10.28	0.061
4536.6	2204.3	3.3	25	10.37	0.063

continued on next page

λ[nm]	ν[cm^{-1}]	P[mW]	Temp[°C]	U$_{LASER}$[V]	I[A]
4537	2204.1	3.9	25	10.46	0.065
4537.4	2203.9	4.4	25	10.55	0.066
4537.6	2203.8	4.4	25	10.57	0.067
4537.4	2203.9	0.3	30	10.21	0.058
4537.6	2203.8	0.8	30	10.25	0.059
4537.9	2203.7	1.2	30	10.3	0.06
4538.4	2203.4	2.1	30	10.4	0.063
4538.7	2203.3	2.6	30	10.46	0.065
4539	2203.1	3	30	10.53	0.066
4539.9	2202.7	0.1	35	10.39	0.062
4540	2202.6	0.2	35	10.41	0.063
4540.3	2202.5	0.4	35	10.45	0.064
4540.6	2202.4	0.9	35	10.51	0.066
4541.1	2202.1	1.3	35	10.61	0.067

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

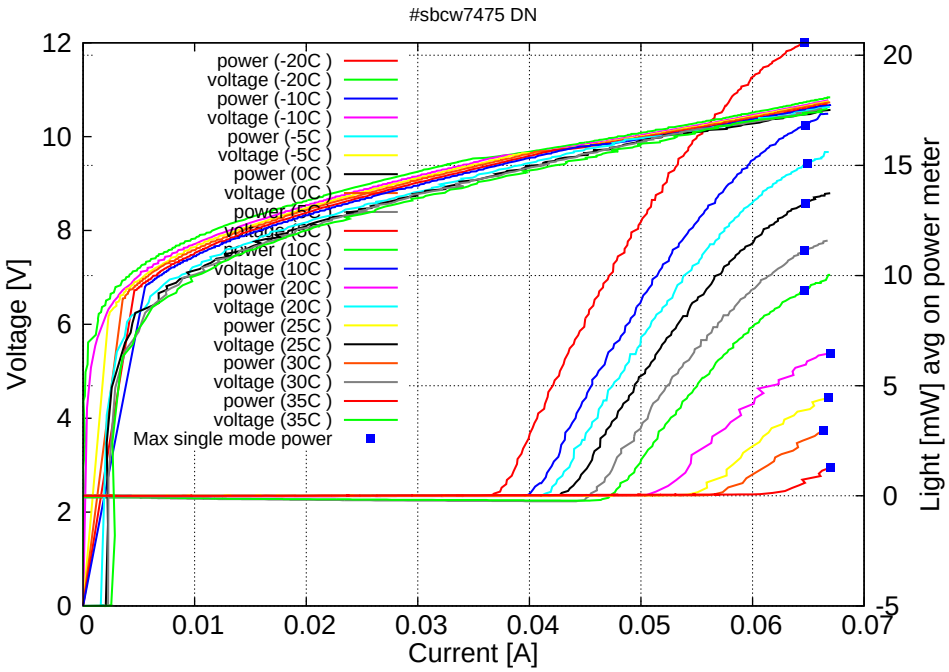

Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

Note: at -20C: Ith=0.04A / Vth=9.6V (2-wires measurements). Maximum operation current: 0.065A between -20C and 10C, 0.067A between 20C and 35C.

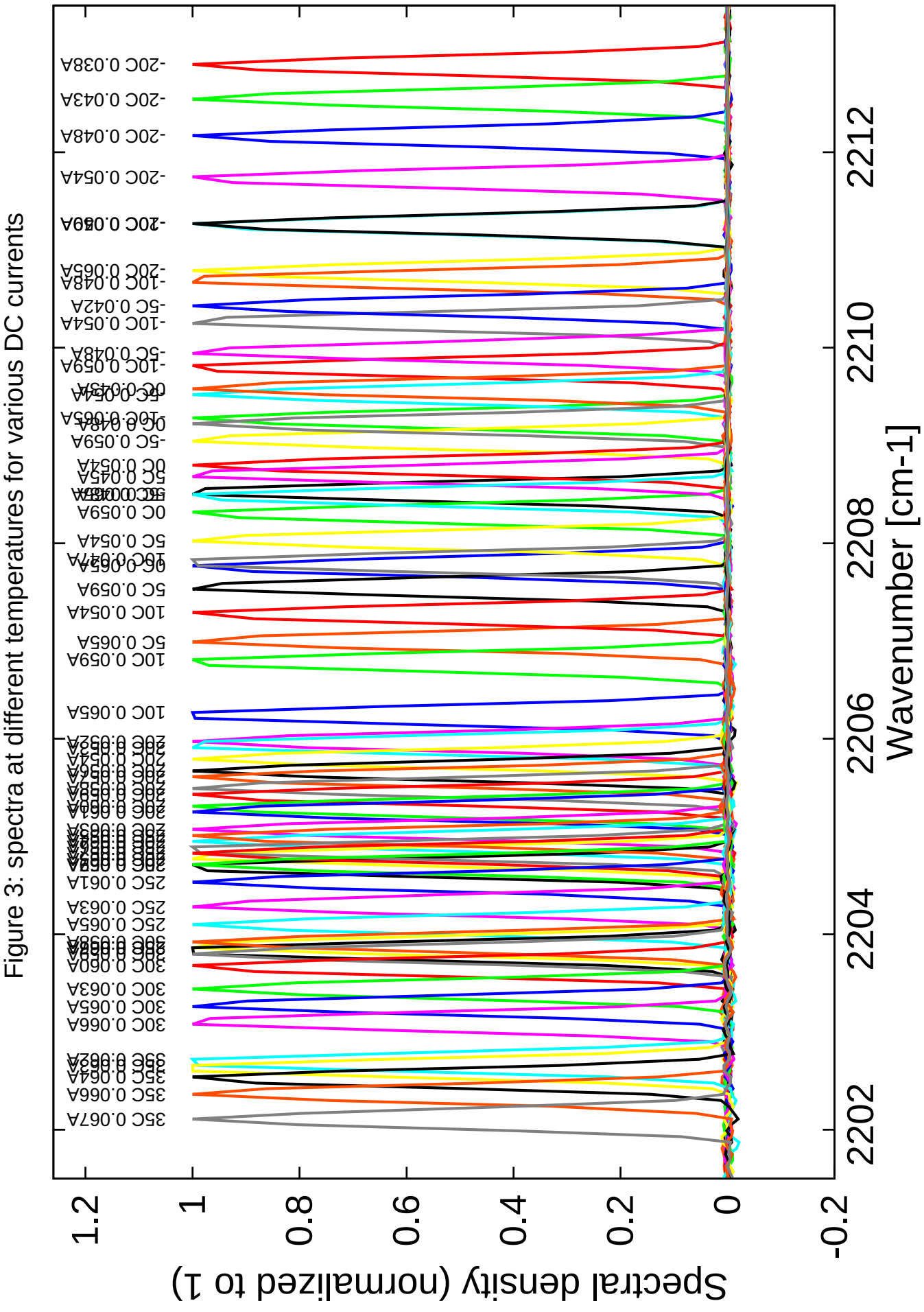

Figure 3: spectra at different temperatures for various DC currents